Agenda Item E Boardman to Hemingway Transmission Line, Request for Site Certificate Amendment 2, EFSC Review of Draft Proposed Order on Request for Site Certificate Amendment 2 for the June 14, 2024 EFSC Meeting

Attachment 2: Comments Received on Draft Proposed Order on Request for Site Certificate Amendment 2

Table of Contents

B2HAMD2Doc10 DPO Public Comment_McCarthy S_2024-04-26 7
1 B2HAMD2Doc10 DPO Public Comment_McCarthy S_2024-04-26 7
1.1 B2HAMD2 DPO Public Comment_McCarthy_2024-26-2024 7
1.2 Extracted pages from FIG 4-1 Proposed Micrositing Area Additions 9
2 B2HAMD2Doc10 DPO Public Comment 2_McCarthy S_2024-04-26 10
B2HAMD2Doc10-1 DPO Public Comment_Baker A_2024-04-26 and 29 11
B2HAMD2Doc10-2 DPO Public Comment_Gilbert I_Party Status in DPO 2024-04-26 to 2024-05-08 14
1 B2HAMD2Doc10-2 DPO Public Comment_Gilbert I_Party Status in DPO 2024-04-26 14
1.1 B2HAMD2Doc10-2 DPO Public Comment_Gilbert I_2024-26-2024 14
1.2 Comment Regarding Party Status Limits 15
2 B2HAMD2Doc10-2 DPO Public Comment_Gilbert I_Party Status in DPO 2024-05-08 17
3 Comment referrals to comments by others 18
3.1 “Evidence” means facts, documents, data or other information offered to demonstrate compliance or noncompliance with the standards believed by the proponent to be relevant to the decision. [Formerly 197.763]” 20
B2HAMD2Doc10-2.1 DPO Public Comment_Gilbert I_Roads and MUAs 2024-05-30 23
1 Gilbert Email Roads and Ladd Marsh 23
2 Comments Road development requirements 24
3 Reference1 OregonModelEnOrdiance energy projects 30
4 Gilbert Email - Roads-MUAs 77
5 Road Comments AND mua IMPACTS 78
6 UCPWD B2H Road Comments 8-17-17 (1) 83
B2HAMD2Doc10-2.2 DPO Public Comment_Gilbert I_Bond 2024-05-30 85
1 Gilbert Email - Site bounday and Bond 85
2 Bond Comments short version 2 86
3 Bond for Irene 93
4 exhibit bond Documentation Merged Ref for Sarah Chris ccomments 99
4.1 Exhibit 8 OwnershipTerms Agreement between PacifiCorp and Idaho Power.pdf 99
4.1.1 PCN 5 PAC Exhibit 201 3-20-23 99
4.2 Exhibit 10 FERC Orders PacificCorp to Respond to Allegations of Reliability Violations.pdf 132
4.3 Exhibit 13 Feds Blame PacifiCorp for Oregon Wildfire.pdf 134
4.4 Exhibit 14 As wildfires exploded, Pacific Power worried power lines were at fault.pdf 136
4.5 Exhibit 17 Idaho Power Company's Responses to RFA1 DPO Public Comments (4).pdf 141
4.6 Exhibit 18 2021-09-24-Item-D-Retirement-Financial-Assurance-Standard-Overview-Sarah Esterson.pdf 174
4.7 Exhibit 19 2021-08-27-Item-G-Bond- Chris Clark.pdf 184
4.7.1 STAFF RECOMMENDATION 184
4.7.2 BACKGROUND 184
4.7.3 Bond Template Assessment 185

4.7.4 RECOMMENDED COUNCIL ACTION 187
B2HAMD2Doc10-2.3 DPO Public Comment_Gilbert I_Site Boundary Expansion 2024-05-30 188
1 Gilbert Email - Site bounday and Bond 188
2 SITE BOUNDARY EXPANSION REQUIRES FULL REVIEW TO APPROVE FUTURE TYPE C PROCEDURE 189
B2HAMD2Doc10-2.4 DPO Public Comment_Gilbert I_Ladd Marsh - Protected Area - T&E 2024-05-30 201
1 B2HAMD2Doc10-2.4 DPO Public Comment_Gilbert I_Ladd Marsh - Protected Area - T&E 2024-05-30 201
1.1 Gilbert Email - T&E - Bats - Protected Area 201
1.2 Failure to complie with Union County Land Use Requirements 202
1.3 ARTICLE-20.00-Supplementary-Provisions 203
1.4 Bat surveys needed prre-construction comment 218
1.5 Exhibit G_5_ Ladd Marsh Wildlife Area Management Paln 224
1.5.1 Oregon Department of Fish and Wildlife 224
1.5.2 Appendix B. Wildlife Species Known to Occur on Ladd Marsh Wildlife Area. 226
1.5.3 Appendix C. Plant Species Known to Occur on Ladd Marsh Wildlife Area. 226
1.5.4 Figure 1 Ladd Marsh Wildlife Area Features and Ownership. 226
1.5.5 Figure 2. Habitat Types within Ladd Marsh Wildlife Area. 226
1.5.6 Figure 3. Land Uses Surrounding Ladd Marsh Wildlife Area. 226
1.5.7 Executive Summary 227
1.5.8 Purpose of the Plan 227
1.5.9 Planning Approach 228
1.5.10 Wetlands and associated upland habitats are preserved, restored and enhanced at LMWA through management utilizing sound stewardship measures to support wetland dependent wildlife and a diverse array of other wildlife and plant species, for use and enjoyment by present and future generations. 228
1.5.11 Introduction 230
1.5.11.1 Purpose of the Plan 230
1.5.11.2 Oregon Department of Fish and Wildlife Mission and Authority 230
1.5.11.3 Purpose and Need of Ladd Marsh Wildlife Area 230
1.5.11.4 Wetlands and associated upland habitats are preserved and enhanced on Ladd Marsh Wildlife Area through management utilizing sound stewardship measures to support wetland dependent wildlife and a diverse array of other wildlife and plant species, for use and enjoyment by present and future generations. 231
1.5.11.5 Wildlife Area Goals and Objectives 231
1.5.11.6 Wildlife Area Establishment 233
1.5.12 Description and Environment 233
1.5.12.1 Physical Resources 233
1.5.12.2 Biological Resources 242
1.5.12.3 Monitoring 258
1.5.12.4 Cultural Resources 260
1.5.12.5 Social Environment 261
1.5.13 Infrastructure 262
1.5.13.1 Developments/Facilities 262

1.5.13.2 Water Resources 262
1.5.13.3 Easements/Access Agreements 264
1.5.14 Land Acquisition and Adjustment 264
1.5.15 Public Use 265
1.5.15.1 Public Access 265
1.5.15.2 Hunting, Angling and Trapping 266
1.5.15.3 Wildlife Viewing 267
1.5.15.4 Educational/Interpretive 268
1.5.16 Objectives and Strategies 269
1.5.16.1 Objectives and Strategies 269
1.5.17 Plan Implementation 284
1.5.17.1 Funding 284
1.5.17.2 Staffing / Organization 285
1.5.17.3 Compliance Requirements 285
1.5.17.4 Partnerships 285
1.5.17.5 Adaptive Management 286
1.5.17.6 Plan Amendment and Revision 286
1.5.18 References 288
1.5.19 Cowardin , L.M., V. Carter, F.C. Golet, and E.T. LaRoe. 1979. Classification of Wetlands and Deepwater Habitats of the United States. FWS/OBS-79/31, U.S. Fish and Wildlife Service, Washington, D.C. 103 pp. 288
1.5.19.1 Appendix A. Land Acquisitions and Adjustments 289
1.5.19.2 Involving the Ladd Marsh Wildlife Area 289
1.5.19.3 Appendix B. Plant Species Known to Occur 290
1.5.19.4 on Ladd Marsh Wildlife Area 290
1.5.19.5 297
1.5.19.6 297
1.5.19.7 Appendix C. Wildlife Species Known to Occur 298
1.5.19.8 on Ladd Marsh Wildlife Area 298
1.5.19.9 Occurrence: Abundant = A, Common = C, Uncommon = U, Rare = R 298
1.6 Gilbert Email Ladd MArsh - T&E 321
1.7 pre-construction surveys of biird species in ladd marsh and protected areas 322
1.8 Guide for Processing NABat data USGS 326
1.8.1 Contents 330
1.8.2 Acknowledgments 330
1.8.3 Introduction 334
1.8.3.1 Step 1. Attribute Acoustic Files 336
1.8.3.2 Step 2. Noise Scrubbing 338
1.8.3.3 Step 3. Auto ID 338
1.8.3.4 Step 4. Manual Vetting 339
1.8.3.5 Step 5. Submit to NABat 345
1.8.3.6 Chapter 1. Processing Acoustic Data Using Kaleidoscope Pro Version 4.3.2 346
1.8.3.7 Chapter 2. Processing Full Spectrum Acoustic Data Using SonoBat 4.2.1 348
1.8.3.8 Chapter 3. Processing Acoustic Data Using Bat Call Identification ver. 2.7d (BCID) 350

1.8.3.9 Chapter 4. Processing Zero-Cross Acoustic Data Using EchoClass v 3.1 352
1.8.3.10 Chapter 5. Processing Zero-Cross Acoustic Data Using AnaLookW 4.2n (March 16, 2017) 355
1.8.3.11 References 359
1.8.3.12 Appendix A. Case Study—Using Rule Sets to Process Acoustic Data for USDA Forest Service Lands in Northern California 360
1.8.3.13 Appendix B. Additional Guidance for AnaLookW 363
1.8.3.14 Appendix C. Bat Auto ID Species Confusion Matrix 365
1.8.4 Tables 332
1.8.4.1 Table 1. Required and recommended metadata fields for the North American Bat Monitoring Program (NABat) acoustic files. Metadata should be embedded in individual files. Fields with * should also be used for naming acoustic files. 337
1.8.4.2 Table 2. Suggested codes for acoustic detectors. Information provided by J. Tyburec (Bat Survey Solutions, LLC). 340
1.8.4.3 Table 3. Species labels to be used when labeling acoustic files and submitting data to the North American Bat Monitoring Program (NABat) modified from Loeb and others (2015). 341
1.8.4.4 Table 4. Species couplet, group, and frequency class labels recommended for labelling files with recordings of species that are acoustically similar and can occur sympatrically (adapted from Loeb and others, 2015). Also included are labels for files witho 342
1.8.4.5 Table 6. Example sunset and sunrise times for running Bat2012 in the above data structure: 353
1.8.5 Figures 332
1.8.5.1 Figure 1. A general workflow for processing recorded acoustic files for the North American Bat Monitoring Program (NABat). Note: Workflow guidance varies between stationary point and mobile transect survey data at steps 2 and 4, because objectives differ between survey methodologies (site occupancy from stationary point acoustic data versus relative abundance of species from mobile transect data). 335
1.8.5.2 Figure 2. Vetting Table sorting criteria in SONOVET software. 349
1.8.5.3 Figure 3. Startup user interface for EchoClass software (from Britzke, 2012). 354
1.8.5.4 Figure 4. View of folder directory in AnaLookW. 358
1.8.5.5 Figure 5. A standard output from SonoBat summarized in Excel (Szewczak and Szewczak, 2017). 361
1.8.5.6 Figure 6. “Sort” criteria used to arrange summary output in Excel. 362
1.9 Sensitive_Species_List 369
1.9.1 Oregon Department of Fish and Wildlife SENSITIVE SPECIES LIST 369
1.9.1.1 What is a “Sensitive Species”? 369
1.9.1.2 What factors are considered in designating a “Sensitive Species”? 369
1.9.1.3 What does the “Sensitive-Critical” designation mean? 369
1.9.1.4 Are species on the list considered “Sensitive” statewide? 370
1.9.1.5 How is the Sensitive Species List used? 370
1.9.1.6 How does the Sensitive Species List relate to the Oregon Conservation Strategy? 370
1.9.1.7 What if there is not enough information to determine whether a species should be “Sensitive”? 371
1.9.1.8 How is the Sensitive Species List updated? 371

1.9.1.9 Why are species that are “threatened” or “endangered” under the federal Endangered Species Act included on the Sensitive Species List? 371
1.9.2 Oregon Department of Fish and Wildlife SENSITIVE SPECIES LIST 374
1.9.3 FISH 374
2 Eagle Maps 380
B2HAMD2Doc10-2.5 DPO Public Comment_Gilbert I_Blasting Plan 2024-05-31 384
1 Gilbert Email Blasting 384
2 Blasting Plan Comment 385
B2HAMD2Doc10-2.6 DPO Public Comment_Gilbert I_Site Cert Conditions 2024-05-31 387
1 Gilbert Email - Conditions 387
2 CHANGES TO SITE CERTIFICATE CONDITIONS AND REQUESTOR (5) 388
B2HAMD2Doc10-3 DPO SAG Comment_Morrow County_BOC 2024-05-17 396
1 Email DPO SAG Comment_Morrow County_BOC 2024-05-17 396
2 B2HAMD2Doc10-3 DPO SAG Comment_Morrow County_BOC 2024-05-17 398
2.1 B2HAMD2Doc10-3 DPO SAG Comment_Morrow County_Mabbot 2024-05-17 398
3 Morrow County Boundary Change Maps 401
4 Morrow County Micrositing Change Maps 416
B2HAMD2Doc10-4 DPO Public Comment_Milbert 2024-05-24 429
B2HAMD2Doc10-5 DPO Reviewing Agency Comment_Pike_ODAV 2024-05-28 430
B2HAMD2Doc10-6 DPO Reviewing Agency Comment_Strope_City of La Grande 2024-05-28 436
1 B2HAMD2Doc10-6 DPO Reviewing Agency Comment_Strope_City of La Grande 2024-05-28 436
2 Extracted pages from FIG 4-1 Proposed Micrositing Area Additions_searchable 442
B2HAMD2Doc10-7 DPO Public Comment_Lyon 2024-05-30 443
B2HAMD2Doc10-8 DPO Public Comment_Larkin 2024-05-30 445
1 B2HAMD2Doc10-8 DPO Public Comment_Larkin 2024-05-30 445
2 Greg Larkin Comments on RAF2 NOISE 5_30_2024 (002) 446
B2HAMD2Doc10-9 DPO Public Comment_Cooke 2024-05-30 454
B2HAMD2Doc10-10 DPO Public Comment_Myers 2024-05-30 455
1 Myers Comment Email 455
2 B2HAMD2Doc10-10 DPO Public Comment_Myers 2024-05-30 456
B2HAMD2Doc10-10.1 DPO Public Comment_Myers 2024-05-31 460
1 Myers Email 460
2 Public comment #2 461
B2HAMD2Doc10-11 DPO Public Comment_March 2024-05-30 463
1 March Email 463
2 B2HAMD2Doc10-11 DPO Public Comment_March 2024-05-30 464
B2HAMD2Doc10-12 DPO Public Comment_Greater Hells Canyon Council 2024-05-30 480
B2HAMD2Doc10-13 DPO Public Comment_King 2024-05-30 483
1 Microsoft Outlook - Memo Style 483
2 Wendy King Public Comment on B2H RFA-2 484
B2HAMD2Doc10-13.1 DPO Public Comment_King 2024-05-31 488
1 King Email 488
2 Second Public comment of Wendy King 489
B2HAMD2Doc10-14 DPO Public Comment_Stop B2H 2024-05-30 490

1	Microsoft Outlook - Memo Style	490
2	RFA2_DPO Comments_StopB2H_24-05-30	491
B2HAMD2Doc10-15 DPO Public Comment_Cunningham Sheep Co_Corey 2024-05-30		523
B2HAMD2Doc10-16 DPO Public Comment_Geer 2024-05-30		524
1	Geer Email	524
2	Geer RFA 2 comment 5.30.24 (003)	525
B2HAMD2Doc10-16.1 DPO Public Comment_Geer 2024-05-31		530
1	Geer Email 2	530
2	Geer RFA 2 comment 5.31.24	531
B2HAMD2Doc10-17 DPO Reviewing Agency Comment_ODOT_Ortiz 2024-05-30		542
B2HAMD2Doc10-18 DPO Public Comment_Luciani 2024-05-30		543

TARDAEWETHER Kellen * ODOE

From: TARDAEWETHER Kellen * ODOE
Sent: Friday, April 26, 2024 8:51 AM
To: Sue McCarthy
Subject: RE: Boardman to Hemingway Transmission Line
Attachments: Extracted pages from FIG 4-1 Proposed Micrositing Area Additions.pdf

Good morning Sue,

Thank you for the email comment on the B2H RFA2 Draft Proposed Order. Part of RFA2 is Idaho Power's request to expand the site boundary as well as add new micrositing areas. The expanded site boundary is an area that is evaluated for resources, however, the proposed micrositing areas are the areas where actual facility components would be located, if Council approves the changes. So, no facility components would be located in the expanded site boundary area (yellow line on the Figure 4-1 and 8-1 maps). That said, you correctly point out that the in Figure 8-1 the expanded site boundary is shown crossing Morgan Lake Park. This is a mapping error in Figure 8-1. I've attached the map from Figure 4-1 in the same area, showing that the expanded site boundary borders and does not enter Morgan Lake Park. Again, the expanded site boundary is not where RFA2 facility components would be located and the findings stated in the Final Order on the application for site certificate (ASC), indicate that there would not be any facility components (towers, roads, etc.) located within the Park boundaries either. Thank you so much for the comment and I hope this helps. I will save your comment and my response on the record for the DPO and pass it along to Idaho Power.

Kellen

Kellen Tardaewether
Senior Siting Analyst
550 Capitol St. NE Salem, OR 97301
C: 503-586-6551
P (In Oregon): 800-221-8035

-----Original Message-----
From: Sue McCarthy <suemc@eoni.com>
Sent: Thursday, April 25, 2024 6:31 PM
To: TARDAEWETHER Kellen * ODOE <kellen.tardaewether@energy.oregon.gov>
Subject: Boardman to Hemingway Transmission Line

[You don't often get email from suemc@eoni.com. Learn why this is important at https://aka.ms/LearnAboutSenderIdentification]

Kellen Tardaewether, Senior Sitting Analyst

Oregon Department of Energy

550 Capitol Street NE, 1st Floor

Salem, Oregon 97301

I received in the mail the new information on the H2B transmission line.

I would like to a make a comment on the RFA2 proposed site boundary.
The proposed site boundary show in figure 8, map 29 of Union County includes part of Morgan Lake Park, including all of Twin lake and part of Morgan Lake itself. Both these are important for wildlife habitat and public recreation.

The movement of the boundary just a small distance would help remove this issue.

Thanks,

Sue McCarthy

suemc@eoni.com

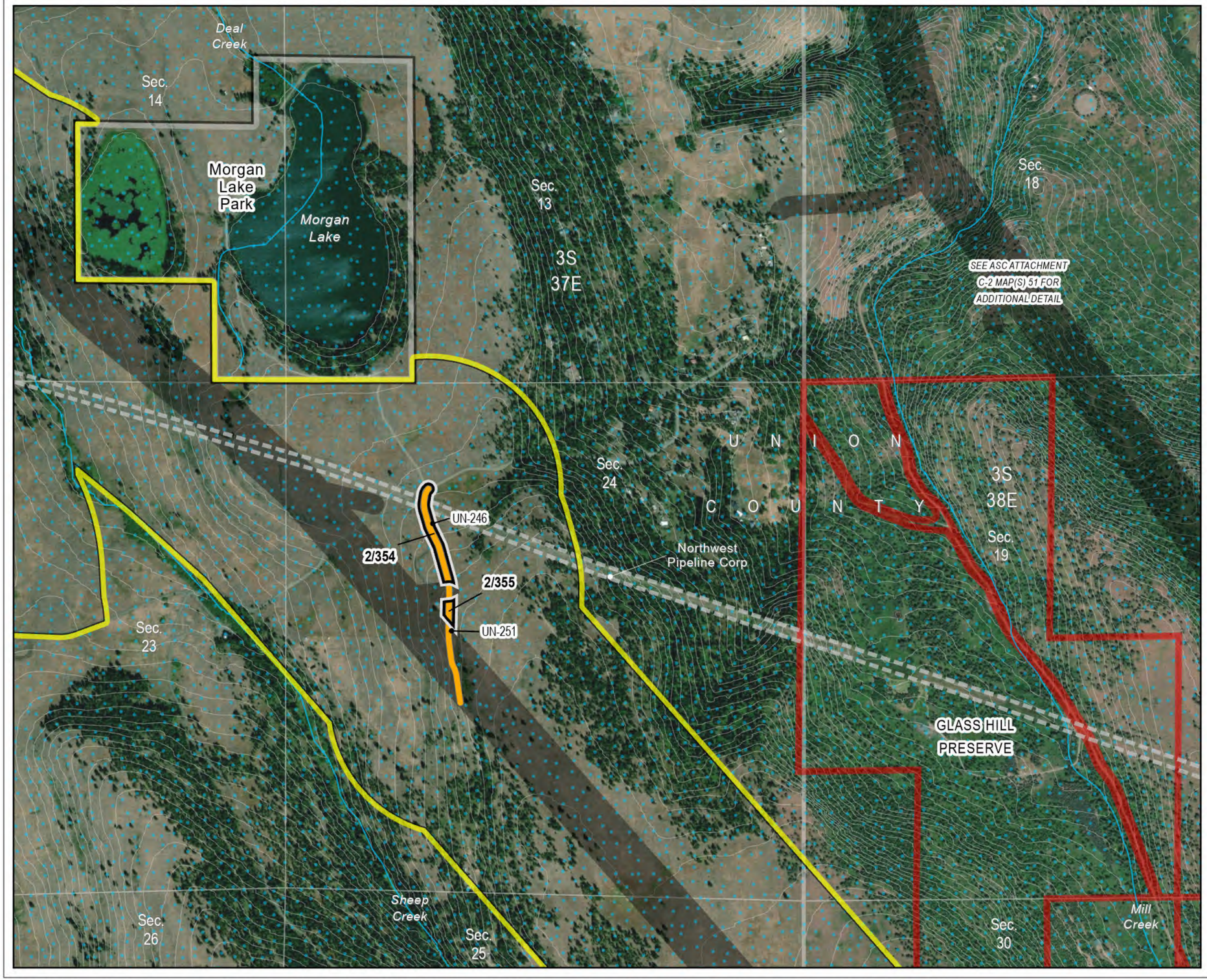
cell 541 786 0824

Boardman to Hemingway
Transmission Project
Request for Amendment 2

Figure 4-1
RFA2 Proposed Micrositing Area Additions

Union County

Map 35



Project Features
- Proposed Site Boundary
- Proposed Micrositing Area Addition
- Previously Approved Micrositing Area

Access (Unique ID)
- Existing Road, Substantial Modification, 21-70% Improvements

Important Siting Constraints and Other Features
- 20-ft Contours
- Pipeline
- Stream
- Morgan Lake Park
- Protected Area (EFSC)
- Elk Winter Range

Land Status
- Private

Notes:
Not intended for construction or any uses other than intended purpose.

Project features current as of December 5, 2023.

Data Source(s):
BLM, Esri, FAA, NPS, ODFW, ODOT, StreamNet, USGS, Velocity, Ventyx

Imagery:
World Imagery: Maxar

N

1,000
Feet

Map Area



IDAHO POWER
An IDACORP Company

\\cess706gisfs1\CES\Projects\BOI\UtilServ\Boardman_Hemingway\Reports\002_Oregon_Energy_Siting_Council\06_RFA2\Exhibits\Project Location\FIG 4-1 RFA2_Site Boundary Changes_MAPBOOK_20240117\Maps\FIG 4-1 RFA2_Site Boundary Changes_MAPBOOK_20240117.aprx 3/31/2024

TARDAEWETHER Kellen * ODOE

From: Sue McCarthy <suemc@eoni.com>
Sent: Friday, April 26, 2024 8:55 PM
To: TARDAEWETHER Kellen * ODOE
Subject: H2B

You don't often get email from suemc@eoni.com. Learn why this is important

Oregon Department of Energy,

I would like to make another comment/concern on the H2B transmission line that will pass by Morgan Lake Park. There is a Bald Eagle nest at the coordinates

118.14560 (Lat.) by 45.30164 (Long.). I believe this is very close to the transmission line and would be detrimental to the breeding eagles.

Thanks,
sue mccarthy
suemc@eoni.com
cell 541 786 0824

TARDAEWETHER Kellen * ODOE

From: TARDAEWETHER Kellen * ODOE
Sent: Monday, April 29, 2024 8:31 AM
To: Amanda Baker
Subject: RE: B2H hwy 86 Baker

If it's the yellow line on the maps that you're talking about, that is an expanded site boundary which is an area that is evaluated for resources, but not where facility components would be located. As I mentioned, the transmission line route in this area is staying the same as it was previously approved except for a minor adjustment to the rebuilding of the existing 230 kV line. Hope this helps,

Kellen

Kellen Tardaewether
Senior Siting Analyst
550 Capitol St. NE Salem, OR 97301
C: 503-586-6551
P (In Oregon): 800-221-8035

OREGON DEPARTMENT OF ENERGY

Stay connected!

From: Amanda Baker <heavenboundalc@gmail.com>
Sent: Friday, April 26, 2024 8:53 PM
To: TARDAEWETHER Kellen * ODOE <kellen.tardaewether@energy.oregon.gov>
Subject: Re: B2H hwy 86 Baker

You don't often get email from heavenboundalc@gmail.com. Learn why this is important

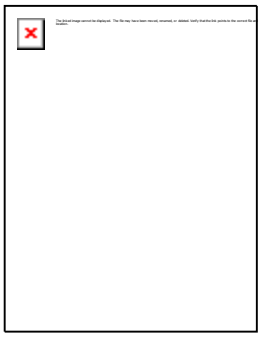
So it's literally going through my entire property?

On Fri, Apr 26, 2024, 9:11 AM TARDAEWETHER Kellen * ODOE <kellen.tardaewether@energy.oregon.gov> wrote:

> Good morning Amanda,
>
> I'm attached a couple maps from RFA2 which show the land parcels under your name as well as the proposed changes within the vicinity of your property. It appears that the changes proposed in RFA2 within the vicinity of your property include slightly modified temporary pulling and tensioning sites and a minor adjustment (moving further away) of the previously approved 230 kV rebuild in the area. As part of RFA2, Idaho Power requests to expand the site boundary as well as add new micrositing areas. The expanded site boundary is an area that is evaluated for resources, however, the proposed micrositing areas are the areas where actual

facility components would be located or temporary would be conducted, if Council approves the changes. So, no facility components would be located in the expanded site boundary area (yellow line on the Figure 4-1). Mailed notices were sent to property owners within 500 feet of the site boundary, so that is why you received the notice. But the primary previously approved location of the transmission line is not changing. Let me know if this helps and you have any additional questions. I will save your comment and my response on the record for the DPO and pass it along to Idaho Power.

Kellen



Kellen Tardaewether
Senior Siting Analyst
550 Capitol St. NE Salem, OR 97301

C: 503-586-6551
P (In Oregon): 800-221-8035



From: Amanda Baker <heavenboundalc@gmail.com>
Sent: Thursday, April 25, 2024 7:05 PM
To: TARDAEWETHER Kellen * ODOE <kellen.tardaewether@energy.oregon.gov>
Subject: B2H hwy 86 Baker

You don't often get email from heavenboundalc@gmail.com. Learn why this is important

I was told last year there wouldn't be transformers on or near my property, now I'm being notified it's going to be on or within 500' of my ranch!

Your map DOES NOT include the portion going through HWY 86, Baker City, which I've been told lines are going through there & that's where my ranch is.

I need a detailed/ zoomed in map of that area so I can see where the lines will actually be.

> Thank you
>
> Amanda Baker

TARDAEWETHER Kellen * ODOE

From: Irene Gilbert <ott.irene@frontier.com>
Sent: Friday, April 26, 2024 10:59 AM
To: TARDAEWETHER Kellen * ODOE
Subject: Comment regarding DPO for Boardman to Hemingway Transmission line Amendment 2
Attachments: Comment Regarding Party Status Limits.docx

Please include the attached written comment in your file for the above DPO.

To: Kellen Tardaewether Date: April 26, 2024

From: Irene Gilbert/2310 Adams Ave/La Grande, Oregon

Subject: Comment One submitted by Irene Gilbert on behalf of the public interest and herself as a petitioner regarding the Draft Proposed Order for the Boardman to Hemingway Transmission Line, Amendment 2

ISSUE STATEMENT:

The Draft Proposed Order cannot designate all petitioners as Limited Parties other than the Applicant absent an evaluation of their requests for party status.

Limiting all parties participation in the contested case procedure to only the issues they raised in their Comments on the DPO denies parties the opportunity to fully participate in the proceedings in the manner described in ORS 183 for full parties.

Pages 42 and 43 of DPO on Request for Amendment 2 states:

"The issues a party to a contested case proceeding may participate on must be limited to those issues that party properly raised in its contested case request that the Council found sufficient to justify a contested case, except that the certificate holder may participate on any issue the Council found sufficient to justify a contested case proceeding."

The Draft Proposed Order limits all petitioners to Limited Party Status in Contested Case Proceedings absent conducting an evaluation regarding whether or not they should be granted full party status.

This language is not consistent with OAR 137-003-0005(7) requirements that establish criteria which must be evaluated in determining a parties application to be a full party.

It is also not consistent with the Oregon Supreme Court ruling in Stop B2H Coalition v. Dept of Energy, Pages 803-804. The court concluded that "EFSC (l) had authority to grant limited party status to Stop B2H and (2) **considered the factors it was required to consider in making that determination."**

The Oregon Supreme Court did not rule that EFSC has the authority to limit all petitioners to Limited Party Status in contested case proceedings with the exception of the developer absent evaluating and describing the justification for the limitation.

This comment is related to a procedural limitation denying the public full access to the Contested Case Procedure for this development. I expect that the council will deny this request given the strict requirements that it fall only within Chapter 22, 23 and 24 requirements to qualify for a contested case hearing. There is no rule in these chapters which covers this comment, however, I am submitting it to obtain documentation that the request is "other than a contested case" in order to establish my appeal rights on this issue.

TARDAEWETHER Kellen * ODOE

From: Irene Gilbert <ott.irene@frontier.com>
Sent: Wednesday, May 8, 2024 8:42 PM
To: TARDAEWETHER Kellen * ODOE; TARDAEWETHER Kellen * ODOE
Subject: Comment regarding the Draft Proposed Order for Amendment 2 of the B2H site certificate
Attachments: Comment referrals to comments by others.docx

Kellen:
Please see that the attached comment regarding the above Draft Proposed Order is included in the agency listing of comments submitted and provided to the council prior to considering the Draft Proposed Order
Thans very much.
Irene

To: Kellen Tardaewether Date: 5/8/24

Subject: Illegal restrictions and interpretation of items allowed as comments and evidence regarding the Draft Proposed Order for B2H Amendment 2.

Kellen:

This comment is being provided early to assure that it is included in the record of comments provided to the public and the council prior to their review of comments on the DPO for Amendment 2

COMMENT

The Oregon Department of Energy and Energy Facility Siting Council are requiring parties requesting full party status to be designated as limited parties when more than one contested case is being heard. They are further denying limited parties the opportunity to respond to comments by other petitioners who have contested cases being heard. As a result, petitioners are required to submit comments on all issues which they do not agree with or wish to request a contested case on.

They have now interpreting Oregon Statutes and rules in a manner that is denying the public the submission of and use of comments by other commenters and references to comments of other petitioners. They are also refusing to accept results and documents provided in other agency actions relating to issues petitioners have, etc. The language and interpretation which is the subject of this comment are in the Draft Proposed Order and footnotes on pages 39 and 40 of that order which specifically states the intended restrictions regarding the evidence being accepted in the public comments supporting requests for contested cases in quasi-judicial hearings before the Energy Facility Siting Council. The language in ther Draft Proposed Order states the following:

“ OAR 345-015-0016(3). Council does not consider incorporation by reference statements or comments made by other persons, (whether they are comments on the DPO, raised by other commenters for this facility or past proceedings, comments on another agency proceeding, or other external references) to meet the sufficient specificity requirement under ORS 469.370(3) and OAR 345-015-0016(3). Blanket incorporations by reference do

not afford the Department, Council or certificate holder an adequate opportunity to respond to each issue as required under ORS 469.370(3) because they typically do not specify which portion(s) of the other person(s) comments are to be incorporated or how those comments relate to any alleged shortcoming in the subject DPO. Attempts to incorporate by reference comments made regarding a matter being considered by another agency do not inform the Council, Department or applicant/certificate holder of any alleged error in the subject DPO sufficient to allow for a response. Further, incorporations by reference of another person's comments on the subject DPO, no matter how specific, are procedurally inefficient because they could result in multiple persons presenting evidence, examining witnesses, etc. regarding the same issue in a contested case. Council has also maintained that this position is consistent with the reasons why it is appropriate to limit the participation of persons seeking to participate in a contested case to the issues each properly raised in their respective DPO comments" (Page 39 and 40 of DPO for Amendment 2)

1. There are multiple laws being broken by their actions, however, two Statutes and one Rules being illegally interpreted follows:

Quai-Judicial Procedures Ch. 17

17.24.200 Evidence.

(1) All evidence offered and not objected to may be received unless excluded by the approval authority on its own motion.

(2) **Evidence received at any hearing shall be of a quality that reasonable persons rely upon in the conducting of their everyday affairs.**

(3) No person shall present irrelevant, immaterial, or unduly repetitious testimony or evidence.

(4) Formal rules of evidence, as used in courts of law, shall not apply. (Ord. 2875 § 1.070.200, 2003)(9)

ORS 197.797.(9)(b)

"Evidence" means facts, documents, data or other information offered to demonstrate compliance or noncompliance with the standards believed by the proponent to be relevant to the decision. [Formerly 197.763]"

ORS 183.450(1) Evidence in contested cases.

:

" (1) Irrelevant, immaterial or unduly repetitious evidence shall be excluded but erroneous rulings on evidence shall not preclude agency action on the record unless shown to have substantially prejudiced the rights of a party. **All other evidence of a type commonly relied upon by reasonably prudent persons in conduct of their serious affairs shall be admissible. Agencies and hearing officers shall give effect to the rules of privilege recognized by law. Objections to evidentiary offers may be made and shall be noted in the record. Any part of the evidence may be received in written form.**

(2) All evidence shall be offered and made a part of the record in the case, and except for matters stipulated to and except as provided in subsection (4) of this section no other factual information or evidence shall be considered in the determination of the case. **Documentary evidence may be received in the form of copies or excerpts, or by incorporation by reference. The burden of presenting evidence to support a fact or position in a contested case rests on the proponent of the fact or position."**

THE REFERENCES STATED BY ODOE WHICH THEY STATE ALLOW THEM TO INTERPRET THE LAW REGARDING THEIR INTERPRETATION OF ACCEPTABLE EVIDENCE SUPPORTING A PERSON'S COMMENTS AND CONTESTED CASE REQUESTS DO NOT POVIDE THEM THE AUTHORITY TO TAKE THE ACTIONS DESCRIBED IN THE DRAFY PROPOSED ORDER. REFERENCES ARE AS FOLLOWS:

OAR 345-015-0016(3) "Except as described in section (4) of this rule, only those persons who have commented in person or in writing on the record of the public hearing described in OAR 345-015-0220 (Public Hearing on the Draft Proposed Order) may request to participate as a party or limited party in a contested case proceeding on an application for a site certificate. To raise an issue in a contested case proceeding, the issue must be within the jurisdiction of the Council, and the person must have raised the issue in person or in writing on the record of the public hearing, unless the

Department did not follow the requirements of ORS 469.370 (Draft proposed order for hearing)(2) or (3) or unless the action recommended in the proposed order described in OAR 345-015-230, including any recommended conditions of approval, differs materially from the action recommended in the draft proposed order, in which case the person may raise only new issues within the jurisdiction of the Council that are related to such differences. If a person has not raised an issue at the public hearing with sufficient specificity to afford the decision maker an opportunity to respond to the issue, the hearing officer may not consider the issue in the contested case proceeding. **To have raised an issue with sufficient specificity, the person must have presented facts at the public hearing that support the person's position on the issue.**

And

ORS 469.370(2)(e) and ORS 469,370(3)

"ORS270(2)(e)

"State that failure to raise an issue in person or in writing prior to the close of the record of the public hearing with sufficient specificity to afford the decision maker an opportunity to respond to the issue precludes consideration of the issue in a contested case."

ORS 270(3)

"Any issue that may be the basis for a contested case shall be raised not later than the close of the record at or following the final public hearing prior to issuance of the department's proposed order. Such issues shall be raised with sufficient specificity to afford the council, the department and the applicant an adequate opportunity to respond to each issue. A statement of this requirement shall be made at the commencement of any public hearing on the application."

THE ABOVE RULES AND STATUTE DO NOT PROVIDE ODOE OR EFSC THE AUTHORITY TO REINTERPRET THE LAW:

SUMMARY

1. Public parties do not have the resources to research hundreds and often thousands of pages of documents in the average 30 days provided to review and comment on the application and draft proposed order in order to establish the right to a contested case. It is impossible for most members of the public to do the necessary review given the fact that they often have full time jobs and other responsibilities.
2. By their recent decision to only allow ODOE and the developers to be full parties to contested cases when there is more than one petitioner, they are requiring all petitioners to include comments on every issue they want to object to or present testimony on during a contested case proceeding.
3. They are now attempting to interpret the law regarding what is acceptable as proof, evidence or support for comments in a manner that denies the public the use of material and references acceptable according to Oregon Statutes and Rules.
4. ODOE and EFSC do not have the authority to reinterpret rules and statutes which provide the public access to due process under Oregon law and the US Constitution.

CHANGE NEEDED TO COMPY WITH OREGON LAW REGARDING EVIDENCE:

Remove the discussion regarding petitioners not being able to submit and reference comments by other petitioners and acceptable documentation regarding issues. The proposed order needs to state that evidence allowed by ORS 183.450 and the Model Rules is acceptable to support an issue which is the subject of public comment and contested case requests.

Comment Submitted by:

Irene Gilbert on behalf of the public interest and herself as a petitioner

2310 Adams Ave.

La Grande, Oregon 97850

Email: ott.irene@frontier.com

TARDAEWETHER Kellen * ODOE

From: Irene Gilbert <ott.irene@frontier.com>
Sent: Thursday, May 30, 2024 1:50 PM
To: TARDAEWETHER Kellen * ODOE
Subject: Comments submitted for B2H RFA2
Attachments: Comments Road development requirements.docx; Reference1 OregonModelEnOrdiance energy projects.pdf; pre-construction surveys of biird species in ladd marsh and protected areas.docx; Sensitive_Species_List.pdf; Exhibit G_5_ Ladd Marsh Wildlife Area Management Paln.pdf

Please include the following comments in your file for the above amendment:
Items 1 and 2 regarding road standards
Items 3, 4 and 5 regarding Ladd Marsh wildlife

To: Kellen Tardaewether May 30, 2024

From: Irene Gilbert on behalf of the public interest and herself as an individual

Subject: Addition of Roads in RFA2 for the B2H project

1.

INTRODUCTION

The addition of roads to the site of the B2H project inserts new hazards and impacts to the development requiring the scope of Council Review to address the requirements of OAR 345-027-0375(2)(c) requiring a determination that the entire facility complies with the applicable laws and council standards that protect a resource or interest that could be affected by the proposed change. The Oregon Department of Energy provided a document to local counties and cities regarding language to meet the intent of requirements and to assure compliance with Oregon Statutes and Rules when siting Energy developments. The document states that approval by EFSC documents that the development complies with the standards. The RFA2 B2H Draft Site Certificate fails to include conditions that would require compliance with EFSC standards identified in their document entitled, " Version 2: July 2005 providing Guidance for Oregon Cities and Counties on Siting Energy Developments"

1 Comments and Site Certificate Conditions Regarding Road Construction and Resotration.

Page 19 and 20 of the document identifies conditions for access roads in order to provide for safety of users and to minimize environmental damages to meet and comply with EFSC and Council Rules: Rules which apply to the construction of roads include OAR 345-022-00030 Land Use Rules; ORS 345-022-0110 Public Service Condition providing that the development will not preclude the ability of public and private providers to provide storm water drainage, traffic safety, fire prevention and health care; ORS 345-022-0115 Wildfire.

2.

Recommended Conditions to comply with the above Council Rules and consistent with the Model Ordinance for Energy Projects, Page 19 and 20:

3.

TEMPORARY ACCESS ROAD CONDITION LANGUAGE RECOMMENDED BY ODOE IN THE EFSC MODEL ORDINANCE

1. “Restore the natural grade and revegetate any temporary access roads, equipment staging areas and field office sites used during construction of the energy project.” The applicant must specify a “timeline to complete this work.”

4.

2 Comments and Site Certificate Conditions Regarding Road Construction and Resotration.

REASONS FOR REQUIRING A SITE CERTIFICATE CONDITION ADDRESSING THIS ISSUE

The DPO states that the developer will not be required to restore the natural grade of temporary access roads and includes no timeline for revegetation of the areas once the temporary road is no longer in use. The DPO on Page 7 states that the developer will be creating over 120 miles of new bladed roads and an equal number of New Primitive Roads. Failure to restore the locations of these temporary roads including the natural grade and revegetation will create a permanent blight on the landscape, increase the likelihood that these temporary roads will become de facto roads and access points for intrusions into wildlife habitat and illegal access to areas, which will increase the potential for human caused wildfire as well as create new erosion impacts placing land and wildlife habitat at risk. The lack of specific timeframes for restoration to occur means the restoration may not commence until the line is energized.

RECOMMENDED SITE CERTIFICATE CONDITION ONE:

"Temporary roads will be restored to as close as possible to their natural grade and revegetated commencing within a year of the time they are no longer in use.

3 Comments and Site Certificate Conditions Regarding Road Construction and Resotration.

Restoration will incorporate best management practices to control erosion and runoff from the sites and include monitoring of sites until the area is revegetated and the ground is stabilized."

6.

ODOE STATES IN THEIR DOCUMENT THERE IS A NEED TO SPECIFY REQUIREMENTS TO ASSURE EMERGENCY VEHICLE ACCESS ,PROVIDE FOR PUBLIC SAFETY AND PRECLUDE ENVIRONMENTAL DAMAGES BEYOND THE ROAD SURFACE.

EFSC has recommended that Counties and Cities require the developer to "Construct and maintain access roads for all-weather use to assure adequate, safe and efficient emergency vehicle and maintenance vehicle access to the site. (Model Ordinance Page 20)

7.

REASONS THIS SITE CERTIFICATE CONDITION IS NEEDED

This site certificate condition is especially necessary in Union County given concerns regarding the potential for wildfire combined with the data provided by Idaho Power in their application regarding the number of days the La Grande weather station reported that there was foul weather involving precipitation during a 4 year period. Their

application states that the average for foul weather over the four year period was 22% of the time or 80 days per year. (Page 26 of Exhibit X of the application) Construction of roads to provide for all weather use will provide for the safety of users as well as assuring that use does not result in significant ruts or environmental damages from unplanned vehicle intrusion outside the roadway.

8.

RECOMMENDED SITE CERTIFICATE CONDITION TWO TO PROVIDE FOR SAFETY AND MINIMIZE ENVIRONMENTAL IMPACTS

'All access roads being Improved or newly constructed as permanent or temporary access will be constructed to best management standards allowing for all weather use by employees and emergency vehicles"

9.

Additional Oregon Statutes Supporting including the site certificate conditions listed above:

--ORS 469.310 (EFSC rules will provide for the Safety and health of citizens);

-- ORS 469.401(requiring conditions to protect the safety and health of the citizens for the period of construction and operation of the development);

5 Comments and Site Certificate Conditions Regarding Road Construction and Resotration.

-- ORS 469.407(2) requiring EFSC rules to implement the policy included in ORS 469.310.

--ORS 469.501(g) (requiring procedures that provide protection of public health and safety and (k) (provide requirements that allow communities to provide traffic safety for citizens);

ORS 469.505(2) requires consultation with agencies and local governments responsible for administering the statutes, administrative rules or substantial local criteria resulting in the need for the proposed site certificate condition. Note: In this case, the Oregon Department of Transportation, the local county planning departments as well as the Oregon Department of Forestry provide requirements for construction of roads to accommodate different classes of use to protect resources and wildlife habitat. These agencies should be contacted to comment on the proposed site certificate conditions in the event the council believes they are not necessary.

6 Comments and Site Certificate Conditions Regarding Road Construction and Resotration.

A MODEL ORDINANCE FOR ENERGY PROJECTS

A Guide for Oregon Cities and Counties on Siting:

- Wind, Solar, Biomass, Geothermal and Cogeneration Projects
- Electric Power Transmission and Distribution Lines
- Natural Gas and Petroleum Pipelines
- Biofuel Production Plants

[VERSION 2: JULY 2005]



OREGON
DEPARTMENT OF
ENERGY

Table of Contents

I. INTRODUCTION 1

II. MODEL ORDINANCE 3

1. Energy Policies 4
2. Purpose 5
3. Exempt Energy Projects 6
4. Covered Energy Projects 7
5. The Permitting Process 9
6. General Standards 12
(a) Comprehensive Plan (##.06.01) 13
(b) Federal and State Protected Areas (##.06.02) 13
(c) Coordination and Documentation (##.06.03) 14
(d) Exclusive Farm Use Land (##.06.04) 15
(e) Forest Land (##.06.05) 15
(f) Overlay or Combining Zones (##.06.06) 16
(g) Air Safety (##.06.07) 16
(h) Interference with Communications (##.06.08) 16
(i) Noise (##.06.09) 17
(j) Visual Impact (##.06.10) 17
(k) Scenic Area Corridor (##.06.11) 18
(l) Fish, Wildlife and Native Plants (##.06.12) 18
(m) Fire Protection (##.06.13) 19
(n) Access and Parking (##.06.14) 19
(o) Local Roads (##.06.15) 20
(p) Protection of Historical and Cultural Resources (##.06.16) 20
(q) Erosion and Sediment Control (##.06.17) 21
(r) Wetlands (##.06.18) 21
(s) Weed Control (##.06.19) 22
(t) Dust Control (##.06.20) 22
(u) Signs (##.06.21) 22
(v) Termination and Decommissioning (##.06.22) 23

7. Specific Standards **24**
(a) Wind Energy Generation (##.07.01) 25
(b) Solar Energy Generation (##.07.02) 27
(c) Cogeneration (##.07.03) 29
(d) Electric Transmission Lines (##.07.04) 29
(e) Natural Gas or Petroleum Pipelines (##.07.05) 30

III. ENERGY RESOURCES AND STATEWIDE PLANNING GOAL 5 ..... **32**

IV. ENERGY PROJECTS AND SITING ISSUES **32**

1. Wind Energy Generation **32**
2. Solar Energy Generation **34**
3. Cogeneration **35**
4. Digesters **36**
5. Electric Transmission and Distribution Lines **37**
6. Natural Gas and Petroleum Pipelines **38**
7. Hydroelectric Projects **39**

V. THE ENERGY FACILITY SITING COUNCIL **39**

1. The Notice of Intent **40**
2. Application for a Site Certificate **40**
3. Filing the Application **42**
4. Draft Proposed Order **42**
5. Contested Case Proceeding **42**
6. Appeal **43**

VI. OREGON WATER RESOURCES COMMISSION **43**

1. Application Procedures **43**
2. Consultation with Public Agencies **44**
3. Notice and Public Hearing **44**
4. Issuance of Permits and Licenses **44**

I. INTRODUCTION

Over the years, local government planners have occasionally asked the Oregon Department of Energy for guidance in planning for energy project development within their jurisdictions. This guide is a response to those requests, and we hope it will prove helpful to local governments in planning for energy projects. Because of space and location requirements, most new locally regulated electric generation projects will likely be located in farm, forest or other county-controlled rural zones. In contrast, for more urban areas, this guide may be most helpful in the siting of locally regulated power lines, pipelines and industrial cogeneration projects.

In general, cities and counties have siting authority over energy projects that are below a certain size or generating capacity. The Oregon Energy Facility Siting Council ("Siting Council") regulates larger energy facilities.[1] The thresholds for Siting Council jurisdiction are determined by the Legislature and are defined in Oregon Revised Statutes (ORS) 469.300. The Siting Council does not regulate hydroelectric development. Instead, the Oregon Water Resources Commission has the authority to appropriate water and issue licenses for hydroelectric development.

Though the Siting Council regulates large energy facilities, it would be misleading to say that local energy project planning is limited to energy projects that have little land use impact. Even "small" energy projects could cause significant impacts for a city or county. For example, counties may receive land use applications for wind energy projects that have a generating capacity of up to 105 megawatts. A 105-megawatt wind energy project would consist of many large wind turbines spread over many acres of land.

Cities and counties may face planning decisions for the following types of energy projects:

- Thermal power or combustion turbine electric generation projects having a nominal electric generating capacity of less than 25 megawatts.
- Electric generation projects having a nominal electric generating capacity greater than 25 megawatts but found to be exempt from Siting Council jurisdiction under ORS 469.320(2).
- Wind or solar electric generating projects having a peak generating capacity of less than 105 megawatts.
- Geothermal electric generating projects with a peak generating capacity of less than 38.8 megawatts.
- Electric transmission and distribution lines carrying less than 230 kilovolts.
- Electric transmission and distribution lines less than 10 miles in length.
- Natural gas or petroleum pipelines less than 16 inches in diameter.
- Natural gas or petroleum pipelines less than 5 miles in length.
- Petroleum product pipelines less than 6 inches in diameter.

[1] Because Oregon law defines the terms "energy facility" and "facility" for statutes relating to the Siting Council's jurisdiction (ORS 469.300), we use those terms when talking about development under the Siting Council's authority and the term "energy project" when talking about development under a local government's authority.

- Petroleum product pipelines less than 5 miles in length.
- Biofuel production facilities, if the fuel produced is capable of being burned to produce the equivalent of less than six billion Btu of heat a day or if the facility is otherwise exempt from Siting Council jurisdiction under ORS 469.320(2).
- Wind measurement devices that are not related to energy facilities under Siting Council jurisdiction.

In addition, a local government may decide to take a broader view of what constitutes an "energy resource." For example, energy resources might include not only sources of energy, such as wind and solar resources, but also energy-related projects or structures such as industrial thermal loads, transmission line and pipeline corridors and existing small power plants used in cogeneration or other on-site electricity generation. Local knowledge plays an essential role in determining the specific energy resources that might be addressed by a local energy ordinance.

The centerpiece of this guide is Section II, the model ordinance for siting energy projects. What is important in the model ordinance is not the particular language but rather the set of concepts that the model addresses. Local governments and their planning agencies can adapt the model ordinance language to the style and format of their existing local land use ordinances. They can use the concepts presented in this guide as a framework for discussion of public policies that suit local circumstances and address local energy resources.

By adopting energy ordinances, local governments have the ability to affect energy siting decisions on facilities that have an impact on their city or county but that are outside of local regulatory authority. For example, both the Siting Council and the Water Resources Commission may apply local land use ordinances when they make permitting decisions for energy facilities under their statutory authority. Thus, through the adoption of a land use ordinance that addresses energy development, cities and counties have an opportunity to establish local public policy that will apply not just to locally-regulated projects, but also to all energy facilities within the local area. *See Section V for further discussion of the Siting Council's use of local land use ordinances.*

In sum, the Oregon Department of Energy hopes this guide will:

- Increase understanding and stimulate consideration of energy project siting needs and issues common to Oregon cities and counties.
- Increase local regulatory options and local influence in the siting of large energy facilities through the Siting Council and Water Resources Commission.
- Increase understanding of federal and state laws and their relationships to local land use planning.
- Help cities and counties coordinate with federal and state agencies in the development of energy projects or facilities.
- Promote city and county energy resource planning.
- Increase the effectiveness of local land use regulations applicable to the siting of energy projects or facilities.

A Model Ordinance for Energy Projects is a work-in-progress. The Department welcomes comments and suggestions from local planning departments to make future versions more useful.

Please send comments to: John G. White, Oregon Department of Energy, 625 Marion Street NE, Salem, Oregon, 97301-3737 (e-mail: john.white@state.or.us).

II. MODEL ORDINANCE

In this section, we present a model ordinance for siting energy projects. The concepts expressed in the model ordinance would likely fit into the conditional use or special use provisions of a city or county development code. Broad policy statements might belong more appropriately in the local government's comprehensive plan. Matters of writing style, formatting and whether a concept "belongs" in the ordinance or in the comprehensive plan are for the local government to decide.

Generally applicable provisions of the local government's development code (for example, procedures for applying for and granting variances) should be made applicable to energy projects by appropriate cross-references in the energy project siting provisions. In addition, the local government may wish to define certain terms contained within the siting provisions, such as "significant adverse impact," or compare their use to terms already defined within the local code.

Our purpose is to engender discussion of the issues that may arise for local governments in planning the development of energy projects. The model ordinance provides a framework of topics for local governments to think about when drafting local regulations for siting energy projects.

In the pages that follow in this section, we present the text of the model ordinance in a column on the left-hand side of the page. On the right-hand side, we provide a "commentary" that describes the intent and rationale of the model ordinance text, notes policy issues and describes options.

Model Ordinance

Section

ENERGY PROJECT SITING REQUIREMENTS

##.01 Energy Policy

##.01.01. Planning for Energy Projects

(1) The [county/city] recognizes that new electric power generation facilities, electric transmission lines and pipelines for natural gas or petroleum will be needed to support the people and the economy of the [county/city].

(2) The [county/city] shall plan for the development of energy resource sites so that development occurs in a timely and orderly manner, with mitigation of any adverse environmental impacts that cannot be avoided.

(3) The [county/city] shall coordinate planning for energy projects with public and privately-owned electric utility companies, with independent developers and with state and federal agencies, including the Oregon Department of Energy, the Oregon Water Resources Department, the Northwest Power Planning Council, Bonneville Power Administration, the Bureau of Land Management and the USDA Forest Service.

##.01.02. Protecting Energy Resource Sites

(1) Energy resource sites are sites within the [county/city] where energy sources could be developed. "Energy sources" are among the natural resources protected under Statewide Planning Goal 5. "Energy sources" include naturally occurring locations, accumulations or deposits of one or more of the following resources used for the generation of energy: natural gas, surface water (i.e., dam sites), geothermal, solar and wind areas. The [county/city] shall evaluate energy sources within the [county/city] and shall identify significant energy resource sites.

(2) The [county/city] shall maintain an inventory of energy resource sites as a reference for comprehensive plan amendments, zone

Commentary

1. Energy Policies

A city or county may choose to adopt policy statements as official expressions of intent concerning resource conservation and energy project development. If adopted, policy statements provide context for the more specific provisions of the planning code. As well, energy resource policies provide guidance to state and federal authorities in the interpretation of the jurisdiction's energy ordinances.

The definition of "energy sources" (##.01.02) is found in OAR 660-023-0190. Statewide Planning Goal 5 encourages local governments to maintain an inventory of energy resources. The administrative rules implementing Goal 5 include a process for developing an inventory and identifying "significant resource sites" (OAR 660-023-0030). *See further discussion at page 32.*

Model Ordinance

changes, conditional use permitting, partitioning and subdividing.

(3) The [county/city] shall conserve and protect significant energy resource sites.

##.01.03. Siting Energy Projects

(1) The [county/city] shall require land use siting review for proposed electric generating projects that have a nameplate generating capacity of [50] kilowatts or more and for proposed electric transmission lines and pipelines for natural gas or petroleum, except when land use review is under the jurisdiction of the Oregon Energy Facility Siting Council as described in ORS 469.504 or is pre-empted by a federal agency.

(2) The [county/city] shall avoid duplicating the siting work of other governmental agencies to the extent the [county/city] standards or equivalent standards have been addressed by those agencies. During review of a proposed energy project, the [county/city] may adopt the reports and findings of other government agencies.

(3) The [county/city] shall be the lead coordinating agency in siting energy projects located in the [county/city], except for energy facilities that are under the jurisdiction of the Oregon Energy Facility Siting Council, the Water Resources Commission or the federal government.

(4) The [county/city] shall apply its energy project siting standards through zoning and land development ordinances without conflicting with the applicable standards of other government agencies.

##.02 Purpose

The intent of the standards in this section is to ensure timely and orderly development of energy projects to meet energy and economic needs while protecting the environment. These standards allow the [county/city] to protect the public health, safety and general welfare of its citizens. These standards comply with the comprehensive land use plan and with the Statewide Planning

Commentary

The "[50] kilowatts or more" threshold in paragraph (1) is a placeholder to be replaced with whatever limit the local government determines appropriate. This limit is the threshold for applying the siting standards. Generators smaller than the threshold level would be exempt.

2. Purpose

This ordinance section describes the need for standards relating to the siting of energy projects. It may refer to compliance with the local comprehensive plan and the Statewide Planning Goals.

Model Ordinance

Goals.

##.03 Exempt Energy Projects

The following types of energy projects have minimal impact on land, air, water, wildlife, community services and cultural resources and are therefore exempt from the standards and conditions in this Section:

(1) Electric generation equipment intended primarily for residential or agricultural use that has a generating capacity of less than [50] kilowatts.

(2) Wind turbines intended primarily for residential or agricultural use that have a generating capacity of less than [50] kilowatts and that are less than 200 feet in height. A single tax parcel may have more than one exempt wind turbine.

(3) A wind measurement device that is less than 200 feet in height, if it is for temporary use for a period not to exceed [24] months.

(4) Photovoltaic panels mounted on residential, commercial or industrial structures that generate power for that structure.

(5) Photovoltaic panels mounted on poles or the ground that do not exceed [400] square feet in area and that generate power for an adjacent residential, commercial or industrial use.

Commentary

3. Exempt Energy Projects

Some energy projects or equipment may be small enough and have such minimal impact that they should be exempt from the detailed standards and additional review steps required by the ordinance. The model ordinance proposes to exempt smaller electric generation projects designed for individual property-owner, agricultural or business use rather than for commercial power generation.

A higher capacity limit on exempt projects may be appropriate depending on the desires of the county or city; the "[50] kilowatts" threshold in paragraphs (1) and (2) is a placeholder to be replaced with whatever limit the local government determines appropriate. In specifying a limit, the local government should consider the generating capacity of commercially-available small-scale wind turbines.

The 200-foot height restriction in paragraphs (2) and (3) reflect the aviation safety requirements for warning lights on structures 200-feet-tall or greater.

The "[24] months" threshold in paragraph (3) is illustrative. Local governments should select an appropriate threshold to define a temporary facility, considering the duration of wind data a developer will need to obtain financing.

The 400-square-foot photovoltaic panel size restriction in paragraph (5) is a placeholder. A larger or smaller area restriction may be appropriate depending on the typical panel sizes of commercially-available photovoltaic equipment.

Customer-owned, small energy generation projects that are

Model Ordinance

##.04 Energy Projects Subject to Sections ##.05 through ##.07

(1)The standards and procedures in Sections ##.05 through ##.07 apply to the following types of power generation, transmission and pipeline projects, except projects that are exempt under Section ##.03:

(a) Thermal power or combustion turbine electric generation projects with a nominal electric generating capacity of less than 25 megawatts.

(b) Electric generation projects having a nominal electric generating capacity greater than 25 megawatts found to be exempt from Oregon Energy Facility Siting Council jurisdiction under ORS 469.320(2).

(c) Wind generation projects with a nominal electric generating capacity of less than 105 megawatts.

(d) Wind measurement devices more than 200 feet in height or intended to be used for more than [24] months.

(e) Solar energy projects with a nominal electric generating capacity of less than 105 megawatts.

(f) Geothermal energy projects with a nominal electric

Commentary

eligible for "net metering" would be exempt, although the local utility company distributes some of the output to other users. Oregon's net metering law (ORS 757.300) applies to solar, wind, hydroelectric and fuel cell systems that have a generating capacity of 25 kilowatts or smaller. Net metering allows electricity to flow through a single meter to and from customers who generate their own power, which allows an offset of the electricity the customer uses. The utility company credits the customer at the end of the billing period for the offsets at the full retail rate or, if the utility installs a second meter to measure generator output, at the avoided cost rate.

4. Covered Energy Projects

The model ordinance lists the types and sizes of energy projects that are subject to local development standards and permitting. The projects paragraph (1) describes are outside the jurisdiction of the Oregon Energy Facility Siting Council ("Siting Council"). ORS 469.300(11) establishes the jurisdictional thresholds of the Siting Council by defining "energy facility."

The Oregon Legislature can change Siting Council jurisdiction and has done so in the past. To conform to future statutory changes, a local government should periodically review the energy ordinance and revise as necessary.

Hydroelectric projects are not included because the Oregon Water Resources Department and Water Resources Commission have essentially complete review and approval authority over hydroelectric projects at the state level.

Permanent wind measurement devices may be constructed as part of a wind generation project, and these structures would be subject to the ordinance. Temporary wind measurement devices are

Model Ordinance

generating capacity of less than 38.85 megawatts.

(g) Electric transmission and distribution lines carrying less than 230 kilovolts or less than 10 miles in length.

(h) Natural gas or petroleum pipelines of less than 16 inch diameter or less than 5 miles in length.

(i) A plant that converts biomass to a gas, liquid or solid product or combination of such products intended to be used as a fuel, unless any one of such products is capable of being burned to produce the equivalent of six billion Btu of heat a day.

(2) The provisions in Sections ##.06 and ##.07 are also "applicable substantive criteria," as described in ORS 469.504, for energy facilities that are subject to the jurisdiction of the Energy Facility Siting Council.

Commentary

structures that would be erected to measure the wind resource at a site before building a wind generation project. Temporary wind measurement devices (as defined in the section ##.03) would not be subject to the ordinance.

Subparagraph (1)(i) would apply to ethanol or biodiesel production plants that have a production capacity below the jurisdictional threshold of the Siting Council. The language in this subsection mirrors the definition in ORS 469.300(11)(G). The limit of "six billion Btu of heat a day" is the equivalent of approximately 26 million gallons per year of ethanol or 18 million gallons per year of biodiesel.

Under ORS 469.504(1)(b), the Siting Council may decide whether a proposed facility complies with the statewide planning goals by applying the "applicable substantive criteria" recommended by the "special advisory group" or determined independently by the Siting Council.

Paragraph (2) provides that the standards of sections ##.06 and ##.07 are designated by the local government as applicable substantive criteria under ORS 469.504. Several of the provisions in sections ##.06 and ##.07 address the same concerns as standards that have been adopted by the Siting Council. In those instances, the model ordinance provides that, for facilities that are subject to Siting Council jurisdiction, compliance with the Siting Council standard would satisfy the requirements of the corresponding local provision.

Model Ordinance

##.05 Permitting Process for Energy Projects

##.05.01. Application

An applicant for a Conditional Use/Special Use permit must submit an application to the [county/city] Planning Department on the form prescribed by the Department. An application for approval of an energy project must include text and maps sufficient to show that the proposed facility would comply with the General Standards in Section ##.06 and the applicable Specific Standards in Section ##.07. The application must include the following:

(1) A general description of the proposed energy project, including a legal description of the property on which the project would be located.

(2) Maps showing the physical features and land uses of the project area, both before and after construction of the proposed energy project. The applicant must include at least one map printed on a standard 8 1/2" x 11" page. The applicant must include maps or color photographs that show:

(a) The project area boundaries.

(b) The location, height and dimensions of all existing and proposed structures and fencing.

(c) The location, grades and dimensions of all temporary and permanent on-site roads and access roads from the nearest county or state-maintained road.

(d) State and federal resource lands and other protected areas near the project site.

(e) Existing topography with contours that vary depending on the size and slope of the site.

(f) Water bodies, waterways, wetlands and drainage channels.

(g) The location of and distance to residences and other noise sensitive properties that could be affected by noise generated by the proposed energy project.

Commentary

5. The Permitting Process

All cities and counties have ordinances that describe the land use permitting procedures. We do not suggest that local governments need to modify their current procedures to accommodate energy project permitting. The local government could address permitting process requirements by including a cross-reference to the applicable section of the local government's development code.

Subsection ##.05.01 addresses the content of a land use application for an energy project. It suggests the level of detail regarding a proposed energy project that an applicant should provide to the local planning authority. This level of detail could be included in the development code, if appropriate, or could serve as guidance to the planning authority to use in designing an application form.

Because of the size and complexity of energy projects, the local government should require sufficient maps, documentation of other permits and licenses needed, development plans and other information the city or county will need to review the request.

We recommend that planning departments have an informal procedure for meeting with a potential applicant before the applicant submits a land use application. Such advance communication helps the planning department understand the scope of the project. It also provides an opportunity to answer the applicant's questions about standards and application requirements. This will also help ensure that the applicant submits adequate information in the application.

Model Ordinance

(h) The location and distance to public or private airports or airstrips.

(i) For a wind power generation facility, copies of all baseline wildlife studies applicable to the project site.

(j) For a wind power generation facility, the direction of prevailing winds across the project area.

(3) A list of permits, approvals or other actions that the applicant has requested or will request from other government agencies or from public or privately-owned utility companies serving the site.

(4) An explanation of all construction and other development associated with the proposed energy project and how that construction and development complies with the approval standards in Sections ##.06 and ##.07.

(5) A transportation plan showing how vehicles would access the site and describing the impacts of the proposed energy project on the local and regional road system during construction and operation.

(6) A revegetation plan for restoring areas temporarily disturbed during construction.

(7) A drainage and erosion control plan for construction and operation developed in consultation with the [county/city] public works department.

(8) A fire protection plan for construction and operation of the facility.

(9) A plan to protect any archaeological, historical or cultural sites or artifacts found at the site.

(10) A description of actions the applicant would take to restore the site to a useful, non-hazardous condition upon project termination.

(11) A detailed cost estimate for site restoration in current-year dollars, including an explanation of the basis for cost estimates and assumptions.

Commentary

Model Ordinance

##.05.02. Avoidance of Duplication

The applicant may incorporate by reference any information developed or submitted in any other application if the applicant submits a copy or summary of the referenced material, identifies the proceeding in which it was submitted and the outcome of that proceeding and explains the relevance of the information to the approval standards.

##.05.03. Application Fee

The applicant must pay the appropriate fee [cross-reference to fee schedule] when the application is submitted to the county. However, if the applicant is a federal agency, the applicant may pay the county's actual cost of processing an application at any time before the effective date of the county decision.

##.05.04. List of Property Owners

The applicant must submit, with the application, a list of the names and mailing addresses of all property owners within 500 feet of the project area (including the route of any related electric transmission or distribution lines or natural gas or petroleum pipelines).

##.05.05. Notice

Within 10 days after acceptance of the application, the [county/city] Planning Department shall notify affected property owners and the public of the pending review of the Conditional Use or Special Use Permit application for an energy facility.

##.05.06. Decisions

The procedures for review and action for a Conditional Use or Special Use Permit [cross-reference applicable section of the development code], including public hearings, apply to energy projects described in this section.

Commentary

Subsections ##.05.02 through ##.05.08 address other aspects of the permitting process in a somewhat cursory manner. We assume that local governments already have included detailed permitting procedures in other provisions of the local development codes. The energy ordinance could cross-reference these provisions.

Some energy projects may proceed in phases or use existing rights-of-way or other components previously approved to reduce cumulative impacts. Subsection ##.05.02 allows an applicant to include by reference studies or information previously submitted for other projects to avoid duplication of effort.

An energy project may require a higher than normal application fee to cover staff analysis, issuance of notice and public hearings. The local government, therefore, may consider adopting a special fee rate for energy projects.

An energy project may cover several acres, and some projects (for example, transmission lines, pipelines and wind projects) may cross zoning boundaries. Subsection ##.05.04 makes the applicant responsible for compiling a list of nearby property owners for the purpose of notification. If the scope of the proposed project is very large, the local government may choose to establish a broader notification area.

Due to the potential short-term and long-term impacts of energy projects, a city or county may want to establish different or additional public notice procedures than subsection ##.05.05 describes. If public hearings are part of the review procedures, then additional measures, such as published notice, should be incorporated into special notice requirements for review of an energy facility.

Subsection ##.05.06 applies standard procedures to the review of

Model Ordinance

##.05.07. Duration

The applicant must begin substantial construction of the energy project within [two] years from the date of final Conditional Use or Special Use approval. This deadline may be extended by modification of the permit as described in subsection ##.05.08.

##.05.08. Modification

The procedures for modification of the terms and conditions of a Conditional Use or Special Use permit [cross-reference to applicable section of the development code] apply to energy projects.

##.06 General Standards for Energy Projects

The following standards apply to review and approval of all energy projects described in Section ##.04. The applicant for a Conditional Use or Special Use permit must demonstrate that the energy project meets these standards. In addition, the applicant must demonstrate compliance with the Specific Standards in Section ##.07. The provisions in Section ##.06 are "applicable substantive criteria," as described in ORS 469.504, for energy facilities that are within the jurisdiction of the Energy Facility Siting Council.

Commentary

proposed energy projects. An appropriate cross-reference to applicable code provisions should be added.

Many cities or counties may limit the duration of a Conditional Use or Special Use approval to a 12-month period. That is, construction must begin within one year or the approval will lapse. The time needed for completion of construction of an energy facility depends on the demand for energy, negotiation of a power sales contract, the wholesale price for electricity, the processing time needed for other state or federal permits or approvals and other factors. Subsection ##.05.07 requires substantial construction to begin within "[two] years," but this is a placeholder. The local government may choose a deadline for construction to begin that is longer, or shorter, than the two years suggested in the model ordinance provision.

6. General Standards

The planning approach of the model ordinance assumes that the local government would review proposed energy projects to assess potential impacts or conflicts with other land uses and to establish site-specific conditions, rather than allow the use outright in a zone. The local government may choose to allow some types of energy projects in some zones or may choose to prohibit some types of energy projects in some zones.

The "General Standards" apply to all non-exempt energy projects described in the model ordinance. These standards cover typical concerns that local governments might have about such land uses. The local government would determine whether these standards are satisfied before approving a permit for the proposed energy project. In addition, the local government would determine whether the proposed energy project complies with the "Specific

Model Ordinance

##.06.01. Comprehensive Plan

The site of the proposed energy project:

(1) Is in an area designated in the [county/city] comprehensive land use plan as suitable for an energy project of the size and type proposed, or

(2) Complies with other applicable policies of the local comprehensive plan and with the Statewide Planning Goals.

##.06.02. Federal and State Protected Areas

(1) The proposed site of the energy project is not on federal or state protected lands or special resource areas unless the applicant provides documentation from the responsible federal or state management agency that either:

(a) The responsible management agency has reviewed the proposed facility, and the agency has authorized the facility developer to proceed, or

(b) The proposed facility is an accessory facility to an existing permitted use on the federal or state land, and the responsible management agency will permit a change or addition to the

Commentary

Standards" in section ##.07.

Some concerns that we might otherwise include here are likely covered under land use provisions that the local government has already adopted in other sections of the local land use code. For example, the local government might choose to address seismic issues under the building permit process rather than adopt a seismic standard in the energy ordinance.

(a) Comprehensive Plan (##.06.01)

Paragraph (1) of this standard applies if the applicant proposes to locate an energy project in an area that the local government has previously determined appropriate for such uses. Paragraph (2) provides an alternative if the adopted comprehensive plan does not designate specific areas for siting energy projects. Paragraph (2) precludes energy projects in areas where the comprehensive plan specifically prohibits such use.

Statewide Planning Goal 5 requires local governments to have a program to identify and protect energy resource sites within their jurisdiction. *See further discussion at page 32.*

(b) Federal and State Protected Areas (##.06.02)

Except in limited circumstances, this provision prohibits energy projects in federal and state protected areas or on special resource lands such as parks, wildlife refuges, scenic areas, research areas and similar areas. A local government may choose to include a definition of "special resource areas" in this section or in a separate "definitions" section of the local code. Paragraph (1) requires the applicant to provide documentation that the responsible management agency has approved the development.

Subsection ##.06.02 addresses potential adverse effects of an

Model Ordinance

existing use.

(2) For facilities subject to Energy Facility Siting Council jurisdiction, a finding by the Council that a proposed energy facility meets the Council's Protected Areas standard, OAR 345-022-0040, satisfies the requirements of paragraph (1).

##.06.03. Coordination and Documentation.

The applicant has provided the county with copies of all applications for state and federal permits and licenses at the time of submitting a [county/city] Conditional Use or Special Use application or within 30 days after receiving notice of an incomplete application. Upon the issuance of any state and federal permits or licenses, biological opinions, records of decision, memoranda of understanding, exemptions, variances or other similar authorizations or approvals related to the proposed energy project, the applicant shall provide copies of these documents to the planning authority.

Commentary

energy project on federal and state protected areas. A Siting Council standard also addresses this concern. To avoid duplication, paragraph (2) provides that, for facilities subject to the Siting Council's jurisdiction, the requirements of the paragraph (1) are met if the Siting Council finds that a proposed energy facility meets its Protected Areas standard.

(c) Coordination and Documentation (##.06.03)

An applicant for a permit to construct a proposed energy project will need various state and federal permits, licenses and authorizations that cover conditions or concerns that are beyond the scope of local planning. This standard requires the applicant to submit documentation of applications to state or federal agencies at the time the local land use application is submitted or within 30 days after receiving notice of an incomplete application. Requiring submittal of the documents at the beginning of the local review will help the local government conduct a timely review and coordinate with the actions of state and federal agencies.

The 120-day (ORS 227.178) or 150-day (ORS 215.427) city or county time limit to act on a land use application starts when an application is "complete." The local government might specify that an application is complete when the documentation has been submitted.

This provision further requires the applicant to submit copies of permits and other relevant documentation upon issuance by the responsible agency.

Model Ordinance

##.06.04. Exclusive Farm Use Land

(1) If the site of a proposed power generating project is in an Exclusive Farm Use zone, the proposed project complies with the standards in ORS 215.296(1) and OAR 660-033-130(17) or 660-033-130(22).

(2) If the proposed project is a transmission line or pipeline in an Exclusive Farm Use zone, the proposed project complies with the standards in ORS 215.275.

(3) The applicant shall record in the [county/city] property records a Covenant Not to Sue with regard to generally accepted farm practices.

(4) Notwithstanding paragraph (1), if the facility is within the jurisdiction of the Energy Facility Siting Council, the exception provisions of ORS 469.504(2) apply.

##.06.05. Forest Land

(1) If the site of a proposed energy project is in a forest zone or mixed farm and forest zone, the proposed use complies with OAR 660-006-0025(4).

(2) Notwithstanding paragraph (1), if the facility is within the jurisdiction of the Energy Facility Siting Council, the exception

Commentary

(d) Exclusive Farm Use Land (##.06.04)

"Commercial utility facilities for the purpose of generating power for public use by sale" are allowed on Exclusive Farm Use land subject to acreage limits in OAR 660-033-0130 (12 acres on high value farmland and 20 acres on non-high-value farmland, unless a Goal 3 exception is taken). In practice, the application of this provision requires the permitting authority to decide whether to treat some components of the proposed project (such as access roads or transmission interconnection lines) as separate from the "power generation facility" for purposes of OAR 660-033-0130.

Under ORS 215.296, a "commercial utility facility for the purpose of generating power for public use by sale" must not force a significant change in accepted farm or forest practices on surrounding lands or significantly increase the cost of accepted farm or forest practices.

Paragraph (4) clarifies the applicable exceptions process. The statute, ORS 469.504(2), describes the findings that the Siting Council must make to take an exception to a statewide planning goal for facilities under its jurisdiction. The statute provides that those findings apply, notwithstanding ORS 197.732, which states the findings that a local government must make to take a goal exception. This paragraph makes clear that ORS 469.504(2) applies to all exceptions decisions made by the Siting Council.

(e) Forest Land (##.06.05)

This standard reflects administrative rules regarding how much land can be used for a non-forest use. OAR 660-006-0025(4)(j) allows a "power generation facility" in forest land, subject to a limit of ten acres, unless a Goal 4 exception is taken. OAR 660-006-0025(4)(q) allows electric transmission lines with right-of-

Model Ordinance

provisions of ORS 469.504(2) apply.

##.06.06. Overlay or Combining Zones

If the site of the proposed energy project is subject to an overlay zone, the proposed use meets or exceeds the applicable standards in the overlay zone.

##.06.07. Air Safety

For all structures that are more than 200 feet above grade or that exceed airport imaginary surfaces as defined in OAR Chapter 738, Division 70, the proposed facility complies with the air hazard rules of the Oregon Department of Aviation. The applicant shall notify the Department of Aviation and the Federal Aviation Agency of the proposed facility and shall submit documentation to the planning authority of any air safety conditions required by those agencies.

##.06.08. Interference with Communications

Operation of the energy project would not create conditions that unduly reduce or interfere with public or private television, radio, telemetry or other electromagnetic communication signals. If undue

Commentary

way widths of up to 100 feet and new "distribution lines" (including gas or oil lines) with rights-of-way of 50 feet or less in width.

Paragraph (2) clarifies the applicable exceptions process. The statute, ORS 469.504(2), describes the findings that the Siting Council must make to take an exception to a statewide planning goal for facilities under its jurisdiction. The statute provides that those findings apply, notwithstanding ORS 197.732, which states the findings that a local government must make to take a goal exception. This paragraph makes clear that ORS 469.504(2) applies to all exceptions decisions made by the Siting Council.

(f) Overlay or Combining Zones (##.06.06)

This standard recognizes that there may be local resource overlay zones that have separate land use standards. If an applicant proposes to locate an energy project within an overlay zone (such as a flood hazard area, steep slope area, riparian protection corridor, conservation reserve area or scenic corridor), then the standards of the overlay zone would apply to the energy project.

(g) Air Safety (##.06.07)

This standard applies to tall structures such as exhaust stacks and wind turbine towers that are more than 200 feet in height. The Federal Aviation Agency and the Oregon Department of Aviation require these structures to have lighted warning beacons.

(h) Interference with Communications (##.06.08)

A power generation facility or transmission line may cause interference with wireless communications. Although an energy

Model Ordinance

reduction or interference occurs, the applicant must restore reception to the level present before operation of the energy project.

##.06.09. Noise

The proposed energy project complies with the noise regulations in OAR Chapter 340, Division 35. The applicant must submit a qualified expert's analysis and written report.

##.06.10. Visual Impact

(1) The applicant has reduced the visual impact of construction and operation of the proposed energy project to the extent practical by methods that may include, but are not limited to, the following:

(a) Avoiding state or federal scenic areas and significant visual resources listed in the comprehensive plan.

(b) Building the energy project near the edge of contiguous timber areas or using the natural topography to obscure the project.

(c) Using materials and colors that blend with the background unless otherwise required by the Federal Aviation Administration or the Oregon Department of Aviation.

(d) Retaining or planting vegetation to obscure views of the energy project; and

(e) Setting the energy project back from the edge of public arterial rights-of-way and from Type F and Type D streams.

(2) For facilities subject to Energy Facility Siting Council

Commentary

project would be designed to prevent such interference, it may not be possible to determine whether such an effect occurs until after the facility is operating.

(i) Noise (##.06.09)

The Oregon Environmental Quality Commission (EQC) administrative rules regulate noise from industrial sources, including power generation projects. Local governments may rely on the EQC rules or adopt their own local noise standards. Although the EQC rules are in effect, the Department of Environmental Quality no longer has resources to administer a noise regulation program. Therefore, enforcement is a matter of local authority. The model ordinance standard requires compliance with the EQC rules.

(j) Visual Impact (##.06.10)

This standard allows the local government to consider standards to mitigate the visual impact of a proposed energy project in a designated scenic area or corridor. The local government may need to designate visual resources it considers "significant" and include that information in its comprehensive plan.

This standard refers to type D and F streams. Oregon Department of Forestry rules define these resources in OAR 629-635-0200.

Some of these general standards on visual impact may not be appropriate for wind energy projects. Section ##.07.01 of the model ordinance suggests other visual standards for wind energy projects.

Paragraph (1) addresses potential adverse effects of an energy project on scenic areas. A Siting Council standard also addresses this concern. To avoid duplication, paragraph (2) provides that,

Model Ordinance

jurisdiction, a finding by the Council that a proposed energy facility meets the Council's Scenic and Aesthetic Values standard, OAR 345-022-0080, satisfies the requirements of paragraph (1).

##.06.11. Scenic Area Corridor.

(1) The proposed energy project is not within a formally-designated scenic corridor. Scenic corridors include federal or state scenic byways, scenic highways, scenic areas, scenic waterways and local scenic view corridors listed in the comprehensive plan.

(2) If the proposed energy project is adjacent to a formally-designated scenic corridor, the applicant agrees to implement mitigation measures that would protect the resource values of the designated scenic corridor as a condition of approval. Such measures may include, but are not limited to, using colors that blend with the background, setting the development back from a right-of-way or stream corridor, using the natural topography to screen the energy project and retaining or planting vegetation that would obscure the view of the energy project within the scenic corridor.

(3) For facilities subject to Energy Facility Siting Council jurisdiction, a finding by the Council that a proposed energy facility meets the Council's Scenic and Aesthetic Values standard, OAR 345-022-0080, satisfies the requirements of paragraphs (1) and (2).

##.06.12. Fish, Wildlife and Native Plant Protection

(1) The proposed energy project can be designed, constructed and operated without significant adverse impact to fish, wildlife and native plant resources, including fish and wildlife habitat, migratory routes and state or federally-listed threatened or endangered fish, wildlife or plant species. The applicant agrees to implement monitoring and mitigation actions that the planning authority determines appropriate after consultation with the Oregon Department of Fish and Wildlife and the Oregon Department of Agriculture.

Commentary

for facilities subject to the Siting Council's jurisdiction, the requirements of the paragraph (1) are met if the Siting Council finds that a proposed energy facility meets its Scenic and Aesthetic Values standard.

(k) Scenic Area Corridor (##.06.11)

This standard requires the applicant to consider the effect of a proposed energy project on nearby local, state or federal scenic corridors. Many parts of Oregon have designated state or federal scenic highways or scenic byways. An energy project within or near a corridor could adversely affect the scenic value of the corridor.

Paragraphs (1) and (2) address potential adverse effects of an energy project on scenic areas. A Siting Council standard also addresses this concern. To avoid duplication, paragraph (3) provides that, for facilities subject to the Siting Council's jurisdiction, the requirements of the paragraphs (1) and (2) are met if the Siting Council finds that a proposed energy facility meets its Scenic and Aesthetic Values standard.

(l) Fish, Wildlife and Native Plants (##.06.12)

This standard provides for the protection of fish and wildlife habitat and sensitive fish, wildlife and plant species. The standard provides for consultation with the Oregon Department of Fish and Wildlife (ODFW) and the Oregon Department of Agriculture (ODA) to determine appropriate monitoring and mitigation actions. Appropriate actions are actions that would avoid or mitigate for significant adverse impact on fish, wildlife or native plant resources. ODFW has adopted rules and standards to

Model Ordinance

(2) For facilities subject to Energy Facility Siting Council jurisdiction, findings by the Council that a proposed energy facility meets the Council's Fish and Wildlife Habitat standard, OAR 345-022-0060, and Threatened and Endangered Species standard, OAR 345-022-0070, satisfy the requirements of paragraph (1).

##.06.13. Fire Protection

The applicant agrees to implement fire protection measures for the construction and operation of the energy project that are acceptable to the [county/city] and other land management agencies adjacent to the proposed energy project, if any. For power generation projects, the applicant must have an approved fire prevention or protection plan in place with the [county/city] or local fire protection district during construction and operation.

##.06.14. Access and Parking

The applicant agrees to implement adequate plans to:

(1) Use existing roads for access to the extent practical and avoid construction of on-site roadways as much as possible.

(2) Restore the natural grade and revegetate any temporary access

Commentary

"mitigate impacts to fish and wildlife habitat caused by land and water development actions" in OAR Chapter 635, Division 415. Under ORS 496.172, ODFW maintains a list of threatened or endangered fish and wildlife species and a list of state sensitive species. Under ORS 564.105, ODA maintains a list of threatened or endangered plant species.

The local development code may already define special overlay zones (such as zones for habitat protection or migratory corridors), and the standards applicable to those overlay zones may take precedence under subsection ##.06.06.

Paragraph (1) addresses potential adverse effects of an energy project on wildlife. Siting Council standards also address these concerns. To avoid duplication, paragraph (2) provides that, for facilities subject to the Siting Council's jurisdiction, the requirements of the paragraph (1) are met if the Siting Council finds that a proposed energy facility meets its Habitat standard and Threatened and Endangered Species standard.

(m) Fire Protection (##.06.13)

Many rural areas have volunteer fire protection districts. Some sparsely populated areas may not have any organized fire protection district. This standard addresses fire protection for the energy project and surrounding public lands. Fire protection measures would be included as conditions on the land use permit.

(n) Access and Parking (##.06.14)

The objectives of this standard are to reduce the impact from new road construction and to provide for year-round access by emergency vehicles. The local government could add a cross-reference here to other parking or access provisions in the local

Model Ordinance

roads, equipment staging areas and field office sites used during construction of the energy project. The applicant must specify the type and amount of seed or plants used to revegetate the disturbed areas and a timeline to complete this work.

(3) Construct and maintain access roads for all-weather use to assure adequate, safe and efficient emergency vehicle and maintenance vehicle access to the site.

##.06.15. Local Roads

The applicant has secured, or can secure, all necessary approvals from the local government or the State Highway Division of access points for project roads and parking areas at the project site.

##.06.16. Protection of Historical and Cultural Resources

(1) Construction and operation of the proposed energy project would not cause significant adverse impact to historical and cultural resources identified by the State Historic Preservation Office or identified in the local comprehensive plan or cultural resource inventory. The applicant agrees to implement a plan to preserve any previously undiscovered archeological, historical or cultural artifacts discovered during construction or operation of the energy project in compliance with applicable county, state and federal law.

(2) For facilities subject to Energy Facility Siting Council jurisdiction, a finding by the Council that a proposed energy facility meets the Council's Historic, Cultural and Archaeological Resources standard, OAR 345-022-0090, satisfies the requirements of paragraph (1).

Commentary

code. In addition, the standard provides for restoration of areas temporarily disturbed during construction, such as temporary access roads and construction laydown areas.

(o) Local Roads (##.06.15)

This standard provides for local or state control of access points to and from an energy project or operations area. The construction of the proposed energy project may require the use of large trucks and cranes that need a larger-than-normal turning radius. In addition, the size and weight of construction equipment may damage local roads – particularly the edges and shoulders – and bridges. The local government may include a permit condition requiring the applicant to repair any road damage from construction vehicles.

(p) Protection of Historical and Cultural Resources (##.06.16)

This standard requires the applicant to protect historical and cultural resources identified by the state or included in the local government's cultural resources inventory. The applicant must have a plan on file that describes how newly discovered artifacts would be cataloged and protected. If the energy project could disturb traditional tribal lands, the city or county should include a requirement of consultation with the affected tribes.

If artifacts are discovered during construction, state law requires a halt to construction activities and notification of the Oregon State Historic Preservation Officer to protect previously unidentified cultural resources (ORS 97.745 and 358.920). The model ordinance, in addition, requires notification of the local

Model Ordinance

##.06.17. Erosion and Sediment Control

The applicant agrees to conduct all roadwork and other site development work in compliance with a National Pollutant Discharge Elimination System (NPDES) permit as required by Oregon Department of Environmental Quality regulations. The applicant must have an NPDES permit and an erosion and sediment control plan before beginning construction. The plan must include both general "best management practices" for erosion control during and after construction and permanent drainage and erosion control measures to prevent damage to local roads or adjacent areas and to minimize sediment run-off into waterways.

##.06.18. Protection of Wetlands

Construction of the proposed energy project would not have a

Commentary

government.

Paragraph (1) addresses potential adverse effects of an energy project on historic and cultural resources. A Siting Council standard also addresses this concern. To avoid duplication, paragraph (2) provides that, for facilities subject to the Siting Council's jurisdiction, the requirements of the paragraph (1) are met if the Siting Council finds that a proposed energy facility meets its Historic, Cultural and Archaeological Resources standard.

(q) Erosion and Sediment Control (##.06.17)

Ground disturbance caused by the construction of the energy project and associated access roads, pipelines or transmission lines can lead to erosion and add sediment to waterways. This standard requires that an erosion and sediment control plan be in place before construction, if required by Department of Environmental Quality regulations. Typical mitigation and control measures are straw bales or rounds, erosion control fences, topography change and seeding of disturbed areas. This section could include cross-references to other development code sections that address erosion.

An NPDES 1200-C stormwater runoff permit is required for construction on any site that is one acre or more in area (OAR 340-045-0033(10)(i)).

In addition, the energy project may require an NPDES 1200-Z stormwater runoff permit for operation or a state Water Pollution Control Facilities (WPCF) permit issued by DEQ.

(r) Wetlands (##.06.18)

The Oregon Removal-Fill Law (ORS 196.800 through 990) and

Model Ordinance

significant adverse impact on wetlands.

##.06.19. Weed Control

The applicant agrees to implement a plan for weed control during construction and operation of the proposed energy project.

##.06.20. Dust Control

The applicant agrees to construct all non-paved temporary or permanent on-site roads and staging areas using compacted base-rock and gravel. During the site development and construction, the applicant must regularly water roads and staging areas as necessary to minimize dust and wind erosion.

##.06.21. Signs

The applicant agrees not to erect outdoor displays, signs or billboards within the energy project site, except:

(1) Signs required for public or employee safety or otherwise required by law.

(2) No more than two signs relating to the name and operation of the energy project; and

(3) Signs specifically approved in the land use permit.

Commentary

regulations adopted by Division of State Lands (OAR 141-085-0005 through 141-085-0090) protect wetland areas. A permit is required if 50 cubic yards or more of material is removed, filled or altered within any waters of the state at the proposed site

(s) Weed Control (##.06.19)

Ground disturbance during construction of the energy project and associated access roads, pipelines or transmission lines exposes areas for weeds to become established. The spread of noxious weeds is a serious problem, especially in rural areas of the state. For counties with a large agricultural base, an invasion of weeds can affect the value of cropland. This standard requires the applicant to implement a plan for weed control. This section could also include cross-references to other code sections that address weed control.

(t) Dust Control (##.06.20)

Airborne dust can be a health and safety issue, especially in the dryer parts of the state. Requiring a rock base for roadways and staging areas reduces dust from vehicles and construction activity. In addition, construction contractors may have to use water for dust suppression in windy areas.

(u) Signs (##.06.21)

This standard allows for project identification signs and signs required for safety but generally prohibits other signs and outdoor displays. The local government could add a cross-reference to other provisions of the local development code regarding signage. The model ordinance language includes flexibility for the planning authority to allow additional signage if special circumstances warrant.

Model Ordinance

##.06.22. Termination and Decommissioning

(1) The applicant agrees to the following as conditions of the land use permit:

(a) If the applicant ceases operation of the energy project or begins, but does not complete, construction of the project, the applicant shall restore the site according to a plan approved by the planning authority. The applicant shall submit a plan that ensures that the site will be restored to a useful, non-hazardous condition without significant delay, including but not limited to the following:

(i) Removal of aboveground and underground equipment, structures and foundations to a depth of at least three feet below grade. Underground equipment, structures and foundations need not be removed if they are at least three feet below grade and do not constitute a hazard or interfere with agricultural use or other resource uses of the land.

(ii) Restoration of the surface grade and soil after removal of aboveground structures and equipment.

(iii) Removal of graveled areas and access roads.

(iv) Restoration of surface grade and soil.

(v) Revegetation of restored soil areas with native seed mixes, plant species suitable to the area, consistent with the [county/city]'s weed control plan.

(vi) For any part of the energy project on leased property, the plan may incorporate agreements with the landowner regarding leaving access roads, fences, gates or buildings in place or regarding restoration of agricultural crops or forest resource land.

(vii) The plan must provide for the protection of public health and safety and for protection of the environment and natural resources during site restoration.

(viii) The plan must include a schedule for completion of site

Commentary

(v) Termination and Decommissioning (##.06.22)

An applicant might begin construction of an energy project but fail to complete it; or an applicant might operate a completed energy project for a time and then shut it down. This standard requires the applicant to restore the site if construction stops before completion or the energy project is shut down. In addition, the standard provides financial protection to the local government if the applicant fails to restore the site.

Paragraph (1) addresses termination and decommissioning of energy projects. The financial assurance provided by paragraph (1)(b) would protect the local government from the cost of site restoration, if the applicant fails to restore the site as required under paragraph (1)(a).

A Siting Council standard also addresses this concern. To avoid duplication, paragraph (2) provides that, for facilities subject to the Siting Council's jurisdiction, the requirements of paragraph (1) are met if the Siting Council finds that a proposed energy facility meets its Retirement and Financial Assurance standard. In addition, a financial assurance bond or letter of credit is a mandatory condition in all site certificates (OAR 345-027-0020(8)). This site certificate condition protects both the local government and the state from the cost of site restoration.

Model Ordinance

restoration work.

(b) Before beginning construction of the energy project, the applicant must submit a bond or letter of credit in a form and amount satisfactory to the [county/city], assuring the availability of adequate funds to restore the site to a useful, non-hazardous condition, if the operator fails or is otherwise unable to restore the site as required by the permit.

(c) The amount of the bond or letter of credit shall be adjusted for inflation using the U.S. Gross Domestic Product Implicit Price Deflator, Chain-Weight, as published in the Oregon Department of Administrative Services' "Oregon Economic and Revenue Forecast," or by any successor agency (the "Index"). The applicant shall increase the amount of the bond or letter of credit annually by the percentage increase in the Index and shall pro-rate the amount within the year to the date of retirement. If at any time the Index is no longer published, the [county/city] shall select a comparable index for adjusting the amount.

(d) The certificate holder shall describe the status of the bond or letter of credit in an annual report submitted to the county/city.

(e) The bond or letter of credit shall not be subject to revocation or reduction before retirement of the energy project site.

(2) For facilities subject to Energy Facility Siting Council jurisdiction, a finding by the Council that a proposed energy facility meets the Council's Retirement and Financial Assurance standard, OAR 345-022-0050, satisfies the requirements of paragraph (1).

##.07 Specific Standards for Energy Projects

The following standards apply to specific types of energy projects described in Section ##.04. These standards apply in addition to the General Standards in Section ##.06. The planning authority must find that the proposed energy project meets the applicable Specific Standards before issuing a Conditional Use/Special Use permit. The provisions in this section are "applicable substantive

Commentary

7. Specific Standards

In addition to the general standards described above, the energy project siting ordinance might include specific standards applicable to particular types of energy projects. These standards are supplemental requirements applicable to particular types of energy projects in addition to the requirements of the general

Model Ordinance

criteria," as described in ORS 469.504, for energy facilities that are within the jurisdiction of the Energy Facility Siting Council.

##.07.01. Wind Energy Generation

(1) Visual Impact: To the extent practical, the proposed wind energy project has been designed to minimize visual impact by:

(a) Using underground electric collection lines (transmission lines that connect each turbine to a substation).

(b) Using turbine towers of uniform design, color and height.

(c) Using the minimum lighting necessary for safety and security purposes in addition to aviation warning lights required by federal or state law.

(d) Using appropriate techniques to prevent casting glare from the on-site area lighting.

(e) Using existing roads to provide access to the site, or if new roads are needed, minimizing the amount of land used for new roads and locating roads to reduce visual impact and other adverse environmental impacts such as erosion.

(f) Using existing substations, or if new substations are needed, minimizing the number of new substations.

(2) Wildlife Resources: The proposed wind energy project has been designed to reduce the likelihood of significant adverse effects on wildlife and wildlife habitat. Measures to reduce significant impact may include, but are not limited to, the following:

Commentary

standards.

The local government may determine that not every type of energy project requires additional specific standards. The general standards alone may be adequate for some energy projects, such as small natural gas or biogas-fueled generator sets.

To illustrate the concept, the model ordinance includes specific standards for the following types of energy projects: cogeneration projects, wind energy generation, solar electric generation, transmission lines and natural gas or petroleum product pipelines.

(a) Wind Energy Generation (##.07.01)

Under section ##.03, the model ordinance exempts wind turbines intended primarily for residential or agricultural use that have a generating capacity of less than 50 kilowatts and that are less than 200 feet in height. The 50-kilowatt limit is a placeholder to be replaced with whatever limit the local government determines appropriate.

The model ordinance is intended to apply to commercial-scale wind turbines. These turbines are likely to be large (exceeding 200 feet in overall height). The electric generating capacity of each turbine is likely to exceed 500 kilowatts (0.5 megawatts). Commercial wind generation turbines now operating in Oregon range from 0.66 megawatts to 1.5 megawatts each. Wind energy generation projects are likely to include multiple turbines operated together within the project site.

The visual impact of wind energy projects can be an issue of concern, especially when the applicant proposes to locate wind turbines near residential or urban areas. To some, the visual impact of the required aviation warning lights is more disturbing than the sight of wind turbines themselves during the daytime. A

Model Ordinance

(a) Conducting biologically appropriate baseline wildlife surveys in the areas affected by the proposed wind energy project to determine wildlife species present and patterns of habitat use.

(b) Selecting turbine locations to reduce the likelihood of significant adverse impacts on wildlife based on expert analysis of baseline data.

(c) Designing turbine towers to reduce horizontal surfaces for perching.

(d) Designing turbine towers and pad-mounted transformers to avoid creation of artificial habitat or shelter for raptor prey.

(e) Spreading gravel on turbine pad areas to minimize weeds and to avoid creation of habitat for raptor prey.

(f) Using anti-perching protection devices on transmission line support structures and appropriate spacing of conductors.

(g) Avoiding construction activities near raptor nesting locations during sensitive breeding periods and using appropriate no-construction buffers around known nest sites.

(h) Developing a plan for post-construction monitoring of the wind energy project site using appropriate survey protocols to measure the impact of the project on wildlife in the area.

(3) Public Safety: The proposed wind energy project has been designed and will be operated to protect public safety by measures that may include, but are not limited to, the following:

(a) Designing turbine blades so that at the closest point, the sweep of the blades is at least 20 feet above the tallest existing or foreseeable obstruction to blade movement.

(b) Designing, constructing and operating the facility to exclude the public from close proximity to turbine blades and electrical equipment.

(c) Designing, constructing and operating the facility to protect against structural failure of the turbine tower or blades that could endanger the public safety.

Commentary

city or county may restrict the location of wind energy projects through zoning designations as a means of addressing visual impact. Within an approved zone, little can be done to mitigate the visual impact of large wind turbines. To use the wind resource effectively, turbines must be placed in open terrain, often on high ground, and the turbine towers must be of sufficient height to operate efficiently and safely.

Paragraph (2) addresses the potential for adverse impacts on wildlife, particularly birds and bats. This has been a significant issue in the siting of wind energy projects. Because baseline wildlife surveys are essential to determine whether a proposed site is appropriate for wind development, they should be required. Such surveys identify the species of wildlife present in the area (including any threatened or endangered species) and patterns of habitat use by wildlife. Baseline surveys can provide information about migratory species and nesting areas. Having this information enables the wind project developer to design the location of turbines and accessory facilities to reduce the likelihood of significant adverse impact on wildlife. The local government should consult with the Oregon Department of Fish and Wildlife regarding the protocols for baseline wildlife surveys and the potential for adverse impacts on wildlife and wildlife habitat.

Post-construction monitoring surveys are important to determine the statistical fatality rate among avian and bat species for comparison with wind generation projects in other areas. Mitigation of significant adverse impacts should be considered if higher-than-average fatality rates occur.

Although large-scale wind turbines are designed to be safe in operation, paragraph (3) suggests specific standards to protect public safety. Setback requirements in paragraph (4) provide a

Model Ordinance

(d) Restricting public access to the interior of tubular turbine towers by installing locked access doors.

(4) Setback: The proposed wind energy project has been designed so that all above-ground parts of the nearest wind turbine structure are set back from the property line by a distance that is at least 1.5 times the height of the wind turbine structure, including the rotor-swept area, except when the wind energy project extends onto the abutting property.

(5) For facilities subject to Energy Facility Siting Council jurisdiction, a finding by the Council that a proposed wind energy facility meets all requirements necessary for a site certificate satisfies the requirements of paragraphs (1) through (4).

##.07.02. Solar Energy Generation

(1) Acreage: The proposed solar energy project would occupy less than [40] acres on land zoned for commercial or industrial use or less than [20] acres on land zoned for Exclusive Farm Use.

(2) Ground Leveling: The proposed solar energy project has been designed and would be constructed so that ground leveling is limited to those areas needed for effective solar energy collection and so that the natural ground contour is preserved to the greatest extent practical.

(3) Wildlife Resources: The proposed solar energy project has been designed to reduce the likelihood of significant adverse effects on wildlife and wildlife habitat. Measures to reduce significant impact may include, but are not limited to, the following:

(a) Designing foundations and support structures for solar equipment to avoid creation of artificial habitat or shelter for

Commentary

buffer between wind turbines and neighboring properties, residences or areas accessible to the public. Most existing wind energy projects have been located on private land so that the area in proximity to turbine towers is not accessible without landowner permission. The local government may decide that existing setback ordinances in other parts of the local development code are adequate. In remote rural areas, exceptions to the setback requirements may be justified.

Paragraph (5) applies to facilities subject to the Siting Council's jurisdiction. If a proposed energy facility meets all requirements necessary for the Council to issue a site certificate, then the concerns addressed by subsection ##.07.01 would be addressed by corresponding site certificate requirements. These requirements include specific standards for wind facilities (OAR 345-024-0010 and -0015), in addition to the Council standards in OAR Chapter 345, Division 22.

(b) Solar Energy Generation (##.07.02)

Under section ##.03, the model ordinance exempts solar electric equipment (photovoltaic panels) that are mounted on the roof of residential, commercial or industrial structures and that generate electric power solely for that structure. It also exempts photovoltaic panels mounted on poles or on the ground that do not exceed the specified size limit and that generate power solely for an adjacent residential, commercial or industrial use.

Solar devices designed to provide domestic hot water are excluded from consideration here.

Solar-thermal generation technology involves a large array of mirrors or other solar concentrating devices (heliostats) that are designed to direct solar radiation on water or another working

Model Ordinance

raptor prey.

(b) Controlling weeds to avoid the creation of artificial habitat suitable for raptor prey.

(c) Using anti-perching protection devices on transmission line support structures and appropriate spacing of conductors.

(d) Avoiding construction activities near raptor nesting locations during sensitive breeding periods and using appropriate no-construction buffers around known nest sites.

(e) Using suitable methods such as coloration or sound-producing devices to discourage birds from entering areas of concentrated solar energy near solar-thermal mirrors or other devices that concentrate solar radiation.

(4) A finding by the Energy Facility Siting Council that a proposed energy facility meets the Council's Fish and Wildlife Habitat standard, OAR 345-022-0060, satisfies the requirements of paragraph (3).

(5) Misdirection of Solar Radiation: The proposed solar energy project has been designed and would be operated to prevent the misdirection of concentrated solar radiation onto nearby property, public roads or other areas accessible to the public.

(6) Public Safety: The proposed solar energy project has been designed and will be operated to protect public safety, including development and implementation of a plan of operating procedures to prevent public access to hazardous areas.

(7) Airport Proximity: The proposed solar energy project is not located adjacent to, or within, the control zone of any airport.

(8) Cleaning Chemicals and Solvents: During operation of the proposed solar energy project, all chemicals or solvents used to clean photovoltaic panels or heliostats would be low in volatile organic compounds and the operator would use recyclable or biodegradable products to the extent possible.

Commentary

fluid to produce steam, which is then used to drive a generator.

Currently, there are no large-scale solar electric projects in Oregon that would be subject to the model ordinance according to section ##.04. Some areas of the state may be suitable for such projects.

With current technology, any large-scale solar energy project would require several acres of land to be cost-effective. The local government might choose to limit the size of such energy projects to minimize potential conflict with other land uses. The acreage limits suggested in this standard are placeholders, but the 20-acre limit is consistent with the standard for "commercial utility facility" use on non-high value farmland (OAR 660-033-0130). See section ##.06.04.

Leveling of the ground surface may be necessary for effective use of the solar resource but should be minimized. The wildlife protection provisions are specific to the characteristics of large solar energy projects. The local government should consult with the Oregon Department of Fish and Wildlife about the potential impacts of a proposed solar energy project on wildlife and wildlife habitat.

The model ordinance addresses the risk to public safety from misdirected solar rays from solar-thermal arrays. Photovoltaic panels also have reflective surfaces. The model ordinance therefore excludes solar energy projects from airport control zones. The local government should consult with the FAA or the Oregon Department of Aviation on other possible safety restrictions near airports.

To maintain optimal efficiency of the equipment, the operator of a solar energy project may need to clean heliostats or photovoltaic panels frequently. The model language includes a provision to

Model Ordinance

##.07.03. Cogeneration

(1) The proposed cogeneration project would supply thermal energy to an existing or approved industrial or commercial use.

(2) Except as allowed in this section, an electric transmission line or natural gas or petroleum pipeline necessary for the cogeneration project must be an upgrade to an existing transmission line or pipeline or must otherwise be constructed in an existing right-of-way or utility easement. If the proposed electric transmission line or natural gas or petroleum product pipeline necessary for the proposed cogeneration project is not an upgrade to an existing transmission line or pipeline, the transmission line or pipeline must comply with the standards in Sections ##.07.04 or ##.07.05.

##.07.04. Electric Transmission or Distribution Lines

(1) Use of Existing Routes: To the extent practical, the proposed transmission or distribution line would use developed or approved road and utility rights-of-way or easements that can safely accommodate the proposed line.

(2) Adjacent to Existing Routes: To the extent practical, any part of the proposed transmission or distribution line outside an existing route would be adjacent to an existing public road or utility right-of-way or easement and would not increase the width of the clearing

Commentary

reduce adverse impacts to the soil, plants, animals and ground water from the use of cleaning chemicals and solvents.

(c) Cogeneration (##.07.03)

"Cogeneration" is the sequential production of electricity and thermal energy (usually in the form of steam) from a single fuel source. The user of the thermal energy output is called the "thermal host" or "steam host." Due to the energy losses associated with transporting steam through a pipeline, a cogeneration facility must be located near the thermal host. For this reason, sites in or near industrial, commercial or mixed-use zones are the most likely sites for cogeneration projects.

If new fuel supply pipelines or electric transmission or distribution lines are needed, then the specific standards for transmission lines and pipelines discussed in subsections ##.07.04 and ##.07.05 below would apply to those proposed supporting facilities.

There may be air quality concerns associated with cogeneration projects. The model ordinance does not address air quality because federal law largely controls regulation of air emissions. The Oregon Department of Environmental Quality has authority for issuing air quality permits (except in Lane County, where the Lane Regional Air Pollution Authority is the permitting agency).

(d) Electric Transmission Lines (##.07.04)

Subsection ##.07.04 reflects a preference for locating new transmission (or distribution) lines within, or adjacent to, existing rights of way. These provisions aim to minimize the creation of new transmission corridors.

The "[125] feet" width limitation on expansion of the clearing for an existing right-of-way and the "[50] feet" width limitation on

Model Ordinance

for the existing right-of-way or easement by more than [50] percent and not beyond a maximum width of [125] feet.

(3) New Routes: If all of part of the proposed transmission or distribution line is outside an existing route or not adjacent to an existing route, the permanent right-of-way for the new transmission line route would not exceed [50] feet in width, and:

(a) The proposed new route would serve an existing or proposed electric generation project that is not adjacent to an existing right-of-way or easement, or

(b) The proposed new route would result in less adverse energy, environmental, economic and social consequences than would result from using an existing route.

(4) Avian Habitat: The proposed transmission or distribution line has been designed to reduce the likelihood of significant adverse effects on nearby wetlands or water bodies identified as critical bird habitat. Measures to reduce significant impact may include, but are not limited to, the following:

(a) Locating the transmission line at least 50 feet from the edge of the nearest wetland or water body.

(b) Separating the transmission line from the nearest wetland or water body by topography or substantial vegetation.

(c) Locating the transmission line parallel to the prevailing winds.

(5) For facilities subject to Energy Facility Siting Council jurisdiction, a finding by the Council that a proposed energy facility meets the Council's Fish and Wildlife Habitat standard, OAR 345-022-0060, satisfies the requirements of paragraph (4).

##.07.05. Natural Gas or Petroleum Product Pipelines

(1) Use of Existing Routes: To the extent practical, the proposed pipeline would use developed or approved road and utility rights-of-way or easements that can safely accommodate the proposed line.

(2) Adjacent to Existing Routes: To the extent practical, any part of

Commentary

new right-of-way in paragraphs (2) and (3) are placeholders. The local government would determine appropriate limits based on local circumstances.

If any part of a proposed new transmission line route is in an area zoned Exclusive Farm Use, the applicant must address the requirements of ORS 215.275. Transmission lines with support structures that are not more than 200 feet in height may be considered "utility facilities necessary for public service" under ORS 215.283(1)(d).

For proposed transmission lines that run near or across a water body, the model ordinance has standards to protect waterfowl. The local government would identify "critical bird habitat" after consultation with the Oregon Department of Fish and Wildlife.

A Siting Council standard also addresses potential impacts on wildlife habitat. To avoid duplication, paragraph (5) provides that, for facilities subject to the Siting Council's jurisdiction, the requirements of paragraph (4) are met if the Siting Council finds that a proposed energy facility meets its Fish and Wildlife Habitat standard.

(e) Natural Gas or Petroleum Pipelines (##.07.05)

The first three paragraphs mirror the provisions for electric transmission lines. Although the preference for existing rights-of-way given above for transmission lines is copied here, public safety concerns may make placement of natural gas or petroleum

Model Ordinance

the proposed pipeline outside an existing route would be adjacent to an existing public road or utility right-of-way or easement and would not increase the width of the clearing for the existing right-of-way or easement by more than [50] percent and not beyond a maximum width of [75] feet.

(3) New Routes: If all of part of the proposed pipeline is outside an existing route or not adjacent to an existing route, the permanent right-of-way for the new transmission line route would not exceed [40] feet in width, and:

(a) The proposed new route would serve an existing or proposed electric generation project that is not adjacent to an existing right-of-way or easement, or

(b) The proposed new route would result in less adverse energy, environmental, economic and social consequences than would result from using an existing route.

(4) Stream crossings: If the proposed pipeline would cross a stream or river that is important habitat for a state or federally-listed threatened or endangered species, the applicant must use a crossing technique or method approved by the Oregon Department of Fish and Wildlife.

Commentary

product pipelines in the right-of-way less desirable.

The "[75] feet" width limitation on expansion of the clearing for an existing right-of-way and the "[40] feet" width limitation on new right-of-way in paragraphs (2) and (3) are placeholders. The local government would determine appropriate limits based on local circumstances.

As with transmission lines, if any part of a proposed new pipeline route is in an area zoned Exclusive Farm Use, the applicant must address the requirements of ORS 215.275. Natural gas or petroleum product pipelines may be considered "utility facilities necessary for public service" under ORS 215.283(1)(d).

The model ordinance includes a standard for protection of fish-bearing streams or rivers that are important habitat for a threatened or endangered species. Consultation with the Oregon Department of Fish and Wildlife would be necessary to determine a suitable crossing method for a proposed pipeline in a particular case. For example, the new pipeline might be hung on an existing road bridge to keep it out of the streambed.

III. ENERGY RESOURCES AND STATEWIDE PLANNING GOAL 5

Statewide Planning Goal 5 requires local governments to "adopt programs that will protect natural resources and conserve scenic, historic, and open space resources for present and future generations." Although Goal 5 does not impose substantive criteria for siting an energy project, cities and counties need to be aware of Goal 5 in planning for energy projects.

The purpose of Goal 5 is "to protect natural resources and conserve scenic and historic areas and open spaces." Under Goal 5, energy sources are among the natural resources that qualify for protection. "Energy sources" are natural resources used for the generation of energy, including natural gas, hydroelectric dam sites and geothermal, solar and wind resource areas (OAR 660-023-0190).

For energy sources found to be "significant," the protection required under Goal 5 means to limit new conflicting uses within the impact area and to authorize development of the energy source at the site (OAR 660-023-0190(1)(b)). Measures to protect a resource site from conflicting uses must contain clear and objective standards (OAR 660-023-0050(2)).

The local government may adopt a program to evaluate conflicts and develop a protection program for energy sources on a case-by-case basis (OAR 660-023-0190(2)). An application to develop an energy source within the local government's jurisdiction would trigger a case-by-case Goal 5 evaluation.

Energy sources "applied for or approved through the Oregon Energy Facility Siting Council" are automatically deemed significant resources. For energy facilities approved by the Siting Council, the local government must amend its comprehensive plan and land use regulations at the time of periodic review to implement the Siting Council decision (OAR 660-023-0190(2)).

IV. ENERGY PROJECTS AND SITING ISSUES

In this section, we provide additional information about specific types of energy projects. We discuss some but not all of the issues that apply to siting these projects. We have included this section to provide background information for local government officials and staff who may not be familiar with energy technology.

1. Wind Energy Generation

Local governments could receive land use applications for wind energy projects of up to 105 megawatts (MW) of generating capacity. Such wind energy generation projects could include as many as 100 or more turbines and affect several square miles of land.

County governments have approved the siting of commercial-scale wind energy projects in Umatilla, Gilliam and Sherman counties. The generating capacity of the turbines now operating in these counties ranges from 660 kilowatts (kW) to 1.5 MW each. In the future, even larger turbines will be available to developers of wind energy projects.

The physical size of a wind turbine is proportional to its generating capacity. For example, the 660-kW wind turbines in operation at the Vansycle Ridge Wind Project in Umatilla County are about 165 feet tall at the rotor hub and each blade of the rotor is about 77 feet long. The overall height of these turbines is 242 feet. In contrast, the 1.5 MW turbines at the Klondike Wind

Project in Sherman County are about 213 feet tall at the rotor hub and each blade is about 115 feet long. The overall height is about 328 feet.

Construction of commercial-scale wind projects has direct on-site land impacts. Excavation, trenching and road construction can result in dust emissions and erosion unless appropriate measures are taken to minimize these risks. Ground disturbance may also allow the spread of noxious weeds unless control measures are imposed.

Construction of wind energy projects may have both temporary and permanent impacts on wildlife habitat. During operation, avian and bat fatalities from collision with turbine towers or blades have been a matter of concern. It is easier to avoid adverse impacts by making informed siting decisions before a wind energy project is approved than it is to try to mitigate for significant adverse wildlife impacts after construction. Requiring the applicant to conduct appropriate pre-construction wildlife surveys is essential.

Pre-construction surveys can provide information about the use of a proposed energy project site and vicinity by raptors and migratory species. Pre-construction surveys can also provide information about threatened, endangered or sensitive species that may be in the area. This information allows the applicant to design the proposed wind generation project to avoid or reduce direct impact on important wildlife habitat areas and to schedule construction to avoid critical breeding and nesting periods for threatened, endangered or sensitive species.

It is unwise to locate wind energy projects in known migratory bird routes or in areas of frequent use by raptors for foraging or nesting. It is unlawful to kill or "take" bird species protected under the Migratory Bird Treaty Act, 16 U.S.C. §§ 703-712, (MBTA). Strict liability applies to violations, meaning that "unintentional" killing of a protected species is no defense. A misdemeanor violation of the MBTA can result in a fine of up to $15,000 and imprisonment for up to 6 months. The MBTA protects more than 830 species of migratory birds. There is additional protection for bald eagles and golden eagles under the Bald and Golden Eagle Protection Act, 16 U.S.C. §668. A civil penalty of $5,000 per violation may result, even for an unintentional killing of an eagle.

Local governments should consider requiring post-construction monitoring to collect data on avian and bat fatalities. Although impacts to wildlife may be reduced substantially by siting and designing wind energy projects to avoid areas where protected species are likely to be present, post-construction monitoring is necessary to assess the actual impacts of a wind energy project on wildlife. Because wildlife use of the area is likely to vary from year-to-year, at least two years of post-construction monitoring is advisable to ensure a more accurate assessment of actual wildlife impacts.

In making the siting decision, local governments also should consider the visual impact of a proposed wind generation project. The need for high towers and exposure to open terrain is inherent in the function of wind turbines, and therefore visual impact is unavoidable. The greater the distance between the viewer and the turbine string, the less significant is the visual impact. At a distance, even a large wind energy project tends to blend into the background landscape. Nevertheless, it is better to avoid siting commercial-scale wind energy projects near residential areas or within important scenic areas.

Enforcement of building and electrical codes and limiting public access to the wind project site are ways to address public safety risks, such as broken turbine blades, fire or electrical hazards. A wind energy project may pose an air traffic hazard. Typically, commercial-scale wind turbines

exceed 200 feet in height (including the length of turbine blades). If the overall height of a structure is 200 feet or more, Federal Aviation Administration and Oregon Department of Aviation regulations require warning lights.

Unobstructed access to a consistent wind resource is necessary for safe, efficient operation of wind turbines. Wind access can be protected through property setback requirements and structure height limits. Oregon law also allows landowners to secure a "wind energy easement" to ensure the undisturbed flow of wind across a site (ORS 105.900 - .915).

The model ordinance suggests that small-scale wind turbines be exempt from the siting standards listed in the ordinance. A local government may choose instead to draft ordinances to refer specifically to small-scale turbines. Small-scale wind turbines are commercially available. These systems currently range up to 25 kilowatts of generating capacity. Small turbines are mounted on towers up to 120 feet tall. Many Oregon property owners have installed small wind generators to generate power for on-site use. Larger, higher-capacity systems may become available in the future. Although the local government may choose to exempt small wind turbines from the energy facility siting ordinances, other existing land use ordinances may apply, such as structure height and setback requirements.

2. Solar Energy Generation

There are two types of solar electric generating technologies: photovoltaic panels and solar-thermal systems. Photovoltaic cells convert solar energy directly to electrical energy. Although photovoltaic technology and solar cell efficiency is steadily improving, high-capacity generation projects using photovoltaic panels is not economically feasible today.

Photovoltaic systems have been installed in remote locations in Oregon and in demonstration projects to meet small on-site needs for electricity. Photovoltaic panels can be a lower-cost power option in remote areas where building electric power distribution lines would be more costly. For example, a photovoltaic system is in use on an Oregon ranch to provide power for pumping water from a creek to a stock-watering pond. This use of solar energy has the added benefit of protecting water quality by keeping cattle away from stream banks and preserving riparian area vegetation.

Solar-thermal electric generation technology uses the sun's energy to power a steam turbine. In one design of this technology, an array of mirrors, called "heliostats," concentrates solar energy onto a boiler. Another design uses rows of mirrors to heat water in pipes that go to a boiler. In either case, the heat generated by the concentration of solar rays produces steam. The steam drives a turbine that is coupled to a generator to produce electricity. The exhaust steam condenses to water, which is recycled into the boiler. A cooling process, using water or cooling fans, is needed to condense the steam. Solar energy projects using thermal generation technology would require significant land area to collect sufficient solar energy to operate the steam turbine component. There are no solar-thermal energy projects in operation in Oregon. Beginning in 1984, nine solar thermal power projects have been installed in California's Mojave Desert, totaling approximately 354 megawatts of generating capacity. This represents more than 90 percent of all of the commercial solar electric generation in the world.

Review of a proposed solar energy project should include analysis of possible significant adverse impacts on wildlife. Wildlife encountering the concentrated sunlight reflected by solar panels or mirrors could be killed or injured, and in a sensitive habitat – such as a desert ecosystem – the environmental effects might be significant. Photovoltaic panels or heliostats for a solar-thermal

system could create artificial habitat for prey species. Prey species might attract raptors and other predators to forage at the site, risking injury from focused sunlight. The local government should require applicants to implement measures to avoid creating prey habitat. The discussion of potential liability for impacts on protected species in the Wind Energy Generation section above applies to solar generation projects as well.

3. Cogeneration

Energy projects that produce both electricity and useful thermal energy are called "cogeneration" projects (sometimes called "combined heat and power" or "CHP" systems). Steam turbines or combustion turbines produce electricity using natural gas or other fuels, such as fuel oil or biomass. In a typical cogeneration energy facility, a steam turbine turns a shaft that is coupled to an electric generator. Operation of the steam turbine produces electricity. The exhaust steam from the turbine is piped to a "thermal host," such as a manufacturer or other industrial facility, that needs steam for an industrial process.

An energy project may generate electricity using a combustion turbine fueled by natural gas, instead of a steam turbine. Combustion turbines are derived from jet engine technology. The turbine drive shaft is coupled to a generator to generate electricity. The exhaust from a combustion turbine can be used to turn water into steam that, in turn, is used to generate additional electrical energy in a steam turbine. This two-stage process is called a "combined-cycle combustion turbine" facility (CCCT). If a thermal host uses the exhaust steam from a combustion turbine or CCCT, then the combustion turbine or CCCT would be considered a cogeneration project.

Cogeneration is an efficient use of fuel with reduced environmental impacts compared to generating either electricity or steam separately. Usually, the critical land use planning issues are the effect on air quality from emissions, water consumption, operation noise and construction impact on local roads. There may be other site-specific issues, including impacts on wetlands or fish and wildlife habitat.

Because cogeneration projects are necessarily located close to a thermal host, applicants will likely propose building them in areas already developed for industrial use. Appropriate thermal hosts for cogeneration projects are industrial plants with older boilers that have been used to supply steam alone. A new cogeneration facility will have lower emissions, use water more efficiently and displace older, less efficient equipment used by the thermal host.

Emissions from cogeneration projects are lower than the combined emissions would be from separate power and steam production plants. Depending largely on the size of the proposed cogeneration project, the result of replacing an old boiler with a cogeneration plant can result in an overall reduction of adverse environmental impacts while producing both electricity and steam for industrial use. Air quality improvements resulting from replacing old equipment with cogeneration may allow for additional industrial or commercial development in some areas where air quality is limited. Air quality permits are under the jurisdiction of the Oregon Department of Environmental Quality (or, in Lane County, the Lane Regional Air Pollution Authority).

A cogeneration project may need new transmission lines, natural gas pipelines and water supply pipelines. Often, public concerns will focus on these associated "linear" components rather than on the cogeneration project itself. We discuss transmission lines and pipelines below.

In the future, a new form of cogeneration, based on fuel cells, may become commonplace. Fuel cells use hydrogen, or hydrogen-rich fuels such as natural gas, ethanol and methanol. In a fuel cell, hydrogen reacts with oxygen in air. The products are electricity and hot water. The inner workings of a fuel cell are too complex to describe in any detail here, but the process is similar to what happens in a battery, except that the fuel cell needs an external fuel supply. The hot water produced by a fuel cell could be used for space heating or for other applications requiring thermal energy. If a fuel-cell based system produces both electricity and useful thermal energy, it is a cogeneration system.

Cities or counties may encounter siting applications for fuel cells or fuel cell cogeneration systems. Industries such as semi-conductor manufacturing may propose to build on-site fuel cell plants because of the high-quality power the fuel cells produce. Fuel cells may replace emergency back-up diesel power plants and may include a tank of propane or other back-up fuel to supplement natural gas. Fuel cells are small and quiet, and they produce reliable power. Siting review of proposed cogeneration projects using fuel cells should be relatively simple, because of small size and minimal resource impacts.

4. Digesters

In some counties, owners of large dairy farms may be interested in addressing the problem of manure management by installing a digester project. This technology helps control the disposal of animal waste and reduce odor. Digesters effectively eliminate the environmental hazards of runoff from dairy farms and other animal feedlots. Digester systems can reduce fecal coliform bacteria in manure by more than 99 percent, virtually eliminating a major source of water pollution.

Anaerobic digestion is a biochemical process in which particular kinds of bacteria that thrive in an oxygen-free environment break down complex organic wastes such as animal manure. The process results in the production of “biogas” (also known as “digester gas”). Controlled anaerobic digestion can take place in an airtight chamber, called a “digester.”

The biogas produced in a digester is actually a mixture of gases, with methane and carbon dioxide making up more than 90 percent of the total. The energy value of biogas depends on the amount of methane it contains. The methane content of biogas varies from about 55 percent to 80 percent. Typical digester gas, with a methane concentration of 65 percent, contains about 600 Btu of energy per cubic foot. By fueling an engine-generator set, the energy in digester gas can be converted to electricity. Digester systems also produce a significant amount of heat energy, which dairy farms can use to provide hot water. Because digester systems can produce both heat and electric energy, they are a form of cogeneration.

Digesters can be designed for individual dairies or for clusters of dairy farms. For example, a digester designed to process 8,000 gallons of manure per day would be an appropriate size for a 500-cow dairy. A digester of this size could produce more electricity and hot water than the dairy consumes. Through a contract with the local utility, the dairy could receive a payment or credit for the electricity produced in excess of the dairy’s on-site power consumption.

The electric generating capacity of a dairy digester system designed for an individual farm depends on the size of the digester. Smaller systems would have a capacity of less than 100 kilowatts; larger systems might have a capacity of 200 to 300 kilowatts. Under the model ordinance, electric generation projects of 50 kilowatts or larger would need a conditional use permit and would be subject to the energy project siting standards.

5. Electric Transmission and Distribution Lines

Growth in population and industrial activity will generate demand for new or upgraded electric transmission and distribution lines throughout Oregon. In addition, interstate electricity sales and balancing the electric transmission grid may require the development of new transmission lines. We use the broader term "transmission line" in this discussion, but similar land-use concerns apply to distribution lines, which carry power from the transmission grid to end-users.

The linear nature of transmission lines (and pipelines, discussed below) leads to several unique considerations. Long transmission lines might cross city or county boundaries, requiring coordination with neighboring jurisdictions. They might cross zoning district boundaries, requiring application of sections of the development code applicable to each zone. In addition, transmission lines may require associated structures such as access roads or substations.

Inappropriately located transmission line corridors could impede other development. Upgrades to existing transmission lines or placement of a new line in an existing corridor or public road right-of-way could reduce the impacts compared to creation of a new corridor. The local government should contact the Bonneville Power Administration and regional utilities to determine where new or upgraded transmission lines might be needed in the future.

Siting new transmission lines in forested areas requires clearing trees within the corridor. A major new transmission line route through forest land may require an exception to Statewide Planning Goal 4 if the cleared area is more than 100 feet wide for a transmission line or 50 feet wide for a distribution line (OAR 660-006-0025(4)(q)). In agricultural areas, transmission line support structures displace relatively small areas of farmland, but poorly placed support structures could obstruct farm machinery.

Wildlife effects of transmission line projects can be significant during construction. After construction, maintenance of corridors (for example, when herbicides are used) can have an adverse impact on wildlife. Long-term effects can be reduced by siting transmission lines away from habitat used by protected species, replanting cleared areas and limiting public and vehicular access. The goals and standards of the Oregon Department of Fish and Wildlife provide guidance on mitigating for habitat affected by development.

Transmission lines have no air quality impacts, unless maintenance of the transmission line corridor includes aerial spraying of herbicides. Water quality impacts of transmission lines are generally insignificant, except where access routes or tower sites come near to, or cross over, water bodies or wetlands. The local government can reduce water quality effects such as sedimentation and erosion by imposing conditions on construction techniques and site access.

The local government should consider public safety in siting transmission lines. Compliance with applicable building and electrical codes protects public health and safety. The applicant should analyze geologic and soil conditions to avoid building a transmission line on unstable soils. The operation of high-voltage transmission lines produces electric and magnetic fields in the immediate vicinity of the line. Transmission lines can be designed to meet the electric field standard that the Energy Facility Siting Council has adopted in OAR 345-024-0090. Electric fields around transmission lines can induce electric currents in metal structures in the immediate area such as metal fences, gates, cattle guards, trailers or other objects or structures, which should be grounded as a safety precaution. Numerous studies have explored whether magnetic fields can cause health effects on humans living or working near high-voltage lines. The Energy Facility Siting Council has concluded that there is insufficient scientific evidence to establish a

magnetic field standard. Nevertheless, as a matter of "prudent avoidance," transmission lines should be located at least 200 feet away from any residence or occupied place of business.

The use of natural terrain, vegetation and appropriate support structure construction materials can mitigate the visual impact of transmission lines. Transmission line support structures can be designed to "ladder" or hang other telephone, cable or power service lines below the main transmission lines. The use of multi-line structures, where possible, avoids the need for new transmission line corridors.

6. Natural Gas and Petroleum Pipelines

Underground natural gas and petroleum product pipelines present siting issues that are similar to those arising from siting transmission lines. For example, pipelines may cross jurisdictional or zoning boundaries. Decisions made about siting a new pipeline affect the location and need for future pipeline development or expansion. Some pipelines may need associated development such as access roads or compressor stations.

Permanent easements are needed to assure access to the pipeline and associated structures. Because buried pipelines are out of sight, it is extremely important to enforce easements and setbacks when reviewing new proposals for adjacent development. Utility line locates and marking should be required before excavation or construction near any pipeline corridor.

Areas prone to erosion or landslides are unsuitable for pipelines carrying high-pressure flammable gas or liquid. Safety requirements of state and federal agencies must be followed. The Oregon Public Utility Commission is the state agency responsible for ensuring the safety of pipelines. The Oregon Department of Geology and Mineral Industries (DOGAMI) has maps of areas prone to landslides and other geological risks. Local governments should consult DOGAMI during their review of proposed pipelines.

Erosion control measures should be implemented during pipeline construction. Permit conditions should include revegetation of disturbed areas and follow-up monitoring to assure successful restoration. Pipeline construction may cause significant wildlife impacts. Adverse impacts on wildlife may occur after construction if corridor maintenance includes the use of herbicides. Siting pipelines away from protected species habitat, replanting cleared areas and restricting public and vehicular access can reduce long-term effects on wildlife. The goals and standards of the Oregon Department of Fish and Wildlife provide guidance for mitigation of habitat affected by pipeline development.

Water quality impacts of pipelines can be significant where access routes or pumping stations come near to or cross water bodies and wetlands. Water or wetland crossing must be done according to the requirements of state and federal agencies. In Oregon, the Division of State Lands must approve a wetland disturbance or the crossing of a navigable waterway. Directional drilling beneath a riverbed is possible and should be considered if downstream sedimentation would damage critical habitat. Leak detection systems help prevent accidental pollution of surface or ground water from petroleum product pipelines.

Clearing trees for pipeline corridors and access easements can cause significant loss of timberland. To minimize this loss, pipelines should use existing developed rights-of-way and easements to the extent possible. Any major new pipeline route through forest land with rights-of-way more than 50 feet wide would require an exception to Statewide Planning Goal 4 (OAR 660-006-0025(4)(q)). In some cases, it may be possible to avoid creating new natural gas

pipeline corridors by increasing the operating pressures of existing pipelines so more gas can be transported. Local governments should contact interstate pipeline companies and local gas utilities to determine where new or upgraded pipelines might be needed in the future.

7. Hydroelectric Projects

There is overlapping state and federal authority over hydroelectric projects. Oregon's hydroelectric licensing authority lies with the Water Resources Department and the Oregon Water Resources Commission. Since 1993, the Oregon Energy Facility Siting Council has had no jurisdiction over hydroelectric projects. A developer must comply with both federal and state permit processes before building a hydroelectric facility. Although siting hydroelectric projects is not within the local government's regulatory authority, the local government should participate in federal and state agency reviews to assist in meeting the objective of consistency between federal or state action and the local comprehensive plan. Construction of new hydroelectric projects may conflict with other land and water uses and may create environmental problems for riparian areas, vegetation and wildlife. The impacts of hydroelectric projects are site-specific and need case-by-case analysis.

Federal licenses issued to hydroelectric dams by the Federal Energy Regulatory Commission expire after 50 years. Many of the older hydroelectric projects in Oregon are reaching the stage of license renewal. The license renewal process is a unique opportunity for the local government to participate in updating the conditions of the license. The local government should contact the Water Resources Department for more information.

V. THE ENERGY FACILITY SITING COUNCIL

In Oregon, the Energy Facility Siting Council ("Siting Council") decides whether large energy facilities may be built. The Siting Council has authority for siting all large energy facilities, except for hydroelectric facilities and some relatively large wind facilities that are subject to local permitting, as discussed above. The Oregon Water Resources Commission has review and permitting authority over hydroelectric projects.

For facilities under Siting Council authority, the developer must apply to the Council for a "site certificate" and must supply information about the proposed facility and the proposed site. The energy facility siting statutes, beginning at ORS 469.300, make the Council siting process different from the permitting process in other states and different from the permitting practices of many other state and local agencies in Oregon. The Department of Energy website (egov.oregon.gov/ENERGY/SITING/index.shtml) includes the Siting Council's siting standards and a description of the process. Key provisions are as follows:

- The use of specific standards for issuing a site certificate.
- A "one-stop" process in which the Siting Council determines compliance with its own standards and the regulations and permitting requirements of other state agencies.
- Applicant's option of seeking land use approval by the local government or having the Siting Council determine compliance with statewide land use planning goals.
- Opportunity for public participation through comment periods at the front end of the process, followed by a public hearing and a more formal contested case proceeding.

- Direct review by the Oregon Supreme Court.

If a proposed facility meets the standards, the Siting Council must issue a site certificate. If the facility does not meet one or more of the standards, the Council cannot issue a site certificate except in unusual circumstances based on a finding that the public benefits of siting the energy facility outweigh the damage to the resource protected by the unmet standard.

In making the siting decision, the Siting Council applies not only its own standards but also relevant rules and ordinances of state and local agencies. The Council's decision is binding on all state and local agencies if they issue permits addressed in the Council's review (ORS 469.401(3)). The binding effect of a site certificate applies to issuance of conditional use or special use permits by local governments. The Siting Council's decision, however, does not apply to federally-delegated permits, such as permits under federal air quality or water quality programs (ORS 469.503(3)). Furthermore, a site certificate addresses siting issues only. Building permits and other permits and approvals that are related to construction or operation – rather than to siting – are not part of the Council's review (ORS 469.401(4)).

The Council siting process has two major phases. In the first phase, the applicant submits a notice of intent (NOI) to the Department of Energy ("Department"). The NOI describes the proposed facility in general terms and allows the Department to gather public comment and comments from other government agencies. Based on the NOI, state and local government agencies identify the laws, regulations and ordinances that apply to the proposed facility. The second phase of the process begins when the applicant submits an application to the Department and ends when the Council decides whether to issue a site certificate.

The Siting Council has two forms of expedited siting review (OAR 345-015-0300 and -0310). If a proposed facility qualifies for expedited review, the applicant is not required to submit a NOI.

1. The Notice of Intent

OAR 345-020-0011 describes the required content of a NOI. The NOI must describe the proposed site, the proposed facility and the possible impacts of development in enough detail for the Department and other reviewing agencies to identify the applicable statutes, rules and local ordinances. The NOI must include proposed routes for linear facilities, such as gas pipelines or electric transmission lines.

The Department issues public notice of the NOI, and copies of the NOI are distributed to other state agencies for review. The NOI enables the Department and other agencies to identify issues and determine staffing needs for the review process. It provides the first opportunity for public comment. Public and agency comments on the NOI alert the Department and the applicant to issues that the applicant will need to address in the site certificate application.

2. Application for a Site Certificate

An application for a site certificate includes a detailed description of the proposed site, the proposed facility and the anticipated impacts of construction and operation. The applicant must show how the proposed facility complies with the Siting Council's standards. The general content requirements for a site certificate application are listed in OAR 345-021-0010.

When an applicant submits an application, the applicant must choose whether to seek land use approval from the local jurisdiction or to have the Siting Council make the land use

determination. The choice is final. After submitting the application, the applicant cannot choose a different path for the land use decision.

The Siting Council may determine compliance with the statewide planning goals by finding that the proposed facility has received local land use approval (ORS 469.504(1)(a), which the Council informally refers to as "Path A"). Alternatively, the Council may determine compliance by making findings that the proposed facility "complies with applicable substantive criteria from the affected local government's acknowledged comprehensive plan and land use regulations that are required by the statewide planning goals and in effect on the date the application is submitted, and with any Land Conservation and Development Commission administrative rules and goals and any land use statutes directly applicable to the facility under ORS 197.646(3)" (ORS 469.504(1)(b), referred to as "Path B").

Local government participation is essential whether the applicant chooses Path A or Path B. If the applicant chooses Path A, then the applicant must follow the local procedures. The Council will issue a site certificate for the project only if the local jurisdiction has approved the proposed land use. If the local land use decision comes after the applicant has submitted a NOI, then any appeal of the land use decision is through an appeal of the Council's decision on the site certificate.

If the applicant chooses instead to follow Path B, the Council determines whether the proposed facility complies with the local land use ordinances. Under Path (B), the local government has the opportunity to identify the applicable substantive land use criteria in the local land use ordinances and comprehensive plan for application by the Council. In addition, the local government can recommend site certificate conditions (addressing matters that would normally be included in a conditional use permit) and offer other comments about the proposed facility. If the local government does not identify the applicable substantive land use criteria to be applied by the Siting Council, the Siting Council can either determine which local criteria should be applied or apply statewide planning goals directly.

In analyzing compliance of a proposed facility with applicable substantive criteria under Path B, the Council has the authority to decide whether a local ordinance is "required by the statewide planning goals." If the Council finds that an ordinance is not required, the Council need not apply the ordinance, but the Council must decide whether the proposed facility would comply with the relevant statewide planning goal. It may be useful, therefore, to identify the statewide planning goal or goals that the local government is implementing through particular ordinance provisions by inserting cross-references.

If the Council finds that the proposed facility does not comply with one or more local land use criteria, the Council may apply the relevant statewide planning goal directly. In addition, the Council has authority to take a goal exception under ORS 469.504(2).

Designation of provisions of the local energy ordinance as applicable substantive criteria provides an efficient means for a local government to influence the Siting Council's energy facility siting decisions. Although state statutes control certain land uses, local ordinances can restrict or condition the use of land for energy projects. For example, local governments can make decisions about land in industrial use zones based on:

- The amount of industrial land available
- The location of industrial land relative to infrastructure necessary to support energy projects or facilities

- Zoning definitions
- Specific references to energy projects in zoning ordinances
- Restrictions applicable to energy projects (such as height or setback requirements)

3. Filing the Application

The date the applicant *submits* the application to the Department is not the date of *filing*. After an applicant submits an application, the Department reviews it to determine if it is complete. Copies of the application are distributed to affected state agencies and to local and tribal governments for review. These "reviewing agencies" help the Department determine whether the application is complete; that is, whether it contains enough information to support findings by the Siting Council regarding compliance with the Council's siting standards and applicable state and local regulations. It is quite common for an applicant to make changes to the site certificate application at this stage, whether in response to the Department's requests for more information or as the result of changes in the applicant's plans for the energy facility.

The application is "filed" when the Department determines it is complete. Upon filing, the Department issues a public notice, as described in OAR 345-015-0190.

4. Draft Proposed Order

The Department conducts a thorough review of the filed application. During this review, the Department consults with the other state and local government agencies and requests their substantive comments and proposed site certificate conditions.

After completing its review, the Department issues a "draft proposed order." If the Department concludes that the proposed facility can meet the Siting Council's standards and other applicable regulations, the draft proposed order would propose findings of fact, determinations of compliance and site certificate conditions for design, construction, operation and retirement of the facility. The draft proposed order reflects the recommendations of Department staff and the comments from other state and local agencies.

After public notice of the draft proposed order, the Department holds a public hearing. Anyone having a concern in opposition to the proposed facility must raise the issue at this hearing or in writing by the close of the hearing. Only those issues that are raised at the hearing can be addressed later in the contested case proceeding (ORS 469.370).

5. Contested Case Proceeding

After the public hearing, the Siting Council meets to review the draft proposed order. Based on the comments by the Council, public comment at the hearing, written comments and consultation with other governmental agencies, the Department then issues a "proposed order" and a public notice of a contested case proceeding. The contested case proceeding is mandatory (ORS 469.370(5)).

The Siting Council appoints an independent hearing officer to conduct the contested case proceeding. Aside from the applicant and Department staff, anyone else wanting to participate in the contested case proceeding must request party status from the hearing officer. The hearing

process includes presentation of evidence, rebuttal, cross-examination, rights to discovery and appeal.

Following the hearing, the hearing officer issues a proposed contested case order, and the parties in the contested case proceeding may file exceptions. The Siting Council then considers the hearing officer's proposed contested case order and any exceptions along with the Department's proposed order before deciding whether to issue a site certificate. At least four members of the seven-member Siting Council must vote to approve a site certificate before the Council can issue the certificate.

6. Appeal

After the Siting Council's decision and final order, any party to the contested case has 30 days to apply for a rehearing. A party may petition for judicial review within 60 days after the date of service of the Council's final order (or within 30 days after the date a petition for rehearing is denied). The Oregon Supreme Court has exclusive jurisdiction for judicial review of the Siting Council's decision.

VI. OREGON WATER RESOURCES COMMISSION

It is the policy of the State of Oregon "to protect the natural resources of this state from possible adverse impacts caused by the use of the waters of the state for the development of hydroelectric power" (ORS 543.015). To carry out this policy, the Oregon Water Resources Commission ("Commission") has authority to review and approve new or expanded hydroelectric facilities. The Commission considers the expertise of other state agencies, such as the Energy Facility Siting Council and the Department of Environmental Quality, in reviewing a proposed hydroelectric project. The Commission applies the standards in OAR 690-051-0170 to 690-051-0290 in reviewing hydroelectric applications

1. Application Procedures

Any non-municipal company or person who proposes to operate, develop or expand a hydroelectric project must apply to the Oregon Water Resources Department ("WRD") for a state "preliminary permit." The definition of a hydroelectric "project" is broad and includes the water rights, structures, rights-of-way, lands used for the facility and the transmission lines to the point of junction with a distribution system (ORS 543.010).

An application for a hydroelectric project will not be accepted if the project is in a designated federal or state resource area such as a park, scenic area or wildlife refuge listed in OAR 690-051-0030. An application is exempt from this restriction if the applicant has a valid lease from the agency managing the resource.

When the WRD receives an application to appropriate water for a hydroelectric project or for a hydroelectric permit or license, the agency must determine whether the impacts of the project would be "cumulative" with the impacts of other hydroelectric projects proposed in pending applications or with existing hydroelectric projects in the same basin (ORS 543.255). If the WRD determines that the project has cumulative impacts, the Commission must conduct a consolidated review as a contested case hearing under ORS 183.310 to 183.550.

2. Consultation with Public Agencies

An applicant for a hydroelectric license or permit must consult with appropriate public and private agencies before filing an application with the WRD. By rule, an applicant must consult with the planning offices of affected local governments on matters that involve scenic resources, recreation resources, land use and access (OAR 690-051-0060).

3. Notice and Public Hearing

After an application for a preliminary permit has been accepted and referred to a hearing, the Commission gives written notice to adjacent land owners, to any city or county interested in or affected by the project and to other interested parties. The Commission also publishes notice for at least four consecutive weeks in a newspaper of general circulation in the county in which the project is located (ORS 543.220).

The Commission holds a contested case hearing for any "major project" (a hydroelectric project of more than 100 theoretical horsepower). A contested case hearing may be held on lower-capacity "minor projects" if the Commission determines that it is in the public interest to do so (ORS 543.225 and OAR 690-051-0130).

A public hearing normally is held in a community near the proposed project, but the hearing can be held in Salem if no one files a protest or objection within the period announced in the notice. The governing body and the planning offices of any affected city and county must receive notice of the public hearing. Owners of property near the project also receive notice.

4. Issuance of Permits and Licenses

If the Commission finds that the applicable standards have been met, the Commission can issue a preliminary permit. The preliminary permit is issued for a period not to exceed three years. The holder of a preliminary permit can make application for a license to build and operate the hydroelectric facility. The license specifies terms and conditions under which the project can be built and operated and is valid for a period not exceeding 50 years (ORS 543.250 and 543.260).



TARDAEWETHER Kellen * ODOE

From: Irene Gilbert <ott.irene@frontier.com>
Sent: Thursday, May 30, 2024 2:12 PM
To: TARDAEWETHER Kellen * ODOE
Subject: Comments for RFA2 for B2H
Attachments: Road Comments AND mua IMPACTS.docx; UCPWD B2H Road Comments 8-17-17 (1).doc

This should be the last written documents from me. Whew!!!

To: Kellen Tardaewether May 30, 2024

From: Irene Gilbert on behalf of the public interest and herself as an individual

Subject: Addition of Roads and Multi-use areas in RFA2 for the B2H project

INTRODUCTION

RULE LANGUAGE

1. On Page 9 it lists the items that must be included on maps or color photographs of the site:
   Item 2
   c. The location, grades and dimensions of all temporary and permanent on-site roads and access roads from the nearest county or state-maintained road.
   e. Existing topography with contours that vary depending upon the size and slope of the site.

The RFA2 Draft Proposed Order removed the requirement that Road Names be provided. The failure to require this information directly conflicts with Oregon Statute requiring state agencies to provide documents in a clear understandable manner. Road names are provided in the Couty Transportation System Plans. These plans provide detailed information regarding the standards required for roads, and whether or not the roads are currently constructed to comply with those standards. The developer states that they are assuming that roads are constructed to meet the designations such as “Collector”, “Local,

"Arterial" and basing their decisions regarding whether or not the roads can withstand the level of use, weight and length of their vehicles and equipment. The County Transportation Plans contain information regarding roads which do not conform to the identified standards. In the case of Union County, the plan states that "many Union Couty roads can be identified as deficient". The deficiencies are "related to existing geometric problems and safety related issues."

Item 5: A transportation plan showing how vehicles would access the site and describing the impacts of the proposed energy project on the local and regional road system during construction and operation.

COMMENT:

The application for Amendment II of the Site Certificate includes no information regarding the grades of the planned access roads to determine impacts of the expanded construction areas nor is it clear how far roads and structures will be from wetlands, streams and other water resources. There is a lack of detailed information regarding how vehicles from the newly added multi-use areas and other developments and changes included in RFA2 will access the site. The route of access from these new and changed developments will have a significant impact on existing uses of roads. They will impact citizen access to medical providers, churches, school buses, pedestrians, emergency vehicles, bicycle use of roads, etc.

The roads in Union County must comply with the Union County Transportation System Plan Final, Dated August 1999 requirements. The developer states that they "assume" that the roads identified as "arterial", "collector", "local" meet the requirements for construction under the standards that apply to those designations and will support their use of the roads absent upgrades or construction required. The Union County Transportation Plan identifies multiple roads the developer intends to use which do not comply with these standards and will need upgrades to accommodate the uses identified by Idaho Power in their application and the Draft Proposed Order. In addition, the public works director for Union County has documented that several roads that are planned for use definitely will require upgrades prior to use by the developer.

SITE CERTIFICATE CODITION:

Condition One: The developer will confirm with local planning departments that all county and city roads being used to transport heavy equipment and machinery are constructed in a manner that will accommodate the planned use without creating substantial damages to the road surfaces.

Condition Two: In the event that roads are not constructed for the kinds of vehicle use the developer will need, they must be upgraded to meet the standards required by ODOT for the planned use.

Site Certificate Condition Needed to Comply with the following requirements:

--ORS 469.310 (EFSC rules will provide for the Safety and health of citizens);

-- ORS 469.401(requiring conditions to protect the safety and health of the citizens for the period of construction and operation of the development);

-- ORS 469.407(2) requiring EFSC rules to implement the policy included in ORS 469.310.ORD;

469.501(g) (requiring procedures that provide protection of public health and safety and (k) (provide requirements that allow communities to provide traffic safety for citizens);

ORS 469.503(3) requires the facility to comply with the requirements of the Project Order and where there are conflicts the council cannot waive requirements of Oregon Statutes in resolving them.

ORS 469.505(2) requires consultation with agencies and local governments responsible for administering the statutes, administrative rules or substantial local criteria resulting in the need for the proposed site certificate condition. Note: In this case, the Oregon Department of Transportation has provided requirements for construction of roads to accommodate different classes of use including weights supported by roads. These requirement are incorporated into the Union County Traffic System Plan and identifies areas of deficiency where the developer will be constructing or using existing roads. A denial of the proposed Site Certificate Condition proposed must include the results of consultations with the above two entities.

4 Road Comments

s

5 Road Comments

UNION COUNTY PUBLIC WORKS DEPARTMENT

P.O. Box 1103 • La Grande, OR 97850 • PHONE (541) 963-1016 • FAX (541) 963-7822 • TTY 1-800-735-1232

Memo

To: Scott Hartell

From: Doug Wright
Public Works Director

Subject: B2H Road Comments

Based upon a review of maps supplied by Idaho Power Company (IPC), the following gravel roads will be impacted during construction of the B2H power line: Jimmy Creek, Olsen, Heber, Bushnell, Marvin, Hawthorne, Rock Creek and Dark Canyon. Depending on how the power line is constructed, and the types of construction equipment used, these roads will need additional maintenance, before, during and post construction, including blading, watering, rolling, additional ¾ - 0 gravel, and dust abatement in front of residents homes. Union County Public Works Department will inspect each road before, during, and post construction, to evaluate the condition of the roads.

In addition to the roads listed, two additional gravel roads requiring special accommodation will be impacted during construction of the B2H power line: Morgan Lake Road and Glass Hill Road. Morgan Lake Road is a narrow gravel road two miles long, with a very steep grade (15% - 18%), that serves residents, cattle ranches, and access to Morgan Lake. Depending on the types of construction equipment that will use this road, maintenance will be needed, as mentioned above. Again, this road is very narrow and given the volume of traffic that uses this road (400 ADT or greater during summer months) guard rail should be installed the full length of the road, and the road must be widened to accommodate two lanes of traffic. If guard rail modifications and widening cannot be completed, IPC should not use Morgan Lake Road and instead look for other alternatives to access the power line during construction.

Glass Hill Road is a gravel road and will need additional maintenance during construction as outlined above. In addition, at approximately mile post 1, from Morgan Lake Road, there is an active slide. IPC will be required during construction to monitor the slide and if movement occurs the contractor will be required to clean culverts, ditches, install retaining walls, and remove any excess material to reduce the further movement of the road to ensure safe passage for residents and construction equipment.

Paved roads that will be used for construction are Foothill Road and Old Oregon Trail. According to Union County Public Works pavement management system, Foothill Road is in fair condition. If substantial damage occurs during construction, IPC and/or its contractor will return the road in the same condition. Union County Public Works a will review the road before during and after construction to evaluate damage to the existing road.

Old Oregon Trail Road is paved but in poor condition. If this road is used as a haul route for construction materials, IPC and/or its contractor will fix any further damage to the paved road. Union County Public Works a will review the road before during and after construction to evaluate damage to the existing road.

The total number of road approaches equals approximately 22. Each road approach will require a Work in Right of Way Permit. IPC's contractor can obtain these permits at the Union County Public Works office. Each permit will be evaluated by Union County Public Works to determine if culverts are needed, and approve location of the approach.

In summary, all roads that will be used to construct the B2H power line are farm to market roads and do not experience this type construction traffic. I encourage IPC to review the condition of the roads with Union County Public Works Director to develop a maintenance and safety plan that will keep Union County roads in current or better condition.

TARDAEWETHER Kellen * ODOE

From: Irene Gilbert <ott.irene@frontier.com>
Sent: Thursday, May 30, 2024 1:43 PM
To: TARDAEWETHER Kellen * ODOE
Subject: Comments for Amendment 2 B2H
Attachments: SITE BOUNDARY EXPANSION REQUIRES FULL REVIEW TO APPROVE FUTURE TYPE C PROCEDURE.docx; Bond for Irene.docx; Bond Comments short version 2.docx; exhibit bond Documentation Merged Ref for Sarah & Chris ccomments.pdf

Attached is my comment regarding the site boundary changes and two documents regarding the bond amount. Iam submitting both as my comments. The exhibit attachment contains the letters from Sarah and Christopher referenced in the bond comments.

To: Kellen Tardaewether May 30, 2024

From: Irene Gilbert on behalf of the public interest and myself

Re: Bond Amount Fails to Comply with EFSC Rules;

The council must require a bond amount consistent with the requirements of the rules and EFSC actions prior to and after issuance of the Boardman to Hemingway Transmission Line Site Certificate.

This comment is addressing the requirement in the plain language of the mandatory rules requiring a bond or letter of credit adequate to restore the site of the development.

The Mandatory condition does not provide for exceptions to the requirements contained in the rule regarding the amount and form of the bond or letter of credit. The Oregon Department of Energy and Energy Facility Siting Council are exceeding their authority by allowing bond amounts that are not consistent with the plain language of the rule or amounts required of other developments prior to and after the issuances of the original and amended site certificates for B2H.

OAR 345-027-0375 requires the council to determine whether the preponderance of evidence on the record supports the conclusion that the amount of the bond or letter of credit required under OAR 345-022-0050 is adequate.

The plain language of OAR 345-025-0006(8) requires the bond to be submitted prior to the start of construction in an amount adequate "**to restore the site to a useful, non-hazardous condition".** OAR 345-025-0006(16) supports the plain language of OAR 345-025-0006(8) by stating that if the developer does not retire the facility according to a final retirement plan

approved by Council, the Council may draw upon the bond or letter of credit to restore the site.

The council has determined that it will require $170,276,273 to restore the site. In order to take the actions included in Mandatory condition OAR 345-025-0006(16), the amount of the bond must be equal to the cost the council determined would be required to restore the site.

I am requesting a site certificate condition which is substantially the same as PRE-RT-02, Page 22 and 23 of the Bakeoven Solar Project Site Certificate, Dated April, 2020. That site certificate uses the council figures for the cost of restoration of the site or use the language of the requirement for a bond complying with the mandatory condition contained in other developments which require the bond to be consistent with the amount the council determined it would cost to restore the site.

DISCUSSION

The purpose of the bond is to protect the public, including electric customers and the State of Oregon from being required to restore the site in the event the developer fails to do so. The plain language of the rule is not subject to interpretation . Both the Oregon and Federal Courts only extend the authority to interpret rules when they are ambiguous. There is no ambiguity in OAR 345-025-0006(8) or OAR 345-025-0006(16). It states that the bond amount is to be in an amount adequate to restore the site.

In their instructions to county and cities regarding conditions to issue a site certificate it says on page 20

The Council's standard for Retirement and Financial Assurance (OAR 345-022-0050) If a facility is retired or abandoned, the certificate holder is obligated to decommission the

facility and restore the site to a useful, non-hazardous condition. **To protect the state, should a facility be abandoned and a site certificate holder go bankrupt before decommissioning a facility, as part of compliance with the Council's standards for Retirement and Financial Assurance, a site certificate holder is required to procure a bond or letter of credit from a Council- approved financial institution in an amount sufficient to restore the proposed facility.** The bond or letter of credit is held by the Oregon Department of Energy Siting Division Fiscal Analyst for the life of the facility. The bond or letter of credit would be used by the state should a site certificate holder go bankrupt and abandon a facility prior to decommissioning and restoring the site.

There is no opportunity to adjust the amount required for a bond to restore the site other than adjustments to the amount based upon the facility as constructed and inflation adjustments.

--Sarah Esterson, Senior Policy Advisor for ODOE issued a memo to Council on September 10, 2021 stated the following:

A. Council must determine if the applicant's proposed retirement estimate to determine if amount is sufficient (page 2)

`B. OAR 345-025-0006(8) requires the developer to submit a bond or letter of credit to council prior to the start of construction (Page 2)

C. OAR 345-025-0006(16) authorizes the use of the bond to retire the facility if the certificate holder fails to do so. (Page 2)

D. OAR 345-021-0010(l)(w)(C) requires the developer to estimate the useful life of the facility, however, no discounting of future costs is allowed and estimate must use current cost values. (Page 2)

This requirement is further documented by Item PRE-RT-02 of the Bakeoven Site Certificate which says, "**The bond or letter of credit shall not be subject to revocation or reduction before retirement of the faciity site."**

E. “the standard requires Council to find that the facility decommissioning amount is satisfactory for restoring the site to a useful, nonhazardous condition, prior to approval.”(Page 5, last paragraph)

F. Historically the council accepted full bond or letter of credit amount necessary for facility decommissioning. (Page 6) Esterson states that the only adjustments to the bod or letter of credit amount allowed are an inflation adjustment and built facility adjustment. (Exhibit 3)

G. She references the fact that the council determined that reduction of bond amounts would more appropriately be dealt with through rulemaking, where information and expertise of subject matter experts could be considered, rather than relying solely on information provided by the applicant. (Page 6)

--Christopher Clark, Siting Policy Analyst and Rules Coordinator provided the Council with a written report regarding the bond amounts and needs for it. That memo states that the bond or letter of credit

A. Must be in an amount necessary to “restore the site to a useful, nonhazardous condition”. Page 1)

B. “Council may call on the bond as needed to restore the site” (Page 3)

C. It states that if a developer is unable or unwilling to comply with the retirement and financial assurance requirements, and civil pentiles are assessed and collected through enforcement actions they are “statutorily required to be deposited in the State‘s general fund and would not necessarily be available for the decommissioning and site restoration activities the bond is intended to assure” (Page 3)

D. “The lack of a clear and effective mechanism to ensure that a certificate holder maintains a bond or letter of credit until the facility has been retired could expose the State to unacceptable risk.”.

E. The memo also states that the bond can be adjusted annually to "reflect changes in inflation through the use of riders." (Page 3)
--It is documented that PacifiCorp is the primary owner of the transmission line and will be able to control decisions during construction and operation of the transmission line. (Exhibit 12, Purchase agreement between Idaho Power and PacifiCorp)
-- PacifiCorp 2023 IRP, Chapter 1, Page 2

Even if there were the opportunity to make the kinds of adjustments planned in the Idaho Power Site Certificate, which there is not, Idaho Power with a 45% interest in the transmission line and the major owner, PacifiCorp present risks that would preclude a reduction in the bond amount.

SUMMARY

1. ODOE's own contractor asked to evaluate changes to reduce the bond amounts in another development recommended against it.
2. There is substantial documentation regarding the fact that PacifiCorp inserts a significant risk not previously considered in evaluation of the application for a site certificate which may result in having to draw on the bond in the future.
3. Idaho Power is a much smaller utility than PacifiCorp or PGE but subject to similar financial risks due to wildfires and the construction of the B2H transmission line will increase the risk significantly.
4. EFSC has never before or after their review of this development authorized a bond amount less than it would take to restore the site.
5. Arguments that utility customers, who the bond is intended to protect, would be required to pay to restore the site lack justification or proof that they would be required to do so. The Idaho Public Utilities Commission recently refused to

approve the 8.61% rate increase requested by Idaho Power for their Idaho customers. Instead they approved a 4.25% increase. Idaho Power has requested a 19.28% rate increase for their Oregon customers. A decision has not been made, but given the public comments regarding this request, it is likely that this request also will not be approved.

6. Chrstopher Clark's memo of April 1, 2021 shows all developments are being required to maintain a bond adequate to restore the site.
7. No requirement for developers to provide information on a schedule will eliminate the risk of unplanned events the bond is to address.

Supporting References

OAR 345-022-0050 council to determine the cost of restoring the Site

OAR 345-025-0006(8) Bond Required

OAR 345-025-0006(16) allows Council to draw on bond to restore site.

OAR 345-027-0375: Requires a full review of bond amount.

"Jury finds PacifiCorp at fault for Santiam Canyon, labor Day Fires" by Zach Urness, Salem Statesman Journal, June 12, 2023,

"Pacific Power potentially wants its customers to pay $90 million in wildfire liability," Ryan Haas, June 16, 2023)

"US Attorney's Office Dist of Or., Pacificorp to pay $3.4 Million in Civil Settlement for

Sarah Esterson, September 10. 2021 Memo to Council Overview of the Energy Facility Siting Council's Retirement and Financial Assurance standard.

Christopher Clark, August 13, 2023 memo to EFSC regarding the Surety Bond Template Update for the August 27, 2023 EFSC Meeting.

Legal Decisions Supporting this comment:

City of Portland v. Bartlett, 369 Or 606, 610 509,P3d 99 (2022) and PGE v Bureau of Labo and Industries 317 Or 606 611, 859 P2d 1143 (1993) To determine intent, primary weight is to be given to the statutory text in context. Context includes "other provisions of the same statutde and other related statutes,"

CONCLUSION

A bond that is at times as low as $1.00 fails to provide the citizens and state of Oregon protection from having to assume the costs of restoring the site given the real potential that the developer could fail to do so. Parties with ownership in the B2H transmission line will either increase or decrease the risk of having to draw on the insurance provided by the bond. In this case, the majority owner will increase the risk.

SITE CERTIFICATE CONDITIONS NEEDED TO COMPLY WITH THE FINANCIAL ASSURANCE REQUIREMENT:

Condition One: A bond or letter of credit must be provided by Idaho Power from an EFSC approved financial institution and approved by Council prior to the start of construction.

Condition Two: During the construction period, the bond may be increased to reflect the value of the development as construction proceeds.

Condition Three: Prior to the start of operations, the bond must be the amount identified by council in the site certificate necessary to restore the site. For this development, the amount would be $170,276,000 after rounding off the figure.

To: Kellen Tardaewether **May 30, 2024**

From: Irene Gilbert on behalf of the public interest and myself as an individual

Regarding: Retirement-Financial Assurance standard continues to fail to copy with the Mandatory Conditions and the Site Conditions must be further amended due to Risk.

My submission regarding this topic include two documents. This one is the combined testimony of Stop B2H which also is provided and supported by me. The second one is my effort to add to the arguments in this document.

The updated cost estimate to retire the facility, with proposed RFA2 changes, is $170,276,273 (in Q1 2024 dollars).[1] An increase of approximately $30 million since the original Site Certificate.
The issue of an adequate bond or letter of credit continues to be raised as a significant issue in the B2H project siting because non-compliance with this standard puts the entire State of Oregon, taxpayers and rate payers at risk. This is why it is also one of the Standards whereby the Council cannot apply its balancing determination.[2] Council must comply with OAR 345-027-0375(2)(d) which requires a review of the requirements of OAR 345-022-0050, which simply states:

> "To issue a site certificate, the Council must find that:
> (1) The site, taking into account mitigation, can be restored adequately to a useful, non-hazardous condition following permanent cessation of construction or operation of the facility.
>
> (2) The applicant has a reasonable likelihood of obtaining a bond or letter of credit in a form and amount satisfactory to the Council to restore the site to a useful, non-hazardous condition."

There are also **Mandatory Conditions** for all Site certificates. OAR 345-025-0006(8) states that this assurance: **bond or letter of credit, must be maintained for the life of the project**. While Council may adjust some of the conditions, such as varying amounts for construction vs. operational periods, STOP believes that it is imperative that Council review this issue more frequently than every five years (per current Condition 5). We also urge Council to seek advice of an independent expert on the matter routinely.

Per the two-part series of presentations to Council regarding, bonds, letters of credit, Council rules and practices, templates, and more, by staff,[3] Christopher Clark provides background:

> "The Council has adopted rules requiring each certificate holder to provide a surety bond or letter of credit before beginning construction of a facility. The bond or letter of credit must be provided in a form and amount satisfactory to the Council to restore the site to a useful, nonhazardous condition, and must be maintained at all times until the facility has been retired. OAR 345-025-0006(8). These requirements provide assurance that the people of Oregon will not be burdened with the costs of restoring the site if the certificate holder is unable or unwilling to

[1] Staff report for this meeting (external memo, p. 12 of 22), Referring to Table 26 of the DPO (page 172).
[2] OAR 345-022-0000(3)(c)
[3] Memo to Council, September 10, 2021, Agenda Item D (Information Item): Overview of the Energy Facility Siting Council's Retirement and Financial Assurance standard (Part 2) for the September 24, 2021 EFSC Meeting, from Sarah Esterson.

properly decommission the facility following permanent cessation of construction or operation of the facility."[4]

He goes further explaining that: "The lack of a clear and effective mechanism to ensure that a certificate holder maintains a bond or letter of credit until the facility has been retired could expose the State to unacceptable risk." (p. 3 of 4, same memo as above).

In the Final Order and original Site Certificate, Council chose to follow Idaho Power's suggested method/mechanism for meeting the bond requirements (see Conditions 4 and 5[5]). STOP continues to contend that this method is not protective of Oregonians; and ODOE and the Council will claim that this issue has been litigated already. However, clear from the deliberations of Council during the "exceptions hearings," Council expressed concerns as well. After the very lengthy hearing and discussions, Council decided that they would:

> "[R]etain the authority to adjust the bond or letter of credit amount up to the full amount at any time under the terms of the site certificate. Further, as directed by Council, the condition requires that the 5-year report be presented to Council and include an evaluation and recommendation, based on review of report results, by the Department and, if appropriate, a **third-party consultant**. The **condition allows the Council to consider whether or not the approach towards the financial assurance instrument remains appropriate** and would account for unforeseen shifts in the power grid or the certificate holder's financial condition."[6] [emphasis added]

The DPO does not make recommendations for change to the financial assurance conditions with the exception of updated amounts/costs necessary to restore the site. The narrative infers that the mid-line capacitor is the only substantial change and laments that the bond issue has been addressed already.

Additionally, the department emphasizes that: since "the certificate holder is a regulated utility by the Oregon Public Utility Commission and […] if necessary, the utility could recover costs from its ratepayers…"[7] This is insulting to eastern Oregon ratepayers and irresponsible from a fiduciary standpoint. There is **not a guarantee** that the OPUC would grant rate recovery. That comes later in the OPUC processes during prudency review and rate cases. To make this point, OPUC Commissioner Hardie said in LC 68[8]:

> *"Transmission must be developed with very long lead times. Because circumstances may change in the future, and new information may be presented at a later date, the ultimate development of the B2H project is not a foregone conclusion. We agree with Staff that a host of changed*

---

[4] Memo to Council, August 12, 2021, Subject Agenda Item G (Action Item), Surety Bond Template Update for the August 27, 2021 EFSC Meeting, from Christopher M. Clark, Siting Policy Analyst & Rules Coordinator. Page 1 of 4.

[5] 2024-04-16-B2H-AMD2-Draft-Proposed-Order-Combined

[6] Ibid, p. 188 of 855, including footnotes: 173 See 2020-03-13-Approved-January-Minutes and 2020-01-24-EFSC-Meeting-Recording Pt 1 of 2; at approx. 11:00 minutes. B2H EFSC Meeting Day 1 PCCO-PO-Exception Hearing Condensed 2022-08-29, pages 132 -160.

[7] B2HAPPDoc31 Final Order on ASC and Attachment 2022-09-27, Section IV.G. Also: 2024-04-16-B2H-AMD2-Draft-Proposed-Order-Combined p176, FN 174.

[8] Docket LC 68; Order 18-176, pp. 10-11.

circumstances could require Idaho Power to reevaluate its course, including but not limited to significant changes in co-participant shares and commitments, project costs, load needs, power market liquidity and depth, and capabilities and costs of alternative technologies. ***Idaho Power should be prepared for such reevaluation and to change course should such information or circumstances emerge." (emphasis added)*** **[**Commission Order 18-176 p. 10-11.]

Changing Conditions and Risk:

PacifiCorp (PAC) is the 55% partner in this project. PAC poses increasing risk due to alternative company investments and mounting liability costs from pay-outs and court settlements from wildfires.

Regardless of the EFSC orders, siting process, and conditions, the bottom line is that the developers[9] will decide in their "iterative processes"[10] what capital investments and infrastructure projects that they will choose to invest in. Let's be clear, PAC is the controlling interest here, and Council and staff should not be putting blinders on their eyes.

Within the partnership, and the "Joint Funding Agreement,"[11] there is a decision-making entity called, the "Construction Funding Committee" who will have ultimate authority in decision-making for the project. In this group the voting rights align with the % of partners' investments; hence, PAC is the majority decider at 55%. Idaho Power has had difficulties in the past with partner relations and commitments, PAC in particular has been very slow to commit to the Joint Funding Agreement.[12] It would be prudent for Council to change and update this financial assurance site condition to maintain a closer eye and view on this rapidly changing situation. (STOP's recommendations will be offered below).

Recently, PAC's 10-K filing with the Security and Exchange Commission (SEC), p. 88, states:

> "PacifiCorp's litigation risk associated with the Wildfires is inherently uncertain and the ultimate outcomes of the associated claims could materially and adversely affect PacifiCorp's financial condition and results of operations and its ability to obtain financing, to fund its operations, capital investments and settlements arising from the Wildfires, and to obtain and fund third-party liability insurance coverage."

With regards to wildfire insurance, on page 93 of the SEC filing it warns:

> "[t]he Registrants are subject to increasing risks from catastrophic wildfires and may be unable to obtain enough third-party liability insurance coverage at a reasonable cost or at all and

---

[9] Developers in this case are also the owners, investors, and partners. These terms may be used interchangeably.
[10] "Iterative processes" are common among the regulators of the investor-owned utility. For example, the OPUC and IPUCs most importantly, will review Integrated Resource Plans (IRPs) every two years; and while they do not "approve" plans, they do approve Action Items (short-term under 5-year actions). Annually, the OPUC will review Oregon's utilities' wildfire mitigation plans; and the OPUC considers these iteratively as well. **ODOE should make this financial assurance review and adjust conditions as an iterative process as well.**
[11] PAC's 2023 IRP Chapter 1, page 28, 98-99.
[12] STOP's Closing Comments LC74, 1/8/2021, pp. 7, 8-12.

> insurance coverage on existing wildfire claims could be insufficient to cover all losses, all of which could materially affect the Registrants financial results and liquidity."

Not to be understated, is the obvious fact that PAC is embroiled in serious lawsuits over their wildfire liabilities as this illustrative list demonstrates:

- "Pacific Power faces $42.5 billion in new wildfire claims, seeks more rate increases"
- "Warren Buffett's PacifiCorp faces $30 billion of new wildfire claims"
- "Verdict in Oregon wildfires case highlight risks utilities face amid climate change"
- "US government may sue PacifiCorp, a Warren Buffet utility, for nearly $1B in wildfire costs"

PAC is not alone when it comes to wildfire risks.[13] In Idaho Power's IDACORP 10-K Annual report 2023, it states: "Liability from fires could adversely impact IDACORP's and Idaho Power's business, financial condition, and results of operations, and Idaho Power's WMP [wildfire mitigation plans] and other protocols may not prevent such liability."[14]

Idaho Power's SEC report also addresses the partners' risks and how they may impose more:

> "Co-owners of Idaho Power's generation and transmission assets may have unaligned goals and positions due to the effects of legislation, regulations, capital requirements, load growth amounts, changes in our industry, or other factors, which could at times adversely impact Idaho Power's ability to construct and operate those facilities in a manner most suitable to Idaho Power." (p. 29)

It also notes that differences in co-owners' willingness or ability to continue participation or the timing of facility construction, modification, or decommissioning could lead to operational restrictions, financial impacts, and uncertainty regarding cost recovery of such assets. This highlights the complexity of joint ownership, and STOP believes that the Council has been indifferent to the fact that the applicant is not the only risk factor in play.

All Investor-owned utilities in Oregon, like PAC, are seeking very high-rate increases[15] and Idaho Power is among them as well. The Idaho PUC denied the company's full rate request increase and reduced the amount[16]; the rate increase case at the OPUC is pending until October.

In an April 19, 2024 memo IPC informed the OPUC that the energization date of the B2H had to be pushed back from summer to fall 2026. This is increasing the net present value (NPV) of the B2H compared to other portfolios making it less competitive. The Company stated:

> "Due to the increased level of uncertainty surrounding several important near-term decisions, the 2023 IRP has been prepared in a manner intended to provide the flexibility and adaptability

---

[13] Not long ago in Baker County, OR., IPC was fined over $1miilion from a resulting fire at a substation: Aug. 25, the US Dept of Justice issued "Idaho Power to Pay $1.5 million in civil Settlement for Powerline and Lime Hill Fires."
[14] IDACORP 10-K 2023 p. 24.
[15] Judicially noted.
[16] Settlement reached at IPUC on IPC rate increase proposal

necessary to inform decisions as more information becomes known before the next planning cycle."

While this may not be of interest to EFSC, it will be important in OPUC decision making in terms of rate recovery (mentioned more below) and seemingly OPUC rate recovery is being relied on as a financial assurance, per comments in meetings and in the DPO.

STOP cannot stress enough the fiduciary, legal--and moral--responsibility that the Council has when considering the bond issue within this RFA2, and into the future. STOP recommends an "iterative process," of review and updating this condition, because of the rapidly changing environment. Then, based on an external, independent consultant's review, verifying documents from financial institutions, and other applicable documentation for Council consideration, decisions would be made for adjusting and amending the Financial Assurance (aka Bond) Conditions.

In *this iteration*, Idaho Power presented an updated letter from Wells Fargo which states:

> "Based upon Idaho Power's current credit ratings, profile, and information we have as of the date hereof, and subject to acceptable pricing, terms, and requisite internal approvals, and assuming no market disruption, **Wells Fargo** confirms to you that it would be highly interested in arranging (as administrative agent under the existing credit facility or otherwise), and **believes it would be successful at arranging, a syndicated letter of credit in an amount up to $180 million** (the "LC Facility") **for a period not to exceed five years** (the tenor of the $400 million credit facility) for the purpose of ensuring Idaho Power's obligation that the site of the Boardman-to-Hemingway transmission project be restored to a useful and non-hazardous condition."[17] [emphasis added]

This letter may be an improvement from the last letter in 2018[18], during the original application for site certificate (ASC), in which they said the likelihood for credit would be for $141 million and only for up to 3 years. Now the letter reads that they *believe* they would be successful at arranging credit for $180 million for up to five years. However, five years is still not sufficient for the life of the project per the EFSC standard.

Given the risks discussed above, the short-term nature of the Wells Fargo letter, and that the OPUC is not offering financial assurance that IPC so confidently claims, STOP urges the Council to make condition changes to implement one or more of the following**: 1) insist on the letter of credit (per the rule) – not a "likelihood" letter from Wells Fargo; 2) insist on a more robust timeframe that complies with OAR 345-022-0050(2) and the Mandatory Condition OAR 345-025-0006(8), i.e.: the duration.** The ratepayers, and tax payers deserve this level of protection given the financial risks created from the

[17] RFA #2, Attachment 7-20. Decommission and Letter of Credit https://oregonenergy-my.sharepoint.com/:f:/g/personal/askenergy_odoe_state_or_us/Er1RrIKI4RpMg1Utb7siRX4BAldBJHQXYA1PUo61tVU0KQ?e=Aq9WeV navigate to Attachment 7-20 in the One Drive.

[18] Wells Fargo letter of the likelihood of credit.

wildfire litigations and the changing energy landscape (technologies and investments[19]) of the NW grid and partner investments. These are the reasons that we are recommending the following Condition.

Site Condition Recommendation 6:

1) *In lieu of a bond, a formal letter of credit must be obtained by Idaho Power by an EFSC approved financial institution(s) and approved by Council before construction begins and maintained throughout the life of the project (per Mandatory Condition). Alternatively, if the "1/16th" method of paying the bond over four-year construction period (Condition 4) is retained by EFSC because Council is authorized to vary the amounts between construction and operation,[20] STOP recommends that the full amount attained by year-four remain in place for the life of the project to ensure compliance.*
2) *OPR-RT-01 (Condition 5) d. should be changed to more frequent intervals, no more than every 2-3 years. This will assist the Council in maintaining their fiduciary responsibilities and due diligence.*
3) *Documentation of proper insurance should be included in the required report to the Council, as a bond is not the only assurance instrument available.*

The recommendations above, if adopted, would need to be edited/incorporated into the already lengthy Site Conditions 4 and/or 5.

[19] Applicable recent articles: on GETs and 3 Ways…
[20] OAR 345-025-0006(8)

Docket No. PCN 5
Exhibit PAC/201
Witness: Rick T. Link

BEFORE THE PUBLIC UTILITY COMMISSION

OF OREGON

PACIFICORP

Exhibit Accompanying Rebuttal Testimony of Rick T. Link

B2H Term Sheet Dated January 18, 2022

March 2023

Contract No. 22TX-17207

TERM SHEET

THIS TERM SHEET IS INTENDED SOLELY TO FACILITATE DISCUSSIONS AMONG IDAHO POWER COMPANY ("***IDAHO POWER***" or "***IPC***"), PACIFICORP ("***PACIFICORP***" or "***PAC***"), AND THE BONNEVILLE POWER ADMINISTRATION ("***BPA***") (EACH REFERRED TO HEREIN AS A "***PARTY***" AND COLLECTIVELY REFERRED TO HEREIN AS THE "***PARTIES***") RELATED TO THE CONSTRUCTION, OWNERSHIP, OPERATION, ASSET EXCHANGES, AND SERVICE AGREEMENTS REGARDING THE BOARDMAN TO HEMINGWAY TRANSMISSION LINE PROJECT ("***B2H PROJECT***" OR "***PROJECT***") AND OTHER TRANSMISSION FACILITIES. EXCEPT FOR SECTION 5 OF THIS TERM SHEET WHICH SHALL BE LEGALLY BINDING UPON THE PARTIES UPON THE EXECUTION AND DELIVERY OF THIS TERM SHEET BY ALL OF THE PARTIES (THE "***EFFECTIVE DATE***"), (I) THIS TERM SHEET IS NOT INTENDED TO CREATE, NOR SHALL IT BE DEEMED TO CREATE, A LEGALLY BINDING OR ENFORCEABLE AGREEMENT OR OFFER, AND (II) NO PARTY SHALL HAVE ANY LEGAL OBLIGATION WHATSOEVER PURSUANT TO THIS TERM SHEET.

1. **BPA Requirements.** The Parties acknowledge and agree that in order to negotiate the Agreements (as defined below) and before BPA can make a definitive final decision regarding whether to enter into the Agreements, BPA must (1) engage in customer and stakeholder outreach, share information about this Term Sheet during the outreach, and solicit feedback; (2) fulfill all requirements under the National Environmental Policy Act (NEPA), the National Historic Preservation Act (NHPA) and other applicable environmental laws, and (3) make a definitive decision in an Administrator's final record of decision. Nothing in this Term Sheet shall be construed as indicating that BPA has engaged in customer and stakeholder outreach; completed its NEPA and other environmental review processes or made a decision regarding how to proceed.

2. **Term.** This Term Sheet shall terminate the earlier of (a) energization of the B2H Project, or (b) execution of all agreements identified in the Term Sheet, or (c) mutual written agreement of all Parties. This Term Sheet may be extended by mutual written agreement of all Parties.

3. **Agreements.** Upon execution of this Term Sheet, the Parties intend to negotiate in good faith toward the execution of the definitive, binding agreements and amendments between or among the Parties described below consistent with the terms and conditions described below ("***Agreements***"). Each of the Parties intends to prepare and deliver to the other Parties initial drafts of the Agreements it is designated as responsible for below by no later than the date identified for each agreement. The Parties further intend, subject

to the BPA requirements in Section 1, that they will endeavor to complete negotiation of and execute the Agreements by no later than the date identified for each agreement*;* provided, however, that the effectiveness of any such Agreement may be subject to one or more conditions precedent, including state or federal regulatory approvals.

a) Asset Exchanges, Transmission Service Agreements, and Amended and Restated Existing and Future Agreements: The table below defines the transactions contingent on completion of the B2H Project including, without limitation, regulatory approval associated with IPC's acquisition of BPA's interest in the Amended and Restated Boardman to Hemingway Transmission Project Joint Permit Funding Agreement ("Joint Permitting Agreement"), asset exchanges, transmission service agreements, and amended and restated existing and future agreements. Each of the Parties will prepare an initial draft of the Agreements and Amendments below for which it is designated as the Primary Drafter, consistent with the following terms:

	Parties / Agreement / Action / Primary Drafter	***General Terms / Details***
1.	***PAC, BPA*** ***Agreement on Principles and Timelines*** ***Prepare First Draft – BPA: Quarter 2 of Calendar Year 2022*** ***Target Execution Date: Quarter 3 of Calendar Year 2022***	PAC and BPA are parties to the Amended and Restated Midpoint-Meridian Agreement, originally executed June 1, 1994 (the "Midpoint-Meridian Agreement"), which provides PAC with 340 MW of bidirectional scheduling rights over the Buckley-Summer Lake 500kV line (the "Buckley-Summer Lake Line"). In connection with the Goshen Area Asset Exchange (as referenced in Section 3(a)(7) of this table) and the B2H Midline Series Capacitor Project (as referenced in Section 3(a)(12) of this table), PAC and BPA are discussing options to allow PAC the ability to schedule 340 MW from the Buckley substation to the 500kV side of the Ponderosa Transformer Bank 500/230 kV #1 ("Ponderosa 500") and to concurrently schedule 340 MW from the Summer Lake substation to Ponderosa 500 upon energization of the B2H line and the B2H Midline Series Capacitor Project. I. Contingent upon the conditions set forth below, PAC and BPA desire for the concurrent bidirectional scheduling rights over the Buckley-Summer Lake line to be provided as firm point-to-point transmission service ("PTP service") pursuant to the terms and conditions in BPA's Tariff and rate schedules upon energization of the B2H line

		and the B2H Midline Series Capacitor Project. As of the Effective Date, the PAC and BPA understand that such PTP service remains subject to further BPA evaluation. a. BPA's offer of PTP service may include conditions if such conditions are identified during BPA's evaluation. Conditions for PTP service are at BPA's sole discretion and, if required, will be developed consistent with the principles set forth in Section 3(a)(1)(II)(b) so that flows associated with the PTP service over the Buckley-Summer Lake line do not exceed 340 MW in the north-to-south direction and concurrently does not exceed 340 MW in the south-to-north direction during all lines in service. b. As part of the PTP service evaluation, PAC and BPA will also explore options to combine an offer of PTP service with the modification to points of receipt and points of delivery in PAC's existing PTP service tables ("redirect") within the Long Term Firm Point-to-Point Service Agreement (No. 04TX-11722) between PAC and BPA, subject to BPA's Tariff and related business practices including available transfer capability ("ATC"), with a goal to optimize PAC's transmission service over the Federal transmission system to serve its central Oregon loads (*e.g.*, using a single wheel from a network point of receipt to PAC's load at Ponderosa 230 or Pilot Butte 230). BPA will apply its long-standing practice to evaluate the ATC impacts of the new PTP service against the ATC impacts of existing service, to include the bidirectional scheduling rights and redirected service. c. BPA may request additional information from PAC. PAC will make good faith efforts to provide such information within 30 days of BPA's request. d. PAC will submit applicable transmission service request(s) ("TSR") within 30 days

		of BPA's notice to PAC that such requests should be submitted. e. If BPA determines, in its sole discretion, that BPA can convert the bidirectional scheduling rights to PTP service, BPA agrees to offer PTP service pursuant to BPA's Tariff and rate schedules. i. The PTP service will be contingent upon and will not be effective before (A) the energization of the B2H line and the installation of the B2H Midline Series Capacitor Project; (B) approval by the Federal Energy Regulatory Commission ("FERC") of the proposed amendments to the Midpoint-Meridian Agreement discussed in this Section 3(a)(1), per subpart (iii below; and (C) the Goshen Area Asset Exchange set forth in Section 3(a)(7) of this table is completed and all associated agreements are in effect. ii. PAC and BPA will adhere to the applicable requirements set forth in BPA's Tariff and related business practices, including timelines for execution or amendment of a service agreement. iii. Concurrent with the execution of the PTP service agreements contemplated in this Section 3(a)(1)(I), PAC and BPA will amend Section 4(a) of the Midpoint-Meridian Agreement to remove and otherwise terminate PAC's bidirectional scheduling rights over the Buckley-Summer Lake Line. f. If BPA offers PTP service that satisfies PAC's objectives as expressed in this Term Sheet, PAC intends to accept such service subject to the condition regarding FERC approval described below. If following FERC acceptance without material conditions of the arrangements negotiated between BPA and PAC in this Section 3(a)(1)(I), PAC nonetheless fails to submit applicable TSRs or otherwise

declines to accept the PTP service or execute a PTP service agreement, then BPA will have no further obligations to provide PAC with the PTP service described in this Section 3(a)(1)(I) or the scheduling rights described in Section 3(a)(1)(II) below.

g. PAC and BPA will negotiate in good faith to complete and enter into agreements needed to complete the other conditions set forth in Sections 3(a)(2) through (14) and 3(c) of this Term Sheet, as such conditions are applicable to either Party.

h. PAC will seek FERC guidance as necessary and file the proposed amendment to the Midpoint-Meridian Agreement with FERC for acceptance. BPA will reasonably coordinate with PAC to prepare for FERC meetings and submissions. FERC's unconditioned acceptance shall be a condition to PAC's obligations as contemplated under this Term Sheet.

II. Following either (1) BPA's determination that it is unable to provide the PTP service to PAC consistent with Section 3(a)(1)(I) above, or (2) FERC's failure to accept without material conditions the arrangements negotiated between PAC and BPA under Section 3(a)(1)(I) above, BPA will, effective upon energization of the B2H line and the B2H Midline Series Capacitor Project provided that all conditions described below are met, provide PAC with bidirectional scheduling rights over the Buckley-Summer Lake line which give PAC the ability to (A) schedule 340 MW from the Buckley substation to Ponderosa 500 ("North to South schedules") and (B) concurrently schedule 340 MW from the Summer Lake substation to Ponderosa 500 ("South to North schedules") (collectively referred to as "scheduling limits"). The concurrent, bidirectional scheduling rights described in the immediately preceding sentence will be

provided pursuant to an amendment to the Midpoint-Meridian Agreement and one or more separately negotiated agreements, that will be effective upon acceptance by FERC and after all conditions set forth in this Section 3(a)(1)(II) are met and will remain in effect until BPA offers PTP service as set forth in Section 3(a)(1)(I). PAC and BPA will work in good faith to satisfy all such conditions consistent with the principles articulated in Section 3(a)(1)(II)(b) below by energization of the B2H line.

a. Transmission service to move from the Ponderosa 500 substation. The utilization of the concurrent bidirectional scheduling rights at the Ponderosa substation described in this Section 3(a)(1)(II) is limited to Ponderosa 500. PAC must reserve PTP service from BPA pursuant to BPA's Open Access Transmission Tariff ("OATT"), business practices, and rate schedules in effect at the time of such reservation to move from Ponderosa 500 to the 230 kV side of Ponderosa transformer bank #1 for delivery to PAC load in central Oregon.

b. Principles to guide satisfaction of conditions.

   i. North to South schedules, South to North schedules, and the associated directional power flows may not exceed the scheduling limits (*e.g.*, 340 MW North to South and, concurrently, 340 MW South to North, under all lines in service). A Power Transfer Distribution Factor ("PTDF") based methodology ("PTDF algorithm") and calculator will be used to determine directional power flow. The PTDF algorithm will sum positive flows in the North to South and South to North directions (*i.e.*, schedules and flows are not netted).

   ii. If, at any time, North to South schedules, South to North schedules, or the associated directional power

		flows exceed the scheduling limits, PAC shall reduce the schedules so that the schedules and directional power flows are within the scheduling limits. BPA can, at BPA's sole discretion, curtail the schedules in whole or in part to maintain the scheduling limits and to mitigate congestion, such as during outages. iii. Schedules (E-Tags) must contain a single granular source and sink. Sources and sinks (1) cannot be consolidated on a single E-Tag; and (2) must be granular enough to determine the PTDF impact. Sources and sinks that are scheduling points, hubs, or nodes are not sufficiently granular to determine the PTDF impact. iv. PAC may not schedule from sources and sinks for which the PTDF impact has not been determined. PAC will provide BPA with advance notice of sources and sinks with sufficient time for BPA to determine the PTDF impact and, if necessary, to accommodate modifications to tools, systems, and contracts. v. The terms, tools, and protocols associated with the concurrent bidirectional scheduling rights will be structured to minimize to the maximum extent possible any impacts exceeding the scheduling limits (*e.g.*, 340 MW North to South and, concurrently, 340 MW South to North, under all lines in service) that the physical flows associated with the concurrent bidirectional scheduling rights have on the Pacific Northwest AC Intertie (as such transmission facilities are defined in the various PNW AC Intertie-related agreements among PAC, BPA and the other PNW AC Intertie owners, the "NW AC Intertie") or the Federal transmission

		system, as reasonably determined by BPA. c. Conditions to Effectiveness of 3(a)(1)(II) Scheduling Rights i. PTDF calculator. BPA will develop a PTDF algorithm to calculate the directional power flow associated with each source and sink that PAC intends to schedule. PAC and BPA will coordinate to develop, at PAC's expense, a PTDF calculator that uses the PTDF algorithm and related communication equipment. ii. Agreement on operational terms. After the PTDF calculator is developed, PAC and BPA will work in good faith to develop operational terms, to include the protocols and requirements for monitoring, dispatch, curtailment, reduction of scheduling limits due to outages, and future modifications to stay current with reliability standards, automation, and technological abilities. The operational terms will remain in effect for the duration of the concurrent bidirectional scheduling rights described in this Section 3(a)(1)(II) and will be incorporated into the proposed amendments to the Midpoint-Meridian Agreement or such other agreement as mutually agreed by PAC and BPA. iii. Energization of the B2H Project, including the B2H Midline Series Capacitor Project. iv. The agreements set forth in Section 3(a)(1)(III) below are, to the extent required, accepted for filing at FERC without material conditions. v. The Goshen Area Asset Exchange set forth in Section 3(a)(7) of this table is completed and all associated agreements are in effect. III. Agreements.

		a. Agreement on Principles and Timelines. Following execution of the Term Sheet, PAC and BPA will negotiate and execute an agreement to reflect the objectives, commitments, principles, conditions, and timelines, including negotiation of applicable follow-on agreements for the PTP service described in Section 3(a)(1)(I), and the concurrent, bidirectional scheduling rights described in Section 3(a)(1)(II). With regard to the concurrent, bidirectional scheduling rights described in Section 3(a)(1)(II), the Agreement on Principles and Timelines would include the principles and conditions set forth in Section 3(a)(1)(II) above, and the timelines for development of the PTDF calculator and negotiation of operational terms and protocols. b. Follow-on Agreements. Before energization of B2H and subject to the conditions described above in this Section 3(a)(1) being met, PAC and BPA will negotiate and execute (1) the agreements and amendments referenced in Section 3(a)(1)(I) above, or (2) if BPA is not yet providing PTP service upon B2H energization consistent with Section 3(a)(1)(I) above, then an amendment to the Midpoint-Meridian Agreement to reflect the addition of the concurrent bidirectional scheduling rights, including term, scheduling and directional power flow requirements, usage of the PTDF calculator, and operational terms, all as consistent with Section 3(a)(1)(II) above. PAC and BPA understand that PAC may be required to file amendments to the Midpoint-Meridian Agreement with FERC for acceptance and that the effective date for the agreements referenced above will be upon FERC acceptance without material conditions. IV. Consistent with the "Phase II Joint Study Report (2020-2021), Boardman to

		Hemingway (B2H) and Incremental Central Oregon Load" completed on March 23, 2021, upon notice from BPA, PAC will upgrade the existing Meridian Series Capacitor on the 500 kilovolt bus or install an electrically equivalent series capacitor on the PAC section of the Dixonville-Meridian-Klamath Falls-Captain Jack lines in southern Oregon within a reasonable time after receiving the notice. PAC shall be responsible for all costs associated with the upgrade. V. PAC and BPA agree that the proposed modifications to the Midpoint-Meridian Agreement described above are limited in scope to PAC's bidirectional scheduling rights over the Buckley-Summer Lake line under Section 4 of the Midpoint-Meridian Agreement and do not include BPA's bidirectional scheduling rights over the Summer-Lake Malin line under Section 4 of the Midpoint-Meridian Agreement. PAC and BPA do not intend to modify, change, alter, or terminate BPA's bidirectional scheduling rights over the Summer Lake-Malin line set forth in Section 4 of the Midpoint-Meridian Agreement or the General Transfer Agreement between PAC and BPA, originally executed May 4, 1982, as amended.
2.	***IPC & PAC & BPA*** ***New operational agreement between IPC, PAC & BPA*** ***Prepare First Draft – BPA: Quarter 3 of Calendar Year 2022*** ***Target Execution Date: Quarter 4 of Calendar Year 2022***	IPC, PAC and BPA agree to negotiate in good faith and draft a tri-party operational agreement that will: a. Consider Midpoint-Meridian Agreement Section 5(f); and b. Define the curtailment procedures between NW AC Intertie, Western Electricity Coordinating Council (WECC) Path 14 (Idaho to Northwest), and WECC Path 75 (Hemingway – Summer Lake); and c. Identify conditions for revising the tri-party operational agreement including, but not limited to: i. Engagement with NW AC Intertie partners;

		ii. In the event the B2H Project and the B2H Midline Series Capacitor Project are not complete and energized by 2027. The Parties will make best efforts to negotiate and target execution of the tri-party operational agreement within one year of the Effective Date of this Term Sheet, with an effective date for the tri-party operational agreement a reasonable time thereafter.
3.	***PAC & BPA*** ***Termination of Existing NITSAs:*** ***PAC Trans – BPA Merchant NITSAs (SA Nos. 746, 747)*** ***Incorporate into Agreement on Principles and Timelines under 3(a)(1)***	BPA Network Integration Transmission Service Agreements ("NITSAs") (PacifiCorp Service Agreement No. 746 and No. 747): BPA and PAC agree to terminate the aforementioned NITSAs upon (1) the completion of the asset purchase and sale between IPC and PAC as detailed in Section 3(a)(5) through Section 3(a)(7) of this table – the Goshen Area Asset Exchange, and (2) the commencement of network service as described in Section 3(b)(1).
4.	***IPC & BPA & PAC*** ***New Agreement:*** ***Longhorn Substation Agreements*** ***Prepare First Draft – BPA: Quarter 2 of Calendar Year 2022*** ***Target Execution Date: Quarter 3 of Calendar Year 2022***	IPC and PAC will fund a portion of the proposed Longhorn substation near Boardman, Oregon, if B2H interconnects at Longhorn. This funding will occur as specified in one or more negotiated Longhorn Substation Agreements between the Parties that is consistent with BPA's Line and Load Interconnection Business practices and allows for recovery of the network portion of these funds through incremental transmission wheeling revenue. The agreement will: a. include provisions for IPC and PAC to pay a use of facilities charge or other charge pursuant to BPA's OATT and applicable rate schedules to transact across the Longhorn bus in the future; b. include provisions for IPC and PAC to potentially own, operate and maintain B2H equipment, which shall include: the

		B2H series capacitor at Longhorn, the B2H shunt line reactors at Longhorn, any ancillary equipment required to support those devices, such as switches, bypass breakers (series cap), and insertion breakers (shunt reactor); and c. be contingent upon BPA completing its obligations and responsibilities under NEPA, NHPA, and other requisite environmental compliance laws and making a decision regarding how to proceed (including provisions for IPC and PAC funding upfront at a prorated amount based on cost allocation of Longhorn, BPA's NEPA, NHPA, and environmental compliance costs). Non-binding cost estimates identified for the potential Longhorn aspects of the B2H Project as of the Effective Date of this Term Sheet are as follows, which all Parties acknowledge and agree are preliminary and may be modified and revised prior to and upon B2H energization: *These are estimated costs, charges to be trued up with actual costs.* a. Longhorn (base substation) network costs ~$59M. Costs subject to transmission credit. i. IPC 21% ~ $12M (BPA to cover up to $14M of IPC cost) ii. PAC 55% ~ $33M iii. BPA 24% ~ $14M (plus IPC ~ $12M, for total ~ $26M) b. B2H connection to Longhorn Network Bay~$11M. Constructed/Owned/Maintained by BPA. Develop bay 3 with (2) 500kV circuit breakers & (5) 500kV disconnects. Costs subject to transmission credits. i. IPC & PAC 100% c. Customer built (not subject to transmission credits). Including civil work with the reactor and cap costs.

5.	***IPC & PAC*** ***New Agreement:*** ***Purchase and Sale Agreement for Asset Exchange -potentially utilize the previously developed Joint Purchase and Sale Agreement*** ***Prepare First Draft – IPC: Quarter 2 of Calendar Year 2022*** ***Target Execution Date: Quarter 4 of Calendar Year 2022***	PAC and IPC would purchase and sell to each other various assets to achieve the objectives identified in Section 3(a)(6) and Section 3(a)(7) of this table. PAC and IPC will seek to first balance the purchase and sale of the transferred assets through the depreciated net book value of such assets and allocation of upgrade costs and, finally, if necessary, will be balanced between IPC and PAC through cash considerations. <u>Details related to Populus – Four Corners assets</u>: These assets will provide IPC ownership on the existing PAC transmission system from Four Corners substation in New Mexico to Populus substation in Idaho. This will include 345 kV transmission lines between the following substations and assets to create a path through each substation: Four Corners, Pinto, Huntington, Camp Williams, Mona, Terminal, 90th South, Ben Lomond and Populus. Consistent with federal processes, IPC and PAC will complete required studies to determine if recent system upgrades result in a possible increase in existing transmission capacity between Borah and Populus to facilitate IPC's incremental transfer needs associated with this exchange. If determined necessary, IPC and PAC will identify revisions to the JOOA (as defined in Section 3(a)(6) of this table), upgrades, modifications, or other options to meet each party's commercial needs between Borah and Populus. <u>Details related to Borah/Kinport to Hemingway and Midpoint to Borah/Kinport assets</u>: These assets will provide PAC ownership on the existing IPC transmission system from Borah/Kinport to Hemingway and from Midpoint 500 to Borah/Kinport. This will include 500 kV and 345 kV transmission lines between the following substations and assets to create a path through each substation: Borah, Kinport, Adelaide, Midpoint and Hemingway. Upgrades are required across the Borah West and Midpoint West paths to facilitate this portion of the

		proposed asset exchange transaction. The cost of these upgrades will be determined in the course of negotiating the proposed asset exchange transaction described in this Section 3(a)(5). Details related to Goshen Area assets: As described in more detail in Section 3(a)(7) of this table, PAC will transfer to IPC certain to-be-determined Goshen areas transmission assets that would allow IPC to provide transmission service to all BPA customers in southeast Idaho currently served by PAC. These assets are being transferred to IPC, from PAC, as part of the negotiations between PAC and BPA as described in Section 3(a)(1) of this table, with the consideration for these assets being the transmission service provided by BPA to PAC as detailed in Section 3(a)(1) of this table. IPC and PAC intend for these Goshen assets to be incorporated into the broader purchase and sale agreement described in this Section 3(a)(5) with a goal of minimizing changes to each company's transmission rate base. This goal is intended to be facilitated through the allocation of the costs associated with the Borah West and Midpoint West upgrades.
6.	***IPC & PAC*** ***Amendment to Existing Agreement:*** ***IPC – PAC Joint Ownership and Operating Agreement ("JOOA")*** ***Prepare First Draft – IPC: Quarter 2 of Calendar Year 2022*** ***Target Execution Date: Quarter 4 of Calendar Year 2022***	As part of a transaction transferring assets described in Section 3(a)(5) of this table, IPC and PAC may expand their existing Joint Ownership and Operating Agreement, as amended and restated August 22, 2019 ("JOOA"), to include the following: I. PAC owning 300 MW of west-to-east transmission assets between Midpoint 500 and Borah (transferred from IPC); and II. PAC owning an additional 600 MW of east-to-west transmission assets between Borah and Hemingway (transferred from IPC) - total increases from the current 1,090 MW to 1,690 MW; and III. IPC owning 200 MW of bi-directional transmission assets between Populus, Mona and Four Corners (transferred from PAC); and IV. Other revisions as necessary to facilitate other asset exchanges (*e.g.*, for Goshen area, as

		described in Section 3(a)(5) and Section 3(a)(7) of this table).
7.	***IPC & PAC*** ***Goshen Area Asset Exchange*** ***Part of 3(a)(5)***	As referenced in Section 3(a)(5) and Section 3(a)(6) of this table, IPC and PAC would negotiate an asset exchange to be effective no later than (i) energization of the B2H line and (ii) commencement of the NITSA between BPA and IPC, as referenced in Section 3(b)(1), that enables BPA to to serve its loads currently in PAC's East transmission system (Lower Valley Elec., Idaho Falls, Fall River Rural Elec., Lost River Electric, Salmon River Electric, Soda Springs,) ("Southeast Idaho Load Service (SILS) Customers") with one leg of firm IPC network transmission service. As referenced in Section 3(a)(6) of this table, the Goshen area asset exchange may be wrapped into the existing JOOA framework. IPC, PAC, and BPA agree to make best efforts to plan for service to Idaho Falls that requires only one leg of network transmission from the BPA transmission system, provided such best efforts among the Parties must (1) respect and retain the existing services arranged for Idaho Falls load service between BPA and Utah Associated Municipal Power Systems (UAMPS); and (2) be in line with FERC orders in similar circumstances and accepted by FERC.
8.	***IPC & BPA*** ***New Agreement:*** ***Point to Point TSA*** ***Prepare First Draft – BPA: Quarter 2 of Calendar Year 2022*** ***Target Execution Date: Quarter 3 of Calendar Year 2022***	IPC will acquire up to 500 MW of PTP transmission service from Mid-C to Longhorn subject to the terms of BPA's OATT, business practices and applicable rate schedules. The duration of the new service must be for an initial service duration of at least 5 years, and sufficient to compensate BPA for BPA's revenue requirement associated with BPA capital investments to facilitate the transmission service, with the right to rollover service in accordance with the BPA's OATT and business practices in effect at the conclusion of the initial term.

9.	***IPC & PAC***	Upon energization of the B2H Project, PAC would not renew its current 510 MW of east-to-west rights on the IPC system (which rights are found in IPC 1st Revised Service Agreement (SA) Nos. SAs 344-346 and 383-384). Consistent with and pursuant to IPC's OATT, PAC and IPC will coordinate to extend any remaining IPC SAs, enter into new SAs, or take other action as necessary to bridge any SA expiration dates until such time as the B2H project is in-service.
10.	***IPC & PAC*** ***B2H Construction Funding Agreement-related Commitments***	The B2H Construction Funding Agreement, between IPC and PAC as referenced in Section 3(d) below, and any additional agreements as the Parties determine necessary, will include terms necessary to implement the Agreement to Reimburse BPA's Removal and Replacement Related Transaction Costs, among IPC, PAC and BPA, dated March 18, 2020 (BPA Contract No. 20TX-16835). IPC, on behalf of the B2H Project, will assure that it coordinates construction of the B2H Project with BPA in a manner consistent with the terms of BPA's Use Agreement, as amended by Amendment Two (2) to NF(R)-9617, including Exhibits A, B and C, between the United States of America, Dept. of the Navy and the United States of America, Bonneville Power Administration Ptn Secs 13, 23 and 24-T2N-R25E, W.M. IPC and PAC acknowledge that the Removal and Replacement Related Transactions described in Contract No. 20TX-16835 are contingent upon (1) BPA obtaining acceptable service from Umatilla Electric so that BPA may continue to serve Columbia Basin Electric's load; (2) BPA completing its obligations and responsibilities under NEPA, NHPA, or other requisite environmental compliance laws and making a decision regarding how to proceed; and (3) IPC and PAC moving forward with construction of the B2H Project.
11.	***IPC & PAC & BPA***	In conjunction with the termination of the NITSAs identified in Section 3(a)(3) of this table (*i.e.*, PAC

	BPA Redirect and Assignment of existing PTP transmission service ***Incorporate into Agreement on Principles and Timelines under 3(a)(1)***	SAs 746 & 747), following the energization of B2H, BPA will redirect its two 100 MW PTP transmission service agreements (91629850 and 91629500, or any applicable AREFs that supersede or replace them) that it takes from IPC (*i.e.*, IPC 1st Revised SAs 324 & 342) such that the new POR of each SA will be Walla Walla and the new POD for each SA will be Borah. Consistent with and pursuant to IPC OATT, following approval of such redirects by IPC as described above, BPA will assign those redirected reservations to PAC. This redirect and assignment will be delayed by BPA if B2H energization is delayed past 07/01/2026. PAC shall be responsible to pay for all costs associated with 91629850 and 91629500, or any applicable AREFs that supersede or replace them, upon approval of such redirect by IPC and assignment by BPA.
12.	***IPC & PAC & BPA, with respect to B2H Plus Facilities Expectations*** ***IPC & PAC, with respect to B2H Construction Funding Agreement***	The B2H Project will include the installation of the B2H Midline Series Capacitor Project and development of a remedial action scheme ("RAS"). When considering BPA's study methodology, the B2H midline series capacitor reduces simultaneous interactions between the NW AC Intertie, central and southern Oregon load service, and WECC Path 14 (Idaho to Northwest). The Parties agree to funding of the B2H Midline Series Capacitor Project as follows: a. IPC: funding 45% of the cost. b. PAC: funding 55% of the cost c. BPA: funding 0% of the cost The Parties will work in good faith to have the B2H Midline Series Capacitor Project in-service when the B2H Project is energized and to document expectations of operation, maintenance, and future reinforcements and upgrades.
13.	***IPC & PAC*** ***B2H Grant or Additional Funding***	Under IPC and PAC's existing OATT rate procedures, IPC and PAC will include any United States Department of Energy ("DOE") grant or additional funding received for the B2H project in the appropriate FERC account provided such account is allocated 100% to Transmission. Nothing in this Term Sheet limits or waives any party's right to participate, review, comment, or challenge the other

		party's rate case or formula rate inputs through their respective update processes.
14.	***IPC & PAC & BPA*** ***Permit Funding Agreement Amendment***	Upon transfer of BPA's Permitting Interest to IPC identified in 3(b)(3) below, the Permit Funding Agreement will be amended to recognize the re-allocation of the Parties' Permiting Interests and related funding obligations.

b) NITSA Terms and Conditions, NITSA Security Agreement, NITSA Backstop

1.	***IPC & BPA*** ***New Agreements:*** ***Network Integration Transmission Service Agreement to serve BPA customers at Goshen*** ***Network Integration Transmission Service Agreement to service BPA's customer at Burley*** ***Amendment to currently effective Network Integration Transmission Service Agreements*** ***Prepare First Draft – IPC: Quarter 2 of Calendar Year 2022***	IPC and BPA will enter into two NITSAs for IPC to provide firm network transmission service to BPA. One NITSA will serve BPA customers at Goshen (replacing what is, as of the Effective Date of this Term Sheet, provided under PAC Service Agreement 746) and one NITSA will serve Idaho Falls (replacing what is, as of the Effective Date of this Term Sheet, provided under PAC Service Agreement 747) ("New NITSAs"). The New NITSAs will be in addition to the existing NITSAs BPA currently holds with IPC for service to BPA's customers located on IPC's system ("Existing NITSAs"). The term of BPA's New NITSAs will be 20-years from energization of the B2H Project, with a renewal or rollover option at BPA's discretion as required and permitted by FERC a. The NITSA Security Agreement (as referenced in Section 3(b)(2) of this table), and any related other agreements necessary, between BPA and IPC will be updated once the energization of B2H has occurred to document the term and the repayment periods with the actual energization date. b. The New NITSAs, NITSA Security Agreement, and any related other agreements necessary, are conditioned on the Goshen Area Asset Exchange set forth in Section 3(a)(7) being completed and all associated agreements being in effect by the energization of the B2H line.

	Target Execution Date: Quarter 3 of Calendar Year 2022	The New NITSAs and the Existing NITSAs will be updated to include three Points of Receipt (PORs) over which BPA can deliver energy to its customers located on IPC's system. The three PORs are as follows: AMPS POR, LaGrande POR, and Longhorn POR. The New NITSAs shall reflect the following provisions: a. Under the New NITSAs, IPC will plan for and reserve transmission capacity for the continued network service to BPA's SILS Customers' loads and ensure that it can reliably serve the load for the term of the contract prior to BPA assigning the PTP service agreements to PAC pursuant to Section 3(a)(11) above. b. The New NITSAs between BPA and IPC will permit BPA to assign service to specific Points of Delivery (PODs) to BPA's wholesale customers who take service at those PODs. Such assigned PODs will be served by a separate NITSA agreement between BPA's wholesale customer and IPC. The New NITSA between BPA and IPC will state that the customer requesting a separate NITSA for its POD must meet credit rating standards consistent with IPC's OATT. Notwithstanding assignment of the NITS service, BPA would remain entitled to all outstanding credits associated with the Funded Amounts (as defined in Section 3(b)(2) below) as long as BPA continues to be a NITS customer. c. IPC will maintain the current practice of letting BPA choose through the annual delivery allocation process the PODs where BPA will deliver power to serve its loads. The current PODs include LaGrande and AMPS. Once B2H is in service, the PODs will include LaGrande, Longhorn, and AMPS. d. BPA would pay the NT rate as established by IPC's OATT transmission formula rate. There shall be no adders or segmentation

		like actions which result in a rate above the NT rate and the amount BPA pays to IPC under the NT service agreement will be reduced as discussed in the NITSA Security Agreement. e. IPC will not charge BPA IPC's system losses for energy from BPA's Palisades resource used to serve load behind Goshen.
2.	***IPC & BPA*** ***New Agreement:*** ***NITSA Security and Risk Backstop Agreement*** ***Prepare First Draft – IPC: Quarter 2 of Calendar Year 2022*** ***Target Execution Date: Quarter 3 of Calendar Year 2022***	IPC and BPA will enter into an NITSA security and risk backstop agreement ("NITSA Security Agreement"), concurrently with the New NITSA and the purchase and sale agreement referenced in Section 3(b)(3) of this table. <u>Reimbursement If IPC Receives all Permits and Certificates of Public Convenience and Necessity (CPCN) for Construction of B2H</u> IPC will reimburse BPA for the transfer of BPA's Permitting Interest under the Joint Permitting Agreement in an amount consisting of BPA's investment in B2H prior to the transfer date (~$25m). BPA will also pay to IPC an additional $10 million upon execution of the New NITSAs and the NITSA Security Agreement with the intent of offsetting overall B2H project costs in IPC's rate base. The additional $10 million plus BPA's investment in B2H will be collectively referred to as the "Funded Amount." IPC will retain the Funded Amount as follows: If and when IPC obtains all necessary CPCNs and permits for the B2H Project (and all appeals, if any, have been resolved), IPC shall have until January 1, 2026 ("Commencement Date") to commence construction of B2H or to inform BPA of its intent to not pursue construction of B2H. (1) If IPC commences construction of B2H by or before the Commencement Date, then: a. Interest on the Funded Amount (~$35m) payable by IPC to BPA will accrue from the date of energization of B2H at the rate

		established in the applicable IPC tariff for customer funded projects; b. The Funded Amount and all accrued interest will be repaid to BPA starting year 11 following the energization date (the "Refund Commencement Date"), with repayment amortized over the remaining 10 years of the New NITSAs. i. IPC and BPA will incorporate the interest schedule and payment amortization as an exhibit to the NITSA Security Agreement; ii. If during the term of the New NITSAs BPA defaults on its payment obligations under the New NITSAs, IPC will be entitled to retain for its own account an amount equal to the defaulted payment obligation not to exceed the amount not reimbursed to BPA as of the default date; iii. BPA will not be considered in default for any amount not paid subject to a billing dispute; and iv. IPC may prepay the Funded Amount and interest thereon at any time without penalty. (2) If IPC does not commence construction of B2H by or before the Commencement Date or if IPC informs BPA before the Commencement Date of its intent to not proceed with B2H, then: a. IPC shall have 180 days from the Commencement Date (or notice to BPA of its intent to not proceed, whichever is earlier) to sell its Permitting Interests in the B2H Project; b. No later than the close of the above mentioned 180 days, IPC shall i. pay to BPA BPA's proportional share of any proceeds received from the sale of its Permitting Interest in the B2H Project (if any), and

		ii. Pay to BPA the $10 million BPA provided to IPC upon execution of the New NITSAs. <u>Risk Backstop if IPC does not Receive all Permits or CPCNs Necessary for constructing B2H.</u> If IPC does not obtain all necessary CPCNs and permits for the B2H Project, or any such CPCNs or permits are overturned on appeal, then (a) IPC will return to BPA the $10 million BPA provided to IPC upon execution of the New NITSAs; and (b) BPA will reimburse IPC for funding the additional 24.24% share of all B2H Permitting and Preconstruction Costs incurred after BPA transfers its 24.24% Permitting Interest to IPC. The reimbursement obligation will not include any costs related to Right of Way option acquisition or exercising Right of Way Options. The risk backstop commitment will remain in place until IPC obtains all necessary CPCNs and permits for the Project (and all appeals, if any, have been resolved). The intent of the backstop is only to assist IPC in mitigating the risk associated with receiving the approvals for the B2H Project; not to assist in mitigating business risk. The risk backstop commitment will be as follows: a. IPC will not compensate or reimburse BPA for costs expended by BPA on B2H prior to the transfer of the Permitting Interest to IPC (*i.e.*, ~$25m BPA has expended to date); b. BPA will reimburse 24.24% of actual B2H Project Permitting Costs incurred after IPC takes over funding 45% of the project. (Current estimates for 2021-2024 – Total B2H Project estimated at $9,125,466 with 24.24% of these costs estimated at $2,212,234); and c. BPA will reimburse 24.24% of actual B2H Project Pre-Construction Costs incurred after IPC assumes funding 45% of the project. (Current estimates for

		2021-2024 – Total B2H Project estimated at $9,403,564 with 24.24% of these costs estimated at $2,279,652). Collectively, these amounts set forth in a. through c. above will be the "Risk Backstop Amount." The Risk Backstop Amount will be adjusted, as necessary, to the extent that IPC receives grants or forms of other financial assistance from sources other than BPA or PAC. For example, if IPC received a government grant that defrayed the pre-construction costs of B2H, BPA's 24.24 % share of the pre-construction costs would be reduced accordingly.
3.	***Transfer of Interest in Joint Permitting Agreement:*** ***Prepare First Draft – IPC: Quarter 2 of Calendar Year 2022*** ***Target Execution Date: Quarter 3 of Calendar Year 2022***	IPC and BPA will execute a purchase and sale agreement, assignment, and other applicable transfer documents, concurrently with the New NITSAs, NITSA Security Agreement, and any related other agreements necessary, to transfer all of BPA's Permitting Interest under the Joint Permitting Agreement (and all of BPA's interest in the assets associated therewith) to IPC in exchange for IPC's agreement for repayment to BPA of BPA's investment in B2H through the Joint Permitting Agreement through the effective date of the definitive purchase and sale agreement contemplated in this Section 3(b) (or other date specified therein). The proposed purchase and sale agreement contemplated in this Section 3(b)(3) will contain representations, warranties, and covenants typical of a transaction of the nature contemplated by these proposed terms. The definitive agreements transferring BPA's Permitting Interest under the Joint Permitting Agreement and related assets will be executed prior to any activities BPA has indicated could impact federal environmental regulatory requirements under NEPA, so as to prevent additional delay in the development of B2H. Following the transfer of BPA's Permitting Interest (and associated assets) under the Joint Permitting Agreement to IPC, IPC will be solely responsible for funding an additional 24.24% share of all B2H Project Costs thereafter under Joint Permitting Agreement

		(which includes permitting and preconstruction costs), and IPC will be entitled to all rights, title, and interests and assets that BPA would otherwise obtain under the Joint Permitting Agreement if it were a remaining funding party thereto.

c) Ownership, Operation, and Maintenance Agreement: Defines IPC's and PAC's capacity and property ownership, and their roles and responsibilities for operating and maintaining the B2H Project ("***Ownership and Operation Agreement***"). IPC will prepare an initial draft of the Ownership and Operation Agreement based on the ownership interests below and otherwise consistent with the terms of the JOOA between IPC and PAC. Alternatively, in lieu of a new agreement, IPC and PAC may decide to amend the existing JOOA to cover the B2H Project assets.

Idaho Power	**PacifiCorp**	**BPA**
Project ownership: 45.45%	Project ownership: 54.55%	Project ownership: 0%

d) Construction Funding Agreement: Defines IPC's and PAC's roles and responsibilities in construction of the B2H Project ("***Construction Funding Agreement***"). IPC will prepare an initial draft of the Construction Funding Agreement consistent with the following terms:

1. Project In-Service Date	June 1, 2026
2. Scope	The Construction Funding Agreement covers all work necessary to construct the B2H Project by the Project In-Service Date, including any associated residual work after the Project In-Service Date, but excluding any work already covered by the Joint Permitting Agreement.
3. Project Delivery System	A competitive process is being completed to hire a Construction Manager / Constructability Consultant ("CM") for the B2H Project in 2022 to: (1) provide constructability feedback to the design engineer; and (2) collaborate with PAC and IPC to complete the BLM Construction Plan of Development and the Oregon Energy Facility Siting Council's Site Certificate amendments. The hiring process of the CM will be structured such that the CM may be retained to construct the B2H Project.

	IPC and PAC may mutually agree to modify the CM's role through the Construction Funding Committee (as defined in Section 10 below -***Project Funding and Committee***) without amending the Construction Funding Agreement.
4. Project Manager	IPC is the overall Project Manager for all B2H Project permitting, design, procurement, construction, except that BPA will be responsible for designing, procuring, and constructing the Longhorn substation as described in Section 3(a)(4) and relocating and replacing the BPA 69 kV line off Navy property as described in Section 3(a)(10). Although IPC is the Project Manager, PAC is not precluded from taking project management responsibilities for all or selected tasks associated with the B2H Project; provided that these delegations must be made by the Construction Funding Committee.
5. Construction Project Manager	IPC's role as Construction Project Manager will be generally consistent with the roles and responsibilities of the Permitting Project Manager set forth in Article IV of the Joint Permitting Agreement, provided that the permitting responsibilities not relevant to construction will be removed. IPC, as the Construction Project Manager, will provide monthly project updates, including updates on project activities, financials, forecasts, and invoices detailing costs incurred with breakdowns demonstrating all Parties' cost responsibilities based on their percentage shares. To provide the necessary flexibility to avoid delay/additional costs, the Construction Project Manager will administer and oversee all work necessary to construct the B2H Project within the approved budget, schedule and scope, and also have authority to approve any non-material changes to the B2H Project resulting in a price difference of less than $500k, so long as the overall B2H Project costs remain within the approved budget with the price change. All changes to the B2H Project resulting in a change in the approved budget, will require approval of the Construction Funding Committee.

6. Component Specifications	All B2H Project construction specifications shall meet or exceed all applicable state and federal design requirements and standards; provided that, such specifications may be modified by the Construction Funding Committee so long as the project complies with all applicable state and federal design requirements and standards.
7. Real Property Ownership	B2H real property, except Longhorn substation: IPC will acquire rights of way, grants, easements, or other interests in real property necessary to construct, operate and maintain the B2H transmission line and grant to PAC perpetual and sufficient rights of access, to be set forth in the Ownership and Operation Agreement. Longhorn Substation: Upon completion of BPA's obligations and responsibilities under NEPA, NHPA, and other requisite environmental compliance laws and if BPA decides to proceed with construction of Longhorn substation, BPA will continue to own all real property associated with the Longhorn substation, and in relation to the B2H Project equipment BPA shall grant to IPC and PAC perpetual and sufficient rights of access, to be set forth in one or more Longhorn Substation Agreements as described in Section 3(a)(4).
8. Equipment and Facilities Ownership	Equipment and facilities ownership will be consistent with the Ownership and Operation Agreement. B2H equipment/facilities, except Longhorn substation: IPC and PAC will jointly own as tenants in common the transmission line and all associated facilities and equipment, including all associated facilities located in Hemingway Substation as well as supporting communication facilities and B2H Project substation equipment. Longhorn Substation: Upon completion of BPA's obligations and responsibilities under NEPA, NHPA, and other requisite environmental compliance laws and if BPA decides to proceed with construction of Longhorn substation, BPA will own all equipment and facilities in the Longhorn substation, except the B2H specific equipment and facilities which will be jointly owned by IPC and PAC as tenants in common. BPA will grant IPC and PAC access rights to the equipment

	and facilities in Longhorn substation that are constructed as part of and necessary to the operation of the B2H transmission line facilities, to be set forth in one or more Longhorn Substation Agreements as described in Section 3(a)(4).
9. Material Procurement	All material specifications shall be in accordance with IPC's procurement policies and standards, unless otherwise agreed by the Construction Funding Committee to exceed the same.
10. Project Funding and Committee	Funding: IPC and PAC will fund the B2H Project consistent with their respective ownership shares. Construction Funding Committee: The Construction Funding Agreement shall create a Construction Funding Committee consistent with IPC and PAC's ownership interests in the B2H Project, and generally consistent with the Permit Funding Committee created by the Joint Permitting Agreement (Article III). The Project Manager's reporting requirements set forth in the above Section 5 (***Construction Project Manager)*** will be delivered to all members of the Construction Funding Committee prior to, and discussed during, each of the Committee's regularly-scheduled monthly meetings. Obligations, disputed amounts, and audit rights will be generally consistent with Article III of the Joint Permitting Agreement. The Project Manager will have flexibility to make day-to-day decisions associated with construction of the Project but will be required to seek resolution/approval from the Construction Funding Committee on larger dollar/impact decisions, consistent with that set forth in the above Section 5 (***Construction Project Manager***). BPA will be responsible for designing, procuring, and constructing the Longhorn substation as described in Section 3(a)(4) and relocating and replacing the BPA 69 kV line off Navy property, as described in Section 3(a)(10).
11. Payment Schedule	Costs Accrued Prior to Agreement Execution: Prior to executing the Construction Funding Agreement, IPC

	and PAC will have the opportunity to audit all accrued construction-related expenses included therein that have not otherwise been funded under the Joint Permitting Agreement. IPC and PAC will align on ownership shares prior to execution of the Construction Funding Agreement and pay their respective portions of accrued expenses within 30 days of the effective date of the Construction Funding Agreement. Until which time BPA fully divests its ownership interest in the B2H Project, the Parties acknowledge that the B2H Project is bound to compliance with NEPA, NHPA, and other environmental laws associated with federal agency action. Costs Incurred After Execution: Following execution of the Construction Funding Agreement, the Project Manager will invoice the Construction Funding Agreement participants monthly, requiring payment within 30 days of the invoice date.
12. Transfer/Assignment of Rights/Interests *(Some or all of these terms may be instead placed in the Ownership Agreement)*	IPC and PAC may sell some or all of their respective ownership interests in the B2H Project, together with associated capacity, subject to the Construction Funding Committee's agreement and approval of the terms of any such transaction; provided that, such approval will not be unreasonably withheld. IPC will not transfer or assign rights or interests in the B2H Project that would materially impact the BPA load service commitments set forth in Section 3(b) of this Term Sheet.
13. Term ***Early Termination*** ***Withdrawal***	Term: The term of the Construction Funding Agreement will extend through completion of B2H Project construction, as well as final billing and any reconciliation or mitigation associated with the final expenses, unless otherwise agreed by the Construction Funding Committee. Early Termination/Withdrawal: Absent approval of the Construction Funding Committee, no Party shall have a right to withdraw from the Construction Funding Agreement following the earlier of (1) awarding the B2H Project construction contract, or (2) commencing procurement of long-lead items and equipment.

	Assignments of IPC's or PAC's rights and obligations under the Construction Funding Agreement shall be managed pursuant to the above Section 12 (***Transfer/Assignment of Rights/Interests***).
14. Event of Default	Generally consistent with Article VIII of the Joint Permitting Agreement.
15. Force Majeure	Generally consistent with Article IX of the Joint Permitting Agreement.
16. Reps and Warranties	Generally consistent with Article X of the Joint Permitting Agreement.
17. Common Defense & Limitation of Liability	Generally consistent with Article XI of the Joint Permitting Agreement, except that the Article will be expanded to address construction claims.
18. Proprietary Information/Confidentiality	Generally consistent with Article XII of the Joint Permitting Agreement, except that the Article will provide IPC the ability to share information as necessary to work with potential and selected engineers and contractors.
19. Dispute Resolution	Generally consistent with Article XIII of the Joint Permitting Agreement.
20. Miscellaneous	Generally consistent with Article XIV of the Joint Permitting Agreement and including any standard terms that are necessary for PAC agreements (e.g. assignment and jury trial waiver provisions).

4. Additional Agreements. The Parties agree that they may consolidate any or all of the above-described Agreements and are not precluded from pursuing additional agreements, or amending existing agreements as needed, related to the B2H Project besides those discussed herein.

5. Expenses. Each Party will bear its own expenses (including attorneys' fees) incurred in connection with preparation, negotiation, and execution of this Term Sheet, including preparation, negotiation and execution of the Agreements described herein.

ACKNOWLEDGED AND AGREED TO BY THE PARTIES:

IDAHO POWER COMPANY

Signature: _____

Printed Name: Ryan N Adelman

Title: VP, Power Supply

Date: 1/18/22

PACIFICORP

Signature: Rick Link Digitally signed by Rick Link Date: 2022.01.18 11:11:21 -08'00'

Printed Name: Rick Link

Title: Senior Vice President, Resource Planning, Procurement and Optimization

Date: 01/18/2022

Signature: Rick Vail Digitally signed by Rick Vail Date: 2022.01.18 11:59:50 -08'00'

Printed Name: Rick Vail

Title: Vice President, Transmission

Date: 01/18/2022

BONNEVILLE POWER ADMINISTRATION

Signature: TINA KO Digitally signed by TINA KO Date: 2022.01.18 04:25:04 -08'00'

Printed Name: Tina Ko

Title: Vice President, Transmission Marketing a

Date: 1/18/2022

Signature: Digitally signed by KIM THOMPSON Date: 2022.01.18 07:32:28 -08'00'

Printed Name: Kim Thompson

Title: Vice President, Requirements Mark

Date: 1/18/2022

NEWS RELEASES

Greg Larkin/1112
Greg Larkin/1

FERC Orders PacifiCorp to Respond to Allegations of Reliability Violations

April 15, 2021
Docket No. IN21-6-000
Item E-10

The Federal Energy Regulatory Commission (FERC) today ordered PacifiCorp to explain why the company should not be assessed a proposed civil penalty of $42 million for violating FERC reliability standards on its bulk electric system.

In the Staff Report attached to today's order, FERC Office of Enforcement (OE) staff allege that PacifiCorp violated the Federal Power Act and regulations by failing to comply with a Commission-approved reliability standard developed by the North American Electric Reliability Corporation (NERC), the Commission-certified Electric Reliability Organization, involving transmission line facility ratings methodology.

Specifically, PacifiCorp adopted a facility ratings methodology that required the consideration of clearance measurements consistent with the National Electric Safety Code (NESC). FERC Enforcement Staff found that clearance measurements on a majority of PacifiCorp's bulk electric system transmission lines were incorrect under the NESC. As these clearance measurements were used to calculate PacifiCorp's facility ratings, PacifiCorp's facility ratings were thus inconsistent with its facility ratings methodology.

Moreover, Enforcement staff alleges that PacifiCorp was generally aware of incorrect clearances on its bulk electric system since at least 2007, when FERC's reliability standards became mandatory, but failed to specifically identify all of the clearance problems and remedy them in a timely manner.

Enforcement Staff alleges that PacifiCorp's violations began on August 31, 2009, when the company implemented its facility ratings methodology policy, and that at least some of the violations continued until August 2017, when PacifiCorp completed remediation of all of its incorrect clearances to make them consistent with its facility ratings methodology.

Enforcement Staff's investigation into PacifiCorp's incorrect clearances began in 2012 after learning of the Wood Hollow wildfire that lasted from June 23 to July 1, 2012 in Sanpete County, Utah. Enforcement Staff alleges that the inadequate clearance involved in the fire was just one example of clearance violations prevalent on PacifiCorp's bulk electric system.

Today's order makes clear that issuance of the order does not indicate Commission adoption or endorsement of the Staff Report. PacifiCorp has 30 days to respond to the Commission's order.

R21-32

(30)

Contact Information

Benjamin Williams

Acting Director, Office of External Affairs

Email: benjamin.williams@ferc.gov

This page was last updated on April 15, 2021

Located in Oregon, USA

Greg Larkin/1111
Greg Larkin/1

Feds Blame PacifiCorp for Oregon Wildfire

KARINA BROWN / July 22, 2015

EUGENE, Ore. (CN) - PacifiCorp should pay for a wildfire caused by its power lines from a hydroelectric dam, the federal government claims in court.

The United States sued PacifiCorp and Mountain Power Construction Company in Federal Court on Tuesday, accusing the companies of breach of contract, strict liability and trespass by fire and demanding reimbursement for fire damage done by the 2009 Williams Creek Fire in the Umpqua National Forest.

Federal agencies granted a 35-year license to operate the North Umpqua Hydroelectric Project and its transmission lines in 2003 - on the condition that PacifiCorp and Mountain Power implement a fire suppression and vegetation management plan, according to the complaint.

The companies were supposed to clear brush and trees away from the Dixonville-to-Soda Spring power lines moving hydroelectric power to the grid and check the area annually for fire hazards, the government says.

But six years later, the Williams Creek Fire ignited in that very spot, the government claims. A fire investigation allegedly concluded that the fire was caused by the power lines.

The government says it paid a pretty penny to squelch the fire, which burned more than 8,000 acres of the Umpqua National Forest over 19 days. The fire destroyed wildlife habitat, trees that protected the watersheds and prevented erosion, areas valuable for scenic and environmental reasons and assorted structures, the lawsuit states.

PacifiCorp and Mountain Power must cover the cost of damages from the fire, which the government says will be determined at trial.

Acting U.S. Attorney for the District of Oregon Billy J. Williams filed the suit on behalf of the government.

Follow @karinapdx

Read the Top 8

Sign up for the Top 8, a roundup of the day's top stories delivered directly to your inbox Monday through Friday.

enter your e-mail address Submit

Additional Reads

Greg Larkin/1111
Greg Larkin/2



Low Lake Mead water level tough on small town

March 17, 2023



Utilities blame weather, high demand for gas price spikes; California wants feds to investigate

February 7, 2023



Tribe, salmon win in fight over Upper Klamath Lake water

February 6, 2023



Colorado bill to fund AI-equipped cameras to detect and fight wildfires advances

January 26, 2023

© 2023, Courthouse News Service

To: Energy Facility Siting Counsel Members Friday, July 21, 2023

From: Irene Gilbert, as an Individual citizen

Subject: Council Process Concerns. These issues are being presented by me as an individual and have not been approved by any groups which I am affiliated with.

I am requesting that the Energy Facility Siting Counsel make the following requests of the Oregon Department of Energy

1. That scheduling provides adequate time for counsel members to receive, read, and research public comments they receive.
2. That the Oregon Department of Energy provide statements in public notices that communicate that changes to existing site certificate conditions will be reviewed in regards to their impacts on the entire development.
3. That notice include a description of Amendments that communicates that the changes are significant when they are.
4. Rather than Counsel making comments that are based upon assumptions regarding a commenter or their comment which may impact counsel decisions, I am requesting that they be posed as a question to the individual.

NARRATIVE REGARDING THE ABOVE REQUESTS

TIMELINES FOR COUNCIL REVIEW OF PUBLIC COMMENTS

As frustrating as it is, I continue to bring issues before the Council in the hopes that at some point Counsel will give weight to the public comments rather than relying upon interpretations and recommendations of the Oregon Department of Energy and the developer. Counsel members should at least give the public the courtesy of reading their comments and require scheduling that allows them to read the objections and compare them with the rules and statutes that the counsel is to apply. When public comment hearings are held the day prior to the Counsel being presented with the Oregon Department of Energy Recommendations, the potential that public comments will be given due consideration is slim at best. I applaud Counselor Devlin and Counselor Beier for stating the obvious fact that they would not have enough time to read and consider the written comments submitted by the public regarding Amendment 1 of the B2H Site Certificate prior to the counsel meeting the following day which started at 8:30 a. m. The counsel has the authority to require that ODOE schedule

meetings to review Draft Site Certificates and public comments in a timeframe that allows members to make up their own minds as to their legitimacy.

A process where council members must rely upon the Oregon Department of Energy staff to interpret, restate and recommend that public comments should not be adopted is both discouraging and disrespectful to members of the public who often struggle for many hours in an effort to communicate to counsel areas where a draft site certificate fails to comply with Counsel rules. Many of these citizens are not familiar with the EFSC contested case process, may or may not have had any experience with government bureaucracy and often are stressed and frightened by the impacts that the proposed development will have on them and things they value. Some appear trying to protect resources that families have spent generations protecting that will be damaged or destroyed. The majority of the parties simply want developers to compensate citizens and the public at large for the damages to such things as wildlife, historic properties, protected areas, local economies, or because they are being placed at risk of wildfire, noxious weed infestations, noise exceedances, etc. Citizens and local agencies will bear the burden for the impacts of energy developments. That burden should not be increased because the developer is allowed to avoid providing compensation or resources to compensate for damages.

I understand why developers want site certificates that require minimal mitigation for impacts to private property owners, ratepayers and public institutions. They typically work for their stockholders or large multinational companies and must make money to satisfy them.

I understand ODOE's motivation for supporting the developers as they did by making recommendations that counsel deny every contested case on the Original Site Certificate for one recent decision. ORS 469.421 requires the Oregon Department of Energy Siting Division to charge developers and facility owners the entire cost of their budget. They are reliant on the developers of Site Certificates they approve to pay their salaries and maintain the Siting Division. If they were not approving site certificates and having energy developments built, they would lose their jobs.

What I do not understand is why the Council members would accept the recommendations and restatement of arguments provided by ODOE and the developers without actually doing their own evaluation of public comments and

references provided or providing opportunity for the public to correct errors, misstatements of issues or when the department fails to present arguments made by the public. I encourage you to have a discussion regarding above request Number 1.

PROCEDURAL QUESTION AND RECOMMENDATION REGARDING WHETHER THE PUBLIC NOTICES ACCURATELY DESCRIBES THE ISSUES AND PROCESSES THAT WILL OCCUR

I submit the following:

On Page 1 the notice states reviewed at the July 18, 2023 counsel meeting states that the amendment includes re-location of transmission line route segments, changes in some new and substantially modified roads and "amendments of site certificate language to support implementation and interpretation".

I question that a statement such as this communicates to the public the fact that changes in site certificate conditions include changing the requirements or allows exceptions to previously approved requirements.

On page 2, description of amendment request it says that the request adds area to move facility components and "also seeks approval to modify condition language for several conditions (See RFA1 Attachment 6-1) I question that a statement such as this communicates that there are site certificate changes that are entirely different as a result of the modification of the language.

On page 4 of the Public Notice the first paragraph states, **"Review for RFA1, Council must determine whether the preponderance of evidence on the record supports that the PORTIONS OF THE FACILITY WITHIN THE AREA ADDED TO THE SITE BOUNDARY BY THE AMENDMENT COMPLIES WITH ALL LAWS AND COUNCIL STANDARDS APPLICABLE TO AN ORIGINAL SITE CERTIFICATE application, and the amount of the bond or letter of credit required under OAR 345-022-0050 is adequate.**"

The Oregon Department of Energy told the council that their rules do not require specificity in their notices and that their public notice does not state that the public cannot respond to anything they like. When a notice states that what the counsel will be evaluating is whether the portions of the facility added to the site boundary comply with counsel rules, it is reasonable to believe that based upon

the decision process for allowing a contested case this is the only area where any changes could form the basis of a contested case. Commenting on other impacts would be a waste of time.
To Address this issue, please discuss and consider implementing recommendations 2 and 3 above.

REGARDING A COMMENT REGARDING WHETHER OR NOT I WAS AWARE OF A COUNCIL RULE WHICH OCCURRED AT THE JULY 18, 2023 PUBLIC HEARING

At that meeting a Counselor stated that she did not believe me when I stated the reason for requesting time to submit written comment on a topic in writing was because I was unaware of the opportunity to comment regarding impacts to the entire site when previously approved site certificate conditions were changed during an amendment. When counsel makes assumptions absent documentation that are likely to impact the results of a decision and an individual is present, I recommend that Counsel provide opportunity for the individual to respond. My father is responsible for my ethics and honesty is a core value I have. I do not knowingly lie. If I misstate it is because I lack understanding or knowledge. When I said that I was unaware until 2 days prior to the council meeting that comments regarding changes in previously approved site certificate conditions allowed comment on how that change impacts the entire development, that was exactly what I meant. I do not recall having an Amendment request that included both the addition of area as well as substantial changes in previous site certificate conditions. Typically they address increased area, new processes, changes in ownership, dividing the site into two or more developments, or changes to timeframes as the only issue.

In spite of following counsel for a dozen years, my experience with contested cases regarding amended site certificates is very limited. ODOE has a long history of denying contested cases on Amendment Requests and I would be surprised if they have allowed more than a half a dozen such requests in the past dozen years. I encourage council to request from ODOE a list of any Site Certificate Amendments where I was allowed to comment or understood that I have a right to comment to support a future contested case request based upon changes to previously approved site certificate conditions that would impact the entire site.

The reason I went back to the actual language of the rule 2 days prior to the public hearings was because of the significance of the changes in previous Site Certificate Conditions. Upon reading the rule, I realized that the changed site certificate conditions should be evaluated based upon impacts to the entire facility in spite of the statement to the contrary in the Public Notice.

The notice failed to communicate either the significance of the changed site certificate conditions or the fact that the council is required to evaluate the changed conditions in relation to their impacts on the entire facility. I do not believe at this point it would be productive for me to contest this issue. I am, however, requesting that counsel include in their next meeting a discussion of this memo and that individual council members consider implementing Suggestion 4 when they question statements of a party or a developer.

I also encourage counsel to fact check my comments as well as those of developers which are made during EFSC meetings.
For example, please research whether or not I would be correct were I to state that a bond is not required because developers maintain insurance or other methods that would address the need to compensate the public for costs of sight restoration in the event that the developer fails to do so that would not rely upon ratepayers and the public to pay for site restoration.

Respectfully submitted,
Irene Gilbert
2310 Adams Ave.
La Grande, Oregon 97850

Idaho Power's Responses to Comments on the Draft Proposed Order for Request for Amendment #1
July 19, 2023

Idaho Power provides the following responses to oral comments regarding the Draft Proposed Order ("DPO") for Request for Amendment #1 ("RFA1") for the Boardman to Hemingway transmission line project ("B2H" or the "Project") at the July 17 and July 18, 2023 DPO Public Comments hearings, as well as written comments received by ODOE before the close of the DPO comment hearing on July 18, 2023. Idaho Power also responded to certain oral comments at the July 18, 2023 Public Comment Meeting, and provides those responses again in writing for the Council's convenience.

Commenter	DPO Comment	Idaho Power Company's Response
Oregon Forest Practices Act		
STOP B2H	The rule language was adopted on October 26, 2022 to implement Senate Bills 1501, 1502, House Bill 4055 and the Private Forest Accord Report dated February 2, 2022. The changes were promulgated in rule on October 26, 2022 with staggered effective dates, the last having an effective date of January 1, 2024 (See Attachment 2.) Many requirements in the rules apply to this Amendment and also apply to all other site certificates involving the cutting of trees to develop the site. It provides specific requirements for all forest activities involving the removal of timber. Definitions and Requirements are clearly laid out in the statutes and rules and include: OAR 629-600-0100:"forestland" as land which is used for the growing and harvesting of forest tree species, regardless of how the land is zoned or taxed or how any state or local statutes, ordinances, rules or regulations are applied.	These comments are outside the scope of the Council's review because the Council has chosen not to assert jurisdiction over the application of the Forest Practices Act for B2H. Rather, Idaho Power will work directly with the Oregon Department of Forestry ("ODF") regarding compliance with the Forest Practices Act, including through the Company's Plan for an Alternate Practice, which will be filed with and reviewed directly by ODF. For each project seeking a site certificate, the Council issues a project order establishing the statutes, administrative rules, council standards, local ordinances, application requirements and study requirements for the site certificate application.[1] To issue a site certificate, the Council must determine that a proposed facility complies with all Oregon statutes and administrative rules identified in the project order.[2] For B2H, ODOE acknowledged in the Project Order that certain tree-removal activities associated with the

[1] ORS 469.330(3).
[2] ORS 469.503(3).

Commenter	DPO Comment	Idaho Power Company's Response
		Project "may be subject to the Oregon Forest Practices Act."[3] However, the Project Order recommended that Idaho Power "contact ODF to determine the requirements for obtaining . . . any other required permits or approvals from ODF."[4] In the Final Order, the Council further clarified that it did "not assert jurisdiction of the [Forest Practices Act]" and instead directed Idaho Power to "work directly with ODF on [Forest Practices Act] requirements."[5] Although the Council has chosen not to assert jurisdiction over the application of the Forest Practices Act in this case, Land Use Condition 4 requires that, before beginning construction of "any roads constructed in forest lands in Umatilla County, [Idaho Power] will ensure road construction is consistent with the Oregon Forest Practices Act."[6] Consistent with Land Use Condition 4, Idaho Power is coordinating with ODF to ensure that all Project-related roads in forestlands, including those in Umatilla County, will be constructed or upgraded consistent with the Forest Practices Act. This coordination includes preparing a Plan for Alternate Practice, which will apply to all private forestland requiring permanent clearance for the

[3] Second Amended Project Order at 9 (July 26, 2018) (available at https://www.oregon.gov/energy/facilities-safety/facilities/Facilities%20library/2018-07-26-B2H-Second-Amended-Project-Order.pdf) (last visited July 18, 2023).
[4] *Id.*
[5] Final Order at 649-50 (Sept. 27, 2022) (available at https://www.oregon.gov/energy/facilities-safety/facilities/Facilities%20library/2022-09-27-Final-Order-on-ASC.pdf) (last visited July 18, 2023).
[6] Final Order at 186.

Commenter	DPO Comment	Idaho Power Company's Response
		transmission line route and for Project roads.[7] Idaho Power will finalize this plan through coordination with ODF prior to construction in forestlands.[8]
STOP B2H	Any forestland capable of annual wood production of at least 20 cubic feet per acre is subject to the reforestation rules.	The Forest Practices Reforestation Rules (OAR Chapter 629, Division 610) generally require a landowner to replant (or ensuring natural regeneration of) the forest after a timber harvest and maintain the seedlings to the point that they are "free to grow" at a stocking level that meets the Forest Practices Act's minimum stocking standards).[9] If forestlands will be converted to a use not compatible with maintaining forest tree cover, the landowner must obtain written approval of a Plan for an Alternate Practice from ODF providing an exemption from the Forest Practices Act's reforestation requirements.[10] Idaho Power is preparing a Plan for Alternate Practice which will apply to all private forestland requiring permanent clearance for the transmission line route and for Project roads.[11] Idaho Power will finalize this plan through coordination with ODF prior to construction in forestlands.[12] The Company is currently finalizing its Plan for Alternate Practice with ODF. As part of this review

[7] Final Order, Attachment BB-1, Draft Plan for Alternate Practice at 1 (Sept. 27, 2022) (available at https://www.oregon.gov/energy/facilities-safety/facilities/Facilities%20library/2022-09-27-Attachment-BB-1-Plan-Alternative-Practice.pdf) (last visited July 18, 2023).
[8] *Id.*
[9] *See* OAR 629-610-0000.
[10] *See* OAR 629-610-0090(1).
[11] Final Order, Attachment BB-1, Draft Plan for Alternate Practice at 1.
[12] *Id.*

Commenter	DPO Comment	Idaho Power Company's Response
		process, Idaho Power has updated its draft plan to include all additional forestlands that may be impacted by the proposed route revisions and additional access roads at issue in RFA1 and RFA2. Idaho Power will address compliance with the applicable provisions of the Forest Practices Act through direct coordination with ODF and the finalized plan prior to beginning construction in forestlands.
STOP B2H	These new rules (promulgated before this RFA was submitted) also requires a written plan for: (a) forest operations occurring within 100 feet of a stream determined by the State Forester to be used by fish or for domestic use or a significant wetland. (b) Areas at risk from road generated materials entering the waters, roads constructed in riparian areas, constructing or reconstructing any water crossing or roads constructed in critical locations including those within 50 feet of stream channels or lakes, or within significant wetlands. (c) All road construction in critical locations. (d) Conflicts with sensitive wildlife species also require written plan.	ORS 527.670(3) requires submittal to ODF of a written plan before beginning an operation that occurs within 100 feet of a stream determined by the State Forester to be used by fish or for domestic use and 100 feet of a significant wetland. STOP B2H's assertion that this is a new requirement adopted in 2022 is incorrect. ORS 527.670 was last revised in 2011.[13] As discussed above, the Council has elected not to assert jurisdiction over the application of the Forest Practices Act in this case, and for that reason Idaho Power is working with ODF to ensure compliance with all applicable provisions of the Forest Practices Act.
STOP B2H	Intent to obtain, or the issuance of approval of an Alternate Practice does not exempt the developer from complying with the FPA through the removal of the existing timber. The Alternate Practice only	To the extent STOP B2H asserts that additional Forest Practices Act requirements beyond the scope of Idaho Power's Plan for an Alternate Practice will apply to the Project, as discussed above Idaho Power will work

[13] Or. Laws 2011 c.54 §1.

Commenter	DPO Comment	Idaho Power Company's Response
	addresses the ability of the developer to avoid the reforestation requirements.	directly with ODF to determine compliance with these requirements.
STOP B2H	Roads and associated Structures, access and construction areas had not been completed and as such was not available to analyze in the Final Environmental Impact Statement ("EIS"). Detailed analysis of impacts to waters of the US was not conducted during the final EIS due to lack of availability of micro-siting information for tower pads, laydown Yards, tensioning sites and other sub facilities.	The EIS is a federal review conducted pursuant to the National Environmental Policy Act. The EIS is outside the Council's jurisdiction and concerns regarding the analysis in the EIS are outside the scope of RFA1.
STOP B2H	The final Right of Way Clearing Assessment referenced in GEN-LU-13 must include requirements of the Forest Practices Act and be approved by the Oregon Department of Forestry to establish compliance with the FPA.	This comment is outside the scope of RFA1. The Council included site certificate condition GEN-LU-13 (also labeled Land Use Condition 16) in its Final Order on Idaho Power's Application for Site Certificate ("ASC"), and that condition is not revised in either RFA1 or in ODOE's DPO recommending approval of RFA1. Moreover, as discussed above, the Council elected not to assert jurisdiction over application of the Forest Practices Act for B2H, and Idaho Power will instead coordinate with ODF to ensure compliance with applicable provisions of the Forest Practices Act.
STOP B2H	As we are sure you noticed, Conditions in the Site Certificate conflict with and effectively waive requirements of the Forest Practices Act in effect as of July 1, 2023 and those with implementation date of January 1, 2024 for any roads constructed after January 1, 2024. * * * * *	STOP B2H raises concerns regarding the site certificate that the Council has already issued for the Project. These comments are outside the scope of RFA1. Additionally, contrary to STOP B2H's comment, the Council did not waive the Forest Practices Act. Rather, as discussed above, the Council elected not to assert jurisdiction over application of the Forest Practices Act in this case and instead ODF will determine compliance

Commenter	DPO Comment	Idaho Power Company's Response
	What is clear is that there are roads and developments such as multiple use areas that appear to be right up against streams and wetlands. And the current site certificate fails to require setbacks consistent with the FPA. Following are some examples: Union County condition GEN-LU-06 (a) and (b) allowing roads within 25 feet or one-half the steam width. Baker County and Malheur County contain no setback distances being required from streams and wetlands.	with the applicable provisions of the Forest Practices Act.
Irene Gilbert	The Forest Practices Act was adopted October, 26, 2022, and Oregon Department of Forestry ("ODF") has adopted rules implementing that statute, most of which have gone into effect. In the Forest Practices Act, "forestland" is defined as "land which is used for growing and harvesting of trees." And it says "regardless of how the land is zoned or taxed, or how any state or local statutes, ordinance rules, or regulations are applied." So, it basically trumps as far as other agencies, and their decisions about dealing with forestland.	As discussed above in response to STOP B2H's comment, this comment is outside the scope of the Council's review because the Council has chosen not to assert jurisdiction over the application of the Forest Practices Act for B2H.
Irene Gilbert	The Forest Practices Act also defines forestland that says any forest land capable of annual group with production of at least 20 cubic feet per acre is subject to the reforestation rules. The Project is subject to reforestation requirements.	As discussed above in response to STOP B2H's comment, Idaho Power is seeking approval of a Plan for an Alternate Practice from ODF providing an exemption from the Forest Practices Act's reforestation requirements.[14]

[14] *See* OAR 629-610-0090(1).

Commenter	DPO Comment	Idaho Power Company's Response
Irene Gilbert	The Forest Practices Act requires a written plan for any forest operation occurring within 100 feet of a stream determined by the state forester to be used by fish, or for domestic use, or a significant wetland. It also says they have to have a written plan for areas at risk from road generated materials, entering the waters roads constructed in riparian areas, constructing, or reconstructing any water crossing or roads constructed in critical locations, including those within 50 feet of stream channels, or lakes, or within significant wetlands. So all roads in critical locations, require a written plan.	As discussed above in response to STOP B2H's comment, the Council has elected not to assert jurisdiction over the application of the Forest Practices Act in this case, and for that reason Idaho Power is working with ODF to ensure compliance with all applicable provisions of the Forest Practices Act.
Irene Gilbert	The protected species that are specifically addressed in the Forest Practices Act include the Northern Spotted owl, bald eagle, osprey, great blue heron, golden eagle, marbled murrelet, and band-tailed pigeon.	To the extent Ms. Gilbert suggests this protection for certain avian species is a new requirement adopted in 2022, that assertion is incorrect. While it is true that the Oregon Legislature recently revised the Forest Practices Act and ODF adopted new rules to implement these revisions, it should be noted that the specific requirements that Ms. Gilbert cites in her comments predate these revisions and were already in effect at the time EFSC issued the site certificate for the Project. For example, Ms. Gilbert refers to regulations limiting operations within certain distances of nesting sites for northern spotted owl, bald eagles, osprey, and great blue herons, but these regulations were all in effect prior to the recent revisions to the Forest Practices Act.[15]

[15] OAR 629-665-0210 (effective on Sept.1, 2017); OAR 629-665-0110 (effective on Jan. 1, 2006); OAR 629-665-0120 (effective on Sept.1, 2017); OAR 629-665-0130 (initially effective on Sept. 1, 2017 with a minor revision correcting grammatical mistakes in a manner that did not alter the scope, application or meaning of the rule effective on July 1, 2023).

Commenter	DPO Comment	Idaho Power Company's Response
Irene Gilbert	In the site certificate there's a lot of discussion about the Oregon Department of Fish and Wildlife ("ODFW") approval of things like stream crossings. ODFW makes some subjective decisions, but the Forest Practices Act is not open to interpretation by ODFW. When you're talking about stream crossings and you're talking about dealing with these wildlife species, the site certificate clearly has some conflicts that amount to waiving the Forest Practices Act.	As discussed above in response to STOP B2H's comment, challenges to conclusions in the site certificate that the Council has already issued for the Project are outside the scope of RFA1.
Oregon Trail		
Oregon-California Trails Association ("OCTA")	Map 1. The new road lies just outside the border with the Boardman Range. Just over the fence line (west) on the range are extensive Class 1 trail ruts. The location of the proposed road is to the east of the boundary. This area has long been in agricultural use with no obvious trail visible. However, while trail may not be obvious to an observer, there may be artifacts present that would reveal the trail. The trail location can be approximately very closely by extending the traces within the range eastward. Have archaeological studies of the area of the new road been conducted, and if so what in a general did they reveal?	Idaho Power assumes OCTA is referring to the area depicted in Map 1 of Figure 4-2 of the Company's RFA1 Application (RFA 1 Proposed Site Boundary Additions (Access Roads)). Map 1 of Figure 7-18 (RFA1 Cultural Survey Status (Access Roads)) depicts the status of the cultural resources pedestrian surveys of the Direct Analysis Area for the same area. According to Map 1 of Figure 7-18, the cultural resources pedestrian surveys of the Direct Analysis Area for the area in question are complete. There were no new segments of the Oregon Trail that were identified in the agricultural area in Map 1 of Figure 4-2. A report for the surveys within the Direct Analysis Area completed through 2021, i.e., the Initial Class III Report, is provided as Confidential Attachment 7-11 to the RFA1 Application. This report has been reviewed by consulting parties for the Project's Section 106 process. An updated Oregon Visual Assessment of Historic Properties Intensive Level Survey ("VAHP ILS") for the Visual Assessment Analysis Area is also provided as Confidential Attachment 7-12 to the RFA1 Application.

Commenter	DPO Comment	Idaho Power Company's Response
		This report is a draft and is currently being revised under the Section 106 process. During Phase 2—which will be conducted after the amended site certificate on RFA1 has been issued, but before construction—Idaho Power will conduct any additional surveys required to confirm archaeological site boundaries and isolated finds, to determine eligibility on the National Register of Historic Places ("NRHP"), to complete an inventory of 100 percent of the proposed RFA1 site boundary additions, as well as any necessary subsurface inventory or evaluation efforts. Per the Programmatic Agreement, where cultural resources of archaeological significance are identified in the analysis area for a particular transmission line construction segment or associated facilities, all surveys and mitigation plans for such resources must be completed prior to construction.
Oregon-California Trails Association ("OCTA")	Map 12 and 13. Our simulations do not include the effect of forest cover. We suspect that the new roads in this area will not be visible from the Oregon National Historic Trail ("ONHT") which is on the other side of I-84 on a ridgeline. Has this been verified?	Idaho Power assumes OCTA is referring to Maps 12 and 13 of Figure 4-2 of the Company's RFA1 Application (RFA 1 Proposed Site Boundary Additions (Access Roads)). The impacts associated with changes in visibility as a result of RFA1 were found to be similar to what was described in the Company's ASC. AECOM prepared revised viewshed maps that identified areas that would have new views based upon the new alignments and roads. The maps contained in the 2022 draft VAHP ILS (Confidential Attachment 7-12) were then analyzed.

Commenter	DPO Comment	Idaho Power Company's Response
		This analysis did not identify resources that would be newly affected by the proposed route changes other than those archaeological sites with aboveground components identified by Tetra Tech in the Direct Analysis Area and contained in the Initial Class III Report (Confidential Attachment 7-11). A map depicting the identified resources and viewshed impacts for the site boundary is provided as Confidential Attachment 7-13 of the RFA1 Application. Outside of site boundary, no additional resources were identified for field analysis within the Visual Assessment Analysis Area. The trails identified in Maps 12 and 13 of Figure 4-2 have not been previously identified or confirmed to be eligible on the NRHP. Due to the existing forest cover and positioning of the Project in the areas in question, the Project is not likely to be visible from intact, identified NRHP-eligible portions of the Oregon Trail. Access road UN-002b, as depicted in Map 12 of Figure 4-2, would not be visible from intact, identified NRHP-eligible Oregon Trail segments. There would be no new indirect (i.e., visual) impacts because UN-002b is a new access road using the old location of an abandoned road with surrounding vegetation, intervening topography, and a more prominent built environment. Access road UN-625, as depicted in Map 13 of Figure 4-2, would also not be visible from intact, identified NRHP-eligible Oregon Trail segments. There

Commenter	DPO Comment	Idaho Power Company's Response
		would be no new indirect (i.e., visual) impacts because UN-625 is shielded by intervening vegetation and topography.
Oregon-California Trails Association ("OCTA")	Map 16. The location of the ONHT in the area of Clover Creek is not well documented. The construction of I-84 probably obliterated much of the original route. Through the Bureau of Land Management we have requested further studies and documentation of this area to provide better information on the trail's location. Both the approved routing of the B2H transmission line and the new road will add to the degradation of the setting. The National Park Service's routing of the trail through this area cannot be taken as definitive.	Idaho Power assumes OCTA is referring to Map 16 of Figure 4-2 of the Company's RFA1 Application (RFA 1 Proposed Site Boundary Additions (Access Roads)). To the best of Idaho Power's knowledge at this time, there are no previously recorded and/or intact segments of the Oregon Trail that have been identified through archaeological investigations in the vicinity of the Clover Creek area. Note that per Map 16 of Figure 7-18 (RFA1 Cultural Survey Status (Access Roads)), the Company's cultural resources pedestrian surveys for the Direct Analysis Area in the Clover Creek area have not been completed. However, since the filing of the RFA1 Application, Idaho Power has completed the cultural resources pedestrian surveys for the Direct Analysis Area in Map 16 and is in the process of updating the information in the Company's preconstruction survey report. No new cultural resources, including Oregon Trail segments, were identified in the vicinity of the Clover Creek area.
Incorporating Comments by Reference		
STOP B2H	For the record and specificity, we would like to incorporate the comments of Jim Kreider, Stop B2H Coalition, Wendy King, and Sam Myers in the Public Utility Commission of Oregon ("OPUC") docket UM2209.	STOP B2H's reference to "specificity" appears to suggest that STOP B2H seeks to preserve for a potential contested case in this matter any issues raised in other parties' testimonies in a separate proceeding before an entirely different agency. ORS 469.370(3) requires that "[a]ny issue that may be the basis for a contested case . . . be raised with sufficient specificity to afford the

Commenter	DPO Comment	Idaho Power Company's Response
		council, the department and the applicant an adequate opportunity to respond to each issue." Merely referring to comments from multiple parties in a separate proceeding before a different agency does not inform the Council, ODOE, or Idaho Power of any alleged error in the DPO for RFA1. For that reason, STOP B2H's attempt to incorporate other parties' comments by reference does not raise any issue with sufficient specificity to provide the Council, ODOE, or Idaho Power the opportunity to respond.
Irene Gilbert	I don't know who all has submitted comments, but I would like to incorporate into my presentation any and all comments that come before council. . . . If we are again told we can only be a limited party, I want to establish that that we may very well be interested in making comments on other comments. * * * * * The Noxious Weed Plan doesn't provide for monitoring for the life of the development and so I'd like to incorporate because I know that I don't have my act together on this and I didn't even send in anything in writing or providing anything in writing. incorporate the comments that were made by STOP B2H in the prior decision process and also Susan gear who made several submissions about it.	For the same reasons discussed above in response to STOP B2H's comment, Ms. Gilbert's broad request to incorporate all comments raised by other individuals and to incorporate the entire testimony filed by STOP B2H and Susan Geer in the previous contested case on the ASC fails to raise any issue with sufficient specificity for the Council, ODOE, or Idaho Power to respond.
Idaho Power's Wildfire Mitigation Plan		
Irene Gilbert	In the OPUC hearings, Idaho Power said that they don't develop plans during the construction period.	Ms. Gilbert's comment misstates the record. While the Wildfire Mitigation Plan applies to the Project during operation, Idaho Power is also required by Public

Commenter	DPO Comment	Idaho Power Company's Response
	Their plans all focus on after the development is operational.	Services Condition 6 to the Site Certificate to adhere to the Fire Prevention and Suppression Plan, which identifies measures for preventing fires, and responding to fires that might occur during construction.[16] In its Final Order on Idaho Power's ASC, the Council adopted the Hearing Officer's conclusion that Idaho Power's Fire Prevention and Suppression Plan is adequate.[17]
Irene Gilbert	Idaho Power does not consider injury or death to citizens in evaluating the fire management plan.	Ms. Gilbert's comment is not correct. As explained in Idaho Power's Wildfire Mitigation Plan, the Company assesses wildfire risk by considering fire probability multiplied by the consequence of a fire.[18] Consequence is defined as "Number of structures (i.e., homes, businesses, other man-made structures) that may be impacted by a wildfire."[19] These impacts to structures are a proxy for potential impacts to the individuals who would be in or use those structures. Dr. Christopher Lautenberger, Idaho Power's expert witness who helped prepare the Company's Wildfire Mitigation Plan, clarified this at the hearing for Idaho Power's Petition for a CPCN, where he stated: "[C]onsequence is the negative impacts to different assets at risk. Assets at risk that are typically prioritized when looking at utility caused fires are loss of life and loss of structures, and those were the two assets at risk that were considered consequences in the risk modeling

[16] Final Order, Attachment U-3, Draft Fire Prevention and Suppression Plan, Section 2 (Sept. 27, 2022) (available at https://www.oregon.gov/energy/facilities-safety/facilities/Facilities%20library/2022-09-27-Attachment-U-3%20Draft-Fire-Prevention-and-Suppression-Plan.pdf) (last visited July 18, 2023); Final Order at 612.
[17] *Id.* at 34.
[18] DPO on RFA1, Attachment 7-16, Wildfire Mitigation Plan at 10.
[19] *Id.*

Commenter	DPO Comment	Idaho Power Company's Response
		that was conducted by Idaho Power to inform its Wildfire Mitigation Plan."[20]
STOP B2H	The OPUC inserted conditions in the 2023 Wildfire Mitigation Plan after the issues raised by STOP were not corrected from the 2022 Wildfire Plan. The problems in the 2022 and 2023 Wildfire Prevention and Risk Management Plans will affect areas in Union County that are being modified in RFA 1. It will also impact roads already approved.	STOP B2H alleges "problems" in Idaho Power's 2022 and 2023 Wildfire Mitigation Plans. However, the proper venue to raise these concerns was in OPUC Docket UM 2209—and given STOP B2H's reference to its prior comments in Docket UM 2209, it appears that STOP B2H fully participated in that proceeding. The process in Docket UM 2209 was robust, and as STOP B2H acknowledges in its comments, the OPUC approved Idaho Power's 2023 Wildfire Mitigation Plan in that docket.[21] It is also important to note that the utilities' annual Wildfire Mitigation Plans under the OPUC's jurisdiction are intended to be living documents, and changes to them are intended to be iterative. While the OPUC recommended additional actions that the Company should take when preparing its 2024 Wildfire Mitigation Plan, the OPUC and other stakeholders, including STOP B2H, will continue to have the opportunity to participate in these annual WMP updates and provide comments and suggestions for updated wildfire mitigation strategies in Docket UM 2209. To keep the Council informed of the development of these annual plans, ODOE's Recommended Wildfire Prevention and Risk Mitigation Condition 2 will require

[20] *In re Idaho Power Co. Petition for Certificate of Public Convenience and Necessity*, OPUC Docket PCN 5, Transcript for the 4/19/23 and 4/20/23 Evidentiary Hearing at 204, lines 15-21 (a copy of this transcript excerpt is provided with these responses as Attachment A).
[21] *In re Idaho Power Co. 2023 Wildfire Protection Plan*, OPUC Docket UM 2209, Order No. 23-222 (June 26, 2023).

Commenter	DPO Comment	Idaho Power Company's Response
		Idaho Power to submit a copy of each annual updated plan to the Council.[22]
STOP B2H	STOP reads OPUC Order 23-222 to be conditional due to lack of clarity and the additional work the applicant has been told to complete. OPUC staff has 37 recommendations to work through with Idaho Power before Idaho Power's Wildfire Plan for Oregon is considered compete.	STOP B2H's reading of OPUC Order No. 23-222 is incorrect. The OPUC approved Idaho Power's 2023 Wildfire Mitigation Plan and recommended additional information that Idaho Power should include in the 2024 Wildfire Mitigation Plan, but also noted that there may be implementation issues, and in some cases, recommendations may need to be modified, and directed Idaho Power to consult with Staff regarding implementation of recommendations and include a summary of that consultation in its 2024 Wildfire Mitigation Plan.[23] Idaho Power will take this direction from the OPUC into account when preparing its 2024 Wildfire Mitigation Plan.
STOP B2H	The Union County Community Wildfire Protection Plan identifies the Morgan Lake/Glass Hill, Perry/Hilgard, and Kamela areas as wildland-urban interface areas or WUI's. They are in the B2H's site boundary. However, IPC has refused to show their fire risk calculations that they were asked to show in 2022 to determine how 3 other agencies' analyses identifies high risk fire areas in the route of the B2H but IPC does not get the same results. Therefore, we do not know why 3 other entities, in the Wildfire mapping community, see these as high-risk wildfire zones and IPC does not. Which brings into question all of IPC's wildfire work and the Site Certificate	As discussed above, STOP B2H raised this concern in comments in OPUC Docket UM 2209 and OPUC recommended that Idaho Power "should consider the larger communications challenge of ensuring that residents in its service territory are aware of why it has designated certain areas as high fire risk zones and not others, and that they better understand why entities may use different methodologies, have different goals for designation, or have different inputs to the modeling. It should then work to close that information gap."[24] Idaho Power will continue working to address this OPUC recommendation in the Company's 2024 plan, a copy of which will be submitted to the Council.

[22] DPO on RFA1 at 210.
[23] OPUC Docket UM 2209, Order No. 23-222.
[24] OPUC Docket UM 2209, Order No. 23-222.

Commenter	DPO Comment	Idaho Power Company's Response
	Conditions regarding wildfire risk and public services.	
Bond for Decommissioning		
STOP B2H	STOP B2H asserts that the bond amount and flexibility currently included in the site certificate fails to provide for the protection of landowners, residents, ratepayers, and public agencies, from the liability that will occur in the event Idaho Power abandons the transmission line or declares bankruptcy without restoring the site. STOP B2H specifically claims that the current ownership of the transmission line by Idaho Power and PacifiCorp increases the likelihood that the transmission line may be abandoned without restoration because the companies are allegedly at risk of filing for bankruptcy due to ongoing and potential future wildfire-related litigation that may result in millions and potentially billions of dollars owed.	As an initial matter, STOP B2H's arguments were already litigated in the EFSC proceeding for the ASC, and EFSC found that the estimated cost of restoration was reasonable and Idaho Power provided sufficient information about its financial capability to demonstrate that it could obtain a bond or letter of security to cover required decommissioning and restoration costs.[25] While STOP B2H focuses on ongoing wildfire litigation related to PacifiCorp and implies that PacifiCorp is at risk of filing for bankruptcy, Idaho Power—as the certificate holder—is responsible for the bond to cover the decommissioning and restoration costs associated with retirement of the facility per Retirement and Financial Assurance Conditions 2 through 5. Moreover, as stated above, EFSC has already concluded that Idaho Power is financially capable of obtaining a bond in the amount necessary to restore the facility site to a useful non-hazardous condition. Finally, if there are any changes that would require adjustment of the bond amount, Retirement and Financial Assurance Condition 5 requires Idaho Power to provide EFSC and ODOE a report every five years on: (a) the physical condition of the facility; (b) any evolving transmission or electrical technologies that could impact the continued viability of the facility; (c) the facility's

[25] Final Order at 330-39; *see also* Final Order, Attachment 6, Contested Case Order (CCO), as Amended and Adopted by Council at 255-60 (Sept. 27, 2022) (available at https://www.oregon.gov/energy/facilities-safety/facilities/Facilities%20library/2022-09-27-Attachment-6-Contested-Case-Order-As-Amended-by-Council.pdf) (last visited July 18, 2023) (Issue RFA-1).

Commenter	DPO Comment	Idaho Power Company's Response
		performance in the context of the larger Northwest power grid; and (d) the certificate holder's financial condition, including the certificate holder's credit rating at that time. Importantly, under the condition, EFSC may request the report on an off-cycle year if requested. Moreover, the condition allows EFSC to consider whether or not the approach towards the financial assurance instrument remains appropriate and would account for unforeseen shifts in the power grid or the Idaho Power's financial condition.
Irene Gilbert	Ms. Gilbert argues that the bond amount is not reasonable to address restoration costs. Furthermore, Ms. Gilbert argues that the site certificate conditions regarding the bond are not flexible enough as they do not address unforeseen conditions, such as a company declaring bankruptcy because of costs associated with wildfire litigation liability. Ms. Gilbert specifically references ongoing litigation specific to PacifiCorp regarding the Labor Day fires and a negotiated settlement specific to Idaho Power.	Please see Idaho Power's response to STOP B2H's comments above.
Noxious Weeds		
Irene Gilbert	One revised site certificate condition causing me concern is this condition saying that the vegetation management plan is finalized. I have not reviewed the Vegetation Management Plan. I know that during the previous activities related to this, this plan is required to comply with OAR 345-025-0016. The plan does not provide for assuring that noxious weeds do not impact wildlife habitat; it's limited in the area that they are going to cover; does not	Ms. Gilbert's comment conflates two distinct plans. Idaho Power's Vegetation Management Plan describes the methods in which vegetation along the transmission line will be managed during operation of the Project.[26] The measures IPC will undertake to control noxious and invasive-plant species and prevent the introduction of these species within the Project site boundary are discussed in the Noxious Weed Plan.

[26] DPO on RFA1, Attachment P1-4, Amended Vegetation Plan at 1.

Commenter	DPO Comment	Idaho Power Company's Response
	provide for monitoring for the life of the development.	More importantly, Ms. Gilbert raised these same challenges regarding the adequacy of Idaho Power's Noxious Weed Plan in the contested case and these issues were fully litigated. In the Final Order, the Council adopted the Hearing Officer's conclusion that the "Noxious Weed Plan is adequate to serve its intended purpose of establishing the measures the applicant will take to control noxious weed species and prevent the introduction of these species during construction and operation of the project."[27]
Towers Locations on Williams Property		
John Williams	Mr. Williams objects to the placement of three transmission towers on his property for various reasons. Mr. Williams also raised concerns that he has not received all results of surveys conducted by Idaho Power on his property.	Mr. Williams' comments regarding the impacts of the placement of transmission towers on his property are outside the scope of RFA1 as no modifications to tower locations are proposed in the Company's RFA1 Application on Mr. Williams' property. Idaho Power and its contractors have indeed completed surveys in the 2023 season. These reports are still being finalized and once the data is processed and compiled, a property-specific survey memorandum will be provided to Mr. Williams that will indicate what surveys were performed and the results of those surveys.
Glass Hill State Natural Area ("SNA")		
Susan Geer	Ms. Geer asserts that the statements in the DPO for RFA1 concluding that there may be limited public access are mischaracterizations, and instead asserts that Glass Hill Preserve is not advertised, but it certainly is not closed to the public. The SNA is	Ms. Geer appears to suggest that the Glass Hill Preserve/SNA should be considered an important recreational opportunity for purposes of the Council's Recreation Standard, and that the Council should have regarded the Glass Hill SNA as available for public

[27] Final Order at 21.

Commenter	DPO Comment	Idaho Power Company's Response
	open to research and education as spelled out in the Natural Areas agreement, as well as non-motorized nature-oriented activities such as hiking, birding, botanizing, and mountain biking on existing trails. For many years the X-Terra mountain bike race was held on the property annually, and those trails are locally popular. Furthermore, the property owner hosts Native American ghost dance ceremonies as part of addiction recovery programs.	access. That fact, however, should not change the Council's conclusions in the Final Order that it should not be analyzed as an important recreational opportunity. To determine whether a recreational opportunity is important the Council considers: Any special designation or management of the location; The degree of demand; Outstanding or unusual qualities; Availability or rareness; Irreplaceability or irretrievability of the opportunity.[28] ODOE weighed all five factors and determined that the Glass Hill Preserve/SNA is not an important recreational opportunity.[29] While the DPO concluded that public access was not likely allowed, that was not the sole basis for determining that the Glass Hill SNA was not an important recreation site. In particular, the DPO also considered that the Glass Hill SNA was designated for the protection of habitat and not for recreation, the remote location, the lack of available recreation facilities at the Glass Hill SNA, that access for hunting or fishing may require permission from the landowner, and that other sites offer similar opportunities. Even considering Ms. Geer's comments regarding access, it bears noting that Ms. Geer affirms that the Glass Hill SNA is not advertised to the public and it is not clear that the activities described in Ms. Geer's comments are broadly available to the public or a more limited subset of individuals.

[28] OAR 345-022-0100(2).
[29] DPO on RFA1 at 185-87.

Commenter	DPO Comment	Idaho Power Company's Response
		Moreover, even assuming for the sake of argument that the Glass Hill Preserve/SNA were to be analyzed as an important recreation opportunity, the potential impacts to the Glass Hill Preserve/SNA associated with RFA1 would be less than significant because the RFA1 features near the Glass Hill Preserve/SNA are access roads located 1.6 miles away.[30] These access roads will introduce only mild visual contrast with the existing landscape.[31]
Susan Geer	Approval of the Morgan Lake route signals a tragedy for state Protected Areas of Oregon, downgrading their ecological integrity and putting special status species further at risk. Allowing a route through the middle of an established conservation easement signals a huge loss for the conservation community even if they do not yet realize it.	The Council approved the Morgan Lake Alternative in its Final Order on Idaho Power's ASC. Because the Council has already approved the Morgan Lake Alternative, this comment is outside the scope of RFA1.
Allegations regarding Piecemeal Review		
STOP B2H	STOP B2H argues that Idaho Power is submitting RFAs in piecemeal fashion intentionally to avoid greater public engagement, and recommends that the RFA1 should be viewed as new application.	Idaho Power respectfully disagrees with STOP B2H's assertion that RFA1 should be analyzed as a new application. RFA1 includes discrete route changes and road modifications that include impacts that are substantially similar in nature to the impacts already approved in the Council's Final Order on the ASC. Additionally, STOP B2H's allegations regarding Idaho Power's intentions regarding the RFAs are entirely

[30] DPO on RFA1 at 117.
[31] DPO on RFA1 at 141.

Commenter	DPO Comment	Idaho Power Company's Response
		unfounded. As described in the RFA DPO[32] and in oral comments from B2H Project Manager Joseph Stippel at the July 18, 2023 RFA DPO Comment Hearing, the transmission line alignment modifications are discrete changes that were driven by Idaho Power continuing to work with landowners to reduce impacts and refine the project location prior to construction. The road modifications included were intended to refine access road locations and improve constructability of the project.
Mapping		
STOP B2H	STOP B2H asserts that Idaho Power's maps do not comply with Council rules, and asserts that STOP B2H had difficulty locating new access roads, and further asserts that "landowners and other interested parties cannot find all the information they need to properly comment on RFA 1 and therefore there needs to be a new map set developed and an extension of time so all parties can get their bearing and comment effectively.	Idaho Power respectfully disagrees with STOP B2H's assertion that the maps do not comply with Council rules. Idaho Power provided mapping with the RFA1 submittal showing a sufficient level of detail to delineate the site boundary additions included in RFA1. In particular, the maps included as references on page 5 of STOP B2H's DPO comments include a legend that shows that the new site boundary additions are shown with a black and white outline, and the previously approved grey shading reflects site boundary that was previously approved. Idaho Power opposes STOP B2H's request for a new map set and for an extension of the comment period.
Helicopter Use		
STOP B2H	STOP B2H asserts that shortening the time periods described in GEN-PS-01 will increase the risk of health and safety impacts resulting from helicopter use, and proposes that the 30 day notice	The condition GEN-PS-01 contemplates that Idaho Power will finalize a Helicopter Use Plan in coordination with ODOE and each affected county where helicopter use is anticipated during construction.

[32] DPO on RFA1 at 11.

Commenter	DPO Comment	Idaho Power Company's Response
	requirements for adjacent landowners from the original condition language should be retained, and the 30 day notice requirement to the Oregon Department of Aviation ("ODA") for consultation should be retained unless ODA approves a shorter timeframe in writing. .	The DPO includes the following modification to GEN-PS-01: At least 90 days prior to use of a helicopter(s) during construction, unless otherwise agreed to by the Department, the certificate holder shall submit to the Department and each affected County Planning Department a proposed Helicopter Use Plan. The plan must be approved by the Department, in consultation with each county where helicopter use is proposed, prior to use of a helicopter during construction. The certificate holder shall conduct all work in compliance with the approved Helicopter Use Plan. The Helicopter Use Plan shall identify or provide: a. The type of helicopters to be used (all helicopters must be compliant with the noise certification and noise level limits set forth in 14 CFR § 36.11); b. The duration of helicopter use; c. Approximate helicopter routes to be used;

Commenter	DPO Comment	Idaho Power Company's Response
		d. Protected areas and recreation areas within two miles of the approximate helicopter routes; e. Roads or residences over which external loads will be carried; f. Multi-use areas and light-duty fly yards containing helipads shall be located: (i) in areas free from tall agricultural crops and livestock; (ii) at least 500 feet from organic agricultural operations; and (iii) at least 500 feet from existing dwellings on adjacent properties; g. Flights shall occur only between sunrise and sunset; h. ~~At least 30 days~~ P~~p~~rior to initiating helicopter operations at any multi-use area or light-duty fly yard, the certificate holder shall contact adjacent property owners within 1,000 feet of the relevant multi-use area or light-duty fly yard; i. ~~At least 30 days prior to initiating~~ Prior to helicopter operations, the certificate holder shall consult with the Oregon Department of Aviation regarding the

Commenter	DPO Comment	Idaho Power Company's Response
		preparation and posting of notices to airmen regarding the location and nature of work being performed. The notice will be posted at each of the public airports in the vicinity of the facility to alert other aviators of the location and timing of facility-related helicopter construction activities; and j. The certificate holder shall maintain a customer service telephone line to address, among other things, complaints regarding helicopter operations. [Public Services Condition 3; Final Order on ASC, AMD1] As noted in the DPO, the modifications to the timing in condition GEN-PS-01 are intended to allow additional flexibility in timing for preconstruction conditions: As described in Section II.B.1 of this order, RFA1 includes the certificate holder's request to amend conditions with preconstruction timing constraints. As presented in Attachment 1, the Department recommends Council amend the timing constraints to allow for

Commenter	DPO Comment	Idaho Power Company's Response
		additional flexibility in timing of preconstruction compliance.[33] Idaho Power proposed these modifications to allow additional flexibility in scheduling helicopter operations. If the Council would prefer to include a defined period for notice, Idaho Power proposes that a 3-day landowner notice is sufficient to preserve the flexibility of the construction process. This will create a more adaptable approach for the construction team to work with adjacent landowners on a schedule that is adaptable to the needs of everyone, including impacted landowners. For example, with a shorter notice period, Idaho Power may be able to accommodate landowner requests for modifications to scheduling helicopter activity, however, with a longer notice period, Idaho Power would not be able to make such accommodations.
STOP B2H	STOP B2H also comments that GEN-PS-01 fails to identify noise sensitive properties or identify unique hazardous locations.	There is no requirement to analyze construction noise, including helicopter use, or requirement to identify noise sensitive properties in connection with helicopter use. As noted in the DPO regarding construction noise: Because construction related noise is exempt from the DEQ noise rules, an evaluation of construction noise generated from auxiliary vehicle use on new or improved roads, and multi-use areas, and helicopter use at NSRs is not required.[34]

[33] DPO on RFA1 at 198 n.205.
[34] DPO on RFA1 at 223 n.255

Commenter	DPO Comment	Idaho Power Company's Response
Soil Protection		
STOP B2H	STOP B2H comments that ODOE's recommended revisions to site certificate condition GEN-SP-01 are inconsistent with the Council's obligation to ensure compliance with state laws and council rules effective the date the amended site certificate is issued. STOP B2H asserts that revising the condition to include "unless otherwise agreed to by the Department" allows the Oregon Department of Energy to allow the developer to avoid compliance with the Council Standard addressed by the National Pollutant Discharge Elimination System ("NPDES") 1200-C and Erosion and Sediment Control Plan ("ESCP") contained in the site certificate. STOP B2H further asserts that this revision "circumvents the procedure in the Site Certificate requiring the agency consultation process be followed for changes in the Soil Protection Standard and plan."	The revision to Soil Protection Condition 1 (Condition GEN-SP-01) that STOP B2H cites reads: > During construction of the facility, the certificate holder shall conduct all work in compliance with the NPDES 1200-C General Construction Permit, ESCP or revised ESCP if applicable. The ESCP shall be revised if determined necessary by the certificate holder, certificate holder's contractor(s) or the Department. Any Department-required ESCP revisions shall be implemented within 14-days, unless otherwise agreed to by the Department based on a good faith effort to address erosion issues.[35] As ODOE explained in the DPO, an ESCP can be revised throughout construction to address numerous changes but the language of existing Soil Protection Condition 1 (Condition GEN-SP-01) could be interpreted to limit the ESCP to the version approved prior to construction.[36] ODOE further asserted that it must be given authority to require revisions to the ESCP because it is the ESCP that Council relies upon to ensure that erosion impacts are minimized, in

[35] DPO on RFA1 at 43.
[36] DPO on RFA1 at 43.

Commenter	DPO Comment	Idaho Power Company's Response
		compliance with the Soil Protection Standard. For these reasons, ODOE recommended the revisions to Soil Protection Condition 1 (Condition GEN-SP-01).
Blasting Plan		
STOP B2H	Condition GEN-SP-04(a) Page 25 of First Amended Site Certificate: Makes significant changes in the requirements regarding the Blasting Plan which should not be implemented including: Adding the word "related blasting" to the first line of Item (a) would result in no longer requiring the developer to determine whether there will be a need for blasting prior to the start of construction. The changes to this site certificate condition results in a failure of the Site Certificate to provide for the safety of property owners impacted by the development. It also places at risk the requirement that the developer identify wells and springs that may be impacted by blasting that is required as a monitoring condition. Impacts to wells and springs can pose a health hazard to citizens as well as cause significant economic damages in the event the developer fails to provide mitigation for the impacts. The change fails to assure compliance with council standards including providing for the health and safety of citizens, provide mitigation for impacts to resources, and the requirement that the developer assume the costs of monitoring. *** STOP recommends that the following changes should be incorporated in Gen-SP-01 to comply with ORS 469.401(2):	As an initial matter, the proposed amendment to Soil Protection Condition 4 (Condition GEN-SP-04), subsection (a) would not result in Idaho Power being allowed to avoid ODOE review of the final Framework Blasting Plan. Rather, the change from "[p]rior to construction" to "[p]rior to construction-related blasting" simply allows Idaho Power to submit the final Framework Blasting Plan to ODOE closer to (but still prior to) the time blasting activities are anticipated to occur during the construction process. This change in timing is necessary because Idaho Power will not have complete information about planned blasting at the time initially contemplated in the existing plan. Furthermore, per the proposed amendment to subsection (b), Idaho Power is still required to discuss with the landowner any blasting that the Company plans to conduct on the landowner's property prior to any construction-related blasting occurring. If the landowner identifies a natural spring or well on the property, Idaho Power must notify the landowner that at the landowner's request, Idaho Power will conduct pre-blasting baseline flow and water quality measurements for turbidity. Moreover, per the condition, Idaho Power is required to compensate the landowner for adequate repair or replacement if damages to the flow or quality of the natural spring are caused by blasting.

Commenter	DPO Comment	Idaho Power Company's Response
	a. Require the developer to ask the landowner to identify natural springs or wells on their property. As the condition now reads, it would be the responsibility of the landowner to recognize the need to identify these resources as noted in the statement on Page 26, line 1 "If the landowner identifies." b. The water quality measurements should not be limited to assessing "turbidity." Potential impacts to wells and springs as a result of blasting are multiple due to the potential for rocks surrounding the blast site to be fractured or damages to containers of hazardous substances normally contained such as underground oil drums, septic tanks, etc., or the creation of inter-aquifer leakage. Ground Water contaminants that typically move slowly thereby reducing the impact of contaminants can move rapidly through fractures in rocks caused by Blasting. c. To provide for the safety of the public and employees, a site certificate condition should be added requiring the blaster to meet the qualifications required by Chapter XII 1926.901 Blaster Qualifications.	With respect to STOP B2H's proposed amendments to Soil Protection Condition 1 (Condition GEN-SP-01), similar amendments regarding water quality monitoring were already litigated at the EFSC proceeding for the ASC and EFSC adopted the Hearing Officer's conclusion that such changes were unnecessary in light of the requirements in Soil Protection Condition 4.[37] STOP B2H's recommendation that blasters meet the qualifications required in 29 CFR 1926.901 is also unnecessary as the Framework Blasting Plan already requires the following: The Construction Contractor(s) will use qualified, experienced, and licensed blasting personnel who will perform blasting using current and professionally accepted methods, products, and procedures to maximize safety during blasting operations. Blasting procedures will be carried out according to, and in compliance with, applicable laws and will be closely monitored by the [Compliance Inspection Contractor ("CIC")].[38]
Landowner Notification		

[37] *See* Final Order at 41; Final Order, Attachment 6, Contested Case Order (CCO), as Amended and Adopted by Council at 280-81, 292.
[38] Final Order, Attachment G-5, Draft Framework Blasting Plan at 2 (Sept. 27, 2022) (available at https://www.oregon.gov/energy/facilities-safety/facilities/Facilities%20library/2022-09-27-Attachment-G-5-Draft-Amended-Framework-Blasting-Plan.pdf) (last visited July 18, 2023).

Commenter	DPO Comment	Idaho Power Company's Response
STOP B2H	Notice has not been provided per ORS 183.415. This statute requires specific actions when "actions taken by state agencies" affects the public. * * * * * No such information was provided to the impacted people in person, by registered or certified mail even though every residence within at least one half mile of the transmission line will be affected by the noise exemption and variance that EFSC has approved as well as the fact that ODOE and EFSC were provided comment during the original Site Certificate process regarding the failure of the agency to meet the Public Notice Requirements of Oregon Statutes when their actions may impact a landowner.	ORS 183.415 applies only "[i]n a contested case[.]"[39] The DPO hearing is not a contested case,[40] and for that reason ORS 183.415 does not apply to this DPO hearing. Rather, notice of the DPO must be issued consistent with ORS 469.370(2). ODOE provided notice of the DPO in accordance with that statute.[41]

[39] ORS 183.415(2).
[40] OAR 345-015-0220(1).
[41] Request for Comments on the Complete Request for Amendment 1 and Draft Proposed Order (June 14, 2023) (available at https://www.oregon.gov/energy/facilities-safety/facilities/Facilities%20library/2023-06-14-B2H-AMD1-DPO-Public-Notice.pdf) (last visited July 18, 2023).

ATTACHMENT A

to

Idaho Power Company's Responses to RFA1 DPO Public Comments

July 19, 2023

BEFORE THE PUBLIC UTILITY COMMISSION

OF OREGON

PCN 5

In the Matter of

IDAHO POWER COMPANY,

Petition for Certificate of Public Convenience and Necessity.

TRANSCRIPT
OF
April 19-20, 2023
EVIDENTIARY HEARING

BEFORE: ADMINISTRATIVE LAW JUDGE, JOHN MELLGREN

Transcript Prepared by:
Jean Mueller Transcribing
PO Box 1049
Lebanon, OR 97355
(541)259-1139

Do you know, Mr. Lautenberger, the dollar value of cropland wheat that lies within the ROW in a given year for a distance of say one mile?

A. No. That's not part of my expertise or analysis.

Q. That dollar value is significant, I might add, it's in the neighborhood of $21,000 for *(inaudible - talking over each other)* --

MS. PEASE: Your Honor, I would object to the question. Mr. Myers is providing testimony here rather than asking questions.

ALJ MELLGREN: Thank you, Ms. Pease. Mr. Myers, please limit yourself to questions in a relevant context for those questions.

MR. MYERS: Yes, Your Honor. I believe that the dollar amount, $21,000, is very relevant to the context of the questions.

MR. MYERS:

Q. Mr. Lautenberger, on the Wildfire Mitigation Plan, page 26 in your -- one of the -- 2300, page 13, I believe also. The only risk listed as having consequence -- and I might describe "consequence" as risk having a value in the IPC's views -- are homes, businesses. There are subsequent or supplemental values including timber, structures, and protected habitat.

I'll rephrase that question again. The only risk listed as having consequence or risks having value are homes, businesses, and people, is that correct?

A. So, I don't have that page in front of me, but I am very familiar with the analysis, so I'm going to go ahead and answer, but I'd request that if it would be possible, if you could put that up on the screen for others, I think that would be helpful.

So, that being said, we need to get some terminology straight here. And the terminology that I'll be using is risk is the product of probability and consequence. Probability is the likelihood that a fire starts, and that's limited to fires started by power lines, for the sake of our discussion. And then the consequence is the negative impacts to different assets at risk. Assets at risk that are typically prioritized when looking at utility caused fires are loss of life and loss of structures, and those were the two assets at risk that were considered consequences in the risk modeling that was conducted by Idaho Power to inform its Wildfire Mitigation Plan.

I hope that answers your question.

Q. Yes. So, at this point, IPC does not consider the mature dryland wheat crop as having any consequence value, is that correct?

Oregon
Kate Brown, Governor

OREGON DEPARTMENT OF ENERGY

550 Capitol St. NE
Salem, OR 97301
Phone: 503-378-4040
Toll Free: 1-800-221-8035
FAX: 503-373-7806
www.oregon.gov/energy

To: Energy Facility Siting Council

From: Sarah Esterson, Senior Policy Advisor

Date: September 10, 2021

Subject: Agenda Item D (Information Item): Overview of the Energy Facility Siting Council's Retirement and Financial Assurance standard (Part 2) for the September 24, 2021 EFSC Meeting

BACKGROUND

The Energy Facility Siting Council (Council) was created to oversee a comprehensive system for the siting, monitoring and regulating of the location, construction and operation of all energy facilities in Oregon. ORS 469.300. To carry out this purpose, the legislature entrusted the Council with the authority to decide whether to issue a site certificate for any energy facility proposed to be constructed or operated in Oregon. ORS 469.470(1). The Council's decision to issue a site certificate is binding upon state agencies and local governments and requires those agencies and governments to issue any permits specified in the site certificate without further proceedings. ORS 469.401(3).

In order to issue a site certificate, the Council must, in part, determine that the preponderance of the evidence on the record of proceedings on an application supports the conclusion that the facility, "complies with the applicable standards adopted by the council pursuant to ORS 469.501 or the overall public benefits of the facility outweigh any adverse effects on a resource or interest protected by the applicable standards the facility does not meet." ORS 469.503(1). With some exceptions, the Council must make similar finding of compliance for other state laws and administrative rules, and with the statewide land use planning goals adopted by the Land Conservation and Development Commission. See ORS 469.503(3) and (4).

The legislature provided the Council with broad authority to determine both the scope and format of its standards, but has provided a number of subjects which the standards may address, including the "financial ability and qualifications of the applicant." ORS 469.501(1)(d). The Council adopted a standard to address this subject under OAR 345-022-0050, the "Retirement and Financial Assurance Standard."

In Part 1 of this overview, presented at the August 27, 2021 Council meeting, staff provided a summary of how the Retirement and Financial Assurance Standard works, legislative and rulemaking history of the standard, and an overview of the substantive requirements of the standard and its associated application requirements. In Part 2, staff will provide a more

detailed explanation of how the standard is applied, including an explanation of the process for retiring a site and for preparing, reviewing, and updating cost estimates.

APPLICATION OF THE STANDARD

As part of its review, the Council must review the applicant's proposed retirement estimate and determine if the amount is sufficient, and if any additional monitoring and mitigation programs or conditions are required to ensure that the site will be able to be restored to a useful, non-hazardous condition. The Council's rules establish additional procedural and substantive requirements through mandatory conditions and compliance obligations. These include rules:

- Requiring the certificate holder to submit a bond or letter of credit that is acceptable to Council prior to beginning construction and maintaining that bond or letter of credit until the facility has been retired. OAR 345-025-0006(8)
- Requiring the certificate holder to submit a proposed retirement plan for Council approval within 2 years after permanent cessation of construction or operation of the facility, and retiring the facility according to the plan. OAR 345-025-0006(9)
- Authorizing use of the bond or letter of credit to retire the facility according to a retirement plan developed by the Department if the Council finds that the certificate holder failed to meet its obligations to retire the facility. 345-025-0006(16)

PREPARATION AND REVIEW OF DECOMMISSIONING COST ESTIMATE

Decommissioning a facility typically includes dismantling facility structures and components, removing materials from the site for recycling or disposal, and restoring the site to a useful, nonhazardous condition. The extent of required decommissioning activities may be influenced by the zoning of the site, agreements with underlying landowners, and ongoing use of related or supporting facilities for other purposes.

It is important to note that a certificate holder is not required to remove all facility components as part of the decommissioning process. Certain facility components, such as access roads or transmission infrastructure may be left in place if they would support allowed uses at the site. For many facilities sited on lands zoned for Exclusive Farm Use, foundations and buried utility infrastructure are only required to be removed to a depth of three feet, and components that are more than three feet below grade may be abandoned.

Estimated Cost of Site Restoration

While no specific methodology is required to be used when estimating decommissioning costs, all applicants must include the specific actions and tasks to restore the site to a useful, non-hazardous condition; an estimate of the total and unit costs of restoring the site to a useful, non-hazardous condition; and a discussion and justification of the methods and assumptions used to estimate site restoration costs. OAR 345-021-0010(1)(w)(B)-(D).

While the applicant is also required to estimate the projected useful life of the facility no discounting of future costs is allowed, and the estimate must be provided using current cost values. OAR 345-021-0010(1)(w)(C). As discussed below, an annual inflation adjustment is provided to ensure that future price changes are accounted for.

Major cost components included in decommissioning estimates include direct costs such as labor costs, equipment operation and maintenance, tipping fees, permitting fees and revegetation and restoration, as well as indirect costs including site mobilization and contractor overhead, profit markup, and administration. Historically, the Department has recommended that the Council include a 10 to 20 percent contingency on the total estimated costs to account for any adverse development that may occur during operation of the facility or the decommissioning process. Adverse development may include increased regulatory or permitting requirements or the development of hazardous conditions on the site, such as soil contamination, that require higher levels of remediation than accounted for in the estimate. Some certificate holders with more detailed cost estimation methodology have requested a smaller contingency value.[1]

As an example, the applicant's estimated decommissioning and site restoration costs for the Madras Solar Energy Facility, with contingencies for indirect costs, were approximately $4 million. The department recommended the application of an additional 1 percent contingency to purchase a performance bond, a 10 percent contingency for the Department's administration of the decommissioning process, and a 10 to 20 percent for future development. The table below shows the approved decommissioning cost estimate and sum total costs of approximately $4.9 million from the Final Order on the Application for Site Certificate for the Madras Solar Energy Facility.

Table 1: Madras Solar Energy Facility – Retirement Cost Estimate

Task or Action	Quantity	Unit Cost ($)	Unit	Estimate ($)
Solar Photovoltaic Energy Generation Components				
Solar PV Panel	175,446	$1.79	Panel	$314,867
Tracker	569,980	$2.11	Linear Ft.	$1,204,374
Power Conversion Station (PCS)	19	$6,981	Location	$132,641
Underground Cable	56	$241	Tail	$13,492
Battery Storage				
PCS – (Battery) Location	19	$4,978	Location	$94,578
Substation, POI Station and Switching Station				
POI Station	1	$11,442	Location	$11,442
Switching Station	1	$5,762	Location	$5,762
Substation	1	$60,399	Location	$60,399
Substation Auxiliary Equipment	1	$23,469	Location	$23,469
Other Structures				
O&M Enclosure	1	$2,256	Each	$2,256
Staging/Laydown	1	$4,704	Location	$4,704
Perimeter Fence	28,681	$3.86	Linear Ft.	$110,719
Roads	3,564	$4.72	Sq. Yd.	$16,817
Other Tasks and Actions				
Stored Materials	1	$760	Lump Sum	$760
Tipping Fees	5,050	$110	Tons	$555,930

[1] See Final Order on Application for Site Certificate for the Bakeoven Solar Project, April 24, 2020, pg. 133.

Table 1: Madras Solar Energy Facility – Retirement Cost Estimate

Task or Action	Quantity	Unit Cost ($)	Unit	Estimate ($)
Site Reclamation	400	$200	acre	$80,000
Utility disconnect	1	$5,000	Each	$5,000
Surveys	1	$25,000	Lump Sum	$25,000
Environmental	1	$50,000	Lump Sum	$50,000
Safety	1	$25,000	Lump Sum	$25,000
OSHA sanitary	1	$50,000	Lump Sum	$50,000
Field Office	10	$1,250	months	$12,500
Proj Mgmt	10	$12,500	months	$125,000
Mobilization	1	$200,000	Lump Sum	$200,000
Demobilization	1	$150,000	Lump Sum	$150,000
			Subtotal =	$3,274,710
General Costs				
Contingency	10		Percent	$327,471
Overhead, Profit	15		Percent	$491,206
Subtotal =	$818,677			
Subtotal, All Tasks or Actions and Applicant Contingencies	$4,093,387			
Department Applied Contingencies				
Performance Bond	1		Percent	$40,933
Department Administration and Project Management	10		Percent	$409,338
Future Development Contingency	10/20		Percent	$418,795
Total Site Restoration Cost with Department Adjusted Contingencies (Q4 2019 Dollars)				**$4,962,453**

The review process for the final bond and letter of credit amounts includes submission of the decommissioning estimate by the certificate holder, in Excel. The information is then reviewed by a Department Senior Siting Analyst and Fiscal Analyst to ensure that the prescribed methods have been followed correctly. Following review of the site certificate condition requirements, inflation estimate and methods, a certificate holder receives written concurrence from the Department of whether the estimate is accurate. Once confirmed by the Department to be accurate, the certificate holder then submits an executed bond or letter of credit, using a Council approved form and financial institution.

ADJUSTMENT OF BOND OR LETTER OF CREDIT AMOUNT

Decommissioning estimates for a proposed facility or facility with proposed changes are evaluated by Council during the siting review process. If approved by Council through the siting review process, the facility decommissioning estimate: 1) is based on the present dollar value at the time the Application for Site Certificate (ASC) or Request for Amendment (RFA) is deemed complete by the Department; and 2) accounts for all proposed facility components. Council considers these two factors and imposes site certificate conditions requirements for inflation and final built facility adjustments applicable to the final bond or letter of credit amount, as further described below.

Inflation Adjustments

Site certificate conditions for the decommissioning bond or letter of credit require certificate holders to adhere to two inflation adjustments. The first inflation adjustment requires an evaluation of the change in dollar value from the quarter/year the estimate is based to the quarter/year of facility construction commencement. Site certificate conditions prescribe, with some flexibility, the first adjustment method as follows:

- The final amount of the bond or letter of credit must be adjusted to present value, using the U.S. Gross Domestic Product Implicit Price Deflator, Chain Weight, as published in the Oregon Department of Administrative Services' "Oregon Economic and Revenue Forecast" or by any successor agency and using the index value and the quarterly index value for the date of issuance of the bond or letter of credit.
- If at any time the index is no longer published, the certificate holder must request Department/Council input on an acceptable, comparable calculation to adjust the approved dollar amount to present value.

The second inflation adjustment applies annually after the initial bond or letter of credit is received from the certificate holder by the Department:

- The total bond or letter of credit amount must be adjusted on annual basis, based on a date cycle consistent with the date of issuance/effective date, using the same methods identified above.

The condition requires the bond or letter of credit amount to be evaluated annually by the Department's Fiscal Analyst, and to be adjusted based on changes in the prices of goods and services in the U.S., as reflected by the GDP Price Deflator. Based on this review, the Department issues letters to all certificate holders requesting adjustment of the bond or letter of credit amount to ensure the condition is both satisfied and accurately accounted.

Built Facility Adjustments

Site certificate conditions for the decommissioning bond or letter of credit allow certificate holders to adjust the final amount based on final number of facility components built within the allowed construction duration. It is fairly standard for a built facility to include significantly less number of facility components than the maximum number approved. This adjustment applies solely to the number of facility components.

Historically, site certificate conditions have not authorized a certificate holder to change the tasks, actions or cost estimating method as part of the adjustment. Because site certificate conditions do not allow adjustment to the decommissioning tasks, actions or cost estimating method, if requested by a certificate holder, would be considered substantive given that the standard requires Council to find that the facility decommissioning amount is satisfactory for restoring the site to a useful, nonhazardous condition, prior to approval. Therefore, based on typical site certificate condition language, a change in tasks, actions and estimating methods would necessitate formal review, likely in the form of an amendment.

Adjustment Considerations

Council's evaluation of whether an applicant or certificate holder's decommissioning estimate is satisfactory for restoring the facility site to a useful, nonhazardous condition is discretionary. More specifically, to find that a decommissioning estimate is satisfactory, there is not a specific estimating method or tool that must be used; there is not a specific or average amount that must be identified; and there are not restrictions on the process Council imposes to ensure that the decommissioning amount is satisfactory for the duration of facility operations. Therefore, given that estimating methods differ, and decommissioning activities and cost may vary over time, beyond variation in inflation, Council has the authority to consider whether site certificate conditions should contemplate other types of adjustments, as part of its findings of whether the decommissioning estimate is satisfactory. Other types of adjustments could include periodic revaluation in estimating methods and/or decommissioning and restoration actions by the certificate holder, the Department or Department's third-party consultant.

Applicant/Certificate Holder Requests for Adjustments

Applicant's and certificate holders often request Council consideration of other adjustments to the decommissioning amount, either short or long term. Some applicants have requested that Council allow credit for the scrap value of metals in facility components to be included in decommissioning cost estimates, but since at least the mid-2000's the Council has not allowed scrap values to be considered based on concerns over fluctuating market value and the risk that third party creditors or other parties could assert a claim against the scrap or salvage value in the event that a certificate holder became insolvent or declared bankruptcy.

Some applicants have requested Council consideration of a reduced bond or letter of credit after the facility is in commercial operation, based on assurance provided through a security agreement and an executed Power Purchase Agreement. For example, in one ASC, an applicant proposed to submit to the Department, prior to construction, a bond or letter of credit in the approved amount, to be in place until the facility was in commercial operation. Then, after the initial year of operation, applicant proposed to file a Uniform Commercial Code (UCC) financing statement with the State of Oregon, where evidence of the filing would be provided to the Department prior to construction and the bond or letter of credit would be reduced to $1. Then, in Year 20, or the last year of the applicant's Power Purchase Agreement (PPA), whichever were later, the bond or letter of credit would be based on the full facility decommissioning amount, for the remainder of the facility's operational life.

Council's review of the above example concluded that uncertainties remain in the assurances provided to the State by a PPA, even with consideration of the applicant's proposed conditions to execute a security interest with the State. Council concluded that the variation in proposal to meet the standard, from the historically accepted full bond or letter of credit amount necessary for facility decommissioning, would be more appropriately evaluated through rulemaking, where information and expertise of subject matter experts could be considered, rather than relying solely on information provided by the applicant in favor of the proposal.

AUTHORITIES

Statutory Authority

469.501 Energy facility siting, construction, operation and retirement standards; exemptions; rules.

(1) The Energy Facility Siting Council shall adopt standards for the siting, construction, operation and retirement of facilities. The standards may address but need not be limited to the following subjects.

*****

(d) The financial ability and qualifications of the applicant.

****

Administrative Rules

345-021-0010 - Contents of an Application

(1) *** The applicant must include in its application for a site certificate information that addresses each provision of this rule identified in the project order. ***

(m) ***Exhibit M.*** *Information about the applicant's financial capability, providing evidence to support a finding by the Council as required by OAR 345-022-0050(2). Nothing in this subsection requires the disclosure of information or records protected from public disclosure by any provision of state or federal law. The applicant must include:*

(A) An opinion or opinions from legal counsel stating that, to counsel's best knowledge, the applicant has the legal authority to construct and operate the facility without violating its bond indenture provisions, articles of incorporation, common stock covenants, or similar agreements;

(B) The type and amount of the applicant's proposed bond or letter of credit to meet the requirements of OAR 345-022-0050; and

(C) Evidence that the applicant has a reasonable likelihood of obtaining the proposed bond or letter of credit in the amount proposed in paragraph (B), before beginning construction of the facility.

(w) ***Exhibit W.*** *Information about site restoration, providing evidence to support a finding by the Council as required by OAR 345-022-0050(1). The applicant must include:*

(A) The estimated useful life of the proposed facility;

(B) Specific actions and tasks to restore the site to a useful, non-hazardous condition;
(C) An estimate, in current dollars, of the total and unit costs of restoring the site to a useful, non-hazardous condition;

(D) A discussion and justification of the methods and assumptions used to estimate site restoration costs; and

(E) For facilities that might produce site contamination by hazardous materials, a proposed monitoring plan, such as periodic environmental site assessment and reporting, or an explanation why a monitoring plan is unnecessary

ENERGY FACILITY SITING COUNCIL STANDARD

345-022-0050 - Retirement and Financial Assurance
To issue a site certificate, the Council must find that:

(1) The site, taking into account mitigation, can be restored adequately to a useful, non-hazardous condition following permanent cessation of construction or operation of the facility.

(2) The applicant has a reasonable likelihood of obtaining a bond or letter of credit in a form and amount satisfactory to the Council to restore the site to a useful, non- hazardous condition.

CONDITIONS

345-025-0006 - Mandatory Conditions in Site Certificates
*****
(7) The certificate holder must prevent the development of any conditions on the site that would preclude restoration of the site to a useful, non-hazardous condition to the extent that prevention of such site conditions is within the control of the certificate holder.

(8) Before beginning construction of the facility, the certificate holder must submit to the State of Oregon, through the Council, a bond or letter of credit in a form and amount satisfactory to the Council to restore the site to a useful, non-hazardous condition. The certificate holder must maintain a bond or letter of credit in effect at all times until the facility has been retired. The Council may specify different amounts for the bond or letter of credit during construction and during operation of the facility.

(9) The certificate holder must retire the facility if the certificate holder permanently ceases construction or operation of the facility. The certificate holder must retire the facility according to a final retirement plan approved by the Council, as described in OAR 345-027-0110. The certificate holder must pay the actual cost to restore the site to a useful, non-hazardous condition at the time of retirement, notwithstanding the Council's approval in the site certificate of an estimated amount required to restore the site.

*****

(16) If the Council finds that the certificate holder has permanently ceased construction or operation of the facility without retiring the facility according to a final retirement plan approved by the Council, as described in OAR 345-027-0410, the Council must notify the certificate holder and request that the certificate holder submit a proposed final retirement plan to the Department within a reasonable time not to exceed 90 days. If the certificate holder does

not submit a proposed final retirement plan by the specified date, the Council may direct the Department to prepare a proposed final retirement plan for the Council's approval. Upon the Council's approval of the final retirement plan, the Council may draw on the bond or letter of credit described in section (8) of this rule to restore the site to a useful, nonhazardous condition according to the final retirement plan, in addition to any penalties the Council may impose under OAR chapter 345, division 29. If the amount of the bond or letter of credit is insufficient to pay the actual cost of retirement, the certificate holder must pay any additional cost necessary to restore the site to a useful, non-hazardous condition. After completion of site restoration, the Council must issue an order to terminate the site certificate if the Council finds that the facility has been retired according to the approved final retirement plan

TERMINATION

345-027-0110 - Termination of a Site Certificate

(1) A certificate holder may apply to the Council to terminate a site certificate at any time, subject to the requirements of this rule.

(2) A certificate holder must apply to the Council to terminate a site certificate within two years following cessation of construction or operation of the facility.

(3) If the certificate holder fails to apply to the Council to terminate the site certificate and the Council finds that the certificate holder has permanently ceased construction or operation of the facility, then the Council may terminate the site certificate according to the procedure described in OAR 345-025-0006(16).

(4) In an application for termination of the site certificate, the certificate holder must include a proposed final retirement plan for the facility and site. The certificate holder must submit two printed copies of the application for termination and the proposed final retirement plan, and an electronic version of the application for termination and the proposed final retirement plan in a non-copy-protected electronic format acceptable to the Department. The certificate holder must submit additional printed copies of the application for termination and the proposed final retirement plan to the Department upon request.

(5) In the proposed final retirement plan, the certificate holder must include:

(a) A plan for retirement that provides for completion of retirement without significant delay and that protects public health, safety and the environment;

(b) A description of actions the certificate holder proposes to take to restore the site to a useful, non-hazardous condition, including information on how impacts to fish, wildlife and the
environment would be minimized during the retirement process;

(c) A current detailed cost estimate and a plan for ensuring the availability of adequate funds for completion of retirement; and

(d) An updated list of property owners, as described in OAR 345-021-0010(1)(f).

(6) Within 15 days after receiving an application for termination of a site certificate, the Department must:

(a) Send a notice of the application, specifying a date by which comments on the application are due, by mail or email to:

(A) All persons on the Council's general mailing list, as defined in OAR 345-011-0020;

(B) All persons on any special list established for the facility; and

(C) The property owners on the updated list submitted by the certificate holder under section (5) of this rule;

(b) Send copies of the application for termination by mail or email to the reviewing agencies for the facility, and ask those agencies to comment by a specified date; and

(c) Post an announcement of the application for termination on the Department's website.

(7) The Council must review the proposed final retirement plan and must consider any comments received from the public and the reviewing agencies. The Council may approve the proposed final retirement plan or modify the plan to comply with the rules of this chapter and applicable conditions in the site certificate. If the plan is approved, the Council must issue an order authorizing retirement according to the approved or modified final retirement plan and subject to any conditions the Council finds appropriate. The Council's order may be appealed as described in ORS 183.480.

(8) When the Council finds that the certificate holder has completed the retirement of the facility according to the Council's order authorizing retirement, the Council must issue an order terminating the site certificate.

Oregon
Kate Brown, Governor

OREGON DEPARTMENT OF ENERGY

550 Capitol St. NE
Salem, OR 97301
Phone: 503-378-4040
Toll Free: 1-800-221-8035
FAX: 503-373-7806
www.oregon.gov/energy

To: Energy Facility Siting Council

From: Christopher M. Clark, Siting Policy Analyst & Rules Coordinator

Date: August 13, 2021

Subject: Agenda Item G (Action Item):
Surety Bond Template Update for the August 27, 2021, EFSC Meeting

Attachments: Attachment 1: Draft Amended Bond Template
Attachment 2: Draft Amended Letter of Credit Template

STAFF RECOMMENDATION

Staff recommends the Council amend the Surety Bond Template, as shown in Attachment 1, to ensure that a bond would perform if a Surety gives notice of its intent to cancel a bond and the certificate holder fails to provide an acceptable replacement.

BACKGROUND

The Council has adopted rules requiring each certificate holder to provide a surety bond or letter of credit before beginning construction of a facility. The bond or letter of credit must be provided in a form and amount satisfactory to the Council to restore the site to a useful, non-hazardous condition, and must be maintained at all times until the facility has been retired. OAR 345-025-0006(8). These requirements provide assurance that the people of Oregon will not be burdened with the costs of restoring the site if the certificate holder is unable or unwilling to properly decommission the facility following permanent cessation of construction or operation of the facility.

Both bonds and letters of credit are commonly used and accepted forms of security, but there are some important differences. A surety bond provides a guarantee that the principal (e.g. the certificate holder), will meet the requirements of a contract (e.g. the site certificate.) If there is a documented breach in the terms of the contract, the surety will make payment to the Obligee (e.g. the State) to ensure that the contract is fulfilled. A letter of credit, on the other hand, is a bank's guarantee that it will pay a set amount to the letter holder upon demand and does not typically require proof of a breach to perform.

As shown in the table below, the Council has financial assurance on file for approximately $168.2 million in estimated retirement costs. About 56 percent of the total amount was assured through letters of credit, with the remining 44 percent assured through surety bonds.

Table 1: Energy Facility Security Deposits as of April 1, 2021.

Project Name	Instrument	20-21 Value
Biglow Canyon Wind Farm	LOC	$17,825,000
Columbia Ethanol Project	Bond	$315,244
Carty Generating Station	LOC	$23,011,000
Coyote Springs Cogeneration	LOC	$4,117,500
Golden Hills Wind	Bond	$11,903,000
Hermiston Generating Project	Bond	$7,102,200
Hermiston Power Project	LOC	$5,139,883
Klamath Cogeneration Project	Bond	$5,431,244
Klamath Generation Peakers	Bond	$709,759
Klondike Wind Power III	Bond	$11,857,000
Leaning Juniper Wind Power	Bond	$12,245,000
Mist Underground Storage Facility	Bond	$4,557,800
Montague Wind Power	Bond	$7,865,000
Port Westward Generating Project	LOC	$11,276,462
Shepherds Flat Central	LOC	$10,451,000
Shepherds Flat North	LOC	$8,672,000
Shepherds Flat South	LOC	$10,225,000
South Mist Pipeline Extension	Bond	$120,228
Summit Ridge Wind Farm	LOC	$63,129
Stateline Wind Project-1&2	Bond	$7,004,000
Stateline Wind Project-3	Bond	$4,903,000
Wheatridge Renewable Energy Facility 1	LOC	$3,444,000
TOTAL		$168,238,449

The Council has adopted standardized templates for each security instrument that is accepted under the rules. The Council and Department periodically review the template language to ensure that the templates provide adequate assurance for the costs associated with retirement and site restoration and is consistent with current industry and regulatory practices. While both the bond and letter of credit templates were reviewed and are attached to this staff report, staff is not recommending changes to the letter of credit template at this time.

BOND TEMPLATE ASSESSMENT

The bond template provides that the bond will perform only when the certificate holder has failed to fulfill its obligations to retire the facility and restore the site. When a certificate holder permanently ceases construction or operation of a facility it must provide an application for termination of its site certificate that includes a final retirement plan for the site explaining the actions that will be taken to restore the site to a useful, non-hazardous condition. OAR 345-027-0110. The bond is released once the restoration activities described in an approved retirement plan are complete. If the certificate holder fails to submit a retirement plan, or fails to comply

with the plan it submitted, the Council may call on the bond as needed to restore the site. To ensure that funds will be available to restore the site in the event a certificate holder fails to retire the site the certificate holder must maintain a bond or letter of credit for the life of the facility.

During its last review of the bond template language at the January 22, 2021 meeting, the Council noted that the current bond template language does not clearly state that the bond would perform if a certificate holder fails to maintain acceptable security for the life of the facility. Specifically, the template states that in the event that a certificate holder fails to provide an acceptable replacement after a Surety provides notice of its intent to cancel the existing bond instead of providing that the bond will perform, the template states that the Department may take enforcement measures under OAR chapter 345, division 029:

> "6. If the Surety cancels the bond prior to the Principal fulfilling its obligation to retire the facility and restore the site, but Principal does not provide alternate financial assurance approved by the Council within 90 (ninety) days after the date of notice of cancellation is received by the Obligee from the Surety, the Oregon Department of Energy *may take enforcement measures as described in OAR 345-029-0000 through OAR 345-029-0100.*" (Emphasis added.)

The enforcement procedures in OAR 345-029 are generally intended to obtain compliance through corrective actions but allow for sanctions such as civil penalties and the suspension or revocation of a site certificate if a certificate holder is unable, or unwilling, to take appropriate action. It is unclear that these sanctions would be effective to compel compliance with the retirement and financial assurance requirement, particularly when a certificate holder has permanently ceased construction or operation of a facility, or is facing financial conditions that would cause a surety to not renew or cancel its bond. We further note that any civil penalties assessed and collected through enforcement actions are statutorily required to be deposited in the State's general fund and would not necessarily be available for the decommissioning and site restoration activities the bond is intended to assure.

The lack of a clear and effective mechanism to ensure that a certificate holder maintains a bond or letter of credit until the facility has been retired could expose the State to unacceptable risk. For this reason, staff recommends that the Council amend the bond template to clarify that if the certificate holder does not provide an acceptable replacement after a surety has given notice of its intent to cancel the bond, the surety may become liable for payment. This is consistent with the terms of the LOC template, and with decommissioning bond forms used by other regulatory agencies.[1]

In addition, staff recommends that the provisions for expiration of the bond be removed so that the bond remains valid for the life of the facility, or until the surety provides a notice of intent to cancel the bond. The amount of bond may still be adjusted annually to reflect changes in inflation through the use of riders. In the alternative, an "evergreen" clause could be included

[1] For an example, see Oregon DOGAMI Performance Bond to Conduct Geothermal Well Drilling or Prospecting at: https://www.oregongeology.org/mlrr/forms/geothermal/Performance_Bond_Geo_06-2013.pdf

in the bond template which causes the bond to be automatically renewed every year unless the surety provides notice of its intent to not renew the bond. If the Council chooses not to remove the provisions for expiration of the bond, staff recommends that the conditions of performance be amended to allow the state to call on the bond if an appropriate replacement is not provided at least 30 days before the bond's expiration date in addition to the other changes recommended in this report.

Staff's recommended changes to the bond template are provided in Attachment 1. The current bond template requires the surety to give a 120-day written notice of its intent to cancel the bond to the Council. Staff recommends that the revised template language should also require notice to be given to the certificate holder, and that the certificate holder should continue to have 90 days from that date to provide a replacement before action is taken on the bond. If the Council adopts the recommended revision, staff will review internal operating procedures to ensure that appropriate notice is given to both the surety and certificate holder prior to taking action on any bond.

These changes are generally consistent with the Letter of Credit template provided as Attachment 2. The template establishes an Irrevocable Standby Letter of Credit (ISLOC) which is payable upon presentation to the issuing financial institution subject to certain terms and conditions. One condition requires a dated draw certificate describing the conditions under which the Council is presenting the ISLOC for payment. The draw certificate provided under ISLOC Exhibit B allows for presentation to be made when a financial institution provides notice of intent to not renew the ISLOC and the certificate fails to provide acceptable replacement security at least 30 days before prior to its expiration.

RECOMMENDED COUNCIL ACTION

Staff recommends the Council amend the bond template to provide that (1) the bond will not expire, but may be cancelled by the Surety with 120 days' notice and (2) the Surety will become liable for payment if the certificate holder does not provide an acceptable replacement for the bond at least 30 days before the cancellation date. Staff's recommended changes are provided in Attachment 1. Staff does not recommend changes to the Letter of Credit template at this time.

TARDAEWETHER Kellen * ODOE

From: Irene Gilbert <ott.irene@frontier.com>
Sent: Thursday, May 30, 2024 1:43 PM
To: TARDAEWETHER Kellen * ODOE
Subject: Comments for Amendment 2 B2H
Attachments: SITE BOUNDARY EXPANSION REQUIRES FULL REVIEW TO APPROVE FUTURE TYPE C PROCEDURE.docx; Bond for Irene.docx; Bond Comments short version 2.docx; exhibit bond Documentation Merged Ref for Sarah & Chris ccomments.pdf

Attached is my comment regarding the site boundary changes and two documents regarding the bond amount. Iam submitting both as my comments. The exhibit attachment contains the letters from Sarah and Christopher referenced in the bond comments.

TO: Kellen Tardaewether May 30, 2024

FROM: Irene Gilbert as an Individual and representing the Public Interest.

RE: FAILURE TO FULLY REVIEW THE AREA OF THE EXPANDED SITE BOUNDARY FOR THE BOARDMAN TO HEMINGWAY TRANSMISSION LINE AMENDMENT 2

AND

EFSC CANNOT APPROVE OF CHANGES WITHIN THE SITE BOUNDARY(TYPE C APPROVAL) ABSENT A PUBLIC PROCESS WHICH INCLUDES ALL REQUIREMENTS FOR ADDING LAND TO THE SITE BOUNDARY

1.

INTRODUCTION

ORS 469.401(2) requires that the council include in the site certificate conditions in the site certificate to ensure compliance with the statutes, standards and rules described in ORS 469.501 and ORD 469.503. Council must implement this statutory framework by adopting findings of fact, conclusions of law and conditions of approval concerning the facilities compliance with the EFSC Standards for Siting Facilities at OAR 345, Divisions 22, 24, 26 and 27. (Final Order on the ASC for the B2H Transmission Line 9/27/22,Page 88)

2.

The DPO for Amendment 2 changes the review requirements for the area added to the site boundary in a manner that conflicts with OAR 345-027-0375(2)(a). This rule requires that the review of the area added to the site complies with all standards that apply to an original site certificate. The change from requiring review of Council standards which apply to the site boundary to the area In the siting corridor/micrositing area conflicts with the Scope of Review that the Council must apply to add area to the site boundary. Council review no longer meets the council review requirements that apply to a new application.

1 Cannot expand site boundary without full review

3.

Council is precluded from issuing this site certificate without requiring compliance with the requirements of a new application. This includes providing the opportunity for the public to participate in the review. Doing so means that ODOE and EFSC cannot allow a type C review to approve future changes in the micrositing corridors or construction outside the micrositing corridors. Any future changes require either a Type A or Type B review. Doing otherwise conflicts with Eng v. Wallowa County 79 Or LUBA 421 (2019) A county may not defer a determination of compliance with applicable approval criteria to a future proceeding that does not allow for public participation merely because the deferred criteria require no interpretation or judgment.

4.

Use of this process also conflicts with the court's decision in Friends of the Columbia Gorge v. Energy Facility Siting Council 365 Or 371 which states that Council does not have the authority to decide that the public cannot request a reconsideration by the Circuit Court when no opportunity is provided to access a contested case. The use of a Type C review process fails to provide notice and this opportunity to access due process.

5.

Statements that the developer will be required to complete the site reviews which are not being required as part of allowing a Type C change fails to comply with council rules and the above court decisions requiring the public to be allowed to participate in the decision making process.

6.

The Draft Proposed Order waives the requirements of rules promulgated under the authority of ORS 469.501.

> --The change from the rule requirements being met for the area in the "site boundary" to only apply to the "micrositing area" is not a change in definition or interpretation. The definitions and application of the terms

continue to be the same in EFSC rules, statutes and the original B2H Site Certificate as they were prior to Amendment 2. The change represents a unilateral change by the Oregon Department of Energy to allow the development to avoid meeting the requirements of the Oregon Statutes and rules which require identification, protection, and mitigation of the impacts of the transmission line on the resources of the state requiring a preponderance of evidence that the facility complies with EFSC standards.

7.

--During the Contested Case for the Wheatridge wind development, council interpreted the rules to allow developers to decide what items were to be included as part of the "facility". Developers have the ability to define the area included within the facility site boundary consistent with the language of the rules defining "site boundary" so long as it includes all development they decided to include as part of the energy facility.

8.

The site boundary requirements for evaluating whether the development complies with EFSC standards are established in the Siting Standards in Chapter 21 and Chapter 22 of the EFSC rules as well as the 2nd amended project order. The requirements are not subject to change through this amendment.

9.

The following Council Standards and applicable regulations require field-based surveys, literature review and agency consultation for the entire site boundary to support Council review of compliance:

Structural Standard (OAR 345-022-0020) (Analysis area is area within the site boundary)

Fish and Wildlife Habitat (OAR 345-022-0060)

Threatened and Endangered Species (OATR 345-022-0070)

3 Cannot expand site boundary without full review

Historic, Cultural and archaeological Resources (OAR 345-022-0090) plus 5 miles from the site boundary.
Oregon Removal-Fill Law (OAR 141-085-0500 through 141-085-0785, ORS 196.795-196.990)

10.

EFSC rules reference the micrositing area and the site boundary to communicate requirements of Council Standards and where they are to occur. The importance and significance of the term ”Site Boundary” is documented in the Final Order for the Boardman to Hemingway Transmission Line dated September 27, 2022. In that order, the term is used 213 times regarding the decision to approve the original site certificate for this development.

11.

As noted above, changing the evaluation of the area being added to the site to minimize review requirements impacts all future approvals and uses of the area added. Because of this, a site certificate must not be issued to extend the site boundary unless the evaluation of siting standards include the evaluation of the standards in the same manner as is required when an area is included in an original site certificate.

12.

An example of the egregious nature of adding area to the site boundary without requiring a full evaluation required by EFSC rules is described in ORS 469.320(5). This statute allows expansion within a site of a facility for which a site certificate has been issued. OAR 345-027-0351(4) allows the department and council to approve requests to make changes in the location of parts of a facility including structures and roads using the procedure outlined in OAR 345-027-0357. The procedure and requirements include the following:

13.

OAR 345-027-0357(2) allows ODOE and EFSC to amend a site certificate (Type C amendment) to authorize changes in the locations of facility components without requiring an amendment complying with the requirements of a Type A or Type B public amendment process when the changes will occur within an existing site boundary which has been documented to meet all council standards. These requests are processed in the following manner:

OAR 345-027-0357(3): ODOE must post the request on the department web site.

OAR 345-27-0357(4) :ODOE must issue a written decision granting or denying the request within 3 days after receiving the request and post the decision on their web site.

OAR 345-027-0357(7): Within 7 days of granting a request to temporarily amend the site certificate without requiring a public Amendment under the Type A or Type B review process. The department must issue the temporary order and post it on the department website.

OAR 345-027-0357(9): The council at it's next meeting or sooner must consider the recommendation of the department and issue a temporary order amending the site certificate or denying the issuance of an amended site certificate.

OAR 345-027-0357(13): The developer is allowed to take actions allowed under the temporary order and actions taken under the authority of the temporary order that are not consistent with the conditions of the final order are not considered a violation.

14.

This procedure allows ODOE and EFSC to amend the Site Certificate to allow changes including adding micrositing areas or other facilities without providing the public with notice or telling them they have a right to appeal the decision. The rule does not allow ODOE to authorize changes to areas within

5 Cannot expand site boundary without full review

the site boundary which have never shown with a preponderance of evidence that the area meets EFSC standards, and which have never been subject to public review or comment regarding all of the mandatory siting standards. The areas of conflict with Oregon Statutes and rules include the fact that there is no opportunity for the public to provide input or object to the decision and the timeframes for decisions do not allow for a thorough review of eligibility requirements or to establish a "preponderance of evidence" . Issuance of a site certificate with the changes made in the site certificate conditions which require information regarding the "micrositing area" rather than the "site boundary" means that the area within the site boundary which is not currently in the "micrositing corridors" will not be evaluated consistent with the EFSC rules and Oregon statutes designating the requirements for approval of a site certificate which adds area to the site boundary. Future changes would be made with no notice informing the public of their rights to participate in the evaluation of the area, no notice of appeal rights and access to due process regarding any new temporary order. The developer would be authorized to immediately take actions allowed in the order regardless of the illegal action resulting in approval of a site certificate. Amendments to the site certificate using a Type C evaluation when the entire site has not been previously anbeen documented as meeting EFSC standards can result in long term damages to the public safety and health and resources protected by EFSC standards. The Type C decisions are based upon whatever the developer provides and the independent review and recommendation of EFSC staff for impacts to the site that have never been identified or addressed in a public process. In spit of the requirements of ORS 469.350, no Special Advisory Groups , counties or other agencies are provided notice or opportunity to comment on the impacts of the site certificate changes prior to it being issued and implemented.

15.

Two additional examples of statutes and rules being violated in the event that Type C requests were allowed to avoid a public amendment process include:

6 Cannot expand site boundary without full review

16.

ORS 469.505 requiring ODOE to notify and consult with other agencies and local governments responsible for administering statutes, rules or local criteria that may conflict with the decision. The use of a Type C amendment process avoids allowing even other agencies from being involved in the decision.

17.

All surveys and other documentation not provided, required or addressed in this Amendment 2 Site Certificate requesting additional land be added to the site boundary must be evaluated in a public amendment process described in ORS 469.370. This includes all land not included in the "micrositing corridor" review.

18.

SUMMARY

The Draft Proposed Order for Amendment 2 of the B2H Site Certificate fails to require a full review of the area added to the site boundary required by OAR 345-027-0375(2)(a) stating that in order for Council to issue a site certificate which adds area to the site boundary Council must determine that the area added to the site complies with all laws ad Council standards applicable to an original site certificate application. Limiting reviews of some siting standards to the micrositing corridors rather than the site boundary fails to meet tis standard. Not all the land being added to the site boundary has been subject to the full evaluation required of a new facility site . A Type C review cannot be allowed since it does not include participation by the public in the evaluation regarding whether standards are met for micrositing areas or other changes occurring in the Site Boundary. ODOE cannot approve changes to the facility without disclosing the impacts to the safety, health and environmental impacts of the changes. Us of a Type C procedure for this facility circumvents notice requires including the public right to participate in the process and their appeal rights.

7 Cannot expand site boundary without full review

ssue an amended site certificate, the Council must determine that the preponderance of evidence on the record supports the following conclusions:

(a)

For a request for amendment proposing to add new area to the site boundary, the portion of the facility within the area added to the site by the amendment complies with all laws and Council standards applicable to an original site certificate application

19.

THE FOLLOWING PROPOSED SITE CERTIFICATE CONDITIONS NEED TO CONTINUE TO REQUIRE THAT ACTIONS OCCUR WITHIN THE ENTIRE EXPANDED SITE BOUNDARY. RECOMMENDED CHANGES SHOULD NOT BE IMPLEMETED:

20.

GEN-FW-08: Should not change the requirements regarding reporting of avain fatalities from site to micro siting corridor

21.

GEN-FW-01 Remove change limiting area for required reporting to ODOE to micro-siting corridor. Leave it as “site boundary.”

22.

PRE-SS-01: Remove change that would limit sub surface ecological Surveys to the micrositing corridor and retain current wording requiring surveys within site boundary. This is a safety and health condition.

23.

PRE-FW-01: Allows developer to decide whether to complete biological surveys in either the site boundary or micrositing area. Should retain current language requiring surveys in site boundary.

24.

PRE-FW-02: Should retain current language requiring pre-construction surveys within the site boundary.

25.

CON-FW-03: Retain current language requiring identification of migratory bird nests and non-native raptor nests within site boundary.

26.

SITE CERTIFICATE CONDITIONS NEEDED TO COMPLY WITH COUNCIL REQUIREMENTS FOR REVIEW OF AMENDED SITE CERTIFICATES

27.

Site Certificate Condition One:

Prior to approving a site boundary expansion developer must amend the site certificate using an approved Type A or Type B amendment to complete all requirements for analysis, surveys and activities required by Oregon EFSC statutes, rules if the area being added had been included in the initial request for a Site Certificate. This includes, but is not limited to meeting the requirements of Chapter 21, 22, 24, and 27.

28.

Site Certificate Condition Two:

The developer may not make changes to the siting corridors or utilize a Type C review under OAR 345-027-0380 prior to completing and providing results of

all surveys, reviews and certificate amendment activities required by chapter 21 ,Chapter 22, other EFSC rules identified in the 2nd Amended Project Order for the B2H Transmission during a public amendment process.

29.

REFERENCE DOCUMENTS SUPPORTING THIS COMMENT

OAR 345-001-0010(32) . "Micrositing Area" is referred to in the EFSC rules as a "micrositing corridor". It is defined as a "continuous area of land within which construction of facility components may occur, subject to site certificate conditions.".

OAR 345-001-0010(13) "corridor" is a "continuous area of land not more than one-half mile in width and running the entire length of a proposed transmission line or pipeline.":

OAR 345-001-0010(54) "site Boundary" is defined in as "the perimeter of the site of a proposed energy facility, its related or supporting facilities all temporary laydown and staging areas and all corridors and micrositing corridors **proposed by the applican**t."

The Site boundary is typically larger than the micrositing corridor and it includes the micrositing corridors.

OAR 345-001-0010 (55) "Analysis area includes all areas within the site boundary"

ORS 469.300(26) defines Site Certificate as the binding agreement authorizing the applicant to construct and operate a facility on an approved site.

ORS 469.320(5)(b) allows expansion within the site when an existing site certificate allows expansion.

ORS 469.350 Consultation with other agencies regarding request for amended site certificate

ORS 469.401 (2) The site certificate or amended site certificate shall contain conditions for the protection of the public health and

safety, for the time for completion of construction and to ensure compliance with the standards, statutes and rules described in ORS 469.50l and ORS 469.503

The DPO fails to include conditions which comply with the statutes and rules described in the above two statutes.

ORS 183.335(1)(a) Notice Requirements

(a)In the manner established by rule adopted by the agency under ORS 183.341 (Model rules of procedure) (4), which provides a reasonable opportunity for interested persons to be notified of the agency's proposed action;

ORS 183.415(l) The Legislative Assembly finds that persons affected by actions taken by state agencies have a right to be informed of their rights and remedies with respect to the actions.

OAR 345-021-0100(2) The burden of proving compliance with council standards lies with the applicant.

ORS 345-022-0000 Notification Requirements are based upon distance extending beyond the site boundary.

OAR 345-022-0020 Structural Standard

OAR 345-027-0380(1)

30.

REFERENCE DOCUMENTS:

Exhibit 1: Original Site Certificate for the B2H Transmission Line.

Exhibit 2: Wheatridge Site Certificate

Exhibit 3: Draft Proposed Order for Amendment 2 of the B2H Transmission line including Exhibit C Pages 29-30 Section 3.5 describing the site boundary.

11 Cannot expand site boundary without full review

Exhibit 4: Request for Amendment #2 from Idaho Power

Exhibit 5: Second Amended Project Order,

LEGAL REFERENCES:

Eng v. Wallowa County 79 Or LUBA 421 (2019) A county may not defer a determination of compliance with applicable approval criteria to a future proceeding that does not allow for public participation merely because the deferred criteria require no interpretation or judgment.

Friends of the Columbia Gorge v. Energy Facility Siting Council 365 Or 371 Council lacks the authority to decide that the public cannot request a reconsideration by the Circuit Court when no opportunity is provided to access a contested case. Notice must be provided of this right to due process following any decision to amend the site certificate under a Type C review.

TARDAEWETHER Kellen * ODOE

From: Irene Gilbert <ott.irene@frontier.com>
Sent: Thursday, May 30, 2024 1:54 PM
To: TARDAEWETHER Kellen * ODOE
Subject: Comments regarding Amendment II of B2H Site Certificate
Attachments: Failure to complie with Union County Land Use Requirements.docx; ARTICLE-20.00-Supplementary-Provisions.pdf; Bat surveys needed prre-construction comment.docx; Guide for Processing NABat data USGS.pdf; ODFW-Wildlife-Priority-Strategy-Species-by-Ecoregion_3.2018.pdf

Hi Kellen:
Attached are some comments regarding the above amendment for inclusion in the record:
Items 1 and 2: Failure to Comply with Union County requirements regarding protected areas, habitat T & E species and public safety.
Items 3, 4 and 5 Pre-Construction Bat Surveys needed

To: Kellen Tardaewether May 30, 2024

From: Irene Gilbert, On behalf of the Public Interest and herself

Subject: B2H Amendment 2 LACKS COMPLIANCE WITH UNION COUNTY SUPPLIMENTAL PROVISIONS, ARTICLE 20.00 EFFECTIVE 2013

Article 20

Section 20.07 addresses Clear-Vision Areas on corners of all property at the intersection of two or more streets or a street and a railroad.

This Article is a safety requirement which requires a clear-vision area of 30 feet where no temporary or permanent structures exceed 2.5 feet in height. (ORS 345-022-0110)

Section 20.09 addresses Goal 5 Resource Areas

The Multi-use Areas and other facility components are located within 1320 feet of Big game critical wildlife habitat areas, big game winter range Significant avian habitat, Significant wetlands including Ladd Marsh which requires a management plan developed in coordination with the responsible agency. (ORS 345-022-0040, ORS 345-022-0060, ORS 345-022-0070)

Site Certificate Needed:

Item One: Idaho Power will comply with the Union Conty Supplemental provisions, Article 20, Sections 20.07 and 20.09.

ARTICLE 20.00
SUPPLEMENTARY PROVISIONS

20.01 GENERAL PROVISIONS FOR DWELLINGS ON LEGALLY CREATED PARCELS

Every dwelling hereafter erected shall be located on a legally created parcel, and there shall be no more than one dwelling on one lot, except:

1. A dwelling unit demonstrated to be in conjunction with farm use, or allowed outright; or

2. Where a conditional use permit has been obtained.

20.02 USES PERMITTED ON SUBSTANDARD LEGALLY CREATED PARCELS

Any previously created lot, or the aggregate of contiguous lots or land parcels held in a single ownership, of less than the lot size requirement of the zone in which the property is located that was legally created on or prior to April 11, 1979, and that conformed with the previous applicable Ordinance, shall be eligible for a residential dwelling based on the applicant's ability to demonstrate with facts sufficient to develop findings to satisfy one of the following sets of criteria:

1. Farm Dwelling.
   Approval of a single-family dwelling in conjunction with a farm use on a parcel greater than 20-acres shall conform to the following criteria:

   A. The parcel is currently employed in agricultural use, is typical of the existing commercial agricultural operation in the surrounding area, and is of sufficient size to support production of food or fiber using accepted farm practices as that term is defined in ORS 215.203 (2) (c) and taking into account:

      (1) Soil types and patterns in the area and typical yields;

      (2) Type of crops grown in the area and typical yields;

      (3) Potential markets;

      (4) Other relevant information included in the agricultural element of the Union County Plan; and

   B. The proposed use is compatible with the farm use in the

area and does not interfere either in itself or in the location of the improvements, with "current accepted practices" as that term is defined in ORS 215.203(2) (c) which characterizes such use;

2. Forest Dwelling.
Approval of a single-family forest dwelling on a parcel greater than 20-acres shall be dependent on the applicants ability to demonstrate that the dwelling is necessary for and is incidental and secondary to the main forest use.
An applicant for a forest residence must provide, at a minimum, the following information. Additional information may also be required.

A. A description of the parcel, including soil types, forest site classes, forest species, ages and densities, topography, streams, wetland areas, roads, structures, and other significant geographic features.

B. A determination of which forest use(s) the forest residence is needed for.

C. A discussion of why the forest residence is needed to conduct the forest use(s) identified in B. above.

D. A discussion of methods and practices the landowner is or will be using to conserve forest resources, including, but not limited to:
_____soil conservation and erosion control;
_____fire protection;
_____brush management;
_____fish and wildlife habitat management;
_____harvest and revegetation plans;
_____stream quality protection; and
_____fencing requirements and costs.

E. Meets one or more of the standards listed below and meets the overall intent of the standards listed below better than any other alternative site on the parcel.
(1) The structure is sited on the "least suitable" portion of the parcel in question for forest or grazing uses.
(2) The structure is clustered among or near other bexisting structures.
(3) The structure is located so as to have the least amount of impact on lands engaged in the propagation of timber.
(4) Domestic water supplies for all development within the A-4 Zone shall emanate from surface or subsurface water sources either contained within the boundary of the property or legally acquired through easement or water rights from adjacent properties.
(5) The homeowner shall maintain water supply and fire fighting equipment deemed adequate to contain fire from spreading to surrounding areas.

(6) The structure is sited in a manner which complies with such other conditions as the approving authority considers necessary.

3. Those substandard legally created parcels which can meet the following six specific criteria are guaranteed a building right for one single-family dwelling as an outright use. The County Planning Department will keep a record of all such approvals and submit the record to the Land Conservation and Development Commission before the end of each even-number year.

   A. The lot was acquired (transferred to or created) by the present owner between January 1, 1965 and January 1, 1975;

   B. A single-family dwelling was an allowed use when the present owner acquired the lot;

   C. The lot is in an unincorporated area and outside Greenway and hazard area;

   D. The lot is outside of areas designated for urban (land within an UGB is assumed to be earmarked for urban uses), industrial, and commercial uses;

   E. The lot is not contiguous to another legally created parcel under the same ownership (including lots transferred among relatives); and

   F. The lot has not received farm or forest use assessment for more than 5-years (any 5 years).

4. When an applicant fails to comply with the standards in Section 20.02 1., 2., or 3. above, the proposed residential dwelling shall be recognized as a nonfarm or nonforest dwelling and comply with procedures and standards in Sections 24.05 and 24.06.

20.03 GENERAL PROVISIONS REGARDING ACCESSORY USES

Accessory uses shall comply with requirements for the principal use except where specifically modified by this Ordinance.

20.04 GENERAL EXCEPTIONS TO YARD REQUIREMENTS

The following exceptions to the front yard requirements of a dwelling are authorized for a lot in any zone. If there are dwellings on both abutting lots with front yards of less than the required depth for the zone, the front yard for the subject lot need not exceed the average front yard of the abutting dwellings. If there is a dwelling on one abutting lot with a front

yard of less than the required depth for the zone, the front yard for the lot need not exceed a depth one-half way between the depth of the abutting lot and the required front yard depth.

20.05 GENERAL EXCEPTIONS TO BUILDING HEIGHT LIMITATIONS

The following structures or structural parts are not subject to the building height limitations of this Ordinance except as provided in Section 16.06; chimneys, cupolas, tanks, church spires, belfries, domes, derricks, monuments, fire and hose towers, observation towers, transmission towers, smokestacks, elevator flagpoles, radio and television towers, water towers, elevator shafts, windmills, conveyors, and other similar projections.

20.06 PROJECTIONS FROM BUILDINGS

Architectural features such as cornices, eaves, canopies, sunshades, gutters, chimneys, and flues shall meet with uniform building code regulations.

20.07 CLEAR-VISION AREAS

A clear-vision area shall be maintained on the corners of all property at the intersection of two or more streets or a street and a railroad.

1. A clear-vision area shall consist of a triangular area, two sides of which are lot lines measured from the corner intersection of the street lot lines for a distance specified below in subsection 3, or where the lot lines have rounded corners, the lot lines extended in a straight line to a point of intersection and so measured, and the third side of which is a line across the corner of the lot joining the non-intersecting ends of the other two sides.

2. A clear-vision area shall contain no planting, fence, wall, structure or temporary or permanent obstruction exceeding 2.5 feet in height, measured from the top of the curb or, where no curb exists, from the established street or road center line grade except that trees exceeding this height may be located in this area, provided all branches and foliage are removed to a height of eight feet above the grade.

3. The following measurements shall establish clear-vision areas:

    A. In an A-1, A-2, A-3, A-4, R-1, R-2, or R-3 Zone the minimum distance shall be 30-feet or, at intersections including an alley, 10-feet.
    B. In all other zones where yards are required, the minimum distance shall be 20-feet or, at intersections including an alley, 10-feet, except that when an angle of intersection between streets, other than an alley, is less than 30 degrees, the distance shall be 30 feet.

20.08 RIPARIAN ZONE SETBACKS

In order to maintain vegetative cover along Class I streams, rivers and lakes known as riparian habitat a setback for any new development such as structures or roads shall be required on a sliding scale proportional to one-half the stream width, at right angles to the annual high-water line or mark. A minimum of 25-feet either side of streams will be recognized. Woody vegetation presently existing in the riparian zone shall be maintained, however, thinning or harvesting of merchantable tree species may occur within the riparian zone where 75 percent of the existing shade over the stream is maintained.

20.09 SIGNIFICANT GOAL 5 RESOURCE AREAS

1. Any land use action requiring County zoning or partitioning approval or any activity listed as a conflict in this ordinance which is within 1320 feet of or could have an impact on:

    A. Significant historical sites or structures,

    B. Significant scientific or natural areas,

    C. Significant aggregate resource sites,

    D. Big game critical wildlife habitat area and big game winter range

    E. Significant avian habitat

    F. Significant wetlands, and

    G. Designated Scenic Waterways identified by the Union County Land Use Plan, shall be reviewed by the Planning Director for appropriate public notification measures and conflict resolution.

2. Affected Land Management Agencies, landowners and interested persons will be notified of the proposed land use action and will be given an opportunity to submit testimony per the applicable application procedure prior to a decision on the land use action.

3. Review Classifications

    A. When a 3A or 3C (limit conflicting uses) decision has been made as indicated in the comprehensive plan, the applicant must, in coordination with the responsible agency, develop a management plan which would allow for both

resource preservation and the proposed use. If the responsible agency and the applicant cannot agree on such a management plan, the proposed activity will be reviewed through the conditional use process. 3A sites will be preserved where potential conflicts may develop. Conflicts will be mitigated in favor of the resource on 3C sites.

B. When a 3B (allow conflicting uses) decision has been made as indicated on Goal 5 inventory sheets, the request shall not be subject to the standards of this Section.

4. Under the conditional use process land use decisions will consider the economic, social, environmental, and energy consequences when attempting to mitigate conflicts between development and resource preservation.

5. The following criteria shall be considered, as applicable, during the appropriate decision making process:

A. ECONOMIC: The use proposed is a benefit to the community and would meet a substantial public need or provide for a public good which clearly outweighs retention of the resources listed in Section 18.09 (1):

B. SOCIAL: The proposed development would not result in the loss of or cause significant adverse impact to, a rare, one of a kind or irreplaceable resource as listed in Section 18.09 (1).

C. ENERGY: The development, as proposed, would support energy efficient land use activities for such things as transportation costs, efficient utilization of urban services, and retention of natural features which create micro climates conducive to energy efficiency.

D. ENVIRONMENTAL: If alternative sites in Union County for proposed development are available which would create less of an environmental impact of any of the resources listed in Section 18.09 (1), major consideration should be given to these options.

6. The reviewing body may impose the following conditions, as applicable upon a finding of fact that warrants such restrictions:

A. SIGNIFICANT AGGREGATE SITES: Residences and uses listed as conditional uses may be required to provide screening, landscaping, and/or setbacks in excess of those required in the zone in which the lot or parcel is located. The required screening, landscaping, and setback shall be determined by the Planning Director after meeting with the applicant and the owner of the aggregate resource land to ensure compatibility between present and future

uses on the properties. Such setback shall be no less than 50 feet and no greater than 1320 feet.

B. WETLANDS AND NATURAL AREAS: Limitations may be required on draining, filling, structural development, and/or removal of vegetation in order to protect and preserve existing trees, vegetation, water resources, wildlife habitat or other significant natural resources.

C. BIG GAME WINTER RANGE AND BIG GAME CRITICAL HABITAT: A proposed new structure requiring a conditional use may be required to:

1. Be located as close as possible to an ADJACENT compatible structure (a compatible structure shall be any structure which does not adversely affect the intended use of another structure);

2. Share a common access road or where it is impossible to share a common access road, locate as closely as possible to the nearest existing public road in order to minimize the length of access from the nearest road.

D. AVIAN HABITAT: Any proposed activity permitted outright or conditionally may be required to establish a setback from critical nesting or roosting areas and to preserve existing trees, vegetation, and water resources.

E. DESIGNATED SCENIC WATERWAYS: The applicant for a proposed use that is to be located within the Minam River Scenic Waterway and that is regulated under the Oregon Scenic Waterways Rules shall obtain a notice to proceed from the State Highway Commission or the time limit for review by the State Highway Commission shall have expired prior to obtaining a zoning or building permit from the County.

20.10 SITE PLAN REQUIREMENTS

1. Land development in areas classified within the Zoning Ordinance as I-1: Light Industrial; I-2: Heavy Industrial; PA: La Grande Public Airport; SM: Surface Mining; AP: Airport Overlay Zone; and multi-family dwellings, allowed either outright or conditionally shall be subject to the provisions of this section. Before a new building may be constructed or an existing building may be enlarged or substantially altered, a site development plan shall be submitted to the Planning Commission for approval. Appeals of Planning Commission decisions will be to the County Court.

A. The applicant shall submit Site Plans to the Planning Department for consideration. These shall be drawn to scale and of sufficient detail to insure

their review in compliance with this section. A Site Plan shall include the following:

(1) Property lines of subject property(ies).

(2) Existing and proposed building locations, dimensions and height in respect to the subject property.

(3) Off-street parking spaces and loading areas.

(4) Existing and proposed points of ingress and egress – including vehicular, bicycle, and pedestrian ways.

(5) All proposed screening and landscaping.

(6) Existing topographic and preliminary grading plan.

(7) Adjacent road rights-of-way and the location of existing and proposed road facilities, including the provision for the connection of proposed roads with existing roads.

(8) Existing and proposed lighting including location, size and type of signs and other advertising features.

B. The Planning Commission may request any additional information it deems necessary to insure proper development of the property.

C. Site plans shall be either approved or conditionally approved pending modification.

2. Plan Review Considerations: Review of the site plan in consideration of any proposed construction shall include the following considerations:

A. Height limitations on buildings and structures.

B. Off-street parking ratios.

C. The location, width, and improvements of vehicular, bicycle and pedestrian access based on requirements of the Transportation System Plan.

D. Limitation upon the size, dimension, lighting and location of signs and advertising structures.

E. Location and size of off-street loading areas.

F. Landscaping and screening of grounds and storage areas.

G. Measures designed to minimize environmental impacts from noise, dust, odor, fumes, vibration, smoke and glare which would have an adverse effect on adjacent properties.

H. Measures taken to conserve energy or maximize use of alternate energy resources.

I. Location and dimension of structures.

3. Plan Review in La Grande Public Airport Zone: Public notice of the proposed construction shall be given by mail at least ten days prior to the day of the Planning Commission review of the Site Plan to the Federal Aviation Administration, Oregon Aeronautics Division, and La Grande Airport Commission. In addition to #2 PA above, review of the Site Plan in a Zone shall assure that the following are not allowed:

A. The creation of electrical interference with navigational signals or radio communication between the airport and aircraft.

B. Placement of lights which makes it difficult for pilots to distinguish between these and airport lights.

C. Location of materials which results in glare in the eyes of pilots.

D. Industrial discharge impairing visibility.

E. Creation of water impoundments or landfills which would attract birds, creating bird strike hazards.

F. Placement of structures so as to endanger or interfere with the landing, takeoff or maneuvering of aircraft intending to use the airport.

20.11 OFF-STREET PARKING AND LOADING

1. OFF-STREET PARKING: At the time of erection of a new structure, or at any time of enlargement of change in use of an existing structure within any zone in the County, off-street parking spaces shall be provided for the new construction as indicated in this section unless greater requirements are otherwise established. Where square feet are specified the area measured shall be the new gross floor of the building primary to the functioning of the particular use of the property other than space devoted to off-street parking for employees. Where employees are specified the term shall apply to all persons including the proprietors working on the premises during the peak shift.

USE	STANDARD

A.	Residential Uses		
	(1)	Dwelling	One space per dwelling unit
	(2)	Boarding house, lodging house, accommodations or rooming house	One space per guest
B.	Institutions		
	(1)	Convalescent hospital, nursing home, for patients or sanitarium, rest home, residents home for the aged	One space per two beds
	(2)	Hospital	Three spaces per two beds
C.	Places of Public Assembly		
	(1)	Library, reading room feet plus one space per two employees	One space per 400 square
	(2)	Preschool,nursery, kindergarten	Two spaces per teacher
	(3)	Elementary or junior high school	One space per classroom, plus one space per administrative employee
	(4)	Senior high school	One space per classroom, plus one space per administrative employee, plus one space per six students
	(5)	Other public	One space per four seats or assembly, eight feet of bench length including church
D.	Commercial Amusements		
	(1)	Theater	One Space per four seats
	(2)	Bowling alley	Five spaces per alley plus

		one space per two employees
	3) Dance hall, skating rink	One space per 100 square feet of floor area plus one space per two employees
E.	Commercial	
	(1) Retail store	One space per 250 square feet of floor area
	(2) Service or repair shop, retail store handling exclusive bulky merchandise such as automobiles and furniture	One space per 400 square feet of floor area
	(3) Bank or office (except medical or dental)	One space per 400 square feet of floor area plus one space per two employees
	(4) Medical or dental offices	One space per 200 square feet of floor area plus one space per two employees
	(5) Mortuary	One space per four seats or eight feet of bench in chapels
	(6) Motel	One space per guest room plus one space for the owner or manager
	(7) Hotel	One space per two guest rooms plus one
	(8) Restaurant	One space per four seats
F.	Industries	
	(1) Storage warehouse manufacturing	One space per employee

	establishment, rail or trucking freight terminal	
(2)	Wholesale establishment	One space per employee plus one space per 700 square feet of patron-serving area

2. OFF-STREET LOADING REQUIREMENTS: Building or structures to be built or substantially altered which receive and distribute materials, merchandise or people by motor vehicle shall provide and maintain off-street loading spaces in sufficient number and size to adequately handle the needs of the particular use.

   A. The following standards shall be used in establishing the minimum number of spaces required:

Gross Floor Area of the Building in Square Feet	Number of Spaces
(1) Up to 10,000	One
(2) 10,000 and over	Two

   For buildings and structures up to 6,000 square feet, regular off-street parking areas may be used to meet the off-street loading requirements.

   B. A loading space shall be 10-feet wide and 35-feet long and have a vertical clearance of 14-feet. Where the vehicles generally used for loading and unloading exceed these dimensions, the required length of these spaces shall be increased.

3. GENERAL PROVISIONS: The following provisions shall apply to off-street parking and loading facilities.

   A. The provision and maintenance of off-street parking and loading space is a continuing obligation of the property owner. The subsequent use of property shall be conditional upon the unqualified continuance and availability of the amount of parking and loading space required by this Ordinance. Should the owner or occupant of any lot or building change the use to which the lot or building is put, thereby increasing off-street parking and loading requirements, it shall be unlawful and a violation of this Ordinance to begin or maintain such altered use until such time as the increased off-street parking and loading requirements are complied with.

   B. Requirements for types of buildings and uses not specifically listed herein shall be determined by the Planning Commission, based upon the requirements of comparable uses listed.

C. In the event several uses occupy a single structure or parcel of land, the total requirements for off-street parking shall be the sum of the requirements of the several uses computed separately.

D. Owners of two or more uses, structures, or parcels of land may agree to utilize jointly the same parking and loading spaces when the hours of operation do not overlap, provided that satisfactory legal evidence is presented to the Planning Director in the form of deeds, leases, or contracts to establish the joint use.

E. Off-street parking spaces for dwellings shall be located on the same lot with the dwelling. All other required parking spaces shall be located not farther than 200-feet from the building or use they are required to serve, measured in a straight line from the building.

F. Required parking spaces shall be available for the parking of operable passenger automobiles for residents, customers, patrons, and employees only, and shall not be used for storage of vehicles or materials or for the parking of trucks used in conducting the business or use.

G. A plan drawn to scale, indicating how the off-street parking and loading requirements will be met, is to be filed with the Planning Director.

H. Design requirements for parking lots and loading areas:

(1) Areas used for standing and maneuvering of vehicles shall have durable surfaces maintained adequately for all-weather use and so drained as to avoid flow of water across sidewalks.

(2) Except for parking to serve residential uses, parking and loading areas adjacent to residential zones or adjacent to residential uses shall be designed to minimize disturbances of residents.

(3) Artificial lighting which may be provided shall be so deflected as not to shine or create glare in any residential zone or on any adjacent dwelling.

(4) Access aisles shall be of sufficient width for vehicles turning and maneuvering.

(5) Groups of more than four parking spaces shall be so located and served by a driveway that their use will require no backing movements or other maneuvering within a street right-of-way other than an alley.

(6) Service drives to off-street parking and loading areas shall be designed and constructed to facilitate the flow of traffic, provide maximum safety of traffic access and egress and the maximum safety of pedestrians and vehicular traffic on the site.

(7) Service drives shall have a minimum vision clearance area formed by the intersection of the driveway center line, the street right-of-way line, and a straight line adjoining said lines through a point 20-feet from their intersection.

20.12 PROCEDURE FOR CLASSIFYING NEW SCIENTIFIC & NATURAL AREAS, HISTORICAL SITES & CRITICAL WILDLIFE HABITAT AREAS

1. Before new scientific and natural areas, historical sites and critical wildlife habitat areas are added to the Land Use Plan a public hearing shall be held according to Section 24.02 through 24.04 to determine the following:

   A. Any new designation of Goal 5 resources or resource sites as listed in the statewide planning goal shall successfully complete the Goal 5 review process (OAR 660-16-000) before approval can be granted.

20.13 HISTORIC SITES & STRUCTURES

The purpose of this section is to protect and regulate specific buildings and sites identified in the Land Use Plan as having special or significant historic associations or architectural merits, as a part of the heritage of the citizens of Union County (1C sites). It is not the intent or purpose of this section, however, to regulate the specific use of a historic building or site beyond that provided in the applicable zoning classification and other sections of this Ordinance.

1. Permits.
   Prior to any alteration, expansion, destruction or removal of a historic site or structure identified as such in the Land Use Plan and on the Zoning Map the following procedures shall be followed:

   A. An application made to the Planning Department identifying the proposed activity.

   B. The application be placed on the Planning Commission agenda and public notice given at least 10-days in advance of a public hearing.

C. A public hearing be held by the Planning Commission to review the proposed activity and determine the impact on the historical character of the site or structure.

2. Subsequent to Planning Commission review and impact analysis a 30-day period will be provided for public pursuit of alternative courses of action to assure preservation of the historic characteristics of the site or structure.

3. Prior to issuing a building permit for the alteration, expansion, destruction or removal of the historic site or structure written approval from the Planning Director shall be issued subsequent to the 30-day period allowed for the public pursuit of alternatives.

20.14 NONFARM USE PARTITIONS

Partition applications to create a parcel for a nonfarm use, except dwellings, shall be processed according to this ordinance's Article 25.00 Land Division Regulations and reviewed through a quasi-judicial land use process per Sections 24.09 through 24.12 and the following criteria:

1. The Planning Commission may allow the creation of new parcels for nonfarm uses as identified in ORS 215.283(2) and as authorized by ORS 215.263(3), except uses listed in subsection (2) below and where the applicant can meet the following:

   a. The new parcel shall be the minimum size needed to accommodate the use in a manner consistent with other provisions of law;

   b. The new parcel shall be an adequate size necessary for the public health protection;

   c. The new parcel will be the minimum size necessary to accommodate the principal use and its accessory uses, structures and facilities.

2. The Planning Commission may not allow the creation of new parcels for dwellings as prescribed by ORS 215.263(3) and ORS 215.284(7), and home occupations identified in ORS 215.283(2)(i).

To: Kellen Tardaewether Date: May 30, 2024

From: Irene Gilbert, On Behalf of myself as an individual and the public interest

Subject: Failure to provide pre construction surveys to determine the number and species of bats utilizing the habitat and to identify Category 1 bat habitat subject to destruction or degradation during construction of the transmission line and related structures.

PRE-CONSTRUCTION BAT SURVEYS NEEDED TO COMPLY WITH HABITAT AND THREATENED AND ENDANGERED SPECIES STANDARDS OAR 345-022-0060, OAR 345-022-0070 and OAR 345-021-0010(p)

1.

INTRODUCTION

The original site certificate for the B2H transmission line required bat surveys to be conducted for the site boundary. During the contested case process for the original site certificate, Idaho Power submitted a request for Summary Determination to remove the pre-construction surveys. Due to the fact that the hearings officer denied full party status to all petitioners, none of the parties to the contested case with the exception of ODOE were allowed to submit arguments regarding the request. The hearings officer refused to allow any arguments objecting to the request for Summary Determination. She then approved the request and removed the required pre-construction bat surveys In the memo to council for this meeting, **Page 13 it states that CON-FW-02 requires a minimization and avoidance plan for locations identified during**

1 Bat Surveys must be competed prior to the start of construction.

preconstruction surveys of sensitive bat species. These surveys are no longer requirement for reporting of pygmy rabbit colonies and bat surveys have been removed other than chance sitings during a general survey for all wildlife which is not a legitimate means of identifying the preawnxw of or habitat for these nocturnal mammals. The North American Bat Monitoring Program (NABat) is the method supported and prepared through collaboration with Wildlife Conservation Society of Canada USDA Forest Service, US Army Corp of Engineers, National Park Service, Bat Call Identification, Inc. and others.

2.

Under OAR 345-027-0375(2)(a), the council must apply the applicable laws and council standards applicable to a new site certificate to the area added to the site.

3.

Under OAR 345-027-0375(2)(c) other changes such as those in the Draft Proposed Order for Amendment 2 require a review of whether the entire facility complies with the applicable laws or Council standards that protect a resource or interest that could be effected.

4.

There are multiple changes to site certificate conditions and the Draft Proposed Order initiated by both the developer and the Oregon Department of Energy which appear in red lettering in the two documents. These changes require a review of whether the entire facility now complies with the

2 Bat Surveys must be competed prior to the start of construction.

applicable laws or Council standards that protect a resource or interest that could be affected by the proposed changes."

5.

Changes regarding the determination of compliance with OAR 345-22-0060 and OAR 345-022-0070 mean the impacts on bats must be addressed for the facility. The absence of pre-construction bat surveys fall under this review.

OAR 35-021-0010)(p) requires biological and botanical surveys, identification of all fish and wildlife habitat in the analysis area, and a map showing habitat identification. Developer must do field study and literature review to identify all State Sensitive Species that might be present in the analysis area. They must then complete baseline surveys of the use of the habitat in the analysis area by species. And finally, a proposed monitoring plan to evaluate the success of the measures taken needs to be proposed.

6.

According to the USGS 2018 report, eight of Oregon's 15 species of bats have small or declining populations. The Oregon Department of Fish and Wildlife lists these bats as "Conservaton Strategy Species" due to the fact that they have small or declining populations, are at-risk, and/or are of management concern. . Information on the Special Needs, Limiting Factors, Data Gaps, Conservation Actions, and available resources are listed for each of Oregon's Strategy Species. For bats, a significant risk factor is listed as

3 Bat Surveys must be competed prior to the start of construction.

habitat destruction and disturbance such as that occurring during construction of energy developments.

7.

52% of bat species in North America are at risk of declining severely in the next 15 years.

8.

Based upon the definition of the study area in OAR 345-001-0010 Idaho Power needs to complete studies to determine the impact to fish and wildlife habitat for all areas within the site boundary ad one-half mile beyond.

9.

SITE CERTIFICATE CONDITIONS NEEDED TO COMPLY WITH FISH AND WILDLIFE HABITAT AND THREATENED AND ENDANGERED SPECIES STANDARDS:

10.

Condition One: Prior to construction, the developer must complete bat surveys within the site boundary using the methods described in the USGS "A Guide processing Bat Acoustic for the North American Bat Monitoring Program (NABat) 2018 developed by the US Dept. of the Interior in collaboration with the USDA Forest Service, US Army Corps of Engineers,

4 Bat Surveys must be competed prior to the start of construction.

Illinois Natural History Survey, New Yor State Department of Environmental Conservation, National P ark Service and others.

11.

Condition Two:: Results of the bat surveys must be provided to the Oregon Department of Fish and Wildlife and EFSC along with a plan for the Monitoring and Mitigation of habitat impacts for their approval.

12.

STATUTES AND RULES SUPPORTING THE NEED FOR THESE SITE CERTIFICATE CONDITIONS

--OAR 345-027-0375(2)(a) and (c)

To issue an amended site certificate, the council must determine that the preponderance of evidence on the record supports the following conclusions:

(a) For a request for amendment proposing to add new area to the site boundary, the portion of the facility within the area added to the site by the amendment complies with all laws and Council standards applicable to an original site certificate application.

(c) “For any other requests for amendment not described above, the facility, with the proposed change, complies with the applicable laws or Council standards that protect a resource or interest that could be affected by the proposed change.”

--OAR 345-022-0060

5 Bat Surveys must be competed prior to the start of construction.

--OAR 345-022-0070

References:

-- ODFW Wildlife Priority Strategy Species,- Mammals/Bats

--Oregon Conservation and Recreation Fund Project: Adventurers for audible bats. A community-supported scientific survey of Oregon's rarest desert bats – Oregon State University-Cascades

--USGS A Guide to Processing Bat Acoustic Data for the North American Bat Monitoring Program (NABat)

6 Bat Surveys must be competed prior to the start of construction.

FINAL DRAFT

LADD MARSH WILDLIFE AREA MANAGEMENT PLAN



April 2008

Oregon Department of Fish and Wildlife
3406 Cherry Avenue NE
Salem, Oregon 97303

Table of Contents

Executive Summary **1**
Introduction **4**
Purpose of the Plan 4
Oregon Department of Fish and Wildlife Mission and Authority 4
Purpose and Need of Ladd Marsh Wildlife Area 4
Wildlife Area Goals and Objectives 5
Wildlife Area Establishment 7
Description and Environment **7**
Physical Resources **7**
Location 7
Climate 7
Topoggraphy and Soils 9
Habitat Types 9
Description of Management Units 16
Biological Resources **16**
Birds 16
Mammals 22
Amphibians and Reptiles 24
Fish 25
Species of Conservation Concern 27
Non-Native Species 29
Monitoring **32**
Cultural Resources **34**
Social Environment **35**
Demographics 35
Land Use 35
Infrastructure **36**
Developments/Facilities 36
Water Resources 36
Easements/Access Agreements 38
Land Acquisition and Adjustment **38**
Public Use **39**
Public Access 39
Hunting, Angling and Trapping 40
Wildlife Viewing 41
Objectives and Strategies **43**
Plan Implementation **58**
Funding 58
Staffing / Organization 59
Compliance Requirements 59
Partnerships 59
Adaptive Management 60
Plan Amendment and Revision 60
References **62**
Appendices **63**

Appendix A. Land Acquisitions and Adjustments Involving Ladd Marsh Wildlife Area.

Appendix B. Wildlife Species Known to Occur on Ladd Marsh Wildlife Area.

Appendix C. Plant Species Known to Occur on Ladd Marsh Wildlife Area.

Appendix D. Water Rights on Ladd Marsh Wildlife Area.

Appendix E. Easements and Access Agreements on Ladd Marsh Wildlife Area.

Appendix F. Legal Obligations Influencing Management of Ladd Marsh Wildlife Area.

Appendix G. Description of Ladd Marsh Wildlife Area Habitat Management Units.

List of Figures

Figure 1 Ladd Marsh Wildlife Area Features and Ownership.
Figure 2. Habitat Types within Ladd Marsh Wildlife Area.
Figure 3. Land Uses Surrounding Ladd Marsh Wildlife Area.
Figure 4. Ladd Marsh Wildlife Area Habitat Management Units.

List of Tables

Table 1. Habitat Composition on the Ladd Marsh Wildlife Area.

Table 2. Fish species known to inhabit Ladd Creek and its tributaries within the LMWA.

Table 3. Federal- or State-listed Endangered, Threatened, Candidate and Species of Concern potentially present on Ladd Marsh Wildlife Area.

Table 4. Noxious Weeds Found on Ladd Marsh Wildlife Area.

Table 5. Facilities and Developments on Ladd Marsh Wildlife Area.

Table 6. Public Access Management on the Ladd Marsh Wildlife Area.

Table 7. Estimated Annual Hunting, Trapping, and Angling Use Days on Ladd Marsh Wildlife Area.

Table 8. Estimated Average Annual Non-consumptive Use Days on Ladd Marsh Wildlife Area.

Table 9. Educational Group Use of Ladd Marsh Wildlife Area in 2007 by Age Group.

Executive Summary

Purpose of the Plan

This plan will guide management of Ladd Marsh Wildlife Area (LMWA) for the next 10 years. Purposes of this plan are:

- To provide clear direction for management of LMWA;
- To provide long-term continuity in wildlife area management;
- To communicate the department's management priorities for LMWA to its neighbors, visitors, and the public;
- To ensure management programs on LMWA are consistent with the original mandate and purpose of the area when first established;
- To ensure management of LMWA is consistent with Federal, State, and local natural resource plans;
- To ensure management activities address conservation priorities and recommendations described in the 2006 Oregon Conservation Strategy, and;
- To provide a basis for budget requests to support LMWA needs for staffing, operations, maintenance, and capital improvements.

Historical Background

Following droughts in the 1930s that affected most of North America, major conservation efforts, by both private and governmental entities, were enacted to reverse trends of degrading and disappearing wetlands. During this time period there was a major creation and expansion of federal wildlife refuges and state wildlife areas. As the concept of waterfowl flyway management was endorsed and developed, wildlife areas were acquired and managed as part of a larger plan focused on migratory waterfowl needs. LMWA was one of several wetland-focused wildlife areas established in Oregon.

Ladd Marsh Wildlife Area was established in 1949, with primary objectives of protecting and improving waterfowl habitat and providing a public hunting area. The wildlife area is located in southern Union County six miles southeast of La Grande. The wildlife area is approximately 6,019 acres in size.

Ladd Marsh Wildlife Area is located in the Northern Rockies Region of the Intermountain West. It is further defined as the Blue Mountain ecoregion in the Oregon Conservation Strategy. LMWA has a significant land base well suited to support indigenous fish and wildlife species and migratory waterbirds. Wetlands and associated uplands provide habitat for a diverse array of wildlife species. The habitat types found on LMWA are of quality and quantity to make a significant contribution to wildlife resources in this portion of the state.

The LMWA is a popular destination for hunting, wildlife viewing and environmental education due to its geographic setting and the abundance and diversity of its wildlife.

Planning Approach

This plan revises the original long range plan for LMWA initially adopted by the Oregon Fish and Wildlife Commission (Commission) in 1993. The 1993 plan focused on habitat goals, objectives and strategies towards meeting specific wildlife population objectives. Wetland restoration and management were the focus of LMWA staff throughout the period since adoption of the first management plan.

The goals, objectives and actions (strategies) described in the 2008 revised plan were derived following an ecosystem based management philosophy. This plan takes a strong habitat based management approach with descriptions of wetland habitat types in plan goals and objectives following the classification scheme of Cowardin et al. (1979). Of primary importance, most actions undertaken on LMWA are for the benefit of wildlife, and public use must be compatible with the wildlife resource.

This plan describes issues and provides actions for addressing them. These actions will be implemented during the life of this plan, but are subject to funding and personnel availability. The management plan will be reviewed in 2013 to gauge the progress of implementation and make necessary revisions and revised in its entirety in 2018.

Ladd Marsh Wildlife Area Vision

The vision for Ladd Marsh Wildlife Area is as follows:

*Wetlands and associated upland habitats are preserved, restored and enhanced at LMWA through management utilizing sound stewardship measures to support wetland dependent wildlife and a diverse array of other wildlife and plant species, for use and enjoyment by present and future generation*s.

Wildlife Area Goals

The goals for Ladd Marsh Wildlife Area are:

Goal 1: To protect, enhance and manage wetland habitats to benefit fish and wildlife species.

Goal 2: To protect, enhance and manage upland habitats to benefit a wide variety of wildlife species.

Goal 3: To provide a variety of wildlife oriented recreational and educational opportunities to the public which are compatible with Goals 1 and 2.

Specific objectives and strategies to implement each goal, as well as detailed rationale, are provided in this plan on pages 43-58.

Implementation Approach

The primary action for benefiting wildlife is restoring, managing and preserving the range of habitat types that historically occurred at LMWA. These habitats were created and maintained by a suite of ecological processes, most importantly fire and hydrology. Management activities such as water level management (drawdowns and flooding) and vegetation manipulations (controlled burning, disking, farming, grazing, mowing) are tools that LMWA staff use to maintain important ecological processes needed to create and maintain healthy habitats. Due to the wide variety of habitat use among the different species utilizing LMWA, benefits will be varied. Not all species or guilds of species will see benefits at all times. In addition, recreational opportunities based on public demand and habitat capabilities, balanced with resource needs, will be quite variable and specific uses will not be maximized in all cases.

The natural ecosystem of the Grande Ronde Valley has been irreversibly altered since initiation of European settlement in the late 1800s. The most noticeable changes have been land use changes, major disruption of hydrology and the proliferation of invasive species. Recently, suspected climate changes seem to have added other perturbations to a significantly altered system. Hydrologic changes have had a profound effect on vegetative components of wetland habitats on LMWA that in turn influences wildlife and public use.

Current direction is to manage for specific habitat types or features in an attempt to meet the life-history needs of specific wildlife species or guilds.

Introduction

Purpose of the Plan

This document is a plan designed to guide management of the Ladd Marsh Wildlife Area for the next ten years. The Oregon Department of Fish and Wildlife's (department) management planning process for Wildlife Areas (WAs) involves development of broad goals, and formulation of specific objectives and management strategies to achieve those goals. Purposes of this plan are:

- To provide clear direction for management of LMWA over the next ten years;
- To provide long-term continuity in wildlife area management;
- To communicate the department's management priorities for LMWA to its neighbors, visitors, and to the public;
- To ensure management programs on LMWA are consistent with the original mandate and purpose of the area when first established;
- To ensure management of LMWA is consistent with Federal, State, and local natural resource plans;
- To ensure that management activities address conservation priorities and recommendations described in the 2006 Oregon Conservation Strategy, and;
- To provide a basis for budget requests to support the LMWA needs for staffing, operations, maintenance, and capital improvements.

Oregon Department of Fish and Wildlife Mission and Authority

The mission of the department is to protect and enhance Oregon's fish and wildlife and their habitats for use and enjoyment by present and future generations. The department is the only state agency charged exclusively with protecting Oregon's fish and wildlife resources. The state Wildlife Policy (ORS 496.012) and Food Fish Management Policy (ORS 506.109) are the primary statutes that govern management of fish and wildlife resources.

Purpose and Need of Ladd Marsh Wildlife Area

Wetland estimates in the lower 48 states at the time of European settlement were approximately 221 million acres. A survey completed in 1997 (Dahl 2000) reported 105.5 million acres remained, a loss of over 50%. Oregon has lost an estimated 38% of its wetlands. The acquisition of 120 acres of the largest remaining wetland in Northeastern Oregon in 1949 established LMWA. The project was approved for funding under the Federal Aid in Wildlife Restoration Act in 1952. The original 1949 Project Statement for LMWA states that the "Wildlife species to be primarily benefited would be waterfowl. The benefits created for upland birds and furbearers, although substantial would be secondary."

LMWA is one of 12 staffed wildlife areas managed by the department. The wildlife area is located in the Grande Ronde Watershed of the department's Northeast Region. Project coordination is provided by the Wildlife Habitat Program at the department's headquarters to integrate wildlife area management activities with larger scale

landscape planning including intergovernmental agreements, flyway plans, and individual species plans.

This management plan is the guiding document that will ensure natural resources on the LMWA will be managed in such a manner as to protect, maintain, enhance, and restore fish and wildlife habitat to support optimum population levels of many species for the enjoyment of present and future citizens. To protect these natural resources, management programs and strategies utilized on the LMWA will meet or exceed habitat protection policies and standards set by the department.

Ladd Marsh Wildlife Area Vision Statement

The vision for Ladd Marsh Wildlife Area is as follows:

Wetlands and associated upland habitats are preserved and enhanced on Ladd Marsh Wildlife Area through management utilizing sound stewardship measures to support wetland dependent wildlife and a diverse array of other wildlife and plant species, for use and enjoyment by present and future generations.

Wildlife Area Goals and Objectives

Wildlife area goals are broad, open-ended statements of desired future conditions that convey a purpose but do not define measurable units. In contrast, objectives are more concise statements of what the department wants to achieve, how much the department wants to achieve, when and where to achieve it, and who will be responsible for the work. Objectives derive from goals and provide the basis for determining strategies, monitoring wildlife area accomplishments, and evaluating the success of strategies.

The goals and objectives for Ladd Marsh Wildlife Area are:

Goal 1: To protect, enhance and manage wetland habitats to benefit fish and wildlife species.

> **Objective 1.1:** Manage approximately 45 acres of palustrine permanently flooded wetland habitats. Emphasis will be on maintaining productive stands of submerged aquatic vegetation such as sago pond weed interspersed with cattail and hardstem bulrush stands.
>
> **Objective 1.2:** Manage approximately 110 acres of palustrine intermittently exposed wetlands. This habitat will be managed for a ratio of 3:1, open water to emergent wetlands.
>
> **Objective 1.3:** Manage approximately 1,811 acres of palustrine semi-permanent wetlands with a ratio of no greater than 1:1, robust emergent vegetation to open water.

Objective 1.4: Manage approximately 658 acres of palustrine seasonally flooded wetlands (wet meadow) for foraging and nesting areas for waterfowl and other wetland birds.

Objective 1.5: Manage approximately 113 acres of palustrine intermittently flooded wetlands.

Objective 1.6: Manage approximately 116 acres of palustrine forested wetlands.

Objective 1.7: Manage approximately 26 acres of palustrine scrub-shrub wetlands.

Objective 1.8: Restore, enhance and manage approximately 11 acres of riverine wetlands on LMWA.

Objective 1.9: Maintain and improve critical physical and functional infrastructure affecting wetland management activities.

Objective 1.10: Evaluate the effectiveness of the existing sanctuary for waterfowl and wetland dependent wildlife. Designate 15-35% of the managed wetlands as seasonal sanctuary.

Goal 2: To protect, enhance and manage upland habitats to benefit a wide variety of wildlife species.

Objective 2.1: Enhance and manage approximately 1,581 acres of grassland habitat to benefit a wide variety of native wildlife and desired game species.

Objective 2.2: Enhance and manage approximately 307 acres of shrub habitat to benefit a wide variety of native wildlife and desired game species.

Objective 2.3: Enhance and manage approximately 397 acres of agricultural upland habitat to benefit a wide variety of native wildlife and desired game species.

Objective 2.4: Enhance and manage approximately 760 acres of mixed conifer habitat to benefit a wide variety of native wildlife and desired game species.

Objective 2.5: Enhance and manage approximately 38 acres of deciduous tree habitat to benefit a wide variety of native wildlife and desired game species.

Objective 2.6: Maintain and improve wildlife area facilities, structures and equipment used to conduct habitat management and public use projects.

Objective 2.7: Provide supplemental big game feed to protect upland habitats on Ladd Marsh Wildlife Area and adjacent private land.

Goal 3: To provide a variety of wildlife oriented recreational and educational opportunities to the public which are compatible with Goals 1 and 2.

> **Objective 3.1:** Provide hunting and angling opportunities in a manner compatible with habitat management objectives.
>
> **Objective 3.2:** Provide wildlife viewing and education/interpretation opportunities compatible with Objective 3.1.

Specific objectives and strategies to implement each goal, as well as detailed rationale, are provided in this plan on pages 43-58.

Wildlife Area Establishment

The original Tule Lake in the south end of the Grande Ronde Valley encompassed over 20,000 acres at an elevation of 2,750 feet. Extensive draining of the marsh was initiated in the late 1800s to provide agricultural and grazing land. By 1948 the original tule marsh was reduced to 400 acres. In 1949, the department pursued the purchase of the last original wetland acreage left in the valley. Today the tule marsh located on the LMWA is the largest remnant wetland in northeast Oregon.

LMWA currently consists of 6,019 acres, with the most recent acquisition of 136 acres occurring in 2004. (See **Appendix A** for detailed acquisition history).

Description and Environment

Physical Resources

Location

The Ladd Marsh Wildlife Area is located in the southwest corner of the Grande Ronde Valley in northeast Oregon. The headquarters is located at 59116 Pierce Road, approximately six miles southeast of the city of La Grande. LMWA is located in the Intermountain West region of the North American Waterfowl Management Plan and the Blue Mountains ecoregion described in the 2006 Oregon Conservation Strategy.

The wildlife area consists of eight Habitat Management Units (HMUs). See **Appendix G** for detailed Habitat Management Unit descriptions. **Figure 1** shows the location and key features of Ladd Marsh Wildlife Area.

Climate

The Grande Ronde Valley has a modified continental climate. Winters are cool and moist, and summers are warm and dry. Temperature extremes range from -34°F to 108°F, with prevailing winds regularly exceeding 20 mph. Precipitation averages 19 inches with most of this falling during the winter months. Wetlands may freeze from November through February. The growing season is approximately 115 days with mild to hot days followed by cool nights. Killing frost is possible throughout the season.

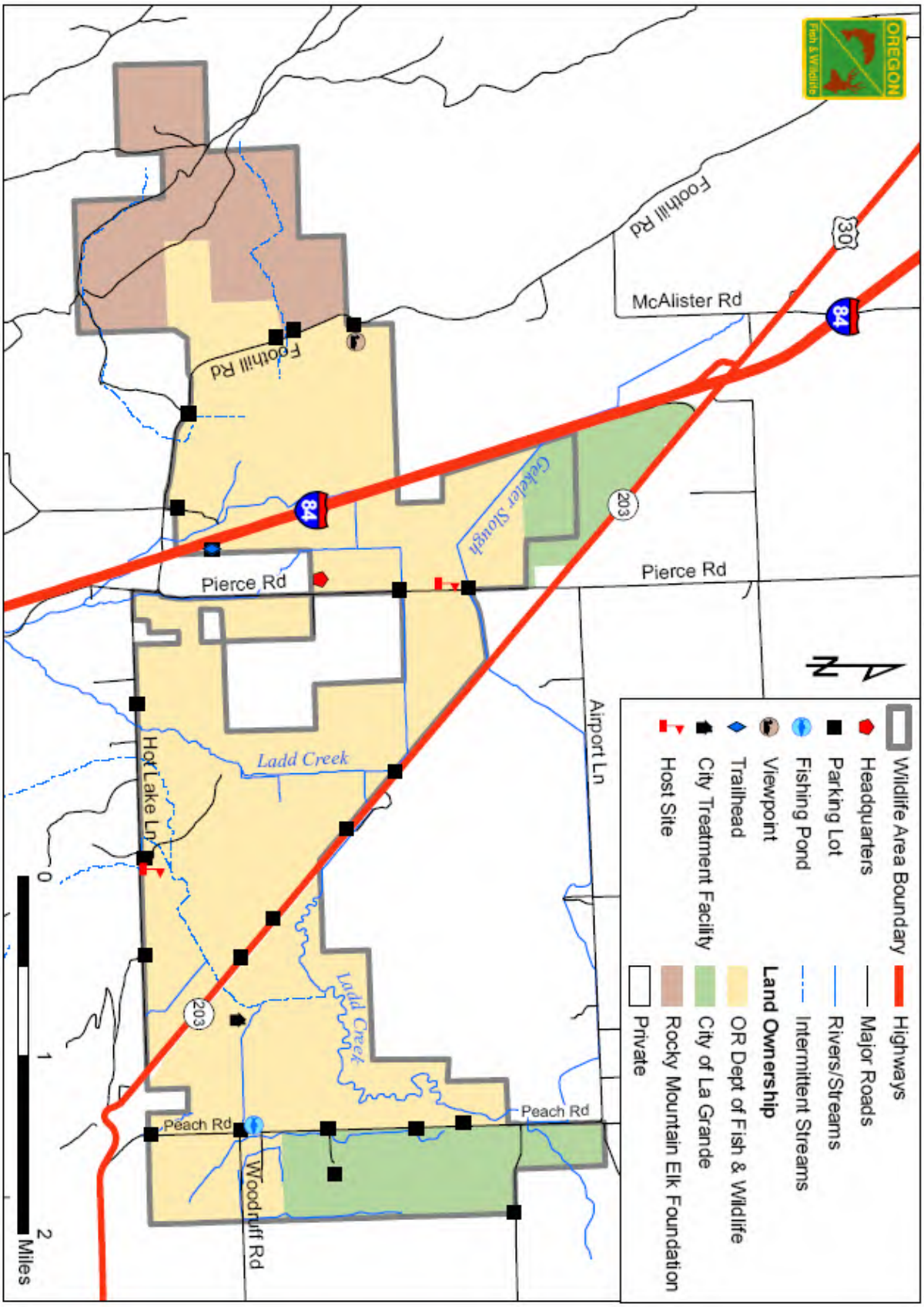


Figure 1 - Ladd Marsh Wildlife Area Features and Ownership

Topography and Soils
LMWA is located in the Grande Ronde Valley with the Wallowa Mountains to the east and the Blue Mountains to the west. LMWA elevations range from 2,685 feet at the mouth of Ladd Creek to 5,391 feet on Glass Hill. A total of twenty-four soil types are present on LMWA. The soils on the valley floor (below 2,700 ft.) are moderately deep, somewhat poorly drained that formed in lacustrine sediment mixed with diatomaceous sediment and volcanic ash. The most prevalent soil types are moderately fertile silt loams with low to severe salinity and/or alkalinity, and are often associated with a hardpan. Wind erosion ranges from moderate to severe.

The mid elevation soils (2,700 – 2,800 ft.) are shallow to moderately deep, well drained soils that formed mainly in colluvium and residuum derived from basalt and volcanic tuff. These soils historically supported mixed shrub-grassland habitats.

Soils above 2,800 ft. are moderately deep, well drained soils that formed in volcanic ash and loess and in colluvium and residuum derived from volcanic tuff and basalt. These soils support predominately mixed conifer habitats.

Habitat Types
Currently, LMWA contains a variety of palustrine wetland types including palustrine forested (riparian areas) and palustrine emergent vegetation that includes a range of hydroperiods from intermittently to seasonally, semi-permanently and permanently flooded (wet meadows, marshes, shallow lakes). Each wetland type occurred historically in the Ladd Marsh area and each provides different resources or similar resources at different times of year to birds, other wildlife and fish.

LMWA provides habitat for migrating, wintering and breeding waterfowl as well as a variety of other waterbirds, including breeding greater sandhill crane, a sensitive species in Oregon. The wildlife area also supports significant numbers of elk and deer in winter. Historically, habitats in the Ladd Marsh area consisted of a large shallow lake and associated fringe wetlands maintained by snow melt and runoff through Ladd Creek and artesian springs. There was also considerable wetland habitat associated with Ladd Creek and other streams in the region. River channelization, tile drains, and water diversion for irrigation led to loss of the lake and a considerable reduction in wetlands. In lieu of the natural ecosystem, LMWA staff has recreated specific habitat types using a series of managed impoundments. Recent infrastructure improvement projects have considerably increased the total acreage of wetlands under management.

Physical features (elevation, aspect, soil type and presence of water) and historical and ongoing management has created a broad array of habitat types at LMWA. Nearly half of the area consists of shallow fresh water wetlands. Wetland water depths rarely exceed three feet in borrow areas, canals and ponds. The remaining wetlands vary between a few inches to two feet in depth. Wetlands are delineated into additional sub-types based on hydrology modifiers (Cowardin et al., 1979). Upland habitats include mixed conifer at the higher elevations, upland shrub at mid elevations, and agricultural areas and grasslands on the valley floor.

LMWA habitat types are shown in **Figure 2**.

Wetland, riparian, grassland, shrubland and ponderosa pine habitats are considered Key Habitats within the Blue Mountain ecoregion as defined in the Oregon Conservation Strategy (OCS). The OCS recommends conservation actions such as wetland, riparian and grassland restoration, which are high priority activities ongoing at LMWA. **Table 1** shows the approximate acreage of each habitat type occurring on LMWA.

Table 1. Habitat composition on the Ladd Marsh Wildlife Area.

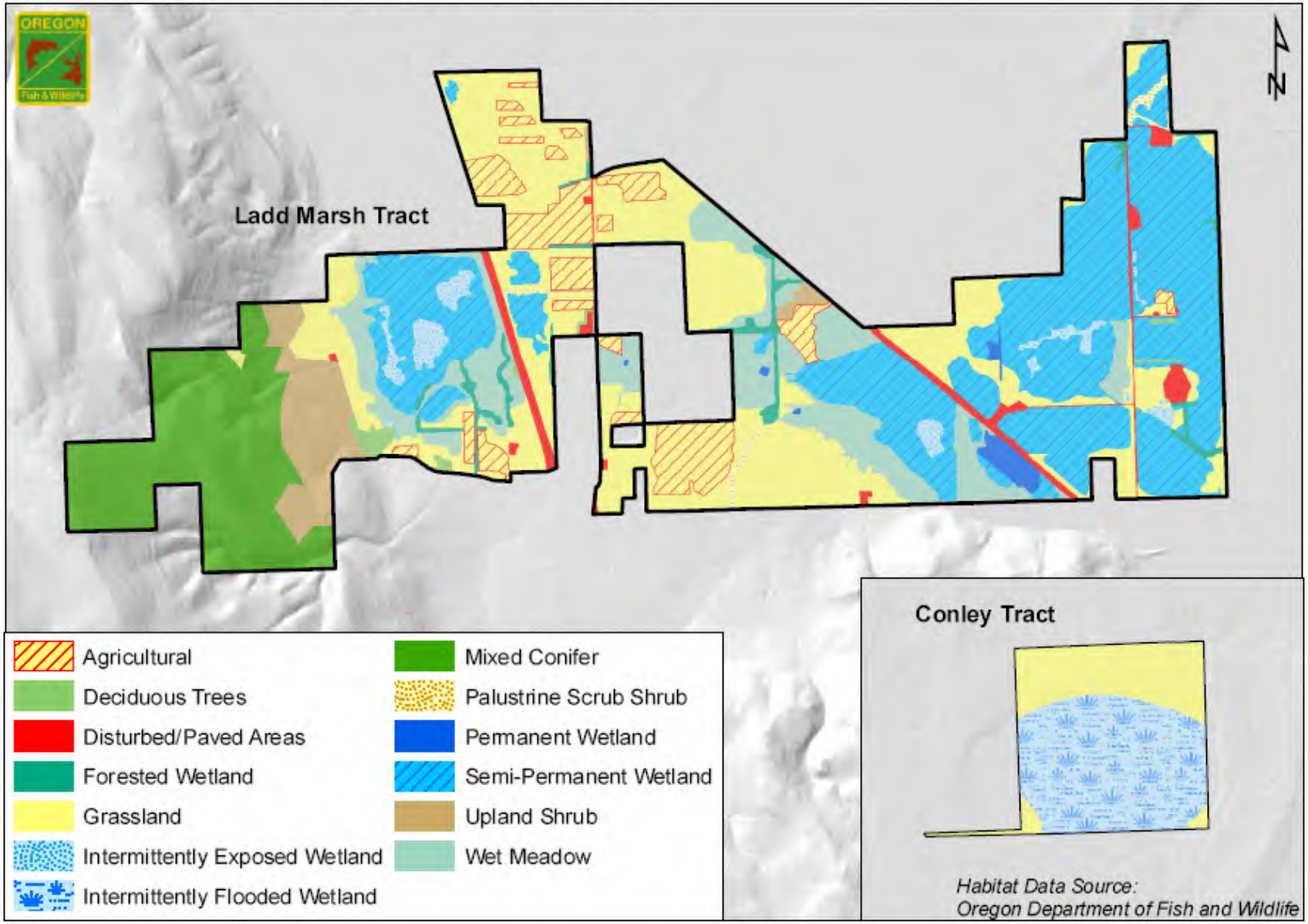
Habitat Type	Approximate Acres
Palustrine wetlands	
Permanently flooded	45
Intermittently exposed	110
Semi-permanent wetlands	1,811
Seasonally flooded (wet meadows)	658
Intermittently flooded	113
Forested wetlands	116
Palustrine shrub-scrub	26
Total	**2,879**
Riverine wetlands	**11**
Uplands	
Grasslands	1,581
Upland shrub	307
Agricultural uplands	397
Mixed conifer (includes Ponderosa pine)	760
Deciduous trees	38
Facilities	46
Total	**3,129**
Total	**6,019**

Habitat types found on LMWA are described in greater detail below.

I. Wetlands

Descriptions of wetland habitat types follow the classification scheme of Cowardin et al. (1979). Within each major wetland type, variation in hydrology and topography creates important differences in plant communities and seasonal differences in wetland availability that in turn influence bird use. Consequently, additional habitat descriptions are provided based on hydrology modifiers defined by Cowardin et al. (1979). Nearly all of the semi-permanent wetlands and the intermittently exposed wetlands are managed with dikes and individual water delivery systems. While the habitat associations are

Figure 2 - Habitat Types within Ladd Marsh Wildlife Area



described below as discrete, they represent a continuum from dry to wet and when considering topographical variation on LMWA, each may occur in close juxtaposition to others in a single habitat management unit.

IA. Palustrine wetlands

1. Permanently flooded: Permanently flooded wetlands are covered with water throughout the year, in all years. They are mostly open water areas with water depths of four feet or less. They are maintained by constant water sources including springs and high ground water. Vegetation is dominated by obligate hydrophytes including sago pondweed (*Stuckenia pectinata*) and mare's tail (*Hippuris vulgaris*). Wetland edges are often dominated by cattails (*Typha latifolia*) and hardstem bulrush (*Scirpus acutus*). These areas are extremely important for waterfowl broods during dry periods.

2. Intermittently exposed: Intermittently exposed wetlands have water present throughout the year except in years of extreme drought. These areas function similarly to permanently flooded areas during most years but dry completely during extremely dry summers. Periodic drying is important for nutrient recycling and carp (*Cyprinus carpio*) control. They are dominated primarily by sago pond weed and mare's tail. Much like permanently flooded wetlands, these areas are extremely important for wildlife in late summer.

3. Semi-permanent wetlands: Semi-permanent wetlands have surface water present for extended periods, especially early in the growing season, but water is absent by the end of the season in most years. The majority of Ladd Marsh wetlands are semi-permanently flooded and managed with dikes and water delivery systems. Since 1998, LMWA staff has restored approximately 1,200 acres of this habitat type. Therefore, different wetlands are in varying successional stages. Recently restored wetlands are dominated by annual species including biennial wormwood (*Artemesia biennis)*, alkali aster (*Aster frondosa*) and beggar's-tick (*Bidens vulgata*). Mid-succession wetlands have wapato (*Sagittaria cuneata*), waterplantain (*Alisma plantago-aquatica*) and common spikerush (*Eleocharis palustris)* as dominant species with patches of cattails and hardstem bulrush. Late successional wetlands begin to show monocultures of cattails and reed canarygrass (*Phalaris arundinacea*). Semi-permanent wetlands are extremely productive for annual plant seeds which are important for migrating waterfowl. They also provide important habitat for invertebrates. Invertebrates are important for waterfowl egg production, broods and molting. They also provide food for other water birds such as American avocets (*Recurvirostra americana*) and black-necked stilts (*Himatopus mexicanus*).

4. Seasonally flooded (wet meadow): In this habitat type, surface water is present for extended periods early in the growing season, but absent by the middle of the season in most years. Tufted hairgrass (*Deschampsia caespitosa*), camas (*Camassia quamash*), a variety of sedges and reed

canarygrass are the major plant species in these areas. Wet meadows are extremely important Canada and white-fronted goose foraging areas during spring migration. Some of these areas are mowed annually after the nesting period to provide better quality forage. Seasonally flooded wetlands are also important for invertebrate production in spring and early summer.

5. Intermittently flooded: The substrate of this habitat type is usually exposed, but surface water is present for variable periods. Weeks, months, or even years may intervene between periods of inundation. The dominate plant communities under this regime may change as soil moisture conditions change. The wetlands of this type on the Conley Lake unit are an important spring migration area in northeast Oregon during years with average or above average precipitation. In 1997, when Conley Lake was inundated, over 1,000 swans, 3,000 white-fronted geese and numerous other waterbirds were observed on the area. Conley Lake is a shallow playa that is dry most of the year. Salt grass and various forb species are common. Hardstem bulrush was present in the deepest area in the past. Historically this area was filled by high ground water and spring runoff almost every year. Northeast Oregon has been experiencing extremely dry conditions for several years. Consequently, Conley Lake has not had sufficient water to attract migratory water birds during that period. Several irrigation wells were recently put in which may contribute to changes in ground water conditions in the area.

6. Forested Wetland: Forested wetlands are characterized by woody vegetation that is 20 feet tall or taller. Forested wetlands on LMWA generally occur along streams, borrow areas and canals. Common overstory species are non-native willow (*Salix* spp.) and native black cottonwood (*Populus tricocarpa*). Understory species include snowberry (*Symphoricarpos albus*) and reed canarygrass. Forested wetlands provide foraging and nesting habitat for numerous bird species including red-tailed hawk (*Buteo jamaicensis*), Bullock's oriole (*Icterus galbula*) and willow flycatcher (*Empidonax trailii*).

7. Palustrine Scrub-shrub: Scrub-shrub wetlands are dominated by woody vegetation less than six meters (20 feet) tall. Scrub-shrub wetlands on Ladd Marsh are generally found adjacent to the three branches of Ladd Creek. Dominant plant species include coyote willow (*Salix exigua*), red-osier dogwood (*Cornus stolonifera*) and golden currant (*Ribes aureum*). These areas provide habitat for a wide array of neo-tropical migrant bird species including common yellowthroat (*Geothlypis trichas*), eastern and western kingbirds (*Tyrannus tyrannus* and *T. verticalis*) and a number of warblers.

IB. Riverine wetlands

The riverine system on LWMA consists of several miles of three branches of Ladd Creek and several small intermittent streams. This habitat type includes wetlands contained within a channel. A channel is an open conduit either naturally or artificially created which periodically or continuously contains

moving water. Ladd Creek provides migration, wintering and spawning habitat for several fish species including steelhead. Most of Ladd Creek and the small streams were channelized in the late 1800s and early 1900s.

II. Uplands:

I. Grasslands: Wetlands and grasslands dominated the Grande Ronde valley prior to European settlement. Grasslands consisted primarily of basin wild rye (*Elymus cinereus*) on the deeper soils of the valley floor and bluebunch wheatgrass (*Agropyron spicatum*) and Idaho fescue (*Festuca idahoensis*) on the drier, shallow soils on the hillsides. Conversion to agricultural and intensive grazing has eliminated or degraded many of the grassland areas on Ladd Marsh. The introduction of exotic annuals including medusahead rye (*Elymus caput-medusae*) and cheatgrass (*Bromus tectorum*) has also had a negative impact on this habitat type. Several hundred acres of grassland have been restored in recent years. However, with recent expansion of the area, many new areas are in need of restoration or enhancement actions. Native seed collected on or near the area was used for most grassland restoration projects.

2. Upland Shrub: Two community types have been included in this habitat type. Greasewood-basin wild rye habitat occurs on slightly elevated, sandy soils on the valley floor. Interspersed with the grasslands, this habitat type provides excellent winter cover for pheasant and California quail. It also provides foraging and nesting habitat for shrub-grassland dependant species.

   Another upland shrub habitat type exists between the mixed conifer and the grasslands. This type historically had bitterbrush (*Pursha tridentata*), sagebrush (*Artemisia ludoviciana var. ludoviciana*) and black hawthorn (*Crataegus douglasii*) as the dominant shrub species with bluebunch wheatgrass and Idaho fescue in the understory. Hawthorn is the only native species remaining in this habitat. Invasive species including sweetbriar rose (*Rosa eglanteria*), medusahead rye and cheatgrass have invaded and now dominate many areas. Bitterbrush was successfully restored to a small area in the Bench Management Unit in 1998. Another area in the Glass Hill Management Unit was burned, chemically treated and seeded in 2005. Drought conditions have hampered progress on this project.

3. Agricultural uplands: Excluding permanent wetlands, the entire LMWA was either grazed or farmed before department management. Large tracts have been restored to wetlands and grasslands over time but approximately 397 acres of agricultural land still exists as of 2007. These areas produce a variety of food crops for wildlife including elk, pheasants and waterfowl. Irrigation is available in several areas to improve the quantity and quality of crops. Crops include cereal grains such as wheat (*Agropyron intermedium*) and barley (*Hordeum jubatum*) as well as sunflowers (*Helianthus annuus*) and sorghum (*Sorghum bicolor*). Alfalfa (*Medicago sativa*) is grown for spring and fall elk habitat as well as winter feed.

About two-thirds of the food production is accomplished through a sharecrop system where the cooperator produces a crop but leaves one-third for wildlife. The sharecropping plan is reviewed each year by LMWA staff and the cooperator(s) to assess how the program contributes to achieving management objectives. Specific crops raised are selected by the cooperator, with department staff review to ensure the crops are compatible with wildlife area objectives. Earliest annual harvest dates and other guidelines are provided by LMWA staff in order to minimize disturbance to nesting birds and other wildlife.

Livestock grazing is not currently utilized for vegetation management on the LMWA. Nevertheless, grazing was utilized in the past and may be again if it is deemed the most effective method to achieve management objectives. If grazing is reinstituted on the area, an agreement will be drawn up between the grazing permitee and the department to describe allowable stocking rates, grazing period and other guidelines.

4. Mixed Conifer: This habitat type is in the higher elevations on the west side of the wildlife area within the Glass Hill Management Unit. It has been moderately logged in several areas. Conifer species present include Ponderosa pine (*Pinus ponderosa*) on the lower drier sites and a mixture of grand fir (*Abies grandis*), Douglas-fir (*Pseudotsuga menziesii*) and western larch (*Larix occidentalis*) at higher elevations. Ponderosa pine habitats have been designated as a priority habitat for the Blue Mountain ecoregion in the Oregon Conservation Strategy. Some areas have an understory of shrubs including serviceberry (*Amelanchier* sp.), mallow ninebark (*Physocarpus malvaceus*) and snowberry. Understory grasses include Sandberg bluegrass (*Poa bulbosa*), bluebunch wheatgrass and Idaho fescue. This habitat type provides habitat for an array of forest birds including white-headed and pileated woodpecker, blue and ruffed grouse, lazuli bunting and red-breasted nuthatch. This area is important as thermal and hiding cover for resident and migratory elk. A resident herd of 30-50 elk use this area throughout the year. Winter numbers of elk may reach 400.

5. Deciduous Trees: This habitat is mostly planted trees and shrubs consisting of old home sites, orchards and wildlife plantings. Various volunteer groups including schools, scouts, and other conservation groups have planted trees and shrubs over the years. Many non-native species such as Siberian pea (*Caragna arborescens*) and Russian olive (*Elaeagnus angustifolia*) were planted in the 1960s for upland game food and cover. More recently, plantings have shifted to native species such as Ponderosa pine, black cottonwood (*Populus trichocarpa*) and golden currant.

   This habitat provides food and cover for ring-necked pheasant, California quail and gray partridge. Passerine birds use these areas for foraging and nesting as well. Old orchards and scattered fruit trees provide food for a variety of wildlife including bear (*Ursus americanus*), white-tailed deer (*Odocoileus virginianus*) and numerous bird species.

Description of Management Units
LMWA consists of eight habitat management units (HMUs), shown in **Figure 4**. These units have been delineated based on historic uses, physical features or boundaries, vegetation types, current or past management activities and water sources Appendix G. describes these management units in further detail.

To understand habitat management on LMWA, it is important to understand the sources of water and the distribution, timing and volume of water available. The wetlands on the LMWA get their water from a variety of sources including ground water; year-round or seasonal springs; Ladd Creek, either direct flooding or through diversions; Barney and un-named intermittent streams; irrigation diversions from Catherine Creek; and treated wastewater from the City of La Grande. The descriptions of HMUs (Appendix G) include a discussion of the sources of water in each unit. Wetland cells within a HMU may be located in series so that one cell must be filled before water will move into another. In these cases, management actions in one cell may affect adjacent or "downstream" cells. In other cases, cells may be managed completely independently from adjacent cells within the same HMU.

By late summer, virtually all sources of water dry up and very little water is available for management activities. Ladd Creek, Barney Creek and the un-named streams become completely dewatered by late June or July and groundwater levels drop below the level of most pond bottoms. Huge evaporation losses from the wastewater treatment facilities preclude the delivery of water to LMWA from these facilities during the hot, dry weather of late summer. Only the permanent wetlands, fed by springs, typically retain water during this period.

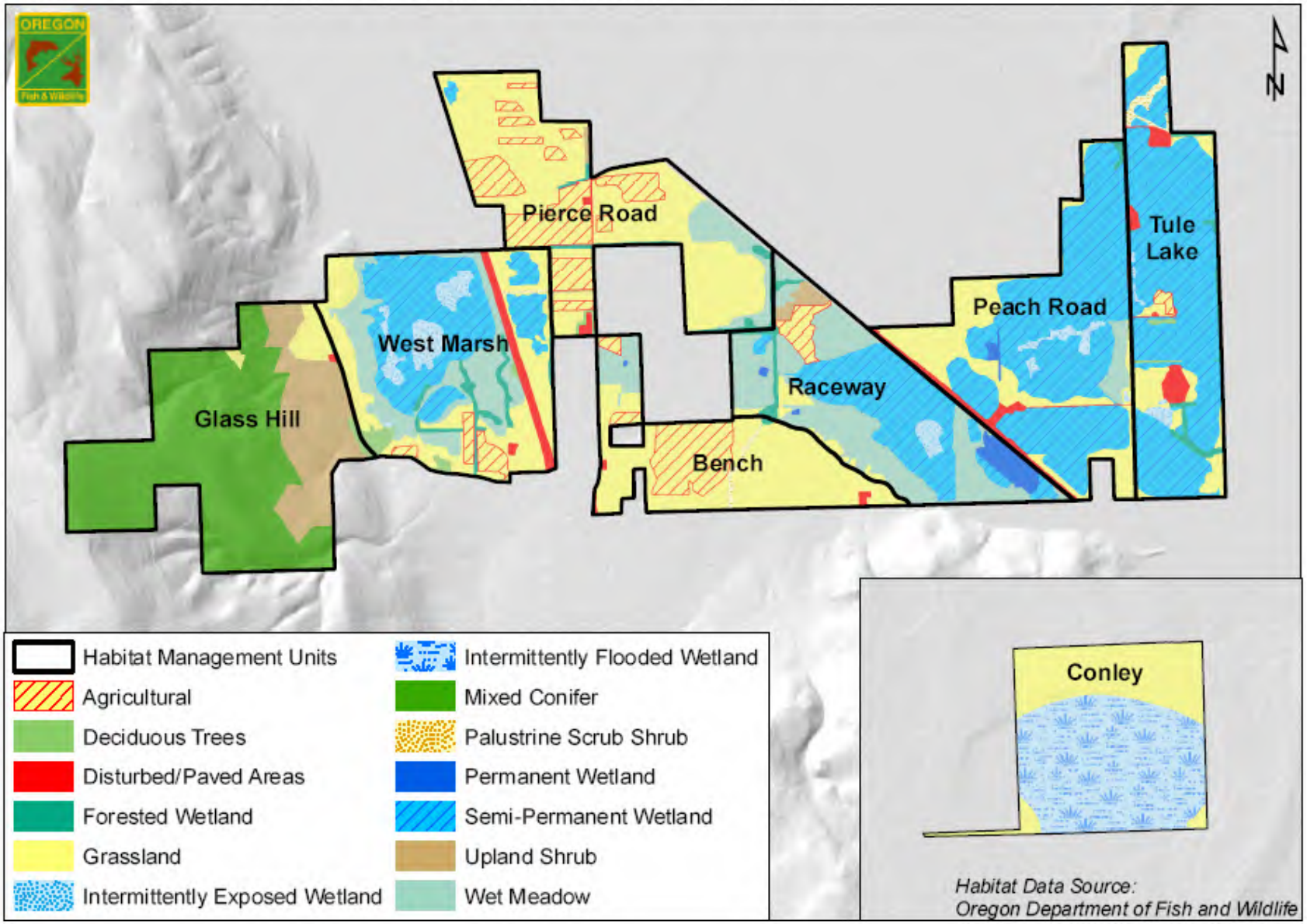
During late summer and early autumn, water management options on LMWA are extremely limited and most wetland cells dry out. These limitations on water availability are important considerations affecting habitat management on the wildlife area.

Biological Resources
Wetland dependent or wetland obligate wildlife, primarily birds, are the major wildlife resource on LMWA. Over 230 species of birds have been recorded on LMWA and over 120 species nest on the area. Comprehensive inventory data for mammal and amphibian and reptile (herptile) species is lacking, but at least 40 mammal and 14 herptile species have been documented on the area. Invertebrate occurrence and abundance has not been inventoried and is unknown although some species have been recorded incidental to other activities.

See **Appendix C** for a list of wildlife species.

Birds
Birds are the most important and dominant wildlife component at LMWA in terms of numbers of species and individuals. Waterfowl and other water birds are the major species complexes utilizing LMWA. Breeding season use has expanded over the past

Figure 4 - Ladd Marsh Habitat Management Units and Habitat Types



ten years in response to wetland habitat restoration and management activities. Habitat management activities and improvement projects have been designed with wildlife diversity as a focus and essentially all species utilizing LMWA have benefited. LMWA plays an important role in meeting life-cycle needs for a wide variety of species that is generally lacking in the Blue Mountains ecoregion.

Waterfowl

LMWA has moderate breeding populations of ducks (13 species represented) and Canada geese (*Branta canadensis*). Populations nesting on LMWA are estimated at approximately 250 pairs of Canada geese and 1,500 pairs of ducks including mallard (*Anas platyrynchos*), gadwall (*Anas streptera*) and cinnamon teal (*Anas cyanoptera*). Smaller numbers of other duck species such as northern shoveler (*Anas clypeata*), redhead (*Aythya americana*), lesser scaup (*Aythya affinis*), blue-winged teal (*Anas discors*), northern pintail (*Anas acuta*), ruddy duck (*Oxyura jamaicensis*) and wood duck (*Aix sponsa*) also nest on LMWA.

These breeding species, supported by the diverse habitats of Ladd Marsh, contribute to continental waterfowl population goals set in the North American Waterfowl Management Plan and support conservation efforts under the Intermountain West Joint Venture. Recoveries and recaptures of ducks and Canada geese banded at LMWA over the past ten years reveal a contribution to harvest in a variety of Pacific Flyway states and Canadian provinces.

The LMWA is an important migration stopover for waterbirds in the Pacific Flyway; it provides important feeding and resting habitat for those populations. Most conspicuous among spring migrants, because they are rarely seen in other seasons, are tundra swans (*Cygnus columbianus*) and Pacific greater white-fronted geese (*Anser albifrons frontalis*). Flocks of white-fronted geese numbering up to several hundred typically use LMWA for two to four weeks each spring. Small numbers of the tule subspecies (*A. albifrons elgasi*) usually occur with these flocks as well.

Swans occur on the LMWA during winter and spring. Groups of 60 or more tundra swans spend one to two months on LMWA each spring preparing to move north to their breeding areas. Trumpeter swans (*Cygnus buccinator*) are occasional winter visitors to Ladd Marsh. These are thought to be resident birds from Summer Lake or other southern Oregon locales that make brief forays to find open water when their home habitats have frozen.

Shorebirds

LMWA supports breeding and migrant shorebirds. Common breeding species are estimated as follows:

- *American avocet* (*Recurvirostra americana)* 100-125 pairs
- *Black-necked stilt* (*Himatopus mexicanus*) 50-75 pairs
- *Wilson's phalarope* (*Phalaropus tricolor*) 30-50 pairs
- *Killdeer (Chardrius vociferous)* 100-150 pairs
- *Wilson's snipe* (*Gallinago delicata*) 100-150 pairs

- *Long-billed curlew* (*Numenius americanus*) 5-10 pairs
- *Spotted sandpiper (Actitis macularia)* 30-50 pairs

Of the shorebirds that nest on LMWA, American avocet, black-necked stilt, Wilson's phalarope and long-billed curlew are all considered *Critically Important* in the Intermountain West (Oring et al. 2000). Additionally, long-billed curlew is an Oregon *Strategy Species* (ODFW, 2006). Oregon's *Strategy Species* were selected because "they are 'low and declining' or are otherwise at risk" (ODFW, 2006: 314).

Spring and fall migrational use of LMWA by shorebirds is variable and determined by both weather patterns and water levels and is generally limited to small numbers of any given species. Shorebird species observed on the LMWA during migration include:

- *Long-billed dowitcher (Limnodromus scolopaceus)*
- *Long-billed curlew*
- *American avocet*
- *Black-necked stilt*
- *Killdeer*
- *Western (Calidris mauri) and least sandpiper (C. minutilla)*
- *Wilson's and red-necked phalarope (Phalaropus lobatus)*

Generally, good to excellent habitat conditions coincide with spring migration time periods. Within the wetlands of LMWA, decreased precipitation and increased evapotranspiration exposes mudflats and muddy shorelines in the spring creating favorable foraging conditions that extend well into the breeding season.

Fall migration use is generally protracted, beginning as early as late June and extending into October as non-breeding birds and unsuccessful breeders return from northern breeding locales en route to southern wintering areas. Weather and climatic patterns affect the timing and duration of fall migration and stopovers at LMWA. Many of the wetlands on Ladd Marsh dry out over the summer and into the fall. Receding water lines along the edges of ponds and wetlands expose muddy shores and create favorable foraging conditions for migrating shorebirds. These conditions persist until water levels rise due to autumn rains and/or management actions or until freezing temperatures push migrants farther south.

Colonial Nesting Waterbirds

Ladd Marsh has not, historically, hosted waterbird nesting colonies with the exception of black-crowned night herons (*Nycticorax nycticorax*). However, a sizeable heron rookery is located on private land along Catherine Creek approximately 0.5 miles from the boundary of the LMWA. Occupancy of the rookery is estimated at 20-25 pairs of great blue herons (*Ardea herodias*). In addition to great blue herons, black-crowned night herons, double-crested cormorants (*Phalacrocorax auritus*) and, possibly, great egrets (*Ardea alba*) have also begun nesting in the colony in recent years. Adult and post-fledging juvenile birds from the rookery utilize Ladd Marsh during the non-breeding seasons and for foraging during the breeding season. Increasing numbers of black-

crowned night herons have been observed on LMWA, suggesting there may be a colony on the wildlife area.

The area's first nesting colony of white-faced ibis (*Plegadis chihi*) was documented in 2007. This pioneering colony numbered four or five pairs. Although a few ibis have been observed annually during the spring for several years, they have not nested on LMWA previously. Land acquisition and wetland restoration during the past decade have improved both the quality and availability of habitat, creating more favorable conditions for a nesting colony. Given that white-faced ibis colonies are somewhat nomadic, it is unknown whether the colony will return to LMWA or persist into the future.

A small colony of eared grebes (*Podiceps nigricollis*), numbering 10-15 pairs, has been nesting on LMWA for a few years. Changing water levels resulted in many nest failures in 2005 and the colony has moved each year since then.

Great blue heron, black-crowned night heron and white-faced ibis are all species of moderate concern and eared grebe is a species of low concern in the Intermountain West Waterbird Conservation Plan (Ivey and Herziger 2006).

Other Waterbirds

Greater sandhill cranes (*Grus canadensis tabida*) are a regular breeding species on LMWA that have increased in number from the first documented nesting pair in 1972 to 12-14 pairs currently. Cranes found on LMWA are thought to be part of the Central Valley Population which is receiving considerable management attention by the Pacific Flyway states. This population is recognized as a threatened species in California and endangered in Washington. However, the population to which Ladd Marsh cranes belong is not certain; they may be part of the Lower Colorado River population (G. Ivey, p.c.). Capture and banding of Ladd Marsh cranes will be necessary in order to determine population affinity.

Ladd Marsh is also used by several hundred greater sandhill cranes and small numbers of lesser (*G. c. canadensis*) sandhill cranes during spring and fall migration. Just as the population to which the breeding birds belong is unknown, it is also unknown where cranes that migrate through LMWA breed or spend the winter.

The greater sandhill crane is listed as Sensitive – vulnerable in Oregon and is an Oregon Strategy Species. It is also a species of concern in the Intermountain West Waterbird Conservation Plan (Ivey and Herziger 2006). Increased monitoring of both breeding and migratory sandhill cranes on LMWA may help determine changes in vegetation management needed to meet the objectives of the wildlife area while contributing to the overall health of the Intermountain West population of sandhill cranes.

LMWA provides habitat to several species of secretive marsh birds, all of which breed on the area. This group of species is of particular interest because their secretive habits make it difficult to assess population status. Since 2006, LMWA staff has participated in

a continent-wide effort to survey secretive marsh birds using audio playback of recorded calls.

American coots (*Fulica americana*) are common breeders on the wildlife area with annual production estimated at 300 - 500 young. Pied-billed grebes (*Podilymbus podiceps*) are also common, having been detected at over half of the 50 locations (stations) surveyed. Virginia rail (*Rallus limnicola*) and sora (*Porzana carolina*) are abundant on LMWA wetland habitats during the breeding season. One or both of these species was detected at three-quarters of the stations surveyed, with many of the stations reporting two to five birds. One or more Virginia rails are typically detected on Ladd Marsh during the Christmas Bird Count indicating some winter use or very late migration by the species.

American bittern (*Botarus lentiginosus*) is less common than rails but nests in relatively high numbers on Ladd Marsh. American bittern is less likely to respond to recorded calls so it is more difficult to detect during surveys; most detections were of birds calling spontaneously, not in response to playback. This, combined with their very secretive nature, may result in an underestimate of numbers of American bitterns on LMWA.

Ladd Marsh is outside the normal range of yellow rail (*Coturnicops noveboracensis*). However, suitable habitat for the species is present on LMWA and a single yellow rail was observed near the wildlife area boundary in the recent past. Audio playback surveys for secretive marsh birds on LMWA include the calls of yellow rail in an effort to document if and when this *Strategy Species* expands its range into the area.

Upland game birds

California quail (*Callipepla californica*) are very numerous especially in upland habitats scattered throughout LMWA. Grasslands bordered by shrubs provide food and security cover for this species.

Ladd Marsh hosts a self-sustaining, breeding population of ring-necked pheasants (*Phasianus colchicus*). Annual production numbers several hundred and is enough, in most years, to off-set losses to predation. During years of low rodent populations, pressure on pheasants is increased as raptors and other predators take what prey they can find, including young pheasants. As emergent wetlands dry out in the fall and remain dry into winter, the remaining robust emergent vegetation provides excellent winter cover for ring-necked pheasants.

Ruffed grouse (*Bonasa umbellus*) and blue grouse (*Dendragopus obscurus*) are found in the higher elevation conifer habitats on the west side of LMWA and are occasionally seen in the uplands on the valley floor. Gray partridge (*Perdix perdix*) also occurs on Ladd Marsh, although in relatively low numbers. This species utilizes upland habitats throughout the wildlife area.

Other Birds

Passerine birds are very numerous during migration periods, utilizing virtually all of the habitats found on the LMWA. The variety of habitats, from emergent wetlands to higher

elevation mixed conifer, available on LMWA offer a range of food and cover options important to migrating birds in both spring and fall.

Over 50 species of passerine birds are known to breed on the wildlife area. These include species of regional and continental concern to Partners in Flight as well as state sensitive species.

LMWA is also home to a variety of raptors, both diurnal and nocturnal. Twelve species of hawks and eagles nest on Ladd Marsh or nearby and hunt the varied habitats of the wildlife area. A number of species also use the LMWA during the winter including bald eagles (*Haliaeetus leucocephalus*), red-tailed hawks (*Buteo jamaicensis*), northern harriers (*Circus cyaneus*) and rough-legged hawks (*Buteo lagopus*).

Nine species of owls nest and rear young on LMWA. These predatory birds hunt waterfowl and other birds in addition to the small and mid-size mammals found on the wildlife area.

Mammals

At least 40 species of mammal occur on LMWA. Although no comprehensive surveys for mammals have been conducted, mammal species have been documented through incidental observation and small-scale trapping efforts.

The LMWA supports several species of ungulate either seasonally or as year-round residents. The most significant of these in terms of population numbers, public visibility and habitat need is Rocky Mountain elk (*Cervus elaphus*). As many as 700 elk from two herds utilize the LMWA primarily from late summer through winter. During these seasons, approximately 300-400 head move almost daily from the higher elevation conifer habitat on Glass Hill down slope into the wetlands of the West Marsh unit. Similarly, 300-400 head move from private lands on Craig Mountain down slope into the Bench and Pierce Road units. These animals provide excellent wildlife watching opportunities as they can be observed from public roads during their daily movements or while feeding or resting on the wildlife area.

The LMWA provides critical winter range for these elk herds that likely wandered widely around the valley prior to settlement by Euro-Americans. The winter feed and security offered by the habitats of LMWA help in keeping the elk from moving onto private agricultural lands and causing damage to crops and/or haystacks. During severe winters, elk may be fed at one, and less often two, locations on the wildlife area. Supplemental feeding encourages elk to stay within the wildlife area during times of thermal stress and relieves pressure from such concentrated herds on the limited natural winter habitat.

Both mule deer (*Odocoileus hemionus*) and white-tailed deer (*Odocoileus virginianus*) occur year-round on the LMWA. Both species take advantage of a variety of habitats throughout the area to meet their life-history needs. From the mixed conifer zone of the

Glass Hill unit to the robust emergent vegetation of the wetlands, deer can be found virtually anywhere on the LMWA.

A small herd of pronghorn (*Antilocapra americana*) have also become year-round residents of the LMWA. Up until 2000, pronghorns generally moved onto the wildlife area in the spring and stayed a few weeks until after their fawns were born. They then moved off the area to higher elevation pastures to the southeast. Since 2001, pronghorns have begun to stay on LMWA year-round. As many as 29 pronghorns have spent the winter on the area where their preference for open fields, usually visible from public roads, creates excellent viewing opportunities for the public.

Furbearers present on LMWA include beaver (*Castor canadensis*), bobcat (*Lynx rufus*), mink (*Mustela vison*), muskrat (*Ondatra zibethicus*), and raccoon (*Procyon lotor*). Muskrats are especially numerous throughout LMWA wetlands. This species provides considerable habitat benefits through vegetation clipping and house construction, but may cause problems due to burrowing activity and den construction in dikes and levees. However, given that most of the wetlands on Ladd Marsh dry out each summer, habitat limitations serve to somewhat regulate muskrat populations and problems with them are minimal.

Beavers are thought to have once been abundant in the habitats of LMWA but they have been virtually absent from the wildlife area during the past decade. However, recent stream and riparian area restoration activities will, over time, result in an increase in the quantity and quality of riparian habitat. It is expected that beavers will take advantage of those improvements and re-colonize LMWA in the future.

Bobcats occur primarily on Glass Hill but may venture into the lowlands on occasion. Raccoons and mink are both relatively common and can be significant predators on ground-nesting birds and their eggs.

Species that occur in relatively high numbers include coyote (*Canis latrans*), striped skunk (*Mephitus mephitus*), long-tailed weasel (*Mustela frenata*), mountain cottontail (*Sylvilagus nuttallii*), Belding's (*Spermophilus beecheyi*) and Columbian (*S. columbianus*) ground squirrels, northern pocket gopher (*Thomomys talpoides*) and a variety of small rodents and shrews (species occurrence or abundance is unclear).

Species that occur but are less numerous include river otter (*Lontra canadensis*), badger (*Taxidea taxus*), yellow-bellied marmot (*Marmota flaviventris*), porcupine (*Erethizon dorsatum*), black bear (*Ursus americanus*) and cougar (*Puma concolor*). Black bear and cougar are found primarily on Glass Hill but occasionally wander down into the lowlands, presumably in search of food.

Additionally, Glass Hill provides habitat for red squirrel (*Tamiasciurus hudsonicus*), fox squirrel (*Sciurus niger*), yellow pine chipmunk (*Tamias amoenus*) and, likely but not verified, northern flying squirrel (*Glaucomys sabrinus*) and bushy-tailed woodrat (*Neotoma cinerea*).

Five bat species have been confirmed on LMWA: fringed myotis (*Myotis thysanodes*), little brown bat (*Myotis lucifugus*), long-legged bat (*Myotis volans*), big brown bat (*Eptesicus fuscus*) and Yuma myotis (*Myotis yumanensis*). These bats forage extensively throughout the area consuming vast numbers of night-flying insects. Many of the area's numerous old barns and outbuildings provide suitable roost sites although no maternity roosts or hibernacula have been identified. The fringed myotis, Yuma myotis and long-legged bat are all species of conservation concern. Comprehensive surveys to locate potential maternity and hibernation locations would help inform management activities to benefit these species.

Amphibians and Reptiles

Native species of amphibians and reptiles are plentiful on the area, as are introduced bullfrogs:

- Long-toed salamanders (*Ambystoma macrodactylum*) occur on LMWA and at least one major breeding site has been identified.
- Columbia spotted frog (*Rana luteiventris*), a federal Candidate species, has been documented in several locations on LMWA but just a single breeding site has been identified. The effects of water level and vegetation management on spotted frogs within the LMWA are poorly understood. Research, including surveys and/or telemetry studies, will be necessary to locate additional potential breeding sites and non-breeding habitat use by this species. Improved knowledge of how spotted frogs utilize the wildlife area will facilitate management to benefit this species.
- Pacific chorus frogs (*Pseudacris regilla*) are abundant and scattered throughout the wildlife area.
- Great Basin spadefoot toads (*Scaphiopus intermontanus*) were first documented on LMWA in 2003. Since Union County was not included in the accepted range of the species, trapping was conducted in 2005 and both adults and larvae were collected and deposited with the vertebrate museum at Eastern Oregon University in La Grande. The new county record was accepted by Herpetological Review and published in September, 2005 (Vol. 36, No. 3). This species has been documented in the Peach Road and Conley Lake units of the wildlife area.
- Western fence lizard (*Scelopourus occidentalis*) and western skink (*Eumeces skiltonianus*) are known to occur on LMWA although distribution and abundance are unknown.
- At least six species of snake have been observed on LMWA. These include both common and western terrestrial garter snakes (*Thamnophis sirtalis* and *T. elegans*), gopher snake (*Pituophis catenifer*), western rattlesnake (*Crotalus oreganus*), racer (*Coluber constrictor*) and rubber boa (*Charina bottae*). These species are thought to be widespread in appropriate habitats but abundance is unclear. All of the above species have been observed at two known hibernacula within the wildlife area where they apparently hibernate in a mixed-species group.
- Western painted turtle (*Chrysemys picta belli*) also occurs on the LMWA. Abundance and distribution of this species is unclear although an effort was begun in 2007, in partnership with Eastern Oregon University, to learn more

about how turtles use the habitats of the area. Additionally, in 2007, a project aimed at rescuing painted turtles from a nearby reservoir that was to be drained, resulted in the translocation of a total of 56 western painted turtles to LMWA. The translocated turtles included both males and females and individuals from two years to more than 20 years old. Little is known about where painted turtles nest or where they overwinter on LMWA. Additionally, there are no records of the movements of painted turtles within the wildlife area. Research is needed to answer these questions and ensure that water and vegetation management can be adapted to benefit this species. Western painted turtles are listed as Sensitive – Critical in Oregon and are a *Conservation Strategy Species*.

- Bullfrogs (*Rana catesbeiana*), an introduced and invasive species, are widespread on LMWA. They are found in nearly all of the wetland areas and reproduce prolifically. Because of their large size and gape and their voracious appetites, bullfrogs are a threat to many native species including spotted frogs and painted turtles.

Fish

Portions of Ladd Creek, including its west, middle and east forks are contained within the LMWA. A wide variety of fish species are found within Ladd Creek and its tributaries as shown in **Table 2**. Ladd Creek, as it flows through LMWA, is in a low gradient unconfined valley that has been highly modified from historic conditions (NPPC, 2004). The stream channels have been extensively ditched and straightened, significantly changing the hydrologic function of the system. Wetlands that were more abundant historically in the system served to attenuate and cool stream flows, providing better habitat and water quality for once abundant populations of summer steelhead and spring Chinook salmon.

While Ladd Creek once provided spawning and rearing habitat for summer steelhead and spring Chinook salmon, a combination of altered hydrology, habitat degradation and passage barriers led to their current minimal use. Neither species is currently known to spawn in Ladd Creek. Juvenile rearing is limited to winter and spring in the lower part of the drainage. However, habitat restoration efforts on Ladd Creek both on and off LMWA are making conditions more suitable for these species. Barriers to migration have been addressed and habitat has been improved along lower Ladd Creek on LMWA and efforts are underway to address passage and habitat issues upstream. It is anticipated that within the next decade unrestricted passage will exist throughout this system allowing steelhead and spring Chinook to recolonize it up to the potential the habitat can provide under modern watershed conditions.

Ladd Creek provides year-round habitat for redband trout and several other native fish species including bridgelip sucker, northern pikeminnow, speckled dace, redside shiner and chiselmouth. As native fish adapted to local conditions, all are spring spawners, making use of flows when they are abundant. Both historically and currently, migratory fish such as redband trout and bridgelip suckers move throughout the system, seeking the most advantageous habitat conditions from season to season. For redband trout, this typically means that they are more widely distributed in the winter and spring

months, their distribution shrinking as flows decline and water temperatures increase during summer.

The presence of numerous non-native introduced fish is a concern for conservation of native fish on LMWA. All of the centrarchids (bass, crappie) are predatory during a significant portion of their life history, potentially foraging on native fish. In addition, introduced species provide competition for both food and space that vary considerably depending on many factors. In light of these concerns, it would be beneficial to see reduction in the numbers of introduced fish species within Ladd Creek and the greater LMWA. Within stream environments there is not currently a practical way of effectively removing introduced fish without significant impacts to native aquatic organisms. The best method to reduce an introduced warm water species in stream environments is to restore habitat to that more conducive to native cold water fish. Efforts are underway to accomplish this. Standing water environments do provide an opportunity for either physical or chemical removal of introduced fish. Removal of introduced fish species will be considered where opportunities exist to capture them from standing waters, and there are no pathways for them to recolonize these habitats.

Table 2 Fish species known to inhabit Ladd Creek and its tributaries within the LMWA.

Common Name	Scientific Name	Life History Stage	Status – Comments
Bull trout	*Salvelinus confluentus*	Subadult	Federal ESA listed: threatened State listed: sensitive – critical
Inland redband trout	*Oncorhynchus mykiss*	All	Federal species of concern State listed: sensitive –vulnerable
Spring Chinook salmon	*Oncorhynchus tshawytscha*	Parr	Federal ESA listed: Threatened State listed: sensitive – critical
Bridgelip sucker	*Catostomus columbianus*	All	Native – common
Northern pikeminnow	*Ptychocheilus oregonensis*	All	Native – common
Speckled dace	*Rhinichthys osculus*	All	Native – common
Longnose dace	*Rhinichthys cataractae*	All	Native – common
Redside shiner	*Richardsonius balteatus balteatus*	All	Native – common
Chiselmouth	*Acrocheilus alutaceus*	All	Native – common
Yellow perch	*Perca flavescens*	All	Introduced – common
Common carp	*Cyprinus carpio*	All	Introduced – common
White crappie	*Poxomis annularis*	All	Introduced – common
Black crappie	*Poxomis nigromaculatis*	All	Introduced – common
Bluegill	*Lepomis macrochirus*	All	Introduced – common
Largemouth bass	*Micropterus salmoides*	All	Introduced – common
Smallmouth bass	*Micropterus dolomieui*	All	Introduced – common
Warmouth	*Lepomis gulosis*	All	Introduced – common
Pumkinseed sunfish	*Lepomis gibbosus*	All	Introduced – common
Brown bullhead	*Ictalurus nebulosis*	All	Introduced – common

Plants

Due to the variety of topography (elevation, slope, aspect), hydrology and soils, the LMWA supports diverse communities of plant species. These communities are

generally described as habitat types in the discussion beginning on page 9. Within these habitats exist hundreds of species of plants ranging from wetland obiligate annuals such as showy downingia (*Downingia elegans*) and American slough grass (*Beckmannia syzigachne*) to long-lived upland species such as ponderosa pine (*Pinus ponderosa*). **Appendix C** contains the current list of plant species occurring on LMWA; this list is incomplete and is added to as species are observed and documented with the assistance of Dr. Karen Antell, a botanist and Professor at Eastern Oregon University.

Douglas' clover (*Trifolium douglasii*), a federal Species of Concern and Oregon List 1 Sensitive species, was first observed on LMWA in 2004. This species has been documented from only 5 locations in Oregon and may have been extirpated in Washington. Douglas' clover grows in damp or wet meadows; surveys by LMWA staff and volunteers have documented the species in 3 separate meadows on LMWA. Management of these meadows will be aimed at conservation of Douglas' clover and its community associates.

Species of Conservation Concern

LMWA is host to a number of species listed under the Oregon and Federal Endangered Species acts (**Table 3**). Federally listed species that occur on LMWA include summer steelhead (*Oncorhynchus mykiss*), Chinook salmon (*Oncorhynchus tschawytscha*) and bull trout (*Salvelinus confluentus*). All three have been documented only in low numbers in Ladd Creek within LMWA. However, stream restoration efforts have improved, and will continue to improve stream habitat for both of these species creating opportunities for increasing numbers to utilize the wildlife area.

There are several species of federal or state concern including Douglas' clover, Columbia spotted frog, western painted turtle, northern goshawk (*Accipiter gentilis*), burrowing owl (*Athene cunicularia)*, bald eagle, great gray owl (*Strix nebulosa*) Swainson's hawk (*Buteo swainsoni)*, olive-sided flycatcher (*Contopus cooperi)*, willow flycatcher (*Empidonax trailii adastus)*, bobolink (*Dolichonix oryzivorus*), black-necked stilt, greater sandhill crane, yellow-breasted chat (*Icteria virens)*, Franklin's gull (*Larus pipixcan),* Lewis' woodpecker (*Melanerpes lewis),* pileated woodpecker (*Dryocopus pileatus*), white-headed woodpecker (*Picoides albolarvatus*), long-billed curlew, American white pelican (*Pelecanus erythrorhynchos),* fringed myotis, long-legged myotis, redband trout*,* Snake River Chinook salmon and bull trout*.*

Many of these species are summer migrants (Swainson's hawk, willow flycatcher, greater sandhill crane, black-necked stilt, Lewis' woodpecker, long-billed curlew, olive-sided flycatcher) and breed on LMWA, some in good numbers. Others are former breeding species (burrowing owl and bobolink) or species that breed in nearby habitats with a high likelihood of becoming or returning as breeding species (bald eagle, American peregrine falcon). These species utilize wildlife area habitats during migration and the breeding season. Several species (northern goshawk, pileated woodpecker and the bat species) utilize LMWA habitats but their population status and whether they breed on the wildlife area is unknown. Some species (e.g., American white pelican, Franklin's gull) utilize LMWA in relatively low numbers during migration.

The species discussed above are strategy species as defined in the 2006 Oregon Conservation Strategy. The Strategy prescribes conservation actions to be implemented that contribute to the overall health of strategy habitats and associated species. LMWA's diverse habitat management actions, activities and programs contribute to the conservation of strategy species in the Blue Mountains Ecoregion and the Grande Ronde Valley Conservation Opportunity Area.

Table 3. Federal- or State-listed Endangered, Threatened, Candidate and Species of Concern potentially present on Ladd Marsh Wildlife Area. (Federal Status: LE-Endangered; LT-Threatened; C-Candidate; SoC-Species of Concern. State Status: LE-Endangered; LT-Threatened; SC-Sensitive; Critical; SV-Sensitive; Vulnerable; SP-Sensitive; peripheral or naturally rare; SU-Sensitive; Undetermined Status. Oregon Conservation Strategy (OCS) species present – x; Key Species-X).

Common Name	*Scientific Name*	Federal Status	State Status	OCS
Amphibians				
Columbia spotted frog	*Rana luteiventris*	C	SU	x
Birds				
Bufflehead	*Bucephala albeola*		SU	X
Barrow's Goldeneye	*Bucephala islandica*		SU	
Horned Grebe	*Podiceps auritus*		SP	
Red-necked Grebe	*Podiceps grisegena*		SC	
American White Pelican	*Pelecanus erythrorhynchos*		SV	
White-faced Ibis	*Plegadis chihi*	SoC		
Bald Eagle	*Haliaeetus leucocephalus*		LT	
Northern Goshawk	*Accipiter gentilis*	SoC	SC	
Swainson's Hawk	*Buteo swainsoni*		SV	
Peregrine Falcon	*Falco peregrinus*			x
Greater Sandhill Crane	*Grus canadensis*		SV	X
Black-necked Stilt	*Himatopus mexicanus*		NR	
Long-billed Curlew	*Numenius americanus*		SV	
Franklin's Gull	*Larus pipixcan*		SP	
Black Tern	*Chlidonias niger*	SoC		
Northern Pygmy Owl	*Glaucidium gnoma*		SC	
Burrowing Owl	*Athene cunicularia*	SoC	SC	
Great Gray Owl	*Strix nebulosa*		SV	x
Lewis' Woodpecker	*Melanerpes lewis*	SoC	SC	x
White-headed Woodpecker	*Picoides albolarvatus*	SoC	SC	x
Three-toed Woodpecker	*Picoides tridactylus*		SC	x
Black-backed Woodpecker	*Picoides arcticus*		SC	x
Pileated Woodpecker	*Dryocopus pileatus*		SV	x
Olive-sided Flycatcher	*Contopus coperi*	SoC	SV	
Willow Flycatcher	*Empidonax trailii*	SoC	SU	
Bank Swallow	*Riparia riparia*		SU	
Yellow-breasted Chat	*Icteria virens*	SoC	SC	x
Bobolink	*Dolichonix oryzivorus*		SV	X
Fish				
Redband Trout	*Oncorhynchus mykiss*	SoC	SV	x
Snake R. Summer Steelhead	*Oncorhynchus mykiss*	LT	SV	X

	Oncorhynchus			
Chinook Salmon	*tschawytscha*	LT	LT	X
Bull Trout	*Salvelinus confluentus*	LT	SC	X
Mammals				
Preble's Shrew	*Sorex preblei*	SoC		
Fringed Myotis	*Myotis thysanodes*	SoC	SV	x
Yuma Myotis	*Myotis yumanensis*	SoC		
Long-legged Bat	*Myotis volans*	SoC	SU	x
Reptiles				
Western Painted Turtle	*Chrysemys picta belli*		SC	x
Plants				
Douglas' clover	*Trifolium douglasii*	SoC		

Non-Native Species

Non-native wildlife on the area includes invasive pest species such as European starling (*Sturnus vulgaris*) and house sparrow (*Passer domesticus*). These species compete with cavity nesting native species. Game birds such as ring-necked pheasants have been introduced and are managed to provide hunting opportunities. Feral cats (*Felis domesticus*), although relatively uncommon on LMWA, can exert considerable predation pressure on native species as well as desirable game birds. House mice (*Mus musculus*) occur at the Headquarters complex and other buildings and residences. Bullfrogs are common in the wetlands of LMWA and can be a significant predator of native species, especially western painted turtle and Columbia spotted frog, both species of concern. Common carp is also present in areas with access to Ladd Creek. This species is reduced each year as Ladd Creek and its adjacent wetlands dry out but an influx of carp from Catherine Creek, via Ladd Creek, repopulates the area each spring. Carp are damaging to potential off-channel rearing habitat for salmonids as they stir up the substrate uprooting aquatic plants and increasing turbidity.

The occurrence and distribution of non-native plants species is unknown since comprehensive surveys have not been conducted. However, a large number of non-native plants are present on LMWA. The origin of most is unknown, but some desirable species have been cultivated in agricultural and other upland areas as well as in pastures and meadows and continue to be utilized. Many species appear to be beneficial as forage or cover as evidenced by wildlife use and do not appear to have serious deleterious effects on habitat.

Several species of noxious weeds found on LMWA are listed in **Table 4**. Most noticeable and of great concern are: knapweeds (*Centaurea* sp.) (diffuse and spotted), perennial pepperweed (*Lepidium latifolium)* , white top (*Cardaria draba)*, sulfur cinquefoil (*Potentilla recta*) and thistles (Canada (*Cirsium arvense)* and Scotch (*Onopordum acanthium*)). Many of these species displace native vegetation and/or are of limited value to wildlife. Noxious weed control efforts involving chemical spraying, mowing and hand pulling or chopping are an annual activity focused on control of these species. Additionally, biological control agents have been introduced for control of Canada thistle and diffuse knapweed.

Table 4. Noxious weeds on the Union County Noxious Weed List and known to be present on Ladd Marsh Wildlife Area. (Species in **bold** are subject to active control efforts on LMWA, *Invasive plants identified in 2006 Oregon Conservation Strategy)

Common Name	Scientific Name	Occurrence
Western water-hemlock	*Cicuta douglasii*	C
Poison hemlock	*Conium maculatum*	C
***Diffuse knapweed**	***Centaurea diffusa***	C
Spotted knapweed	*Centaurea maculosa*	C
Canada thistle	***Cirsium arvense***	A
***Scotch thistle**	***Onopordum acanthium***	C
***Hoary cress (white top)**	***Cardaria draba***	C
***Perennial pepperweed**	***Lepidium latifolium***	C
Kochia	*Kochia scoparia*	A
***Leafy spurge**	*Euphorbia esula*	R
***Purple loosestrife**	***Lythrum salicaria***	R
***Jointed goatgrass**	*Aegilops cylindrica*	C
Wild oat	*Avena fatua*	A
Quackgrass	*Agropyron repens*	A
Cereal rye	*Secale cereale*	A
***Sulfur cinquefoil**	***Potentilla recta***	A
Catchweed bedstraw	*Galium aparine*	C
Puncture vine	***Tribulus terrestris***	C

The first release of a biological control agent for Canada thistle on LMWA occurred in 1988 in collaboration with the Oregon Department of Agriculture (ODA). This gall-forming fly, *Urophora cardui*, is a spring emergent. It attacks the growing points of the thistle, the leaf buds and the tip of the plant, and lays its eggs there. Through a mechanism that is not well understood, this causes the plant to form a gall in which the eggs hatch and the larvae develop, pupate and spend the winter. In the spring, adults emerge and the cycle begins again. The presence of galls precludes the formation of flowers and thus prevents reproduction by the plant. The formation of the galls also consumes significant resources leaving the plant weakened and vulnerable to other stressors. *Urophora* took several years to become established and spread throughout the wildlife area; LMWA was the first site of successful introduction of the species east of the Cascade Mountains. For over a decade, the population increased every year but it has now apparently leveled off. This is likely due to reductions in the population of Canada thistle; there appeared to be just enough of a population of the thistle in 2007 to maintain the population of Urophora for continued control of Canada thistle.

The second release of a Canada thistle bio-control agent on LMWA occurred in 1996. *Ceutorhynchus litura*, a stem-mining weevil, was released in collaboration with the U.S. Forest Service and ODA. *Ceutorhynchus* larvae attack the stem of the plant, hollowing it out and increasing vulnerability to attack by other agents. The action of the larvae in the stem also uses valuable nutrients and disrupts the transportation of nutrients through the stem, weakening the plant. In 2007 the population of *Ceutorhynchus* is still increasing and it has likely spread outside the boundaries of LMWA. *Ceutorhynchus* is found in virtually every Canada thistle plant on LMWA. Although the Canada thistle

population has decreased significantly, the number of *Ceutorhynchus* larvae per stem had increased, increasing the overall population of the weevil. The population of *Ceutorhynchus* on LMWA is adapted to the higher elevation of the area and is the "best population in the Interior Rocky Mountain Region" (G. Markin, U.S.F.S., p.c.).

Some time before 1996, another Canada thistle bio-control agent found its way onto LMWA. This agent, *Larinus plainus*, was an accidental introduction that spread onto LMWA from some other area. *Larinus plainus* is a seed-head weevil that also attacks several other species and thus is not an "approved biological control agent." The larvae of this species get into the flower and resulting seed head and eat the seeds, greatly reducing seed production and slowing the spread of Canada thistle.

These three species, *Urophora cardui, Ceutorhynus litura* and *Larinus plainus*, working in concert, have been so successful on LMWA that Canada thistle is now controlled in natural habitats by their effects alone. The reduction in Canada thistle since the first introduction of *Urophora* is estimated at about 70% to 75%. Chemical control for Canada thistle continues to be utilized in agricultural areas. Representatives of federal, state and county agencies and Native American Tribes from as far away as Montana routinely visit LMWA to collect Ceutorhynchus and Urophora for release at other sites in the interior Rocky Mountains.

Several biological control agents for diffuse knapweed are also present on the LMWA. The precise date when *Larinus minutus* (weevil) reached LMWA is unknown, but it was introduced by ODA to private land throughout the valley in the 1990s with a release near Hot Lake in 1998. This was probably the release that prompted its spread to LMWA. It has become established on LMWA and has been successful at slowing the spread of diffuse knapweed. Like the *Larinus* that attacks Canada thistle, *Larinus minutus* attacks the flower and resulting seed head, eating the seeds and greatly reducing reproduction. In addition to the *Larinus*, another seed-head weevil, *Bangasternus fausti*, is present. This weevil acts on diffuse knapweed in a similar fashion to the *Larinus* but emerges earlier in the year.

Two band-wing flies, *Urophora affinis* and *Urophora quadrifasciata* were released by ODA in various Grande Ronde Valley locations in the 1980s. These flies are characterized as "good fliers and good finders" of knapweed (Dan Sharrat, ODA, personal communication). Thus, they have spread to LMWA and can be found in nearly every patch of the weed on the wildlife area. These two species cause the plant to form galls in the seedhead displacing seeds and creating an energy sink for the plant. These species combined are thought to cause a 50% reduction in seed production by infected plants (D. Sharrat, p.c.). An additional biological control agent for diffuse knapweed is present on LMWA although its date of arrival is unknown. *Sphenoptera jugoslavica* is a root borer which, by damaging the roots of the plant, creates a vector for other pathogens and stresses the plant by slowing uptake of water and nutrients.

Medusahead rye is not on the Union County Weed List but is abundant on LMWA and efforts are ongoing to attempt control of this invasive species. In addition to noxious

weed species known to occur within the LMWA, there are species that occur in Union County but have not been documented on LMWA. These include musk thistle (*Carduus nutans*), tansy ragwort (*Senecio jacobaea*) and yellow starthistle (*Centaurea soltitalis*). Surveillance is conducted each year in an effort to remove any individuals that may occur and avoid colonization by those species.

Sweetbriar rose is an introduced shrub that is established and becoming invasive on the LMWA. This species is found primarily in the Glass Hill and West Marsh units but is spreading throughout the wildlife area. Sweetbriar is of marginal food value to wildlife and may compete with native shrubs such as black hawthorn and native roses (*R. nootkana* and *R. woodsii*). Control of this potentially invasive species will be necessary to maintain the integrity of natural shrub and grassland habitats.

Monitoring

Annual program activities are in place to monitor wildlife populations, habitat use and other features. Wildlife response to habitat developments is a major objective of most surveys. Data are collected by management units and in some cases, specific localities, habitats or vegetative types based upon survey objectives. Population data are used to monitor effectiveness of habitat management activities for a variety of wildlife species. Data are analyzed, summarized, and maintained on site. A database of incidental wildlife observations is maintained in addition to formal survey data. Appropriate data are available to department personnel and interested members of the public upon request.

Waterfowl and other Waterbirds

- Routine surveys include duck and goose pair counts and brood surveys.
- Monitoring and reporting of neck collared waterfowl, band encounter/recovery data are collected and reported.

Other Wildlife

- Monthly bird surveys are conducted year-round on established transects to document and monitor passerines and other nongame bird species.
- Marsh bird surveys are conducted using recorded calls during the breeding season.
- Monthly area count bird surveys are conducted in specific habitat types by volunteer observers.
- Eastern Oregon University faculty conducts periodic surveys for species or groups of species of interest on the wildlife area and shares the data with LMWA staff.

Upland Game Birds

- Upland game bird brood surveys are conducted to document production within those populations.

Big Game

- Elk numbers are periodically monitored to document the potential for damage on surrounding lands and to determine the need to feed during severe winter weather.

Fish

- Fish species presence and abundance are monitored every few years through operation of a two-way fish trap in Ladd Creek.
- Fish species presence and abundance are monitored through stream surveys by department district fisheries personnel.

Wildlife Diseases

- Minor outbreaks or individual birds afflicted with avian cholera, botulism and lead poisoning occur occasionally and are monitored by LMWA staff. Animals that appear to be sick are sent to the department's wildlife veterinarian for disease testing as necessary.
- West Nile Virus (WNV) has been confirmed to occur in horses and at least one human in Union County and has been documented in mosquitoes on LMWA. The wildlife area staff works closely with the local Vector Control District to test mosquitoes, monitor for affected wildlife and implement the Ladd Marsh Wildlife Area Vector Control Plan which was incorporated into the Union County Vector Control Plan in 2006.
- The department is currently testing waterfowl on LMWA for Avian Influenza. This testing follows recently developed statewide and national testing protocols for live birds trapped during banding operations and dead birds harvested legally during waterfowl seasons.

Vector Control

- The LMWA Vector Control Plan, adopted as an addendum to the Union County Vector Control Plan in 2006, includes recommendations for capture and testing of mosquitoes as well as a map showing priority areas for larvicide treatment. The Union County Vector Control District has committed to sharing all mosquito testing data as well as actual treatment areas with Ladd Marsh staff for the purpose of adaptive management of key WNV areas.

Vegetation

- Coarse vegetation mapping has been conducted using recent aerial photography and staff knowledge of the area to document habitat types. Fine scale mapping and surveys are planned to document distribution, changes in abundance and composition of various species and/or habitat types. A noxious weed distribution inventory is desirable and would help inform planning of chemical and mechanical treatment. Additionally, annual mapping of mechanical vegetation management, including disking and mowing, is planned.

Restoration

- Restoration was completed in phases within the Tule Lake, Peach Road and West Marsh management units between 2001 and 2004. These project areas

are monitored through a variety of methods including permanent photo points, habitat evaluation procedures (HEP), vegetation transects and long-term monitoring of Ladd Creek channel morphology. The data collected through these efforts assists in evaluating the effectiveness of restoration actions as well as guiding management activities.

Water Use

- Water use for irrigation and wildlife use is monitored monthly through meters installed on all diversion structures. Water level measurement devices are planned for installation in managed wetlands in order to monitor water levels and correlate them with management actions to evaluate the effectiveness of those actions. Use reports are prepared annually and submitted to the department's Engineering Section for submission to Oregon Water Resources Department.

Public Use

- Observational data of hunter participation and success is collected by area personnel during hunting seasons.
- Wildlife viewing and other non-hunting recreational use is estimated monthly from LMWA staff observations.
- Use of LMWA for education by school and other groups is recorded as it occurs to document the number of participants annually.

Cultural Resources

The Grande Ronde Valley has a rich cultural history including use of the area by Native American peoples and passage of thousands of Euro-Americans on the Oregon Trail. Because of this rich history, numerous cultural resource surveys have been conducted prior to ground-disturbing activities within the LMWA. Each survey completed was site-specific for the planned project and resulted in a report of findings. Any sites deemed culturally significant were avoided and/or left undisturbed during project activities.

The area of the present LMWA lies within lands ceded to the federal government by the Confederated Tribes of the Umatilla Indian Reservation (CTUIR). According to ethnographic and historic accounts, a number of Indian groups of the Southern Columbia Plateau cultural tradition shared this territory at various times. These were the Nez Perce and tribes now part of the CTUIR, to whom the Nez Perce are closely related linguistically and culturally. The CTUIR include the Cayuse, Umatilla and Walla Walla tribes. Several Northern Paiute bands of the Great Basin cultural tradition were also present in the area, often warring with the other inhabitants of the Grande Ronde Valley. The Nez Perce and CTUIR often used the same territory at the same time for hunting, fishing and gathering.

Prior to disturbance by Euro Americans, the Grande Ronde Valley held huge fields of camas, remnants of which can be seen within the LMWA today. The abundant camas as well as the hot springs and other natural resources associated with what was later called Tule Lake attracted native peoples to the area. During cultural resource surveys,

artifacts have been found that suggest the presence of encampments near the edge of Tule Lake and oral histories tell of permanent villages at Hot Lake and Catherine Creek.

The earliest recorded Euro Americans to visit the area were employees of John Jacob Astor's Pacific Fur Company who entered the valley in 1812. In the 1840s, travelers on the Oregon Trail passed through the valley across land now included within LMWA. Remnants of the Oregon Trail can be seen in the Glass Hill Management Unit. By the fall of 1863, the General Land Office (GLO) was surveying the area for future land claims and major Euro American settlement had begun.

Social Environment

Demographics

LMWA is situated near the cities of La Grande (population: 12,400), Union (2,000), Elgin (1,600), Cove (600) and Island City (900) in Union County (pop. 24,530). U.S. Census Bureau figures for 2000 indicate the median age in Union County was 37.7 years and residents were overwhelmingly (94%) self-identified as White. The median household income in the county was $33,700, well below the statewide figure of $40,900. Employment in Union County is provided by a variety of industries including education, health and social services (24%); manufacturing (13%); retail trade (13%); agriculture, forestry and natural resources (7%) and others.

Northeast Oregon in general and Union County in particular has a long history and tradition of participation in agriculture and natural resources. The county boasts numerous Century Farms and ranches and favorite hunting areas are often traditions passed down several generations. In addition, firewood cutting, mushroom picking and other natural resource uses are long-standing traditions for many residents.

Land Use

LMWA is surrounded primarily by agricultural and rural residential land on the valley floor in addition to timber land adjacent to the Glass Hill Management Unit. Other land uses nearby include light industrial and two major transportation corridors including Interstate 84, State Highway 203 and a railroad. These transportation corridors pass through portions of the LMWA creating some challenges to wildlife area management as high-speed vehicles pose a threat to wildlife moving about the area. Further, large animals and large groups of small animals can, at times, pose a risk to the traveling public. The department is working with the Oregon Department of Transportation (ODOT) and others to identify such hazards to both wildlife and the traveling public and develop solutions.

The La Grande Municipal airport has some influence on land management within the Wildlife Area. In 1989, the county adopted an airport overlay zone that restricts any new uses that are designed to attract birds such as created wetlands. The overlay zone extends 10,000 feet from the airport. If the department considers any new uses within the overlay zone, it is required to go through a conditional use process. Wetlands

established prior to 1989 are considered pre-existing uses and are not subject to county regulation.

Figure 3 shows the land uses which border the Wildlife Area.

Infrastructure

Developments/Facilities

LMWA facilities consist of four home sites, three host sites (trailer pads), City of La Grande treatment facility and two storage areas. They occupy approximately 46 acres. In addition there are several scattered buildings on the area from old farm sites. Some are scheduled to be dismantled and the rest provide habitat for bats and barn owls. The headquarters area has a residence, an office/shop, a storage barn, two garages and a grain bin. The following are facilities and developments on LMWA.

Major facilities development occurs primarily at LMWA's Headquarters Complex (see **Table 5**).

The wildlife area has 21 miles of boundary and pasture fence.

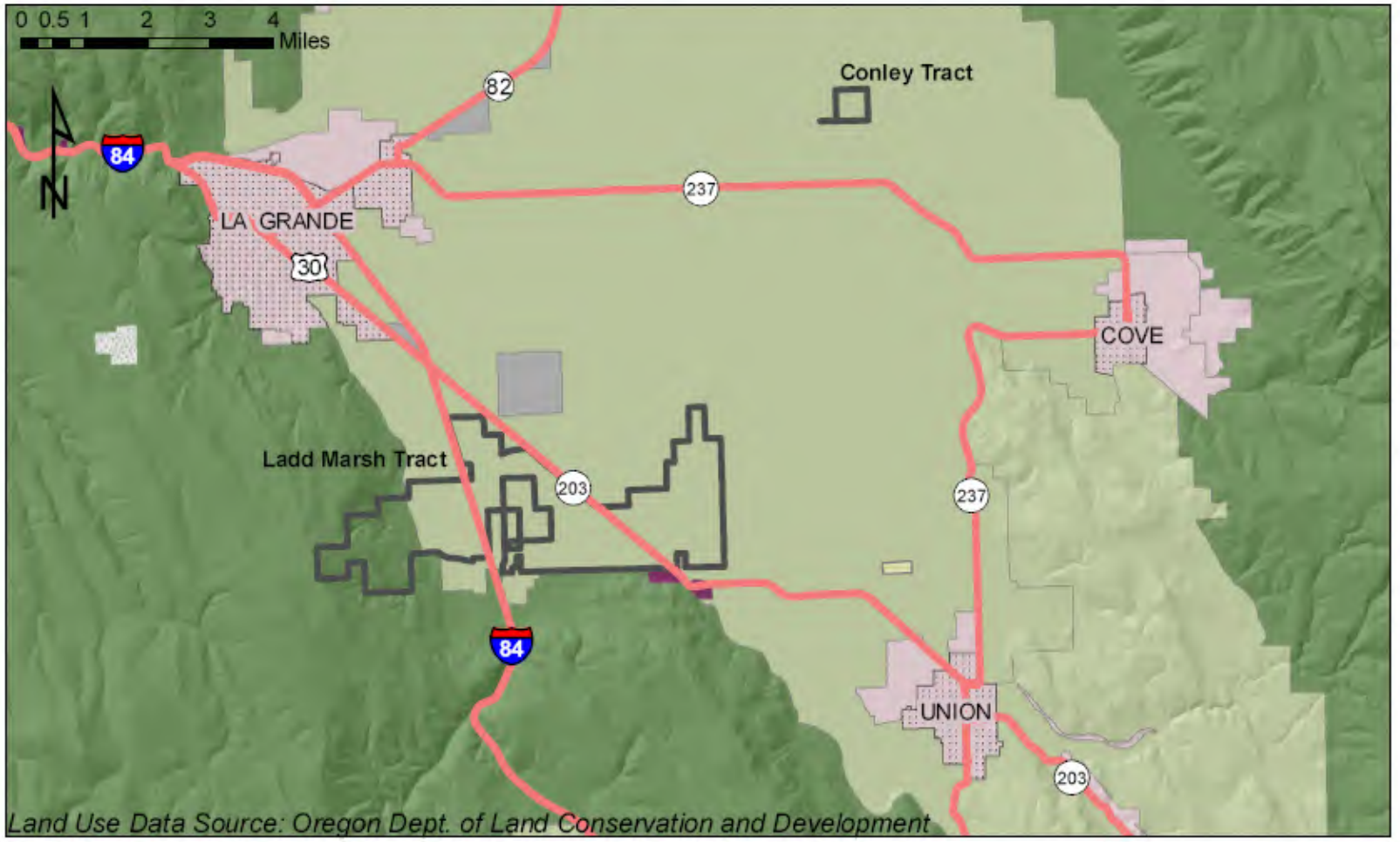
Table 5. Facilities and Developments on the Ladd Marsh Wildlife Area.

Development Type	Location/ Tract Name
Viewing Areas (3)	Tule Lake Access Area (hiking trails and Auto Route), West Marsh Overlook, Nature Trail
Fishing Pond	Peach Road Fishing Pond
Public Restrooms (2)	Headquarters, Peach Road Fishing Pond
Office	Headquarters
Residences (4)	Headquarters, H.Simonis, City of La Grande, G. Simonis
Shops (3)	Headquarters, City of La Grande, H. Simonis
Storage Buildings (14)	Headquarters 3), RMEF, Peebler (2), March (2), H. Simonis, Bench, Host Sites (3), G. Simonis
Grain Storage Bins (4)	H. Simonis, Headquarters, Peebler
Parking Areas	Throughout the wildlife area
Fences (21.35 miles)	Various boundary and cross fences

Water Resources

Currently, LMWA has 34 recorded water rights scattered throughout the area. Water right use includes crop irrigation, winter storage and wetland management. Water availability for these rights depends on winter snowpack and associated stream flows. The quantity of water available is extremely variable and often nonexistent in late summer for many areas. Management strategies reflect the amount of annual water available.

Figure 3 - Land Use Surrounding Ladd Marsh Wildlife Area



LMWA and the City of La Grande began discussions in the early 1990s to use treated effluent for wetland management. These discussions resulted in a pilot program beginning in 1993. Four wetland cells, 50 acres in total, were constructed to begin the program. Isolated from other LMWA wetlands, they have been maintained since that time entirely with treated effluent. These wetlands provide productive foraging areas for migrating waterfowl as well as nesting and brooding areas. The level of treatment prohibits public access to these ponds. Therefore, these 50 acres have been included in one of the area's posted refuges.

The pilot program's success and an Oregon Department of Environmental Quality (DEQ) requirement that the City no longer discharge treated effluent into the Grande Ronde River led to discussions to enlarge the project. The level of treatment and lack of public access with the pilot project concerned LMWA staff. These concerns and water quality regulations resulted in a treatment system that no longer restricts discharge location or public access.

Treated effluent is an important management tool in many of the semi-permanent wetlands near Peach Road. Output varies from one million to several million gallons per day. This water source has become the only reliable water during the ongoing drought in northeast Oregon. **Appendix D** shows water rights which are currently held on LMWA.

Easements/Access Agreements

Numerous easements are associated with LMWA. They include easements for pipeline and transmission lines, effluent treatment facilities and wetland and restoration projects.

Other agreements include:

1) A cooperative management agreement between the Rocky Mountain Elk Foundation (RMEF) and the department for management of 850 acres owned by RMEF.

2) A cooperative management agreement between the department and the City of La Grande to manage land owned by the city.

3) Sharecrop agreements for two permittees involving farming and grazing on LMWA.

Appendix E lists the easements associated with Ladd Marsh Wildlife Area.

Land Acquisition and Adjustment

It is the policy of the department to only acquire land or interests in lands, including easements and leases, from willing sellers, consistent with statutory authority and the department's mission. Acquisitions and adjustments must be for conservation of fish and wildlife and their habitats and to provide fish- and wildlife-oriented public use for educational and recreational purposes. Land adjustments would allow for the sale, trade or exchange of land with willing landowners to enable the department to consolidate wildlife area boundaries.

There are three categories of lands that may be considered for acquisition. These include: 1) Significant or unique habitats, especially those beneficial to threatened or endangered or sensitive species; 2) Sites, or access to sites, that provide wildlife-related recreational opportunities; and, 3) Properties to facilitate the performance of the department's mandated duties (e.g., storage and warehouse, feeding barns, etc.).

Twenty-nine acquisitions and adjustments, totally 6,019 acres, have been made since 1949 to create and expand LMWA. Early efforts were intended to protect remaining wetlands in the area. Recent acquisitions have focused on wetland restoration and big game winter habitat.

Public Use

Public Access

The LMWA is made up of a mosaic of four public access management regimes (**Table 6**). Information regarding access restrictions is available to the public through boundary signs, signs at each major access point, informational signs at parking areas and in the annual Big Game and Game Bird hunting regulations printed by the department. Additional information signs and interpretive kiosks are planned.

The West Marsh Viewpoint, Peach Road Fishing Pond and the Nature Trail are small areas that are open to public access year-round. The West Marsh Viewpoint is accessible by vehicle and offers views of the West Marsh Unit and the Glass Hill Unit. Benches are provided for visitor use. A viewing deck with interpretive information and accessible to persons with disabilities is planned for the viewpoint in 2008. The Peach Road Fishing Pond is a small pond (~one acre) located in the Peach Road Unit and open to angling year-round. The pond is accessible by vehicle and includes fishing piers accessible to persons with disabilities. The fishing pond is stocked by the department with catchable rainbow trout and surplus steelhead. The Nature Trail is a one and one quarter mile walking trail located in the West Marsh Unit and open to the public year-round. Also open year-round is the Glass Hill Unit, which is within the Starkey Wildlife Management Unit. This portion of LMWA contains upland shrub, grassland and the only mixed conifer habitat in the wildlife area. Visitors to this area engage in hunting (during authorized seasons), wildlife viewing, hiking, horse-back riding and other recreational and educational activities. Motorized travel by visitors is prohibited in the Glass Hill Unit.

About 820 acres (14%) of the LMWA is closed to public access at all times except by special permit. This closure applies to two posted refuges, West Marsh and Hot Lake and includes the city treatment facility and its associated ponds. Refuge areas are necessary to provide a sanctuary for wildlife to escape hunting pressure. Without available refuges, birds would likely leave the area for locations with fewer disturbances.

The Tule Lake Public Access Area, located in the Tule Lake Unit is approximately 400 acres with more than five miles of hiking trails and a one mile auto tour. This area is open to the public from March 1 through September 30 each year. Motor vehicles are

permitted only on the auto tour road and trails are restricted to foot traffic only. An elevated viewing platform with access from the auto tour and accessible to persons with disabilities is planned for construction in 2008.

Most of LMWA (~70%) is open to the public only Saturday, Sunday, Wednesday and state-observed holidays during the waterfowl, quail and pheasant hunting seasons. The area is open to hunting, hiking and wildlife viewing at those times but hunters make up the majority of users. Additionally, those portions of the wildlife area not in posted refuges or safety zones are open to Ladd Marsh youth deer tag holders during the season authorized by their tag.

Table 6. Public Access Management on the Ladd Marsh Wildlife Area.

Open Dates	Access Type	Affected Area	Size in Acres*
Year-round	Any, non-motorized	Glass Hill Unit	1,000
	Viewing	West Marsh Viewpoint	10
	Angling	Peach Road Fishing Pond	10
	Hiking, Viewing	Ladd Marsh Nature Trail	10
None – Closed	Closed to Public Entry	West Marsh Refuge	526
	Closed to Public Entry	Hot Lake Refuge	294
March 1 – Sept 30	1-Mile Auto Tour	Tule Lake Public Access Area	N/A
	Hiking, Viewing		400
Sat., Sun., Wed. & State-observed Holidays during Waterfowl, Quail & Pheasant Hunting Seasons	Hunting (noted species only), Hiking, Viewing	All except Glass Hill Unit and Posted Refuges and Safety Zones	4,100
Ladd Marsh Youth Archery and Muzzleloader/Shotgun Deer Hunting Seasons	Hunting (with specified youth tags only)		

*Acreages are approximate and may add up to more than the total acreage of LMWA as some areas is included in more than one access management type.

Hunting, Angling and Trapping

Hunting is a major recreational activity on the LMWA and was one of the primary reasons for formation of the wildlife area. Revenues from hunting-related expenditures provide the funding source for LMWA operations and maintenance. Additional funding sources such as grants exist, but they are generally project-specific and time-limited. Hunting use is difficult to quantify because the LMWA has virtually unlimited points of entry and no system in place for hunter check-in and check-out. Hunter use is estimated (**Table 7**) through vehicle counts on hunt days, staff contact with hunters, number of youth deer tags and voluntary check in by big game hunters in the Glass Hill Unit.

Hunting opportunities on LMWA include deer and elk hunting (archery and rifle) on Glass Hill; youth deer hunts (archery and muzzleloader/shotgun); black-bear, cougar and turkey on Glass Hill; pheasant quail, grouse, partridge and waterfowl.

LMWA provides a relatively unique hunting experience for managed waterfowl areas in Oregon. It is currently free of intensive regulations (no quotas, reservations, designated blinds or check-in system). Waterfowl hunting opportunity on LMWA is largely dependent upon environmental conditions including precipitation (available water) and temperature (open water). Water availability can be extremely limited in the fall due to dry summer conditions and late onset of autumn rains. Cold winter temperatures can result in freezing of available water limiting hunting opportunities to the fields.

Angling on LMWA is permitted only at the Peach Road Fishing Pond. Because of its easy access and close proximity to La Grande and surrounding communities, the fishing pond is used extensively by local anglers. A vault-type restroom will be installed near the fishing pond in 2008. Although it is open year-round, anglers visit the area primarily in the spring and summer. The department annually stocks the fishing pond with catchable rainbow trout and surplus hatchery steelhead. The La Grande Fish District has held its Free Fishing Weekend event at the Peach Road Fishing Pond in the past and is expected to do so again in the future.

Table 7. Estimated Annual Hunting and Angling Use Days on Ladd Marsh Wildlife Area.

Activity	Estimated Annual Use Days
Hunting	
Waterfowl	2,065
Upland Bird	1,750
Big Game (deer, elk, bear, cougar)	625
Angling	1,000
Total	**5,440**

No regulated trapping is permitted on LMWA. However, each year a trapper is hired under contract by the City of La Grande to trap muskrats within the easement of the city treatment facility and associated ponds. This is done to prevent damage to the dikes by burrowing muskrats and to maintain the integrity of the treatment ponds. The contract trapper works under the oversight of the City of La Grande and LMWA personnel. Licensed trappers do occasionally work the road ditches within the LMWA. The road ditches are within the county rights of way and are not regulated by the department. The animals trapped, primarily muskrat, are likely animals that spend most of their time on the wildlife area.

Wildlife Viewing

For the purposes of this plan, non-hunting, trapping, and angling activities (viewing, hiking, photography, etc.) are collectively referred to as wildlife viewing activities.

Portions of LMWA are open to the public year-round (see Table 6 above) and numerous public roads pass within its boundaries. Wildlife viewing on LMWA is estimated through random vehicle counts in parking areas and along public roads and staff contact with visitors (**Table 8**) and is estimated at over 11,300 visitor use days per year.

Wildlife viewing on LMWA has increased over the past ten years as bird watching has grown in popularity nationwide. The sharpest increase has taken place since the 2004

opening of the Tule Lake Public Access Area. This area, open March 1 through September 30, has created access opportunities for birdwatchers to previously unavailable areas of Ladd Marsh during the spring and summer migration and breeding seasons. The Tule Lake Public Access Area is 400 acres in size and includes a one mile auto tour and over five miles of walking trails. The Tule Lake Public Access Area is the focal point of the Ladd Marsh Birdathon. This annual event, first held in 2006, commemorates International Migratory Bird Day. In 2008, the Birdathon is expected to increase in length and scope to two days, with evening programs.

Table 8. Estimated Average Annual Wildlife Viewing Use Days on the Ladd Marsh Wildlife Area.

Activity Area	Estimated Annual Use Days
Tule Lake Public Access Area	1,050
West Marsh Viewpoint	5,475
Glass Hill	400
Viewing from public roads	4,380
Total	**11,305**

Educational/Interpretive

Because of its close proximity to La Grande and surrounding communities, LMWA is used by a variety of educational groups including local and distant school districts, universities and civic groups. All age groups benefit from the educational opportunities at LMWA (see **Table 9**). School and other educational groups may visit the area on their own, with a permit from LMWA staff, or they may arrange for guided tours by LMWA personnel. Informational talks and slide shows are presented to a variety of groups upon request and in conjunction with special projects. Use by educational groups is recorded based on requests for permits and observed participation. Staff time required for preparation and participation in each educational activity varies from one or two hours to as many as 20 hours.

Table 9. Educational Group Use of Ladd Marsh Wildlife Area in 2007 by Age Group.

Age Group	Number of Participants in 2007
Pre-school & Elementary School	350
Middle School & High School	120
University	150
Adult – Continuing Education	140
Total	**760**

In addition to general educational use, LMWA offers opportunities to educate public works personnel and civic leaders regarding the system to use treated wastewater on the wildlife area. Every year, LMWA personnel are asked to give tours and/or presentations to public works employees and civic leaders from around the state to describe the system in place for use of treated wastewater from La Grande to fill managed wetlands.

Economic Impact of Public Use

Public use of LMWA generates considerable economic benefit to Union County. This benefit is in the form of expenditures for food, fuel, lodging and equipment at local businesses. Direct expenditures by outdoor recreationists have a ripple effect within the overall economy. According to the U.S. Fish and Wildlife Service *National Survey of Fishing, Hunting and Wildlife Associated Recreation*, in 2001, outdoor recreationists spent $38.4 billion nationwide which resulted in a total impact to the nation's economy of $95.8 billion. According to the same survey, hunters and anglers average $30 per day in expenditures ($28 for big game, $35 for migratory birds, and $26 for angling). Using that average figure and estimated hunting/angling use days, LMWA hunters and anglers each year contribute around $163,000 directly to the local economy, with an overall economic impact closer to $392,000.

Direct expenditures by wildlife viewers are more difficult to characterize because much of what participants spend nationwide includes feeders, seed and other items for bird and other wildlife watching at home. Nevertheless, similar to hunting and angling, wildlife viewing on Ladd Marsh generates expenses for food, fuel, lodging and equipment at local businesses. Given that the estimated wildlife viewing use days on LMWA are more than double those for hunting and angling, the total impact to the Union County economy from public use of LMWA may reach one million dollars annually.

Objectives and Strategies

Objectives and Strategies

As previously stated, objectives are concise statements of what the department wants to achieve, how much the department wants to achieve, when and where to achieve it and who will be responsible for the work. Objectives derive from goals and provide the basis for determining strategies. Strategies describe the specific actions, tools, techniques or a combination of these elements used to meet an objective.

Goals, objectives and strategies in the plan were derived following an ecosystem based management philosophy. Of primary importance, most actions undertaken on LMWA are beneficial for wildlife, and public use must be compatible with wildlife resources. The primary action for benefiting wildlife is managing or preserving the range of habitat types that historically occurred in the Grande Ronde Valley. These habitats were created and maintained by a suite of long and short term ecological processes, most importantly hydrology and fire. Management activities such as water level management (drawdowns and flooding) and vegetation manipulations (farming, grazing, mowing, disking and controlled burns) are tools LMWA personnel use to maintain important ecological processes needed to create healthy habitats. Due to the wide variety of habitat use among the different wildlife species utilizing LMWA, benefits are varied. Not all species or guilds of species will see benefits at all times. In addition, recreational opportunities based on public demand and habitat capabilities, balanced with resource needs, are quite variable and specific uses are not maximized in all cases.

The following objectives and strategies are based on the three goals described earlier.

They identify the management activities and priorities of the 2008 Ladd Marsh Wildlife Area Management Plan:

Goal 1: To protect, enhance and manage wetland habitats to benefit fish and wildlife species.

A portion of the birds belonging to the Pacific Flyway waterfowl population pass through the Intermountain West enroute to wintering areas in California, Central America and South America. Many of these same species along with others make return migrations to breeding areas in Alaska, Canada and arctic Russia. The diversity of food resources in wetlands plays an important role in replenishing or building energy reserves necessary during migration for a variety of species. In some cases energy is being stored in preparation for the physiological demands of breeding season. LMWA is within the Intermountain West Joint Venture area and provides a stopover for migrating waterfowl that need to rebuild energy reserves. Joint Ventures are based on a cooperative approach to conservation by forming broad partnerships consisting of individuals, corporations, conservation organizations, and local, state, provincial, and federal agencies. These groups work together to protect, restore, and enhance wetlands and associated upland habitats in specific geographic regions.

Life history events of migration molt, pair formation, and pre-breeding fat storage are undertaken by waterfowl and a diversity of habitat types can meet the needs of a wide variety of species. Habitat management at LMWA has historically provided this variety and active management is necessary to enhance, maintain and restore those habitats. Permanent, semi-permanent and seasonal wetlands produce large amounts of natural foods in the form of seeds, foliage, tubers, and invertebrates that provide a diverse diet for a variety of waterfowl species.

Canada geese and 13 species of ducks breed on LMWA; it is an important area to conservation of Pacific Flyway populations. Additionally, locally produced waterfowl constitute a major proportion of waterfowl harvested by hunters early in the season. Waterfowl produced at LMWA are harvested throughout the Pacific Flyway.

The diversity of wetland habitats on LMWA meets the entire range of breeding season requirements for a variety of waterfowl species (e.g. Canada geese to ruddy ducks (*Oxyura jamaicensis*)). Strategies employed by the LMWA staff will support many wetland habitat conservation actions to benefit priority waterfowl species identified in Pacific Flyway management plans.

Strategies employed by the LMWA staff will support many wetland habitat conservation actions to benefit priority shorebird species identified in the OCS, such as black-necked stilt and long-billed curlew.

Over 25 species of other waterbirds or wetland dependent and wetland obligate wildlife including rails, bitterns and other secretive marsh birds, utilize wetland habitats on LMWA. Life cycle demands and needs of breeding season, post breeding dispersal and migration are met for many species in the diverse habitats found on LMWA. These

species forage extensively across all wetland types to build body reserves for migration, roost in shallow ponds or tall emergent vegetation or hunt prey.

Again, wetland habitat management strategies will meet spatial and temporal needs of OCS priority species found in this priority habitat of the Blue Mountains Ecoregion. In addition to naming priority habitats and species, the OCS identifies "recommended conservation actions" for each Conservation Opportunity Area. The Grande Ronde Valley is identified as a conservation opportunity area with recommended conservation actions aimed at maintenance, enhancement and/or restoration of aquatic, riparian and wetland habitats. Specifically, the OCS recommends managing "Ladd Marsh Wildlife Area's wetlands to optimize habitat values for a diversity of breeding and migrating birds" (OCS, p.129). The above Goal One and its associated objectives are consistent with these recommendations in the OCS.

Objective 1.1: Manage approximately 45 acres of palustrine permanently flooded wetland habitats. Emphasis will be on maintaining productive stands of submerged aquatic vegetation such as sago pond weed interspersed with cattail and hardstem bulrush stands.

Rationale: Permanently flooded wetlands on LMWA are maintained primarily by ground water and perennial springs. Water depths remain relatively stable throughout the year. This habitat type is important brood habitat during drought conditions as they are often the only remaining open water on the area. They also provide stable breeding sites for birds including rails, marsh wrens, eared grebes and black-crowned night herons. Aquatic beds have tremendous populations of invertebrates which provide food for an array of wildlife species. Many of the permanently flooded wetlands are maintained by warm springs; therefore they provide waterfowl loafing sites during cold periods. There is also evidence these areas may provide over-winter areas for fish species including steelhead and Chinook salmon.

> **Strategy 1.** Robust emergent vegetation (cattails and hardstem bulrush) will be managed for 25-50% area coverage. Work will include monitoring water levels and robust emergent encroachment.
>
> **Strategy 2.** Reduce robust emergent stands, where necessary to meet 25-50% area coverage, using Best Management Practices approved by the U.S. Fish and Wildlife Service. Work will include applying approved herbicides.
>
> **Strategy 3.** Utilize integrated pest management to control invasive plant species, focusing on noxious weeds within and adjacent to wetland areas. Work will entail monitoring, searching for, and treating infestations utilizing best management practices and techniques.

Objective 1.2: Manage approximately 110 acres of palustrine intermittently exposed wetlands. This habitat will be managed for a ratio of 3:1, open water to emergent wetlands.

Rationale: These wetlands are similar to permanently flooded wetlands regarding their contribution to the diversity of habitat types at LMWA. However, they differ in that some active management options are available. They can be significantly drawn down if desired to facilitate activities including disking, burning and carp control. They cannot be completely dewatered without pumping except under drought conditions. These areas have characteristics of both permanently flooded and semi-permanent wetlands depending on management and hydroperiod. They have significant areas of aquatic vegetation often surrounded and interspersed with emergent vegetation.

Strategy 1. Regulate water levels which promote and enhance aquatic and emergent vegetation growth and invertebrate populations. Work will include monitoring and adjusting water levels as necessary.

Strategy 2. Utilize moist soil and marsh management methods to enhance habitat diversity, improve open water to vegetation ratios and interspersion to improve brooding and foraging sites for waterfowl.

Strategy 3. Monitor wetlands for the presence and size of carp and plan drawdowns to periodically eliminate carp and re-invigorate the wetland. Work will include monitoring carp populations and managing drawdowns. If drawdown occurs during wet years, pumping may be required.

Strategy 4. Utilize integrated pest management to control invasive plant species, focusing on noxious weeds within and adjacent to wetland areas. Work will entail monitoring, searching for, and treating infestations utilizing best management practices and techniques.

Objective 1.3: Manage approximately 1,811 acres of palustrine semi-permanent wetlands with a ratio of no greater than 1:1, robust emergent vegetation to open water.

Rationale: A series of impoundments has been developed at LMWA that substantially increases the land base available for moist soil management. Most of the new units have developed desired vegetation communities consisting of a mosaic of native annual species. As is typical of newly developed impoundments, the soil disturbance associated with creating dikes, reshaping basins or removing previously established vegetation creates germination conditions that favor early successional, seed-producing annual plants that are favored by waterfowl. It also provides substrate for invertebrate production. Plant and waterfowl response when these areas are flooded properly is often considerable. This pattern may persist for several years. However, in the absence of active management or under multiple years of the same management regime, this productive community of annuals changes as plant community succession proceeds towards perennial species or undesirable exotics (e.g., reed canary grass). One common approach is to rotate a single impoundment through a series of wetland types over a period of years. Rotating among dry, seasonal, semi-permanent and permanent wetland types mimics the natural wet and dry cycle that historically

characterized the Grande Ronde Valley and varying the hydroperiod influences plant community composition. However, the rate of plant community change is variable among units and among years of differing environmental conditions. Moist soil management techniques can be applied to the extent water is available for refilling wetland cells. The timing and duration of drawdown generally determines the type and level of vegetation response. These wetlands should have open water with interspersed stands of vegetation to create a mosaic of features within individual habitat management units. Water depths will generally not exceed 24 inches.

Strategy 1. Develop annual work plans that outline specific management actions taking place in each unit during the year. Work will include developing flood up and drawdown schedules and identifying specific treatment actions like burning, disking or spraying.

Strategy 2. Manage water levels to enhance plant species and abundance of invertebrate populations for waterfowl foraging. Work will include monitoring and adjusting water levels annually with an emphasis on providing waterfowl spring migration and production habitats.

Strategy 3. Utilize moist soil and marsh management techniques to enhance habitat diversity and productivity through ground disturbance to encourage annual food production. Work will include drawdowns, re-flooding and soil disturbance (burning, mowing, disking, herbicide treatment and plowing).

Strategy 4. Utilize integrated pest management to control invasive plant species, focusing on noxious weeds within and adjacent to wetland areas. Work will entail monitoring, searching for, and treating infestations utilizing best management practices and techniques.

Strategy 5. Monitor wetlands for the presence and size of carp and plan drawdowns to periodically eliminate carp and re-invigorate the wetland.

Objective 1.4: Manage approximately 658 acres of palustrine seasonally flooded wetlands (wet meadow) for foraging and nesting areas for waterfowl and other wetland birds.

Rationale: This habitat type occurs at slightly higher elevations than the semi-permanently flooded wetlands. They have either standing water or saturated soils due to spring precipitation and runoff. Water levels gradually recede as evapotranspiration increases in early to mid summer. Seasonally flooded wetlands are important foraging areas for spring migrants including sandhill cranes, greater white-fronted and Canada geese and dabbling ducks. They also support abundant invertebrate populations essential for nesting waterfowl and broods.

Tufted hairgrass and common camas are among the desired native species in this habitat along with a rich diversity of wetland forbs. Reed canarygrass, if not effectively

managed, can move into these areas and create a monoculture with little wildlife habitat value.

Strategy 1. Utilize moist soil and marsh management techniques to enhance habitat diversity and productivity through ground disturbance (burning, disking, mowing) to encourage annual food production. Work will include drawdown and soil disturbance (burning, mowing, disking, herbicide treatment and plowing).

Strategy 2. Utilize integrated pest management to control invasive plant species, focusing on noxious weeds within and adjacent to wetland areas. Work will entail monitoring, searching for, and treating infestations utilizing best management practices and techniques.

Objective 1.5: Manage approximately 113 acres of palustrine intermittently flooded wetlands.

Rationale: Palustrine intermittently flooded wetlands are on the Conley Lake Habitat Unit of LMWA. Conley Lake is a 120 acre playa lake which is filled from ground water and spring runoff. Annual precipitation has to be average or above to fill the lake. Historically the lake has been important for spring migrants. Waterfowl counts as recent as 1997 included greater than 1,000 tundra swans and 3,000 geese (Canada, greater white-fronted) using the area. The lake has not had water in recent years due to continued drought conditions in northeast Oregon. The installation of deep irrigation wells also may have affected ground water. These wells and long term climate changes may reduce the habitat value of the wildlife area for migrating waterbirds.

Strategy 1. Monitor wetland conditions and wildlife use to assess the long term habitat value of this area. Work will include monitoring water depths and wildlife use and evaluating the benefits for wildlife.

Strategy 2. Explore, evaluate and if warranted pursue supplemental water sources to provide consistent wetland values. Work will include investigating the availability of water from existing sources including adjacent irrigation wells and municipal waste water. Also investigate and evaluate digging and operating a well on the property.

Strategy 3. Utilize integrated pest management to control invasive plant species, focusing on noxious weeds within and adjacent to wetland areas. Work will entail monitoring, searching for, and treating infestations utilizing best management practices and techniques.

Objective 1.6: Manage approximately 116 acres of palustrine forested wetlands.

Rationale: Along much of its length Ladd Creek has been diverted, straightened, and channelized. The extent of forested wetlands along the original creek channel is unknown, but they were undoubtedly an important habitat in the Grande Ronde Valley.

Forested wetlands provide foraging and nesting habitat for tree-dependent songbirds. Approximately four miles of Ladd Creek have been restored in recent years. Plans have been developed to restore the remaining 6.2 miles. Restoration work will begin in 2008.

Strategy 1. Plant woody vegetation along 6.2 miles of Ladd Creek. Work will include planting native trees and shrubs and installing fencing to protect new plantings from herbivory, where necessary.

Strategy 2. Utilize integrated pest management to control invasive plant species, focusing on noxious weeds within and adjacent to wetland areas. Work will entail monitoring, searching for, and treating infestations utilizing best management practices and techniques.

Objective 1.7: Manage approximately 26 acres of palustrine scrub-shrub wetlands.

Rationale: Historical accounts by early settlers talk about tremendous scrub-shrub habitat, primarily willows, adjacent to the streams in the Grand Ronde Valley. Channelization and land use changes have eliminated this habitat type in much of the valley. This habitat is extremely important for stream health. Shading helps cool streams which is important for anadromous fish. It also provides important off channel habitat for young fish during high water events. Many passerine bird species including common yellowthroat and other warblers use this habitat type for foraging and nesting. Recent stream restoration projects have included planting native shrubs including red-osier dogwood and willows. Natural recruitment has been tremendous in disturbed areas of restored channels.

Strategy 1. Where Ladd Creek flows through management units, LMWA staff will prioritize riparian zone management, mimicking the natural hydroperiod when possible and linking hydroperiod in those units to hydroperiod elsewhere in the stream. Work will include monitoring and adjusting water levels.

Strategy 2. Continue stream restoration efforts emphasizing the planting of native shrubs. Work will include planting shrubs and monitoring shrub survival.

Strategy 3. Utilize integrated pest management to control invasive plant species, focusing on noxious weeds within and adjacent to wetland areas. Work will entail monitoring, searching for, and treating infestations utilizing best management practices and techniques.

Objective 1.8: Restore, enhance and manage approximately 11 acres of riverine wetlands on LMWA.

Rationale: Ladd Creek has been designated critical steelhead habitat. Channelization, land use and fish barriers created during road construction have eliminated steelhead spawning since the early 1970s. Cooperative projects to remove fish barriers and

improve stream habitat on and below LMWA will restore migration, wintering and spawning habitat for several fish species including steelhead.

Strategy 1. Restore approximately six acres (6.2 mi.) of riverine wetlands. Work will include excavating channel and replicating features (riffles, pools, sinuosity) which existed prior to channelization.

Strategy 2. Utilize integrated pest management to control invasive plant species, focusing on noxious weeds within and adjacent to riverine areas. Work will entail monitoring, searching for, and treating infestations utilizing best management practices and techniques.

Objective 1.9: Maintain and improve critical physical and functional infrastructure affecting wetland management activities.

Rationale: Physical infrastructure is essential for water level management and subsequent habitat management across all wetland habitats. Such infrastructure includes dikes and levees, culverts, flashboard risers, other water control structures and rock spillways. Dikes also provide protection from flooding on adjacent private land. Functional infrastructure is necessary for water delivery for flood and drainage purposes and includes canals, channels and ditches.

Most wetland habitat objective and strategies rely on effective, efficient and timely water level manipulations. This capability is critical and necessary to affect nearly all habitat enhancement and management actions.

Vegetation response and subsequent desired wildlife use are tied to water levels, more specifically to the timing of drawdowns and flooding. Infrastructure maintenance and improvement will ultimately enhance and improve wetland condition and function. These actions will assist in meeting direction and goals of Intermountain West Joint Venture, Pacific Flyway species population management plans, and other state, local or federal agency implementation plans involving wetland management and protection. Coordination with appropriate agencies and organizations will occur.

Strategy 1. Maintain and improve physical infrastructure through annual maintenance. Work will include using heavy equipment to stabilize and repair erosion damage, repair burrowing rodent damage on dikes and levees replace and repair flashboard riser structures, grade dike tops and mow vegetation. Culverts, flashboard risers and other water control structures will be repaired, replaced and improved as necessary.

Strategy 2. Maintain and improve functional infrastructure through annual maintenance of canals, channels, ditches and water control structures. Work will include using heavy equipment to remove accumulated silt and invasive vegetation, monitoring water flows/distribution and removing debris and obstructions in canals, channels, ditches and at water control structures.

Strategy 3. Monitor wetland water levels and ground water adjacent to private property. Develop projects and manage water levels to control ground water and possible affects on adjacent land.

Objective 1.10: Evaluate the effectiveness of the existing sanctuary for waterfowl and wetland dependent wildlife. Designate 15-35% of the managed wetlands as seasonal sanctuary.

Rationale: A fundamental consideration for management of any wildlife species is to provide food, water, and sanctuary. Wetland dependent wildlife is sensitive to disturbance during critical time periods of breeding, molting and migration. This is particularly important for waterfowl, both "resident" birds and migrating populations, during hunting season. The physical demands of migration and daily movements within staging areas require that wildlife have access to suitable locations for food and rest. Wildlife that do not have access to sanctuary areas during critical time periods are subject to a variety of disturbances that increase energetic costs, change distribution, prevent use of important habitats and force migration to wintering areas earlier than is desired.

Presently, LMWA designates 850 acres in two areas as posted Wildlife Refuge, of which 520 acres are either permanent or semi-permanent wetlands. This is approximately 30% of the managed wetlands on LMWA. In recent years, the area's largest sanctuary wetland (308 acres) has nearly or completely dried out by late summer and Ladd Creek flows have been inadequate to flood it during fall. Under those conditions, the area does not function as a sanctuary and should not be counted as such. The remaining 212 acres of posted refuge wetlands typically hold water throughout the year and function appropriately as sanctuary for waterfowl and other wetland species.

Additionally, the City of La Grande's primary wastewater treatment facility is situated on land adjacent to the LMWA and consists of approximately 100 acres of water surface available year-round. Because disturbance is minimal around the facility, these ponds function as defacto refuge for waterfowl using LMWA during all seasons. Waterfowl are regularly observed moving between the wetlands and grain fields of LMWA and the treatment ponds.

Strategy 1. Designate selected areas as seasonal (during hunting seasons) or year-round sanctuary (posted "Refuge") for protection of wildlife. Sites will be selected annually based on suitability to support wildlife as well as logistical and operational considerations, such as habitat management actions and hunting programs. Work will include posting information signs as well as public notification through educational and informational means.

Strategy 2. Implement seasonal access restrictions as necessary to protect migrating and breeding wetland dependent or obligate wildlife. Work will entail

posting information signs at key entry sites as well as restricting motor vehicle or foot travel from early spring through early fall annually.

Goal 2: To protect, enhance and manage upland habitats to benefit a wide variety of wildlife species.

Objective 2.1: Enhance and manage approximately 1,581 acres of grassland habitat to benefit a wide variety of native wildlife and desired game species.

Rationale: Grasslands are the second largest habitat type on LMWA after wetlands and are a strategy habitat in the OCS. Native grass species include basin wild rye, bluebunch wheatgrass and Idaho fescue. LMWA staff has converted several hundred acres of agricultural land to native grasslands in recent years. Additional areas have been degraded by historical grazing or the introduction of invasive species including medusahead wild rye and cheatgrass. Future grassland work will include improving the quality of existing stands, restoration of additional areas, and creating blocks ecologically large enough to support grassland dependant species. Grasslands provide nesting habitat for upland game and waterfowl. Upland birds also use residual cover in winter.

Strategy 1. Enhance 200-300 acres of grassland habitat. Work will include removing invasive plant species, preparing a seedbed and planting with several species of native grass and forb species adapted to the site. Creating large habitat blocks to support grassland dependent species will be considered.

Strategy 2. Utilize integrated pest management to control invasive plant species, focusing on noxious weeds within and adjacent to wetland areas. Work will entail monitoring, searching for, and treating infestations utilizing best management practices and techniques.

Objective 2.2: Enhance and manage approximately 307 acres of upland shrub habitat to benefit a wide variety of native wildlife and desired game species.

Rationale: This habitat type provides critical winter foraging areas for elk and white-tailed and mule deer. Depending on winter conditions, 300-700 elk and 100-200 deer may winter in the Ladd Marsh area. Residential development increases the need for quality big game winter habitat. This habitat also provides foraging and nesting habitat for several passerine birds including western and mountain bluebird and Brewer's sparrow.

Strategy 1. Utilize integrated pest management to control invasive plant species, focusing on noxious weeds including sulfur cinquefoil, sweetbriar and medusahead. Work will entail monitoring, searching for, and treating infestations utilizing best management practices and techniques.

Objective 2.3: Enhance and manage approximately 397 acres of agricultural upland habitat to benefit a wide variety of native wildlife and desired game species.

Rationale: Row crops, alfalfa production and grazing have been part of LMWA since its inception. Except wetlands, the entire area was either farmed or grazed at one time. Cereal grains provide high energy foods used by migrating ducks and geese as well as upland birds like pheasant and quail. Currently approximately 397 acres of grain crops are planted on the wildlife area each year. Alfalfa is used to improve soil condition and produce hay for winter feeding of big game. Second and third crops of alfalfa are left standing for late summer and fall forage for elk. Several hundred acres of agricultural land has been restored to wetlands and grasslands in recent years.

Strategy 1. Maintain food and cover plantings on 250-300 acres of agricultural habitat. Some acreage will be left fallow each year for weed control and to enhance soil moisture. Work includes farming with tractors and implements to accomplish soil preparation, planting and cultivation of food and cover crops. Irrigation of crops will be utilized in several locations. Continue to use share-cropping to meet objectives.

Strategy 2. Utilize integrated pest management to control invasive plant species, focusing on noxious weeds within and adjacent to wetland areas. Work will entail monitoring, searching for, and treating infestations utilizing best management practices and techniques.

Strategy 3: Evaluate the potential for conversion of a portion of the present agricultural habitat to either grassland or upland shrub habitat to benefit a variety of upland wildlife. Conversion would be considered as a means to break up large blocks of contiguous agricultural habitat with smaller areas of permanent cover.

Objective 2.4: Enhance and manage approximately 760 acres of mixed conifer habitat to benefit a wide variety of native wildlife and desired game species.

Rationale: This habitat type provides year-round habitat for ruffed and blue grouse, elk, mule and white-tailed deer and many other forest species. Many of the adjacent areas have been logged in recent years. This area provides security for wintering big game.

Strategy 1. Survey and fence the remaining wildlife area boundary to keep neighboring landowners' livestock out of the wildlife area and to maintain grazing as a viable management option. Work will include a survey and fence construction.

Strategy 2. Maintain access roads for management activities and fire suppression. Work will include annual inspection and clearing of downed timber and other debris.

Strategy 3. Monitor seedling regeneration in logged areas and replant if necessary to meet all local and state reforestation laws.

Strategy 4. Utilize integrated pest management to control invasive plant species, focusing on noxious weeds within and adjacent to wetland areas. Work will entail monitoring, searching for, and treating infestations utilizing best management practices and techniques.

Objective 2.5: Enhance and manage approximately 38 acres of deciduous tree habitat to benefit a wide variety of native wildlife and desired game species.

Rationale: The existing deciduous tree habitat on the LMWA is the result of former landowners planting windbreaks (mostly non-native willows) and a local bird club planting a variety of tree species in one specific area. Many of the rows of willows were once along irrigation or drainage ditches but those ditches are no longer functional. This habitat provides food and cover for a wide range of wildlife from breeding neotropical migratory birds to wintering deer and elk.

Strategy 1. Utilize integrated pest management to control invasive plant species, focusing on noxious weeds in the understory of this habitat. Work will entail monitoring, searching for, and treating infestations utilizing best management practices and techniques.

Strategy 2. Utilize local volunteer groups such as the Grande Ronde Bird Club and William Cusick Chapter of the Native Plant Society of Oregon to plant additional areas with an emphasis on native species.

Strategy 3. Utilize local volunteer groups such as the Grande Ronde Bird Club and William Cusick Chapter of the Native Plant Society of Oregon to maintain existing areas of this habitat through surveillance for and removal of noxious weeds.

Objective 2.6: Maintain and improve wildlife area facilities, structures and equipment used to conduct habitat management and public use projects.

Rationale: Facilities, structures and equipment are integral to the overall operation of LMWA. Infrastructure and equipment must be maintained in good working order to accomplish habitat and wildlife management projects and to provide public use opportunities. Infrastructure includes the Headquarters Complex, associated residences and buildings. Equipment includes heavy equipment, dump truck, tractors, agricultural implements, vehicles, ATVs, trailers, boats and shop tools.

Strategy 1. Maintain current Headquarters Complex including 11 buildings, four residences, one host site and associated utility infrastructure. Work will include carpentry and repair, improvement of storage, landscape maintenance, and general facility structural maintenance and improvement.

Strategy 2. Conduct annual property inventories and maintain operational integrity of facilities, structures, equipment and vehicles. Work will include conducting and reporting inventories, scheduled maintenance of all equipment/vehicles and completing repair and upgrades as necessary.

Strategy 3. Continue irrigation and water management practices to meet wildlife area habitat goals and objectives. Work includes exercising water rights, monthly measurement or estimates and annual reporting of authorized water rights use on LMWA to Oregon Water Resources Department.

Strategy 4. Continue proactive project administration actions and activities to address easement, property boundary encroachment and other issues affecting or impacting LMWA operations. Work will include identifying issues, preparing briefing documents and soliciting internal and external assistance where appropriate.

Objective 2.7: Provide supplemental big game feed to protect upland habitats on Ladd Marsh Wildlife Area and adjacent private lands.

Rationale: Three hundred to seven hundred elk winter on LMWA depending on the severity of winter. Elk and deer can damage the remaining native habitat as well as crops on adjacent private land. Supplemental feed is stored and fed to reduce the damage.

Strategy 1. Monitor winter conditions and elk populations on LMWA. Consult and coordinate feeding with watershed and regional department staff.

Strategy 2. Provide supplemental feed for 300-700 elk when required by winter conditions. Work includes storing and daily feeding of 300-700 elk.

Goal 3: To provide a variety of wildlife oriented recreational and educational opportunities to the public which are compatible with Goals 1 and 2.

LMWA staff strives to balance the biological needs of fish and wildlife using the area's habitats with the various recreational and educational desires of the public. In order to meet habitat management objectives, however, decisions must be made to manage public use, either temporally or spatially, to minimize impacts to wildlife. Annual review of the area's hunting program and regulations, designation of refuge areas, access management, maintenance of parking areas, posting signs and developing informational literature are among many of the strategies described below which support and encourage recreational objectives.

Objective 3.1: Provide hunting and angling opportunities in a manner compatible with habitat management objectives.

Rationale: The LMWA is funded entirely by hunter dollars through the Federal Aid to Wildlife Restoration Act (Pittman Robertson) (75%) and hunting license receipts (25%). Hunting is a major public activity at LMWA during fall through winter months.

LMWA's public use program provides an array of hunting and angling opportunities. The LMWA hunt program includes seasons for cougar, bear, elk, white-tailed and mule deer, blue and ruffed grouse, turkey, pheasant, California quail, gray partridge, Wilson's snipe, crow, duck and goose. Youth hunts are available for elk, deer, turkey, upland game and waterfowl. A proposal for a youth pronghorn hunt is under consideration. Angling for hatchery rainbow trout is provided at the Peach Road Fishing Pond.

Strategy 1. Continue upland game, waterfowl and big game hunts. Work will include providing recommendations for seasons, program opportunities and procedures to district and headquarters staff on an annual basis.

Strategy 2. Continue angling program at Peach Road Pond. Work will be conducted in coordination with La Grande Fish District personnel and includes stocking redband trout and monitoring angler use.

Strategy 3. Maintain LMWA facilities including roads, parking areas and informational kiosks as part of the hunt program.

Strategy 4. Conduct wildlife surveys and monitor wildlife population levels, distribution, and use patterns. Maintain database for comparative analysis. Report results to department staff and provide information to LMWA users. Work includes periodic counts, data recording and analysis, and providing results to constituents.

Strategy 5. Continue and expand hunter education and informational programs to improve hunter participation and effectiveness. Work includes providing shotgun and hunting skill clinics and field contacts by department and OSP personnel.

Strategy 6. Continue to provide access and area information to the public through personal communication, web page postings, brochures, maps, signing and hunting regulation booklets.

Strategy 7. Evaluate the potential for improving LMWA's disabled hunter access program.

Strategy 8. Develop a program for tracking hunter use and success on the wildlife area. Information will be use to evaluate and modify hunt programs and regulations. Work may include constituent questionnaires to assess hunt program or development of a self-service permit system.

Strategy 9. Develop and maintain relationships with hunting constituent groups/organizations to assist with wildlife area management.

Strategy 10. Continue to designate sanctuaries and access restrictions to provide for biological needs of waterfowl, to accommodate habitat enhancement actions and permit orderly and equitable utilization during the hunting season.

Objective 3.2: Provide wildlife viewing and education/interpretation opportunities compatible with Objective 3.1.

Rationale: Wildlife viewing and education are the fastest growing public activities at LMWA. Prior to 2005, the majority of LMWA was closed to public access during waterfowl spring migration and nesting. The Tule Lake Public Access area was opened to the public in March 2005. This area includes an auto route and several miles of hiking trails through 400 acres of semi-permanent wetlands. It is open from March 1 to September 30 annually. Year-round access is available on Glass Hill above Foothill Road, the overlook above West Marsh and a nature trail near Interstate 84. These areas offer the public viewing and other non-consumptive uses in a variety of habitat types.

As wildlife viewing use increases, educational and informational efforts will enhance enjoyment while affording protection for the resource. LMWA is attempting to expand opportunities for interpretation and environmental education that will foster visitors' appreciation, understanding, and stewardship of the wildlife area's fish and wildlife species and their associated habitats. Present and planned visitor facilities have been built primarily with grants and donations. Currently, LMWA is maintained entirely by funds generated from hunters, through Federal Aid and hunting license revenue. In order to expand and meet continued maintenance needs it will be necessary to explore additional funding and support. Methods to estimate the number and identify LMWA users and the economic benefits will be developed.

Strategy 1. Maintain existing public facilities and investigate potential for new facilities to provide opportunities for wildlife viewers. Work includes maintenance of West Marsh overlook, Tule Lake Public Access Area, kiosks and parking areas and posting signs as well as investigation into feasibility of new facilities including trails, interpretive kiosks and restrooms.

Strategy 2. Continue to provide wildlife area information to the public through web page postings, weekly recreational reports, other media publications, wildlife viewing brochures, visitor guides, maps, regulations, and species backgrounders.

Strategy 3. Continue Campground Host/Volunteer program to maintain and enhance the wildlife viewing program and other wildlife area needs.

Strategy 4. Provide guidance and support to educational and other institutions including schools, civic groups, conservation entities and state/federal agencies.

Strategy 5. Develop a process to monitor public use. Methodology will be developed for various portions of LMWA to more accurately document public uses and benefits to the local region and the state.

Strategy 6. Manage public uses consistent with the biological needs of wildlife and the wildlife area's hunting program.

Strategy 7. Develop and/or expand internship programs with colleges and universities to support education, management, inventory and monitoring needs.

Plan Implementation

Funding

Since its inception in 1949, funding for operation and maintenance of the LMWA has been accomplished through annual federal grant agreements under the Federal Aid to Wildlife Restoration (WR) Program. This program was created with the passage of the Pittman- Robertson (PR) Act in 1937. The PR Act authorizes the U.S. Fish and Wildlife Service to cooperate with the States, through their respective State fish and wildlife departments, to fund wildlife restoration projects. Eligible types of projects include restoration, conservation, management, and enhancement of wild birds, wild mammals and their habitats, and providing for public use and benefit from these resources. Funding for WR is derived from a federal excise tax on the sale of firearms, ammunition, and archery equipment. Funding is then apportioned to states based on a mathematical formula of area of the state in square miles (50%) and total number of hunting licenses sold annually (50%). Under the program no state may receive more than 5%, nor less than 0.5% of the total money available.

To be eligible, States must have assented to the provisions of the PR Act and passed laws for the conservation of wildlife that include a prohibition against the diversion of license fees paid by hunters for any other purpose than the administration of the State fish and wildlife department. Another major requirement is that states have to contribute up to 25% of the total grant cost using non-federal funds, since federal participation is limited to 75% of eligible costs incurred under a grant. The department provides its 25% cost share from annual license and tag revenues.

Over the past five years, funding for the operation and maintenance of the LMWA has averaged approximately $170,000 annually. To implement many of the proposed actions and achieve the objectives and goals of this plan, the department will need additional funding and staff to undertake several types of projects including: upgrades of existing facilities, habitat improvement, construction of new facilities or amenities (educational/orientation kiosks and interpretive signs), and species and habitat monitoring.

Staffing / Organization

The department manages sixteen major wildlife areas throughout the state. The wildlife areas encompass approximately 200,000 acres and are found in all four department administrative regions. The LMWA is currently staffed by two full time employees and one seasonal employee. Full time employees consist of the area Manager and a Fish and Wildlife Technician 2. The seasonal position is a NRS1. The NRS 1's primary duties include the monitoring and evaluation of Bonneville Power Administration (BPA) funded projects on the wildlife area.

Compliance Requirements

The LMWA Management Plan was developed to comply with all Federal and State laws, Oregon Revised Statutes (ORS), Oregon Administrative Rules (OAR), and department policies. Full implementation of all components of this plan will require compliance with laws, regulations, rules, and policies listed in **Appendix F**.

Partnerships

Partnerships with federal, state and local agencies, universities, tribes, non-profits, individual volunteers and private landowners are an important part of LMWA operations and management. Partnerships occur through project funding assistance, research assistance, private land access or other types of collaboration.

Dramatic changes have occurred at LMWA since 1998. More than four million dollars in land acquisition and habitat developments have improved the area for wildlife and provided additional public recreation. Major funding was provided by the U.S. Department of Agriculture (Wetland Reserve Program), North American Wetland Conservation Act, the U.S. Army Corps of Engineers, Bonneville Power Administration, U.S. Fish and Wildlife Service, Oregon Hunters Association, Ducks Unlimited, Oregon Duck Hunters Association, the Rocky Mountain Elk Foundation, Oregon Watershed Enhancement Board, The Nature Conservancy, Oregon Department of Transportation and the City of La Grande. A number of other state, federal, and local agencies and interest groups provided additional funding and/or in-kind services.

A unique partnership between the department and the City of La Grande has provided additional water for wetland management. This project provides approximately 30 million gallons of reclaimed water for habitat development and management. The project has been so successful that several other municipalities are considering similar projects. This project is discussed in more detail in the Water Resources section, on page 38.

Examples of additional partnerships at work on LMWA include:

- An adjacent landowner who, with the assistance of the department's Access and Habitat Program, has allowed access for hunters to 1,000 acres of land contiguous with LMWA.
- Several professors from Eastern Oregon University conduct research on LMWA which increases our understanding of the wildlife and habitats of the area.

- Eastern Oregon University professors mentor and advise students conducting research or community service projects on LMWA.
- Two local farmers conduct sharecropping on LMWA whereby one-third of the crop is left standing for wildlife.
- Numerous local teachers utilize LMWA as an outdoor class room via entry permits and tours or programs presented by LMWA staff.
- The Confederated Tribes of the Umatilla Indian Reservation (CTUIR) utilize LMWA to collect traditional plants such as camas and bulrush for education and ceremonial use. The CTUIR also assist with harvesting of native seeds on LMWA through the loan of equipment designed for the purpose.
- A corps of local birders conducts bird surveys year-round, adding to our understanding of the seasonal use of LMWA habitats by resident and migrating birds.

These partners play an important role in helping the department achieve its mission and attain LMWA goals. The department will continue to rely on these and other partners in the future to help implement this plan and provide input for future updates. This plan identifies projects that provide new opportunities for existing or new partners. There is great potential for more public participation and assistance in management of LMWA, given its proximity to La Grande. The department welcomes and encourages more public participation in the administration of the wildlife area.

Adaptive Management

This plan provides for adaptive management of LMWA. Adaptive management is a flexible approach to long-term management of resources that is directed by the results of ongoing monitoring activities and latest data. Management techniques and strategies are regularly evaluated in light of monitoring results, new scientific understanding, and other new information. These periodic evaluations are used over time to adapt both management techniques and strategies to better achieve the Wildlife Area goals.

Monitoring is an essential component of adaptive management in general, and of this plan in particular; specific monitoring strategies have been integrated into goals and objectives described in this plan whenever possible. Habitat management activities will be monitored where possible to assess whether the desired effects on wildlife and habitat components have been achieved.

Plan Amendment and Revision

Wildlife area management plans are meant to evolve with each individual wildlife area, and as such, each plan will be formally revisited after five years and updated every ten years. In the meantime, however, the department will be reviewing and updating this plan periodically (at least as often as every five years) based on the results of the adaptive management program. This plan will also be informally reviewed by LMWA staff while preparing annual work plans. It may also be reviewed during routine inspections or programmatic evaluations. Results of any or all of these reviews may indicate a need to modify the plan. Goals and objectives described in this plan will not change until they are re-evaluated as part of the formal plan revision process.

However, strategies may be revised to better address changing circumstances or due to increased knowledge of the resources on LMWA. If changes are required, the level of public involvement and associated compliance requirements will be determined by the department.

References

Cowardin , L.M., V. Carter, F.C. Golet, and E.T. LaRoe. 1979. *Classification of Wetlands and Deepwater Habitats of the United States.* FWS/OBS-79/31, U.S. Fish and Wildlife Service, Washington, D.C. 103 pp.

Herpetological Review, September, 2005 (Vol. 36, No. 3)

Ivey, G.L., and C.P. Herziger. 2006. *Intermountain West Waterbird Conservation Plan, Version1.2. A plan associated with the Waterbird Conservation for the Americas Initiative.* U.S. Fish and Wildlife Service Pacific Region, Portland, Oregon

G. Ivey, International Crane Foundation. Personal Communication, 7/12/07

Markin, George P. USDA Forest Service, Research Entomologist. Forestry Sciences Laboratory, Montana State University, Bozeman, MT. Personal Communication 11/26/2007.

ODFW, 2006. *The Oregon Conservation Strategy*. Oregon Department of Fish and Wildlife, Salem, Oregon

Oring, L.W., L. Neel and K.E. Oring. 2000. Intermountain West Regional Shorebird Plan.http://www.fws.gov/shorebirdplan/RegionalShorebird/downloads/IMWEST4.doc

Sharrat, D. Oregon Department of Agriculture, Personal Communication.

U.S. Fish and Wildlife Service. 2001. *National Survey of Fishing, Hunting and Wildlife Associated Recreation*. Washington D.C.

Appendix A. Land Acquisitions and Adjustments Involving the Ladd Marsh Wildlife Area

Year	Acres	Action	Cooperator
1949	120	Acquired from	C. Grandy
1949	80	Acquired from	H. Counsell
1953	21.3	Acquired from	H. Counsell
1958	207.08	Acquired from	H. Counsell
1958	209.12	Acquired from	M. Peebler
1959	26	Acquired from	C. Grandy
1959	800	Acquired from	J&J Boothman
1961	65	Adjustment/Exchange	R. Robinson
1962	158.5	Acquired from	R. Brogoitti
1964	347.1	Acquired from	F. Counsell
1964	120	Acquired from	F. Counsell
1965	40	Acquired from	R. Smutz
1965	128	Acquired from	R. Smutz
1965	107	Adjustment/Exchange	G. Simonis
1965	160.37	Acquired from	W. Powell
1965	33.1	Acquired from	N. Evans
1969	44.31	Acquired from	J. March
1971	163.4	Acquired from	C. Hill
1987	55.35	Acquired from	M. Crossland
1987	353	Acquired from	OR. Water Resources
1991	247.32	Acquired from	J. Rinke
1996	132.68	Adjustment/Exchange	City of La Grande
1996	102.4	Adjustment/Agreement	City of La Grande
2000	375.45	Acquired from	The Nature Conservancy
2000	160.86	Acquired from	The Nature Conservancy
2000	305.76	Acquired from	The Nature Conservancy
2000	848.98	Adjustment/Agreement	Rocky Mountain Elk Foundation
2000	470.87	Adjustment/Agreement	City of La Grande
2004	135.87	Acquired from	The Nature Conservancy
Total	**6018.82**		

Appendix B. Plant Species Known to Occur on Ladd Marsh Wildlife Area

Common Name	*Scientific Name*
ACERACEAE	
Box elder	*Acer negundo*
ALISMATACEAE	
Waterplantain	*Alisma plantago-aquatica*
Wapato, Arrowhead	*Sagittaria cuneata*
APIACEAE	
Chervil, burr chervil	*Anthriscus caucalis*
Western water hemlock	*Cicuta douglasii*
Poison hemlock	*Conium maculatum*
Cow parsnip	*Heracleum lnatum*
Gray's lomatium	*Lomatium grayi*
Narrow-leaved lomatium	*Lomatium leptocarpum*
Big-fruited lomatium	*Lomatium macrocarpum*
ASCLEPIADACEAE	
Narrow-leaved milkweed	*Asclepias fascicularis*
Showy milkweed	*Asclepias speciosa*
ASTERACEAE	
Yarrow	*Achillea millefolium*
Stinking mayweed	*Anthemis cotula*
Common burdock	*Arctium minus*
Twin arnica	*Arnica sororia*
Biennial wormwood	*Artemisia biennis*
Prairie sage	*Artemisia ludoviciana var. ludoviciana*
Long-leaved aster	*Aster chilensis ssp. Adscendens*
Alkali aster	*Aster frondosus*
Hairy balsamroot	*Balsamorhiza hirsuta*
Arrowleaf balsamroot	*Balsamorhiza sagittata*
Tall beggar's-tick	*Bidens vulgata*
Blepharipappus	*Blepharipappus scaber*
Bachelor buttons	*Centaurea cyanus*
Diffuse knapweed	*Centaurea diffusa*
Spotted knapweed	*Centaurea maculosa*
Rabbitbrush	*Chrysothamnus nauseosus*
Wild succory	*Cichorium intybus*
Canada thistle	*Cirsium arvense*
Lowland cudweed	*Gnaphalium palustre*

Low gumweed	*Grindelia nana*
Common sunflower	*Helianthus annuus*
Prickly lettuce	*Lactuca serriola*
Pineapple weed	*Matricaria matricariodes*
Scotch thistle	*Onopordum acanthium*
Sweet-marsh butterweed	*Senecio foetidus*
Western groundsel	*Senecio integerrimus*
Common sow-thistle	*Sonchus oleraceus*
Common dandelion	*Taraxacum officinale*
Yellow salsify	*Tragopogon dubius*

BETULACEAE

Sitka alder	*Alnus sinuata*
Water birch	*Betula occidentalis*

BORAGINACEAE

Common bugloss	*Anchusa officinalis*
Catchweed	*Asperugo procumbens*
Common hounds-tongue	*Cynoglossum officinale*
Corn gromwell	*Lithospermum arvense*
Western gromwell	*Lithospermum ruderale*
Blue scorpion-grass	*Mysotis micrantha*

BRASSICACEAE

Pale alyssum	*Alyssum alyssoides*
Black mustard	*Brassica nigra*
Little pod falseflax	*Camelina microcarpa*
White top	*Cardaria draba*
Western tansymustard	*Descurainia pinnata*
Richardson's tansymustard	*Descurainia richardsonii*
Spring draba	*Draba verna*
Euclidium	*Euclidium syriacum*
Field pepperweed	*Lepidium campestre*
Perennial pepperweed	*Lepidium latifolium*
Clasping pepperweed	*Lepidium perfoliatum*
Water-cress	*Rorippa nasturtium-aquaticum*
Tumbleweed	*Sisymbrium altissimum*
Field pennycress	*Thlaspi arvense*

CALLITRICHACEAE

Spring water-starwort	*Callitriche verna*

CAMPANULACEAE

Showy downingia	*Downingia elegans*

CAPRIFOLIACEAE

Honeysuckle	*Lonicera tatarica*

Blue elderberry	*Sambucus cerulea*
Common snowberry	*Symphoricarpos albus*

CARYOPHYLLACEAE

Thyme-leaf sandwort	*Arenaria serpyllifolia*
Dry chickweed	*Cerastium siculum*
Common chickweed	*Cerastium vulgatum*
Jagged chickweed	*Holosteum umbellatum*

CHENOPODIACEAE

Fat-hen orache	*Atriplex patula var. hastata*
Wedgescale orache	*Atriplex truncata*
Lambsquarter	*Chenopodium album*
Burning-bush	*Kochia scoparia*
Russian thistle	*Salsola kali*
Greasewood	*Sarcobatus vermiculatus*

CONVOLVULACEAE

Bindweed	*Convolvulus arvensis*
Morning glory	*Calystegia sepium*

CORNACEAE

Red-osier dogwood	*Cornus stolonifera*

CUPRESSACEAE

Eastern redcedar	*Juniperus virginiana*

CYPERACEAE

Columbia sedge	*Carex aperta*
Awned sedge	*Carex atherodes*
Inland sedge	*Carex interior*
Nebraska sedge	*Carex nebrascensis*
Wooly sedge	*Carex pellita*
Dry sedge	*Carex siccata*
Short-beaked sedge	*Carex simulata*
Sawbeak sedge	*Carex stipata*
Needle spikerush	*Eleocharis acicularis*
Ovoid spikerush	*Eleocharis ovata*
Common spikerush	*Eleocharis palustris*
Hardstem bulrush	*Scirpus acutus*
Saltmarsh bulrush	*Scirpus maritimus*
Small-fruited bulrush	*Scirpus microcarpus*

DIPSACACEAE

Teasel	*Dipsacus sylvestris*

ELAEAGNACEAE

Russian olive	*Elaeagnus angustifolia*

EQUISETACEAE

Common horsetail	*Equisetum arvense*
Smooth scouring rush	*Equisetum laevigatum*

EUPHORBIACEAE

Mole plant	*Euphorbia lathyrus*
Leafy spurge	*Euphorbia esula*

FABACEAE

Blue Mountain milkvetch	*Astragalus reventus*
Siberian pea	*Caragna arborescens*
Few-flowered pea	*Lathyrus pauciflorus*
Spanish clover	*Lotus purshianus*
Velvet lupine	*Lupinus leucophyllus*
Sulfur lupine	*Lupinus sulphureus var. sulphureus*
Black medic	*Medicago lupulina*
Alfalfa	*Medicago sativa*
Common yellow sweet-clover	*Melilotus officinalis*
Black locust	*Robinia pseudo-acacia*
Golden pea	*Thermopsis montana*
Douglas' clover	*Trifolium douglasii*
Strawberry clover	*Trifolium fragiferum*
Alsike clover	*Trifolium hybridum*
Long-stalked clover	*Trifolium longipes*
Plumed clover	*Trifolium plumosum var. plumosum*
Red clover	*Trifolium pratense*
Springbank clover	*Trifolium wormskjoldii*
American vetch	*Vicia americana*
Bird vetch	*Vicia cracca*
Hairy vetch	*Vicia villosa*

GERANIACEAE

Filaree	*Erodium cicutarium*
Sticky-leaf geranium	*Geranium viscosissimum*

GROSSULARIACEAE

Golden currant	*Ribes aureum*

HIPPURIDACEAE

Common mare's tail	*Hippuris vulgaris*

HYDRANGEACEAE

Mock orange	*Philadelphous lewisii*

IRIDACEAE

Blue flag, wild iris	*Iris missouriensis*
Blue-eyed grass	*Sisyrinchium angustifolium*

St John-grass-widows	*Sisyrinchium inflatum*
JUNCACEAE	
Baltic rush	*Juncus balticus*
Dagger-leaf rush	*Juncus ensifolius*
JUNCAGINACEAE	
Arrow-grass	*Triglochin maritimum*
LAMIACEAE	
Common henbit	*Lamium amplexicaule*
Horehound	*Marrubium vulgare*
Narrow-leaved skullcap	*Scutellaria angustifolia*
LILIACEAE	
Douglas' brodiaea	*Brodiaea douglasii*
Common camas	*Camassia quamash*
Star-flowered Solomon's seal	*Smilacina stellata*
Corn lily	*Veratrum californicum*
Death camas	*Zigadenus venenosus*
LYTHRACEAE	
Ammannia	*Ammannia coccinea*
Hyssop loosestrife	*Lythrum hyssopifolia*
Purple loosestrife	*Lythrum salicaria*
MALVACEAE	
Dwarf mallow	*Malva neglecta*
MARSILEACEAE	
Clover-fern	*Marsilea vestita*
NYMPHAEACEAE	
Fragrant water-lily	*Nymphaea odorata*
ONAGRACEAE	
Swamp willow-herb	*Epilobium palustre*
Watson's willow-herb	*Epilobium watsonii*
PINACEAE	
Ponderosa pine	*Pinus ponderosa*
PLANTAGINACEAE	
Common plantain	*Plantago major*
POACEAE	
Jointed goatgrass	*Aegilops cylindrica*
Intermediate wheatgrass	*Agropyron intermedium*
Bluebunch wheatgrass	*Agropyron spicatum*

Little meadow-foxtail	*Alopecurus aequalis*
Meadow foxtail	*Alopecurus pratensis*
Tall oatgrass	*Arrhenatherum elatius*
Wild oat	*Avena fatua*
Soughgrass	*Beckmannia syzigachne*
Rattlegrass	*Bromus brizaeiformis*
Meadow brome	*Bromus commutatus*
Smooth brome	*Bromus inermis*
Japanese brome	*Bromus japonicus*
Cheatgrass	*Bromus tectorum*
Orchard grass	*Dactylis glomerata*
Tufted hairgrass	*Deschampsia caespitosa*
Large barnyard grass	*Echinochloa crusgalli*
Medusahead	*Elymus caput-medusae*
Giant wildrye	*Elymus cinereus*
Quackgrass	*Elymus repens*
Idaho fescue	*Festuca idahoensis*
Squirreltail	*Hordeum jubatum*
Common witchgrass	*Panicum capillare*
Reed canarygrass	*Phalaris arundinacea*
Common timothy	*Phleum pratense*
Bulbous bluegrass	*Poa bulbosa*
Meadowgrass	*Poa palustris*
Annual beardgrass	*Polypogon monspeliensis*
Rye	*Secale cereale*
Squirreltail	*Sitanion hystrix*

POLEMONIACEAE

Microsteris	*Microsteris gracilis*
Tufted phlox	*Phlox caespitosa*
Annual polemonium	*Polemonium micranthum*

POLYGONACEAE

Prostrate knotweed	*Polygonum aviculare*
Bistort	*Polygonum bistortoides*
Heartweed	*Polygonum persicaria*
Bushy knotweed	*Polygonum ramosissimum*
Sour weed	*Rumex acetosella*
Curly dock	*Rumex crispus*
Seaside dock	*Rumex maritimus*

PORTULACACEAE

Water montia	*Montia chamissoi*
Narrow-leaved montia	*Montia linearis*
Miner's lettuce	*Montia perfoliata*

PRIMULACEAE

Few-fowered shooting star	*Dodecatheon pulchellum*
Western clematis	*Clematis ligusticifolia*
Dwarf larkspur	*Delphinium depauperatum*

Meadow buttercup	*Ranunculus acris*
Water-plantain buttercup	*Ranunculus alismaefolius*
Macoun's buttercup	*Ranunculus macounii*
Hornseed buttercup	*Ranunculus testiculatus*

ROSACEAE

Black hawthorn	*Crataegus douglasii*
Slender cinquefoil	*Potentilla gracilis var. flabelliformis*
Sulfur cinquefoil	*Potentilla recta*
Wild plum	*Prunus americana*
Common chokecherry	*Prunus virginiana*
Sweetbrier	*Rosa eglanteria*
Nootka rose	*Rosa nutkana var. hispida*
Wood's rose	*Rosa woodsii*
Annual burnet	*Sanguisorba occidentalis*

RUBIACEAE

Bedstraw	*Galium aparine*

SALICACEAE

Black cottonwood	*Populus trichocarpa*
Quaking aspen	*Popullus tremuloides*
Golden willow	*Salix alba*
Peachleaf willow	*Salix amygdaloides*
Coyote willow	*Salix exigua ssp. melanopsis*
Arroyo willow	*Salix lasiolepis*
Rigid willow	*Salix rigida var. watsonii*

SAXIFRAGACEAE

Small-flowered woodlandstar	*Lithophragma parviflora*

SCROPHULARIACEAE

Cusick's paintbrush	*Castilleja cusickii*
Blue-eyed mary	*Collinsia parviflora*
Dalmatian toadflax	*Linaria dalmatica*
Yellow monkey-flower	*Mimulus guttatus*
Hot rock penstemon	*Penstemon deustus*
Showy penstemon	*Penstemon speciosus*
Wooly mullein	*Verbascum thapsus*
American speedwell	*Veronica americana*
Water speedwell	*Veronica anagallis-aquatica*

SOLANACEAE

Climbing nightshade	*Solanum dulcamara*

SPARGANIACEAE

Sparganium	*Sparganium spp*

TYPHACEAE
Common cattail *Typha latifolia*

ULMACEAE
Siberian elm *Ulmus pumila*

VALERIANACEAE
White plectritis *Plectritis macrocera*

ZYGOPHYLLACEAE
Puncturevine *Tribulus terrestris*

Appendix C. Wildlife Species Known to Occur on Ladd Marsh Wildlife Area

Occurrence: Abundant = A, Common = C, Uncommon = U, Rare = R

Bird Species Common Name	***Scientific Name***	**Spring**	**Summer**	**Fall**	**Winter**
Greater White-fronted Goose	*Anser albifrons*	C		O	
Snow Goose	*Chen caerulescens*	O		U	
Ross's Goose	*Chen rossii*	R			
Cackling Goose	*Branta hutchinsii*	R			R
Canada Goose	*Branta canadensis*	C	C	C	C
Trumpeter Swan	*Cygnus buccinator*	R		R	R
Tundra Swan	*Cygnus columbianus*	C		C	U
Wood Duck	*Aix spnsa*	U	U	O	R
Gadwall	*Anas strepera*	C	C	C	O
Eurasian Wigeon	*Anas penelope*	R			
American Wigeon	*Anas americana*	C	U	C	O
Mallard	*Anas platyrhynchos*	C	C	C	C
Blue-winged Teal	*Anas discors*	C	C	C	
Cinnamon Teal	*Anas cyanoptera*	C	C	C	
Northern Shoveler	*Anas clypeata*	C	C	C	R
Northern Pintail	*Anas acuta*	C	U	C	R
Green-winged Teal	*Anas crecca*	C	C	C	
Canvasback	*Aythya valisineria*	U	U	U	R
Redhead	*Aythya americana*	C	C	C	O
Ring-necked Duck	*Aythya collaris*	C	O	U	R
Lesser Scaup	*Aythya affinis*	U	O	U	R
Surf Scoter	*Melanitta perspicillata*	X			R
White-winged Scoter	*Melanitta fusca*				R
Long-tailed Duck	*Clangula hyemalis*				X
Bufflehead	*Bucephala albeola*	C		C	U
Common Goldeneye	*Bucephala clangula*	C	R	C	C
Barrow's Goldeneye	*Bucephala islandica*	O		O	O
Hooded Merganser	*Lophodytes cucullatus*	O	O	O	O
Common Merganser	*Merus merganser*	U	U	U	U
Ruddy Duck	*Oxyura jamaicensis*	C	C	U	O
Gray Partridge	*Perdix perdix*	U	U	U	U
Ring-necked Pheasant	*Phasianus colchicus*	C	C	C	C
Ruffed Grouse	*Bonasa umbellus*	U	U	U	U
Dusky Grouse	*Dendragopus obscurus*	U	U	U	U
Wild Turkey	*Meleagris gallopavo*	O	O	O	O
California Quail	*Callipepla californica*	C	C	C	C
Common Loon	*Gavia immer*	R		R	
Pied-billed Grebe	*Podilymbus podiceps*	U	U	U	R
Horned Grebe	*Podiceps auritus*	O	R	O	R
Red-necked Grebe	*Podiceps grisegena*	R		R	
Eared Grebe	*Podiceps nigricollis*	U	U	O	
Western Grebe	*Aechmophorus occidentalis*	R		R	
Clark's Grebe	*Aechmorphorus clarkii*	R		R	

Bird Species Common Name	***Scientific Name***	**Spring**	**Summer**	**Fall**	**Winter**
American White Pelican	*Pelecanus erythrorhynchos*	O	O		
Double-crested Cormorant	*Phalacrocorax auritus*	O	U	O	
American Bittern	*Botaurus lentiginosus*	U	U	U	
Great Blue Heron	*Ardea herodias*	C	C	C	C
Great Egret	*Ardea alba*	R	R	R	
Snowy Egret	*Egretta thula*	R		R	
Cattle Egret	*Bubulcus ibis*	X			
Black-crowned Night Heron	*Nycticorax nycticorax*	U	U	U	
White-faced Ibis	*Plegadis chihi*	R	R	R	
Turkey Vulture	*Cathartes aura*	O	O	O	
Osprey	*Pandion haliaetus*	U	U	U	
Bald Eagle	*Haliaeetus leucocephalus*	C	R	O	C
Northern Harrier	*Circus cyaneus*	C	C	C	C
Sharp-shinned Hawk	*Accipiter striatus*	U	O	U	U
Cooper's Hawk	*Accipiter cooperii*	U	O	U	U
Northern Goshawk	*Accipiter gentilis*	O	O	O	O
Swainson's Hawk	*Buteo swainsoni*	C	C	C	
Red-tailed Hawk	*Buteo jamaicensis*	C	C	C	C
Ferruginous Hawk	*Buteo regalis*	R		R	
Rough-legged Hawk	*Buteo lagopus*	C			C
Golden Eagle	*Aquila chrysaetos*	U	O	U	U
American Kestrel	*Falco sparvarius*	C	C	C	U
Merlin	*Falco columbarius*	O	O	O	U
Peregrine Falcon	*Falco peregrinus*	R	R		
Prairie Falcon	*Falco mexicanus*	O	O	O	U
Virginia Rail	*Rallus limicola*	U	U	U	R
Sora	*Porzana carolina*	U	U	U	
American Coot	*Fulica americana*	C	C	C	O
Sandhill Crane	*Grus canadensis*	C	C	O	
Black-bellied Plover	*Pluvialis squatarola*	R			
Pacific Golden-plover	*Pluvialis fulva*	R			
Semipalmated Plover	*Charadrius semipalmatus*	U		O	
Killdeer	*Charadrius vociferus*	C	C	C	U
Black-necked Stilt	*Himatopus mexicanus*	C	C	U	
American Avocet	*Recurvirostra americana*	C	C	U	
Greater Yellowlegs	*Tringa melanoleuca*	U	U	U	
Lesser Yellowlegs	*Tringa flavipes*	U	U	U	
Solitary Sandpiper	*Tringa solitaria*	O		O	
Willet	*Catoptrophorus semipalmatus*	R		R	
Spotted Sandpiper	*Actitis macularia*	C	C	C	
Long-billed Curlew	*Numenius americanus*	C	O	O	
Marbled Godwit	*Limosa fedoa*	R		R	
Ruddy Turnstone	*Arenaria interpres*	R		R	
Sanderling	*Calidris alba*	R		R	
Semipalmated Sandpiper	*Calidris pusilla*			R	
Western Sandpiper	*Calidris mauri*	C		C	

Bird Species Common Name	***Scientific Name***	**Spring**	**Summer**	**Fall**	**Winter**
Least Sandpiper	*Calidris minutilla*	C		C	
Baird's Sandpiper	*Calidris bairdii*	O		U	
Pectoral Sandpiper	*Calidris melanotos*	O		U	
Dunlin	*Calidris alpina*	R		R	
Stilt Sandpiper	*Calidris himantopus*			R	
Long-billed Dowitcher	*Limnodromus scolopaceus*	O		O	
Wilson's Snipe	*Gallinago delicata*	C	C	C	O
Wilson's Phalarope	*Phalaropus tricolor*	U	U	U	
Red-necked Phalarope	*Phalaropus lobatus*	R	R	R	
Franklin's Gull	*Larus pipixcan*	R			
Bonaparte's Gull	*Larus philadelphia*	R		R	
Ring-billed Gull	*Larus delawarensis*	C	C	U	U
California Gull	*Larus californicus*	C	C	O	R
Herring Gull	*Larus argentatus*	O		O	
Sabine's Gull	*Xema sabini*	R		R	
Caspian Tern	*Sterna caspia*	O	R		
Forster's Tern	*Sterna forsteri*	R		R	
Black Tern	*Chlidonias niger*	O	O	O	
Rock Pigeon	*Columba livia*	C	C	C	C
Eurasian Collared-dove	*Streptopelia decaocto*	X			
Mourning Dove	*Zenaida macroura*	C	C	C	O
Barn Owl	*Tyto alba*	C	C	C	C
Western Screech Owl	*Otus kennicottii*	U	U	U	
Great Horned Owl	*Bubo virginianus*	C	C	C	C
Snowy Owl	*Nyctea scandiaca*				X
Northern Pygmy Owl	*Glaucidium gnoma*	O	O	O	O
Burrowing Owl	*Athene cunicularia*	O	O	U	
Great Gray Owl	*Strix nebulosa*	U	U	U	U
Long-eared Owl	*Asio otus*	O	O	O	O
Short-eared Owl	*Asio flammeus*	U	U	U	U
Northern saw-whet Owl	*Aegolius acadicus*	O	O	O	O
Common Nighthawk	*Chordeiles minor*	C	C	C	
Vaux's Swift	*Chaetura vauxi*	C	C	U	
Black-chinned Hummingbird	*Archilochus alexandri*	U	U	U	
Anna's Hummingbird	*Calypte anna*	R	R	R	
Calliope Hummingbird	*Stellula calliope*	U	U	U	R
Broad-tailed Hummingbird	*Selasphorus platycercus*	X			
Rufous Hummingbird	*Selasphorus rufus*	O	O	O	
Belted Kingfisher	*Ceryle alcyon*	C	C	C	U
Lewis' Woodpecker	*Melanerpes lewis*	O	O	O	
Downy Woodpecker	*Picoides pubescens*	C	C	C	
Hairy Woodpecker	*Picoides villosus*	C	C	C	C
White-headed Woodpecker	*Picoides albolarvatus*	O	O	O	O
Three-toed Woodpecker	*Picoides tridactylus*	O	O	O	O
Black-backed Woodpecker	*Picoides arcticus*	O	O	O	O
Northern Flicker	*Colaptes auratus*	C	C	C	C
Pileated Woodpecker	*Dryocopus pileatus*	C	C	C	C

Bird Species Common Name	***Scientific Name***	**Spring**	**Summer**	**Fall**	**Winter**
Olive-sided Flycatcher	*Contopus coperi*	U	U	U	
Western Wood-pewee	*Contopus sordidulus*	C	C	C	
Willow Flycatcher	*Empidonax trailii*	C	C	C	
Hammond's Flycatcher	*Empidonax hammondii*	U	U	U	
Dusky Flycatcher	*Empidonax oberholseri*	U	U	U	
Pacific-slope Flycatcher	*Empidonax difficilis*	U	U	U	
Say's Phoebe	*Sayornis saya*	U	U	U	
Western Kingbird	*Tyrannus verticalis*	C	C	C	
Eastern Kingbird	*Tyrannus tyrannus*	C	C	C	
Loggerhead shrike	*Lanius ludovicianus*	O	O	O	O
Northern Shrike	*Lanius excubitor*	U		O	U
Cassin's Vireo	*Vireo cassinii*	O	O		
Warbling Vireo	*Vireo gilvus*	C	C	C	
Gray Jay	*Perisoreus canadensis*	U	C	C	U
Steller's Jay	*Cyanocitta stelleri*	C	C	C	C
Blue Jay	*Cyanocitta cristata*				R
Western Scrub-jay	*Aphelocoma californica*			R	
Clark's Nutcracker	*Nucifraga columbiana*	O	O	O	O
Black-billed Magpie	*Pica hudsonia*	C	C	C	C
American Crow	*Corvus brachyrhynchos*	C	C	U	O
Common Raven	*Corvus corax*	C	C	C	C
Horned Lark	*Eremophila alpestris*	C	C	C	C
Tree Swallow	*Tachycineta bicolor*	C	C	C	
Violet-green swallow	*Tachycineta thalassina*	C	C	C	
Northern rough-winged Swallow	*Stelgidopteryx serripennis*	C	C	C	
Bank Swallow	*Riparia riparia*	C	C	C	
Cliff Swallow	*Petrochelidon pyrrhonota*	C	C	C	
Barn Swallow	*Hirundo rustica*	C	C	C	
Black-capped Chickadee	*Poecile atricapilla*	C	C	C	C
Mountain Chickadee	*Poecile gambeli*	C	C	C	C
Bushtit	*Psaltriparus minimus*	R	R	R	R
Red-breasted Nuthatch	*Sitta canadensis*	U	U	U	U
White-breasted Nuthatch	*Sitta carolinensis*	U	U	U	U
Pygmy Nuthatch	*Sitta pygmaea*	O	O	O	O
Brown Creeper	*Certhia americana*	U	O	U	O
Rock Wren	*Salpinctes obsoletus*	U	U		
Bewick's Wren	*Thryomanes bewickii*	U	U	O	
House Wren	*Troglodytes aedon*	C	C	C	
Winter Wren	*Troglodytes troglodytes*	O	O	O	O
Marsh Wren	*Cistothorus palustris*	C	C	C	O
Golden-crowned Kinglet	*Regulus satrapa*	U	U	U	U
Ruby-crowned Kinglet	*Regulus calendula*	C	C	C	U
Western Bluebird	*Sialia mexicana*	C	C	U	R
Mountain Bluebird	*Sialia currucoides*	C	C	U	R
Townsend's Solitaire	*Myadestes townsendi*	C	U	U	C
Hermit Thrush	*Catharus guttatus*	C	U	C	R

Bird Species Common Name	***Scientific Name***	**Spring**	**Summer**	**Fall**	**Winter**
American Robin	*Turdus migratorius*	C	C	C	U
Varied Thrush	*Ixoreus naevius*	U	U	U	U
Gray catbird	*Dumetella carolinensis*	R	R	R	
Eurasian Starling	*Sturnis vulgaris*	C	C	C	C
American Pipit	*Anthus rubescens*	R		R	
Bohemian Waxwing	*Bombycilla garrulus*	O		O	C
Cedar Waxwing	*Bombycilla cedrorum*	C	C	C	C
Orange-crowned Warbler	*Vermivora celata*	U	U	U	
Nashville Warbler	*Vermivora ruficapilla*	O	O	O	
Yellow Warbler	*Dendroica petechia*	C	C	C	
Yellow-rumped Warbler	*Dendroica coronata*	C	C	C	R
Townsend's Warbler	*Dendroica townsendi*	C	C	C	
MacGillivray's Warbler	*Oporornis tolmiei*	U	U	U	
Common Yellowthroat	*Geothlypis trichas*	C	C	C	
Wilson's Warbler	*Wilsonia pusilla*	U	U	U	
Yellow-breasted Chat	*Icteria virens*	O	O	O	
Western Tanager	*Piranga ludoviciana*	C	C	C	
Spotted Towhee	*Pipilo maculatus*	C	C	C	R
American Tree Sparrow	*Spizella arborea*				O
Chipping Sparrow	*Spizella passerina*	C	C	C	U
Brewer's Sparrow	*Spizella breweri*	U			
Vesper Sparrow	*Pooecetes gramineus*	U	U	U	
Lark Sparrow	*Chondestes grammacus*	U	O	U	
Sage Sparrow	*Amphispiza belli*	X			
Savannah Sparrow	*Passerculus sandwichensis*	C	C	C	
Grasshopper Sparrow	*Ammodramus savannarum*	R	R		
Song Sparrow	*Melospiza melodia*	C	C	C	C
Lincoln's Sparrow	*Melospiza lincolnii*	O	U	O	R
Swamp Sparrow	*Melospiza georgiana*	R			R
Harris's Sparrow	*Zonotrichia querula*				R
White-crowned Sparrow	*Zonotrichia leucophrys*	C		C	U
Golden-crowned Sparrow	*Zonotrichia atricapilla*				X
Dark-eyed Junco	*Junco hyemalis*	C	C	C	C
Snow Bunting	*Plectrophenax nivalis*				O
Black-headed grosbeak	*Pheucticus melanocephalus*	U	U	U	
Lazuli Bunting	*Passerina amoena*	C	C	C	
Bobolink	*Dolichonix oryzivorus*	O	C	U	
Red-winged Blackbird	*Agelaius phoeniceus*	C	C	C	U
Western Meadowlark	*Sturnella neglecta*	C	C	C	U
Yellow-headed Blackbird	*Xanthocephalus xanthocephalus*	C	C	C	
Brewer's Blackbird	*Euphagus cyanocephalus*	C	C	C	U
Brown-headed Cowbird	*Molothrus ater*	C	C	C	O
Bullock's Oriole	*Icterus galbula*	C	C	C	
Gray-crowned Rosy-finch	*Leucosticte tephrocotis*	U	U	U	O
Pine Grosbeak	*Pinicola enucleator*	R			R

Bird Species Common Name	***Scientific Name***	**Spring**	**Summer**	**Fall**	**Winter**
Purple Finch	*Carpodacus purpureus*	R		R	R
Cassin's Finch	*Carpodacus cassinii*	C	C	U	C
House Finch	*Carpodacus mexicanus*	C	C	C	C
Red Crossbill	*Loxia curvirostra*	U	U	U	U
Common Redpoll	*Cardualis flammea*				X
Pine Siskin	*Carduelis pinus*	C	C	C	C
Lesser Goldfinch	*Carduelis psaltria*				R
American Goldfinch	*Carduelis tristis*	C	C	C	C
Evening Grosbeak	*Coccothraustes vespertinus*	U	U	C	U
House Sparrow	*Passer domesticus*	C	C	C	C

Occurrence (in appropriate habitat): C = Common; U = Uncommon; O = Occasional; R = Rare; X = Status Unclear (only 1 or 2 records for the area).

Mammal Species Common Name	***Scientific Name***	**Occurrence**
Insectivora		
Vagrant shrew	*Sorex vagrans*	X
Preble's Shrew	*Sorex preblei*	X
Coast Mole	*Scapanus orarius*	X
Chiroptera		
Fringed Myotis	*Myotis thysanodes*	X
Yuma Myotis	*Myotis yumanensis*	U
Little Brown Bat	*Myotis lucifugus*	U
Long-legged Bat	*Myotis volans*	X
Big Brown Bat	*Eptesicus fuscus*	U
Lagomorpha		
Mountain Cottontail	*Sylvilagus nuttallii*	U
Rodentia		
Yellow-pine Chipmunk	*Neotamias amoenus*	C
Yellow-bellied Marmot	*Marmota flaviventris*	U
Belding's Ground Squirrel	*Spermophilus beldingi*	U
Columbian ground squirrel	*Spermophilus columbianus*	C
Eastern Fox Squirrel	*Sciurus niger*	O
Red Squirrel	*Tamiasciurus hudsonicus*	U
Northern Pocket Gopher	*Thomomys talpoides*	C
American Beaver	*Castor canadensis*	O
Deer mouse	*Peromyscus maniculatus*	C
Western Harvest Mouse	*Reithrodontomys megalotis*	C
Norway Rat	*Rattus norvegicus*	O
House Mouse	*Mus musculus*	U

Long-tailed Vole	*Microtus longicaudus*	C
Montane Vole	*Microtus montanus*	C
Western Jumping Mouse	*Zapus princeps*	C
Muskrat	*Ondatra zibethicus*	C
Porcupine	*Erithizon dorsatum*	U
Carnivora		
Coyote	*Canis latrans*	C
American Black Bear	*Ursus americanus*	O
Raccoon	*Procyon lotor*	U
Long-tailed weasel	*Mustela frenata*	U
Mink	*Mustela vison*	U
Badger	*Taxidea taxus*	O
River Otter	*Lontra canadensis*	U
Striped skunk	*Mephitis mephitis*	C
Cougar	*Puma concolor*	O
Bobcat	*Lynx rufus*	O
Artiodactyla		
Rocky Mountain elk	*Cervus canadensis*	C
Mule deer	*Odocoileus hemionus*	C
White-tailed deer	*Odocoileus virginianus*	U
Pronghorn	*Antilocapra americana*	U

Amphibian Species Common Name	***Scientific Name***	
Long-toed salamander	*Ambystoma macrodactylum*	C
Bullfrog	*Rana catesbeiana*	C
Columbia Spotted Frog	*Rana luteiventris*	R
Pacific Chorus Frog	*Pseudacris regilla*	C
Great Basin Spadefoot	*Spea intermontana*	U
Reptile Species Common Name	***Scientific Name***	
Western Painted Turtle	*Chrysemys picta belli*	U
Common Garter Snake	*Thamnophis sirtalis*	C
Western Terrestrial Garter Snake	*Thamnophis elegans*	C
Gopher Snake	*Pituophis catenifer*	O
Western Rattlesnake	*Crotalus oreganus*	R
Racer	*Coluber constrictor*	O
Rubber boa	*Charina bottae*	O
Western Fence Lizard	*Scelopourus occidentalis*	O
Western skink	*Eumeces skiltonianus*	O

Invertebrates present on Ladd Marsh Wildlife Area

Invertebrate Species Common Name	***Scientific Name***
Odonata	

Coenagrionidae	
Emma's dancer	*Argia emma*
Pacific forktail	*Ischnura cervula*
Aeschnidae	
Paddle-tailed Darner	*Aeshna palmata*
Lord of June	*Anax junius*
Libellulidae	
Western Pondhawk	*Erythemis collocata*
Eight-spotted Skimmer	*Libellula forensis*
Twelve-spotted Skimmer	*Libellula pulchella*
Four-spotted Skimmer	*Libellula quadrimaculata*
Common Whitetail	*Platythemis lydia*
Variegated Meadowhawk	*Sympetrum corruptum*
Saffron-winged Meadowhawk	*Sympetrum costiferum*
Western Meadowhawk	*Sympetrum occidentale*
Striped Meadowhawk	*Sympetrum pallipes*
Black Saddlebags	*Tramea lacerata*
Hemiptera	
Rhopalidae	
Western box elder bug	*Boisea rubrolineatus*
Coleoptera	
Curculionidae	
Canada thistle stem weevil	*Ceutorhynchus litura*
Seed head weevil	*Larinus plainus*
Knapweed seed head weevil	*Larinus minutus*
Rose weevil	*Rhynchites bicolor*
Diptera	
Tephritidae	
Canada thistle stem gall fly	*Urophora cardui*
Lepidoptera	
Hesperiidea	
Woodland Skipper	*Ochlodes sylvanoides*
Persius duskywing	*Erynnis persius*
Papilionidea	
Pale Swallowtail	*Papilio eurymedon*
Western Tiger Swallowtail	*Papilio rutulus rutulus*
Pierinae	
Western White	*Pontia occidentalis*
Cabbage White	*Pieris rapae*
Lycaeninae	
Ruddy Copper	*Lycaena rubida*
Western Pygmy Blue	*Brephidium exilis*

Melitaeini	
Northern Checkerspot	*Chlosyne palla*
Nymphalini	
California Tortoiseshell	*Nymphalis californica*
Mourning Cloak	*Nymphalis antiopa*
Lorquin's Admiral	*Limenitis lorquini*
Satyrinae	
Common Wood Nymph	*Cercyonis pegala*
Danainae	
Monarch	*Danaus plexippus*
Hymenoptera	
Apidae	
Bumblebee	*Bombus spp*
Cynipidae	
Mossy rose gall	*Diplolepis rosae*

Appendix D. State and Local Irrigation District Water Rights on Ladd Marsh Wildlife Area

Permit No.	Priority Date	Source	Rate	Area of Use
S27849	1961	Ladd Creek	3.60 cfs	Raceway
S30208	1964	Treatment Outflow	4.94 cfs	Freeway Ponds and Irrigation
S27846	1962	Ladd Creek	2.5 cfs	Crossland and Brogoitti
S27847	1962	Gekeler Slough	5.0 cfs	Crossland and Brogoitti
S28545	1962	Treatment Outflow	4.94 cfs	Crossland and Brogoitti
S32707	1967	W. Ladd Creek	1.5 cfs	Refuge
S13412	1938	Springs	0.109 cfs	Peebler Pond
D36613	1885	M. Ladd Creek	3.0 af	Simonis
D36612	1876	W. Ladd Creek	0.04 cfs	Peebler Tract
S13412	1938	W. Ladd Creek	0.016 cfs	Counsell Tract
D40403	1876	W. Ladd Creek	0.16 cfs	Refuge
D40404	1885	E. Ladd Creek	0.10 cfs	Bench (Pierce Tract)
D50403	1868	Catherine Creek	900 af	Waterboard Ponds
S37417	1973	Gekeler Slough	3.00 cfs	Renke
S28793	1963	M. Ladd Creek	0.53 cfs	Hill Tract
D6245	1875	W. Ladd Creek	0.725 cfs	March and Counsell Tract
D6518	1883	W. Ladd Creek	5.15 cfs	Bench (Pierce Tract)
D6213	1906	M. Ladd Creek	1.0 cfs	Powell Tract
D6444	1872	E. Ladd Creek	1.575 cfs	Powell Tract
D6476	1878	M. Ladd Creek	0.10 cfs	Simonis Tract
R11512		Hot Lake, Catherine Cr.	70 af	Waterboard Ponds
S51560	1961	Unnamed Stream	2.5 cfs	Waterboard Ponds
R12685		W. Ladd Creek	85 af	Raceway
R12686		W. Ladd Creek	115 af	Raceway
R12687		W. Ladd Creek	140 af	Raceway
R12688		W. Ladd Creek	45 af	Raceway
R12689		W. Ladd Creek	50 af	Raceway
R12965		Unnamed Spring	9 af	Waterboard (Fishing Pond)
R74873	1964	Ladd Creek	4.04 af	Refuge
R74874	1962	W. Ladd Creek	50.09 af	Powell Tract
D50403	1870	Cathrine Creek	360 af	Simonis Tract
D50403	1878	Hot Lake Sp.	150 af	Simonis Tract
D16732	1946	Cathrine Creek	2.42 cfs	Simonis
D50403	1870	Cathrine Creek	720 af	City Property

Appendix E. Easements and Access Agreements on Ladd Marsh Wildlife Area

Easements:

Perpetual: To Pacific Telephone and Telegraph on 5/9/41, easement for poles and right of ingress and egress, across N½NW ¼ Sec. 35, T3S, R38E. (C. Grandy Tract)

Perpetual: To Pacific Northwest Pipeline Corp. on 7/13/55, right-of –way for pipeline construction and maintenance across N½NW¼ Sec. 2, T4S, R38E. (F. Council Tract)

Perpetual: To California-Pacific Utilities Co. on 4/13/48, powerline right-of-way (8'wide) across the SW¼NW¼ Sec. 2, and NE¼ Sec. 3, T4S., R38E. (F. Council Tract)

Perpetual: To Salt Lake Pipeline Co. on 4/20/50, pipeline right-of–way across NE¼SW¼Sec. 2, and NE¼ Sec. 3, T4S, R38E, (F.Council Tract)

Perpetual: To Pacific Northwest Pipeline Corp. on 12/6/55, pipeline right-of-way for construction and maintenance across NE¼SW¼Sec 2, and NE¼Sec. 3, T4S, R38E.. (F. Council Tract,
Perpetual: To Idaho Power Co. on 6/16/55, powerline right-of-way for construction and maintenance with full right of ingress and egress across NE¼Sec. 3, T4S, R38E, (F. Council Tract)

Perpetual: To The Inland Telephone and Telegraph Co. on 11/20/1897, right-of-way for telephone and telegraph lines over and across SE¼Sec. 31, T3S, R39E, (Boothman Tract)

Perpetual: To Eastern Oregon Light and Power Co. on 7/29/55, easement for transmission lines across E½SW¼and NW¼SW¼ Sec. 31, T3S, R39E, (California-Pacific Utilities Co. is successor). (Boothman Tract)

Perpetual: to the Pacific Telephone and Telegraph Company on 5/12/41, easement for poles with right of ingress and egress across N½ Sec. 6, T4S., R39E., S½ Sec. 31, T3S., R39E., and E½SE¼Sec. 36, T3S, R38E, (Boothman Tract)

Perpetual: To California-Pacific Utilities Co. on 6/16/48, easement (8'wide) to construct, operate and maintain powelines across N½ Sec. 6, T4S, R39E, with right of crossing over adjoining lands. (Boothman Tract)

Perpetual: To ODFW from R. Brogoitti on 12/9/64, easement for construction, maintaining and replacing a canal for transfer of water between Gekeler Slough and Ladd Creek, NE¼SW¼ and SE¼ Sec. 25, T3S., R38E.

To Salt Lake Pipe Line Co. on 3/1/50, pipeline right-of-way (16.5' wide) to construct and maintain pipeline across Sec. 34, T3S, R38E, (Exact location is not disclosed of record). (R. Smutz Tract)

Perpetual: To Pacific Northwest Pipeline Corp. on 12/2/55, right –of-way contract to select route, construct and maintain pipeline in Sec. 34, T3S, R38E. (Exact location is not disclosed of record). R. Smutz Tract)

Perpetual: To Idaho Power Co. on 6/29/55, right-of-way and easement for powerline across E½Sw¼ and S½NW¼ Sec. 34, T3S, R38E.. (R. Smutz Tract)

Perpetual: To El Paso Natural Gas Co. on 5/3/76, right-of-way and easement for gas line across N½NE¼ Sec. 3, T4S, R38E.

Perpetual: To Pacific Telephone and Telegraph Co. on 5/9/55, easement for poles across N½NW¼ Sec. 35, T3S, R38E. (C. Hill Tract)

Perpetual: To California-Pacific Utilities Co. on 4/13/48, powerline right-of-way (8'wide) across SE¼NE¼ Sec. 35, T3S. R38E.. (C. Hill Tract)

Perpetual: To Northwest Bell Telephone Co. on 10/15/68, road easement (10' wide) on existing road in the NE¼ Sec. 35, T3S. R38E.. (C. Hill Tract)

Perpetual: To California-Pacific Utilities Co. on 4/13/48, powerline right-of-way (8'wide) across SW¼, Sec 34, T3S, R38E. with right of crossing adjoining lands. (H. Council Tract)

Perpetual: To Salt Lake Pipe Line Co. on 3/1/50, pipeline right-of-way (10.5' wide) across Sec. 34, T3S, R38E., with right of ingress and egress. (H. Council Tract)

Perpetual: To California-Pacific Utilities Co. on 11/18/53, powerline right-of-way (8' wide) across Sec. 3, T4S. R38E., with right of access across adjoining lands. (H. Council Tract)

Perpetual: To Salt Lake Pipe Line Co. on 7/7/54, pipeline fight-of-way (16.5' wide) across north 45 rods of Lots 1 & 2, Sec. 3, T4S R38E., with right of ingress and egress. (H. Council Tract)

Perpetual: To Salt Lake Pipe Line Co. on 6/26/53, right-of-way for installation and operation of a cathodic pipe protection system on a parcel of land adjoining the existing pipeline right-of-way in Lots 1 & 2, Sec. 3, T4S, R38E.. (H. Council Tract)

Perpetual: To Idaho Power Co. on 6/15/55, powerline right-of-way across a part of Sec. 3, T4S., R38E., with right of ingress and egress. (H. Council Tract)

Perpetual: To Pacific Northwest Pipeline Corp. on 9//19/57, contract to construct and maintain a cathodic protection unit in Lots 1 & 2, Sec. 3, T4S, R38E.. (H. Council Tract)

Perpetual: To California-Pacific Utilities Co. on 4/13/48, powerline right-of-way (8' wide) near the west line of the NW¼NE¼ Sec. 2, T4S, R38E., with the right of ingress and egress (M. Peebler Tract)

Perpetual: To General Telephone Company of the Northwest on 1/18/65, right-of-way and easement for transmission lines located on the SW¼ Sec. 25, T3S., R38E.. (Crossland Tract)

Perpetual: To the Inland Telephone and Telegraph Company on 1/26/1898, right-of-way for telephone lines across the SW¼Sw¼Sec. 32, T3S, R39E.. (Water Board Tract)

Perpetual: To Eastern Oregon Light and Power Company (now Oregon Trail cooperative) on 8/29/25, right-of-way for transmission lines across SW¼SW¼Sec. 32, T3S, R39E.. (Waterboard Tract)

Perpetual: To CP National on 7/25/80, easement (15' wide) for electric and telephone lines and or gas, water mains across a portion of Sec. 31, T3S, R39E.. (Waterboard Tract)

Perpetual: To C. Grandy, C. Hill, C. Smutz and I Smutz on 7/29/60, right-of-way agreement for ditches across Sec. 26, T3S., R38E.. (Rinke Tract)

Perpetual: To GTE Northwest on 1/18/65, right-of-way and easement for transmission line. Right of access to maintain lines in the SW¼ of Sec. 25, T3S, R38E.. (Smutz Tract)

Perpetual: to American Telephone and Telegraph Company on 11/8/89, easement for communication system, 20 foot wide strip along Pierce Lane on west side, measured from centerline of Pierce Lane. (Smutz Tract)

Perpetual: To American Telephone & Telegrap Company on 11/9/89, easement for station in SW¼SW¼ Sec. 25, T3S, R38e. (Smutz Tract)

Perpetual: To Oregon Trail Consumers Cooperative on 11/9/89, easement and right to provide electric service to the AT&T repeater in SW¼SW¼Sec. 25, T3S, R38E. (Smutz Tract)

Perpetual: From City of La Grande, OR. To: ODFW on 08/17/01. Wetland, Recreation and Wildlife Easement, 70.7 ± acres. W 1/2 NW ¼ Sec. 28, T3, R39E

Perpetual: To City of La Grande, OR on 02/23/01, Pipeline right-of-way for construction and maintenance with full right of ingress across Sections 23, 25, and 36 of T. 3S, R. 38E and Section 31 of T. 3S, R 39E of the Willamette Meridian, Union County, Oregon.

Perpetual: To City of La Grande, OR on 05/15/01. Wetland/Impound Treatment Facility Easement. Construction and maintenance of wetland cells and treatment facilities. A parcel of land in Section 5, T. 4S, R 39E and Sections 31 and 32, T 3S, R 39E of the Willamette Meridian, Union County, OR.

Perpetual: To the United States of America (Wetland Reserve Program) on 06/23/99 Wetland Restoration and Protection Easement. Northeast quarter of Section 35 or T. 2 S, R. 39 E of the Willamette Meridian, Union County, Oregon

Perpetual: To the United States of America (Wetland Reserve Program) on 09/28/99 Wetland Restoration and Protection. The South half of the Southwest quarter including the Government Lot 4of section 33, T. 3 S, R. 39 E and the northwest quarter and the east half of the southeast quarter of the northeast quarter

Thirty Years: To the United States of America (Wetland Reserve Program) on 06/23/99. Wetland Restoration and Protection.

Appendix F. Legal Obligations Influencing Management of the Ladd Marsh Wildlife Area

Federal Laws

Federal Aid in Wildlife Restoration Act
Pittman- Robertson Act of 1937
The Endangered Species Act of 1973, as amended
National Historic Preservation Act
National Environmental Policy Act
Americans with Disabilities Act

Oregon Revised Statutes

ORS 496.012 Oregon's Wildlife Policy
ORS 496.138 General Duties and Powers; Rulemaking Authority
ORS 496.146 Additional Powers of the Commission
ORS 496.162 Establishing seasons, amounts and manner of taking wildlife; rules
ORS 496.992 Penalties
ORS 570.535 Landowner responsibility for weed control

Oregon Administrative Rules

Division 008 - Department of Fish and Wildlife Lands
- 635-008-0015 Agreements to Restrict Motor-propelled Vehicles
- 635-008-0040 Forage Removal from State Lands
- 635-008-0050 Fish and Wildlife Commission to Post and Enforce Rules
- 635-008-0120 Ladd Marsh Wildlife Area

Division 011 - Statewide Angling Regulations
- 635-011-0050 Procedure of Promulgation of Angling Regulations
- 635-011-0100 General Rule

Division 051 - General Game Bird Regulations
- 635-051-0000 Purpose and General Information
- 635-051-0065 State Wildlife Area Regulations

Division 065 - Game Mammal General Seasons and Regulations
- 635-065-0001 Purpose and General Information
- 635-065-0625 Regulations on State Wildlife Areas, Refuges and Special Areas

Oregon Department of Environmental Quality (DEQ)
The City of La Grande operates its wastewater treatment facilities under permit from the Oregon DEQ through the National Pollution Discharge Elimination System. Their permit (#101549) dictates limitations to allowable public access in areas where treated effluent is discharged.

Union County Ordinances

Union County Zoning, Partition and Subdivision Ordinance, Article 16, addresses the Union County Airport Overlay Zone which restricts activities within 10,000 feet of the airport runway.

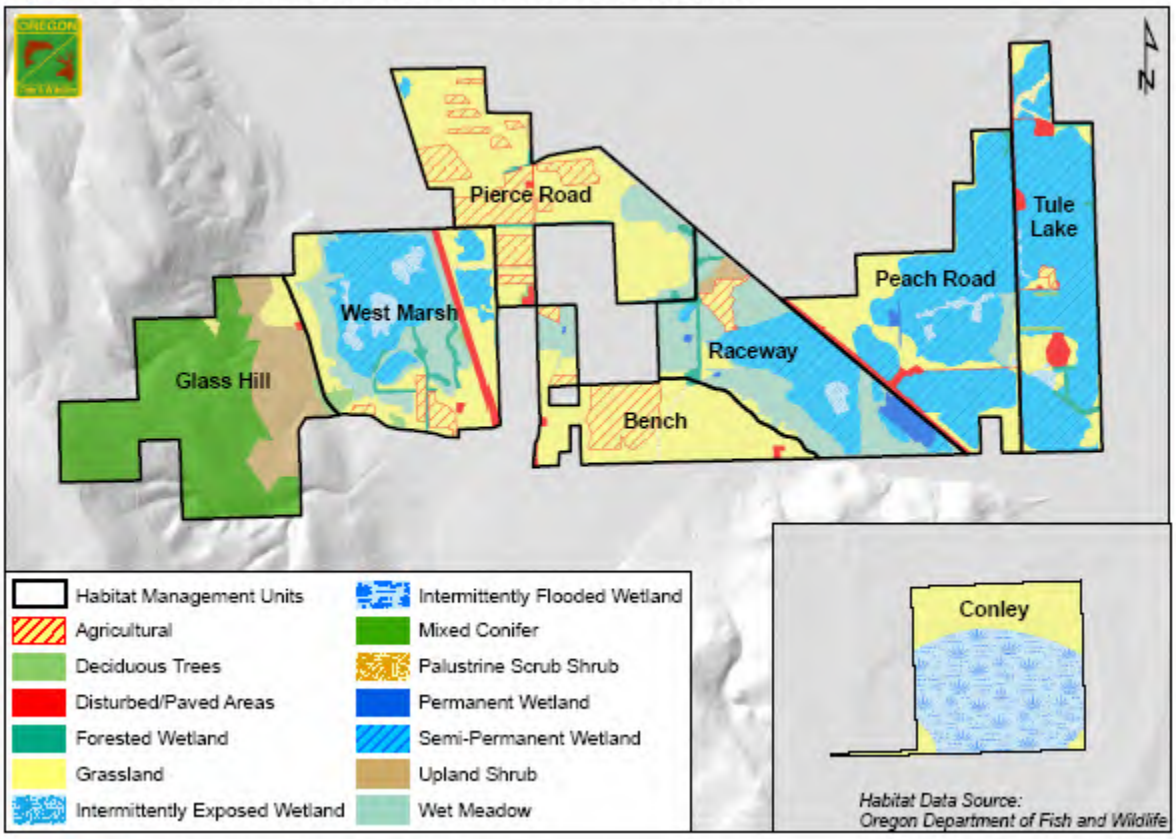
Appendix G. Description of Habitat Management Units on the Ladd Marsh Wildlife Area

Introduction

Eight Habitat Management Units (HMUs) are delineated on Ladd Marsh Wildlife Area (LMWA). These HMUs have been delineated and will be described based on administrative and physical features or boundaries, habitat types and vegetation, current or past management activities and sources of water in the case of wetland units.

Immense evapotranspiration loss and weather events are very important considerations and are factored into management actions. Habitat capabilities and resource outputs across LMWA are based on management actions within the individual units.

Figure 4 - Ladd Marsh Habitat Management Units and Habitat Types



Tule Lake

Background

The 720 acre Tule Lake HMU is predominantly semi-permanently flooded wetlands surrounded by upland grasslands. The north end (480 acres) is owned by the City of La Grande and managed by the department under a Cooperative Management Agreement.

Prior to Euro-American settlement the entire HMU was part of a 10,000 acre wetland complex known as Tule Lake. The area was drained in the late 1800s for grazing and agriculture.

Except for home sites and a historical schoolhouse, the entire area was enrolled in the U.S. Department of Agriculture's Wetland Reserve Program. Along with several other cooperators including Bonneville Power Administration, The Nature Conservancy, The Confederated Tribes of Umatilla Indian Reservation, U.S. Fish and Wildlife Service and the City of La Grande, the area was restored to wetlands by constructing several levees and a water delivery system. Wetland cells were designed for moist soil management capabilities. Construction was completed in 2004. There are six distinct wetland cells which vary in size from 27 to 126 acres.

The water sources for this HMU are natural runoff, Catherine Creek water rights and treated effluent from the City of La Grande. The treated effluent is pumped to an elevated distribution pond and along with Catherine Creek water, distributed via a system of canals and control structures. Water sources cannot offset evapotranspiration during dry summers and falls, therefore most of the cells dry out annually. Waterfowl brood areas are identified and maintained with available water.

As a newly restored wetland, this area is at an early successional stage. It has a mosaic of plant communities including hardstem bulrush, cattail, wet meadow and wetland annuals.

Uplands on the area were planted to native grasses and forbs to provide nesting areas for waterfowl and upland game.

This unit has become a very popular and productive hunting area. Pit blinds are available in several units if hunters so desire. Access is a short walk from several parking areas along Peach Road.

The Tule Lake Public Access Area is located on this area. An auto tour route and several miles of hiking trails are available to the public March 1 to October 1. Additional facilities including a host site, kiosks and trail markers are planned for the area.

Management Strategies

This unit will be managed for semi-permanent and seasonal wetland habitat. Initially, plant communities will be monitored for diversity and encroachment of robust emergents.

Habitat management activities including drawdowns, burning, disking and herbicide application will be used to manipulate plant communities. This will provide nesting, brood rearing, molting and migration habitat. Infrastructure including levees and water control structures will be maintained and or replaced during drawdowns.

Several improvements to the Tule Lake Public Access Area are in the planning and development stage. These include two kiosks, restrooms, trail signs and a viewing platform. The LMWA staff is presently writing and submitting grant proposals to secure funds for these projects. A portion of the funding has been secured. Construction should begin as funds become available in summer 2008.

Peach Road

Background

This HMU was part of the Tule Lake wetland complex prior to Euro-American settlement. It was drained for grazing and agriculture. It was purchased and enrolled in the Wetland Reserve Program by The Nature Conservancy in 1998 and donated to the department in 2000. Prior to the department's acquisition Ladd Creek was channelized and the entire area drained for grazing and agriculture. Restoration included levee construction to create wetland cells and protect adjacent private land, installing water control structures and excavation of a water delivery system. Three miles of Ladd Creek were also restored by excavating a new channel and planting with native trees and shrubs.

Currently this 823 acre HMU has permanent, semi-permanent, and intermittently exposed wetlands surrounded by grasslands. There are six actively managed wetland cells within this HMU. Four cells, 109 to 184 acres in size are managed by LMWA staff. Two cells, 24 and 38 acres, are treatment wetlands for the City of La Grande. These cells are managed by the City of La Grande with input from LMWA staff. The treatment cells are within and managed as waterfowl refuge during hunting seasons.

Ladd Creek flows through the two northern cells. Ladders were installed on the control structures for these two units to ensure fish passage.

Water sources for this HMU are natural runoff, Ladd Creek and treated effluent from the City of La Grande. Water sources cannot offset evapotranspiration during extended dry periods, therefore most of the cells dry out annually. Waterfowl brood areas are identified and maintained with available water.

Management Strategies

This unit will be managed for semi-permanent and seasonal wetland habitat. Initially, plant communities will be monitored for diversity and encroachment of robust emergents.

Habitat management activities including drawdowns, burning, disking and herbicide application will be used to manipulate plant communities. This will provide nesting, brood rearing, molting and migration habitat. Infrastructure including levees and water control structures will be maintained and or replaced during dry periods

Raceway

Background

The Raceway Habitat Management Unit was part of the Tule Lake Wetlands prior to Euro-American settlement. It was drained for grazing and agriculture in the late 1800's. This 726 acre unit has a mosaic of habitat types including permanent, semi-permanent and forested wetlands, upland shrub, agriculture and grasslands.

The permanent wetland area is a natural wetland fed by warm springs. It provides open water during winter. It also provides foraging and brood habitat in late summer.

The semi-permanent wetland habitat was primarily agriculture prior to 1998. This area was enrolled into the Wetland Reserve Program for wetland restoration. Restoration work completed in 1999 created five wetland cells, 25 to 77 acres in size. The cells have independent management capabilities. A fish ladder was installed on the R1 unit for fish passage on Barney Creek.

Management Strategies

This unit will be managed for semi-permanent and seasonal wetland habitat. Initially, plant communities will be monitored for diversity and encroachment of robust emergents.

Habitat management activities including drawdowns, burning, disking and herbicide application will be used to manipulate plant communities. This will provide nesting, brood rearing, molting and migration habitat. Infrastructure including levees and water control structures will be maintained and or replaced during dry periods.

Bench

Background

This 601 acre HMU is on an alluvial fan created from sediments out of Ladd Canyon. It has shallow well drained coarse soils. Part of this area was converted to agriculture in the early 1900s. The remaining area was intensively grazed which allowed invasive species such as medusahead rye and cheatgrass to replace the native grasses. Prior to its conversion, bluebunch wheatgrass and Idaho fescue were the dominant plant communities. Projects to restore this area to native grassland and upland shrub began in 1996. Several areas have been planted to bluebunch wheatgrass, Idaho fescue and native forbs. Bitterbrush and sagebrush were included to enhance the area for wintering big game.

Ladd Creek water rights were established as early as the late 1800s to support crop production. A portion of these water rights have been converted to storage rights for wetland management.

Management Strategies

Management strategies for this area will continue to focus on restoring native grasslands and upland shrubs. Degraded grasslands will be chemically fallowed and reseeded with native grass, forb and shrub species. The present level of agriculture and associated wildlife needs will be reviewed to determine if additional crop fields should be restored to grassland.

Pierce Road

Background

This 826 acre HMU consists predominately of upland habitat types. The major portions of the agricultural lands are located in this unit. Prior to conversion to farming this area was basin wild rye grasslands and wetlands associated with the middle fork of Ladd Creek. During settlement the creek was aligned with property lines and deepened to improve the area for crop production. The management focus in this area has been to restore native grasslands and restore the middle fork of Ladd Creek.

Management Strategies

Management strategies for this area will continue to focus on restoring native grassland and upland shrubs. Degraded grasslands will be chemically fallowed and reseeded with native grass, forb and shrub species. The present level of agriculture and associated wildlife needs will be reviewed to determine if additional crop fields should be restored to grassland.

Efforts to restore the middle fork of Ladd Creek are ongoing. Funding has been secured, cultural resource and topographical surveys have been completed and designs have been finalized. It is anticipated that restoration work will begin in 2008.

West Marsh

Background

The 1,158 acre West Marsh HMU has several habitat types. Wetlands include a 308 acre natural wetland which was enhanced in 2006 with the construction of a perimeter levee and a water control structure. Prior to these improvements, this area was experiencing cattail and reed canary grass encroachment. This area also provided a refuge for large populations of carp which had a devastating effect on LMWA wetlands. Improvements enable LMWA staff to control carp populations, manage emergent encroachment and store water for this unit as well as wetlands downstream.

Included in the West Marsh HMU is a 26-acre wetland cell that was established in 2006 as a cooperative effort between LMWA and the Oregon Department of Transportation (ODOT). This cell is being managed as a compensatory wetland mitigation site that

includes a mixture of palustrine scrub shrub wetlands and palustrine emergent wetlands. ODOT will pursue recognition of the area as a Wetland Bank with the regulatory agencies. As such, the cell will be managed in perpetuity as a wetland.

This HMU also has wetlands created in 1993 as a pilot program for using treated effluent. These four wetland cells, located on the east side of Interstate 84, are maintained entirely by treated effluent. This unit provides foraging and nesting areas for waterfowl.

Upland areas consist of grasslands, agricultural crops and deciduous trees. Forested wetlands are located on the west branch of Ladd Creek and a small intermittent stream. The upland habitats are generally comprised of a variety of native species (except agricultural areas) with minor outbreaks of non-native weeds. Thus these habitats are monitored for invasive weed infestation but are otherwise not subject to intensive management activity.

The West Marsh Unit contains the largest posted refuge (wildlife sanctuary) on LMWA. It is well located as it is relatively isolated from huntable areas to the east. However, in recent years, the wetlands in this area have dried out or very nearly dried out by late summer and Ladd Creek flows have been inadequate to flood them during fall. Under those conditions, the area is not attractive to waterfowl so it does not function as a sanctuary during the waterfowl hunting season. When that occurs, an alternate refuge area should be considered.

Management Strategies

Management strategies for this unit will focus on maintaining semi-permanent and seasonal wetland habitat. Habitat management activities including drawdowns, burning, disking and herbicide application will be used to manipulate plant communities. This will provide nesting, brood rearing, molting and migration habitat. Infrastructure including levees and water control structures will be maintained and or replaced during dry periods. The refuge area will be monitored and evaluated under various water conditions.

Glass Hill

Background

This 1,005 acre unit is a mix of upland shrubs, grasslands and mixed conifers. Eight hundred fifty acres are owned by the Rocky Mountain Elk Foundation and managed by the department through a cooperative management agreement. There are two intermittent streams and several springs in the unit. Several miles of boundary fence were constructed to keep neighboring landowners' livestock out of the area and to manage cattle grazing if that option is selected for vegetation management in the future. To completely protect the unit, approximately one and a quarter miles of boundary fence still need to be surveyed and fenced.

Prior to department management, this unit was part of a family cattle operation. It was intensively grazed by cattle and portions were logged. The lower area, near Foothill Road, was also used as a winter feeding site for cattle.

This unit has been designated as critical big game range in the Union County Land Use Plan. Elk are present year-round, with up to 400 animals wintering in the general area. One hundred to two hundred deer also winter in the area.

Present habitat conditions vary on the unit. The mixed conifer area which includes Ponderosa pine, grand fir, Douglas fir and Western larch is in good condition as defined by live, healthy trees with an open understory of native shrubs, no major infestations of noxious weeds or insects and little to no fuel loading to cause an elevated fire risk. The previously logged areas have been re-planted with seedlings and selective logging to improve wildlife habitat was completed in 2004.

The upland shrub and grassland areas are severely degraded. They are dominated by several invasive species including sulfur cinquefoil, medusahead rye, cheatgrass and sweetbriar. In 2006, the department began a restoration project to eliminate invasive species and restore native habitat. When completed the project site will be used as a demonstration area for rangeland restoration.

This unit is a very popular deer and elk hunting area. An adjacent 1,000 acres of private land are enrolled in the department's Access and Habitat Program. Habitat restoration and vehicle restrictions on both parcels provide security for big game.

Management Strategies

This HMU will be managed primarily for big game habitat. Upland shrub and grassland habitat enhancement projects will include burning, herbicide application and reseeding with native grasses, forbs and shrubs. The remaining unfenced boundary will be surveyed and fenced to manage trespass livestock. The main access road will be maintained for fire suppression and management activities. The logged areas will be monitored for seedling recruitment and if necessary, replanted. Restored areas will function as demonstration sites for rangeland restoration projects.

Conley Lake

Background

The unit consists of a 120 acre playa lake (Conley Lake) and 40 acres of grassland. Several attempts to drain the lake were made over the years. The uplands were farmed prior to acquisition. Conley Lake Unit is an important spring waterfowl migration area in northeast Oregon during years with average or above average precipitation. Over 1,000 swans, 3,000 greater white-fronted geese and numerous other waterbirds were observed on the area in 1997.

Conley Lake was purchased by The Nature Conservancy in 1998 and enrolled in the Wetland Reserve Program for enhancement and protection. It was donated to the department in 2000. The grasslands were planted to native species including needle and thread, bluebunch wheatgrass, and Idaho fescue. The upland seeding has been a failure due to severe drought conditions. The lake bed is primarily alkali grass and saltgrass. Hardstem bulrush was present in the deepest area when acquired but has since disappeared. Historically this unit was filled by ground water and spring runoff almost every year. Because of continued dry weather conditions the lake has been dry for several years. Several nearby irrigation wells which were recently installed may also be contributing to decreasing ground water conditions in the unit.

Management Strategies

Future management will include monitoring water depths and wildlife use. Supplemental water sources will be explored and evaluated. Grassland management will include chemical fallow to eliminate cheatgrass and annual rye and reseeding to native grasses and forbs. A boundary fence will be constructed to manage trespassing livestock.

TARDAEWETHER Kellen * ODOE

From: Irene Gilbert <ott.irene@frontier.com>
Sent: Thursday, May 30, 2024 1:50 PM
To: TARDAEWETHER Kellen * ODOE
Subject: Comments submitted for B2H RFA2
Attachments: Comments Road development requirements.docx; Reference1 OregonModelEnOrdiance energy projects.pdf; pre-construction surveys of biird species in ladd marsh and protected areas.docx; Sensitive_Species_List.pdf; Exhibit G_5_ Ladd Marsh Wildlife Area Management Paln.pdf

Please include the following comments in your file for the above amendment:
Items 1 and 2 regarding road standards
Items 3, 4 and 5 regarding Ladd Marsh wildlife

To KellenTardaewether May 30, 2024

From: Irene Gilbert on behalf of the public interest and herself

Regarding: Comments regarding Amendment II impacts to the Ladd Marsh Wildlife Preserve, Glass Hill Preserve, federal and state mitigation sites and additional protected areas in Union County. These areas provide important and irreplaceable wildlife habitat addressed in OAR 345-022-0060 and for Threatened and Endangered species addressed in OAR 345-022-0070 and are protected areas under OAR 345-022-0110

INTRODUCTION

The design, construction, and operation of the facility in areas added to the site boundary proposed in RFA II are likely to result in significant adverse impacts to wildlife due to noise, increased traffic, electrocution, habitat destruction, nest site abandonment, the lack of complete pre-construction surveys, the lack of post construction monitoring, as well as dust and airborne contaminants from roads and concrete batch plants associated with the proposed Multi-use areas and road changes. Because the amended site certificate includes both adding areas to the site boundary as well as additional changes to the Site Certificate conditions requested by both the developer and the Oregon Department of Energy, the review requirements of both OAR 345-027-0375(2)(a) and (c) must be included in the council Scope of Review. Council must evaluate whether the entire "facility" will continue to comply with Council Standards that protect resources or interests that could be affected by the changes. Direct and indirect impacts of construction of roads, multi-use areas, contact with energized lines and ongoing operations such as keeping corridors clear of vegetation are all land and wildlife disturbing activities.

Changes which require the OAR 345-027-0375(c) review include the addition of multi-use areas in Union County, additional access roads, and additional traffic in proximity to the Ladd Marsh Wildlife Area. In addition, there is a failure to survey or monitor impacts to the federal mitigation sites adjacent to the Ladd Marsh Wildlife Refuge which are identified as Project Number 20114 entitled "Securing Wildlife Mitigation Sites – Oregon, Ladd Marsh WMA Additions. These areas provide compensation for the Columbia River Dams targeted toward mallard,

Canada goose, mink, western meadowlark, spotted sandpiper, yellow warbler, downy woodpecker and California quail. The Project also identifies the following protected and species of concern near the project sites: Bald eagle, peregrine falcon, Bobolink, greater sandhill crane, Swainson's hawk, painted turtle, steelhead and chinook salmon. There is also an Oregon Department of Transportation Mitigation Site adjacent to the LMWA and the Glass Hill Preserve. Ladd Marsh Refuge and established mitigation areas for federal and state projects require compliance with OAR 345-022-0040, 345-022-0070,ORS 345-022-0060, ORS 345-022-0080 and OAR 345-021-0010(l)(t)(A). Idaho Power recognized in their ASC, Page T-14 that Ladd Marsh is "irreplaceable". They stated, "As explained in Attachment T-3 Table T-3-1, Ladd Marsh WA is an important opportunity because of its designation status, high level of use, rareness, and **irreplaceable character** per OAR 345-021-0010(l)(t)(A)"

The Oregon Department of Fish and Wildlife has identified the Ladd Marsh Wildlife Area as an important migratory bird stopover area for passerines, waterfowl, and other waterbirds that use the Pacific Flyway. The National Audubon Society lists the Ladd marsh Wildlife Area as an Important Bird Area (IBA). IBA's include sites for breeding, wintering and/or migrating birds that provide essential habitat for one or more species of birds. The different habitats, habits, survey requirements for different bird species precludes reliance on generic surveys which fail to focus on indicators of specific species presence. The Oregon Sensitive Species List identifies 22 species of birds that occur in the Blue Mountains or Columbia Plateau Ecoregions which are crossed by the B2H transmission line which are either Sensitive or Sensitive/Critical. The protected areas in Union County provide habitat for many of these species of birds.

The developer must provide detailed pre-construction surveys of the protected areas in Union county as well as the adjacent habitat utilized by species present to establish locations and protective measures for birds and other wildlife utilizing Ladd Marsh and the surrounding protected and forest areas.

Pre-construction surveys completed as part of the EFSC site certificate requirements for the proposed Antelope Ridge Wind development resulted in recommendations that no construction of wind turbines or transmission lines

occur in the forested areas surveyed due to the numbers and species of wildlife utilizing this habitat..

One example supporting this need is available information regarding golden eagles compiled by WEST Inc. for the Elkhorn and proposed Antelope Ridge Wind developments which included some area impacted by the B2H transmission line. The following maps are from WEST's Antelope Ridge Golden Eagle observation Study dated Sept. 8, 2011 and the Elkhorn Golden Eagle Studies- Year 1 Annual Report dated August 23, 20012

Item 1 and 2--Copies of the mapping of Golden Eagle and Bald Eagle nest sites identified by WEST Inc. during their 20ll and 2012 surveys.

Item 3--Eagle Observation Points and the number of observations which were between 2 and 31 eagle sitings per location.

Item 4--Figure 3, Page 13 of WEST, Inc. Antelope Ridge Golden Eagle observational Study results shows flight paths of eagles and supports the need to identify and avoid areas of nest sites.

The Ladd Marsh Wildlife Area Management Plan dated June 2018 completed the Oregon Department of Fish and Wildlife contains detailed information regarding the Acquisitions, Wildlife and Plant Species Present, Easements and Access Agreements Legal Obligations and description of Habitat Management Units. Noise impacts have been addressed in relation to corona noise from the transmission line impacts on citizens, however, no evaluation has occurred regarding the impacts related to the construction and use of multi-use areas in close proximity to protected areas and ongoing noise from the transmission line. Ladd Marsh is protected through OAR 635-008-0120.

Citizen impacts include noise and safety risks resulting from equipment and vehicles moving in and out of the multi-use areas and restricting citizen access to schools, work, health care facilities, as well as denying them access to recreational opportunities which currently exist for hiking, walking, biking along the roadways being inundated by heavy equipment, large vehicles, and additional traffic.

SITE CERTIFICATE CONDITIONS:

Condition One: Traffic and equipment moving from multi-use areas to locations on the site will not travel across existing roads in areas where roads are located on Ladd Marsh or Ladd Marsh Additions .

Condition Two: Developer will complete pre-construction wildlife surveys on areas within the site boundary and areas within one half mile of the site boundary including Protected Areas and adjacent land. (OAR 345-022-0040 and OAR 345-022-0060).

Condition Three: Idaho Power will develop a Monitoring Plan including ground surveys for approval of ODFW to determine impact of transmission line facility on birds. The survey area will be large enough to include most carcasses as determined by ODFW.

Condition Four: Idaho Power will assure that their activities during construction and operation of the transmission line do not damage or degrade resources protected under the Ladd Marsh Wildlife Area Management Plan dated 2018.

USGS
science for a changing world

Prepared in collaboration with Wildlife Conservation Society Canada, USDA Forest Service, U.S. Army Corps of Engineers, Illinois Natural History Survey, New York State Department of Environmental Conservation, Colorado Natural Heritage Program, Montana Natural Heritage Program, National Park Service, and Bat Call Identification, Inc.

A Guide to Processing Bat Acoustic Data for the North American Bat Monitoring Program (NABat)



Open-File Report 2018–1068

U.S. Department of the Interior
U.S. Geological Survey

Cover. **Upper left:** Fen (wetland) setup in western Newfoundland. Photograph by Jessica Humber, Department of Fisheries & Land Resources, Government of Newfoundland and Labrador, Canada, 2016. Used with permission. **Center:** A detector in the Trinity Alps Wilderness Area, Shasta-Trinity National Forest, Calif. Photograph by T.J. Weller, U.S. Dept. of Agriculture (USDA) Forest Service, July 18, 2017. **Lower right:** A roof detector mount. Photograph by Carl Herzog, New York State Department of Environmental Conservation, 2015. **Upper right:** Townsend's big-eared bat (*Corynorhinus townsendii*), Wikipedia Commons, 2002, accessed May 2018, at https://commons.wikimedia.org/wiki/File:Big-eared-townsend-fledermaus.jpg.

A Guide to Processing Bat Acoustic Data for the North American Bat Monitoring Program (NABat)

By Brian Reichert, Cori Lausen, Susan Loeb, Ted Weller, Ryan Allen ,
Eric Britzke, Tara Hohoff, Jeremy Siemers, Braden Burkholder, Carl Herzog,
and Michelle Verant

Prepared in collaboration with Wildlife Conservation Society Canada, USDA Forest Service, U.S. Army Corps of Engineers, Illinois Natural History Survey, New York State Department of Environmental Conservation, Colorado Natural Heritage Program, Montana Natural Heritage Program, National Park Service, and Bat Call Identification, Inc.

Open-File Report 2018–1068

U.S. Department of the Interior
U.S. Geological Survey

U.S. Department of the Interior
RYAN K. ZINKE, Secretary

U.S. Geological Survey
James F. Reilly II, Director

U.S. Geological Survey, Reston, Virginia: 2018

For more information on the USGS—the Federal source for science about the Earth, its natural and living resources, natural hazards, and the environment—visit https://www.usgs.gov or call 1–888–ASK–USGS.

For an overview of USGS information products, including maps, imagery, and publications, visit https://store.usgs.gov.

Any use of trade, firm, or product names is for descriptive purposes only and does not imply endorsement by the U.S. Government.

Although this information product, for the most part, is in the public domain, it also may contain copyrighted materials as noted in the text. Permission to reproduce copyrighted items must be secured from the copyright owner.

Suggested citation:
Reichert, B., and Lausen, C., Loeb, S., Weller, T., Allen, R., Britzke, E., Hohoff, T., Siemers, J., Burkholder, B., Herzog, C., and Verant, M., 2018, A Guide to processing bat acoustic data for the North American Bat Monitoring Program (NABat): U.S. Geological Survey Open-File Report 2018–1068, 33 p., https://doi.org/10.3133/ofr20181068.

ISSN 2331-1258 (online)

Acknowledgments

We thank the bat community for their unwavering support of the North American Bat Monitoring Program. We especially thank David Riggs (Myotisoft, LLC), Ian Agranat (Wildlife Acoustics, Inc.), Joe Szewczak (Humboldt State University, SonoBat), Chris Corben (Titley Scientific), Jenny Barnett (U.S. Fish and Wildlife Service), and François Fabianek (WavX, Inc. & Groupe Chiroptères du Québec) for thoughtful discussion, suggestions, and comments on processing bat acoustic data. Janet Tyburec (Bat Survey Solutions, LLC) and Han Li (University of North Carolina at Greensboro) reviewed the manuscript and provided suggestions which greatly helped to improve this document. We also thank Janet Tyburec for contributing information on standardized codes for metadata.

Contents

Acknowledgments iii
Introduction 1
Step 1. Attribute Acoustic Files 3
    Naming Acoustic Files 3
    Examples 3
    Assigning Metadata to Acoustic Files 3
Step 2. Noise Scrubbing 5
    Scrubbing Stationary versus Mobile Datasets 5
Step 3. Auto ID 5
Step 4. Manual Vetting 6
    General Recommendations: 6
    For Stationary Point Acoustic Data 9
    For Mobile Transect Acoustic Data 10
    The Manual Vetting Process 11
Step 5. Submit to NABat 12
Chapter 1. Processing Acoustic Data Using Kaleidoscope Pro Version 4.3.2 13
    Step 1. Attribute Files 13
    Steps 2 and 3. Noise Scrubbing and Auto ID 13
    Step 4. Manual Vetting 14
    Step 5. Submit to NABat 14
Chapter 2. Processing Full Spectrum Acoustic Data Using SonoBat 4.2.1 15
    Step 1. Attribute Files Using SonoBat Attributer 15
    Step 2. Noise Scrubbing using SonoBat Scrubber and Attributer 15
    Step 3. Auto ID 15
    Step 4. Manual Vetting 15
        Stationary Point and Mobile Transect Data 16
        Mobile Transect Data Only 16
    Step 5. Submit to NABat 16
Chapter 3. Processing Acoustic Data Using Bat Call Identification ver. 2.7d (BCID) 17
    Step 1. Attribute files 17
    Step 2. Noise Scrubbing 17

Step 3. Auto ID....17
Step 4. Manual Vetting....18
Step 5. Submit to NABat....18
Chapter 4. Processing Zero-Cross Acoustic Data Using EchoClass v 3.1....19
Step 1. Attribute files....19
Tips for organizing your data....19
Example file structure....19
Global Positioning System (GPS) Information....20
Mobile Transect Acoustic Monitoring....20
Stationary Point Acoustic Monitoring....20
Sunset/Sunrise Times....20
Steps 2 and 3. Noise Scrubbing and Auto ID....21
Supplemental Data Options....21
Step 5. Submit to NABat....21
Chapter 5. Processing Zero-Cross Acoustic Data Using AnaLookW 4.2n (March 16, 2017)....22
Step 1. Attribute Files....22
Step 2. Noise Scrubbing....22
Option 1: Kaleidoscope or Kaleidoscape Pro....22
Option 2: AnaLookW....23
Step 3. Auto ID....23
Option 1: Species Labels are Embedded in Files as MetaData During the Auto ID Process....23
SonoBat....23
Kaleidoscope Pro....23
Bat Call Identification (BCID)....23
Option 2: Species Labels Are Embedded in Files as Metadata Following Application of Filters....23
Option 3: Species Labels Are Provided in an Excel Spreadsheet....24
Step 4. Manual Vetting....24
Mobile Transect Data Only....26
Download Results into an Excel Spreadsheet Format....26
Step 5. Submit to NABat....26
References....26
Appendix A. Case Study—Using Rule Sets to Process Acoustic Data for USDA Forest Service Lands in Northern California....27
Appendix B. Additional Guidance for AnaLookW....30
Tips for using AnaLookW....30
Using Filters in AnaLookW....31
Appendix C. Bat Auto ID Species Confusion Matrix....32

Figures

1. A general workflow for processing recorded acoustic files for the North American Bat Monitoring Program (NABat). Note: Workflow guidance varies between stationary point and mobile transect survey data at steps 2 and 4, because objectives differ between survey methodologies (site occupancy from stationary point acoustic data versus relative abundance of species from mobile transect data) 2
2. Vetting Table sorting criteria in SONOVET software 16
3. Startup user interface for EchoClass software (from Britzke, 2012) 21
4. View of folder directory in AnaLookW 25
5. A standard output from SonoBat summarized in Excel (Szewczak and Szewczak, 2017) 28
6. "Sort" criteria used to arrange summary output in Excel 29

Tables

1. Required and recommended metadata fields for the North American Bat Monitoring Program (NABat) acoustic files. Metadata should be embedded in individual files. Fields with * should also be used for naming acoustic files 4
2. Suggested codes for acoustic detectors. Information provided by J. Tyburec (Bat Survey Solutions, LLC) 7
3. Species labels to be used when labeling acoustic files and submitting data to the North American Bat Monitoring Program (NABat) modified from Loeb and others (2015) 8
4. Species couplet, group, and frequency class labels recommended for labelling files with recordings of species that are acoustically similar and can occur sympatrically (adapted from Loeb and others, 2015). Also included are labels for files without bat recordings (NOTBAT) and for files that contain a bat pulse, but no grouping or user-defined category applies. While this is not an exhaustive list, we recommend you try to use these labels for consistency, but document any additional user-defined categories you use and submit to the North American Bat Monitoring Program (NABat). For consistency, always place the species names making up a couplet label in alphabetical order 9
5. Example stationary GPS Locations for running Bat2012 in the above data structure 20
6. Example sunset and sunrise times for running Bat2012 in the above data structure 20

Conversion Factors

U.S. customary units to International System of Units

Multiply	By	To obtain
	Length	
mile (mi)	1.609	kilometer (km)
mile, nautical (nmi)	1.852	kilometer (km)
yard (yd)	0.9144	meter (m)

International System of Units to U.S. customary units

Multiply	By	To obtain
	Length	
kilometer (km)	0.6214	mile (mi)

Abbreviations

Auto ID	automated species identification
BCID	Bat Call Identification (software)
FFT	Fast Fourier transform
FS	Full spectrum recording format
GPS	Global Positioning System
GRTS	Generalized Random-Tessellation Stratified design
GUANO	Grand Unified Acoustic Notation Ontology, a universal, extensible, open metadata format for acoustic files
KSPro	Kaleidoscope Pro (software)
ms	millisecond (1 ms = 0.001 seconds)
NABat	North American Bat Monitoring Program
USDA	U.S. Department of Agriculture
USGS	U.S. Geological Survey
WAV	Waveform audio-file format, standard for storing audio bit-stream on personal computers
ZC	Zero-cross audio file format and recording format

Guide to Processing Bat Acoustic Data for the North American Bat Monitoring Program (NABat)

By Brian Reichert,[1] Cori Lausen,[2] Susan Loeb,[3] Ted Weller,[3] Ryan Allen,[4] Eric Britzke,[5] Tara Hohoff,[6] Jeremy Siemers,[7] Braden Burkholder,[8] Carl Herzog,[9] and Michelle Verant[10]

Introduction

The North American Bat Monitoring Program (NABat) is a multi-national, multiagency coordinated monitoring program designed to assess the status and trends of North American bats at local, state, and range-wide scales. NABat monitoring efforts focus on the 47 species of bats shared by Canada, the United States, and Mexico. NABat is composed of a network of partners including local, State, Federal, and provincial agencies, Tribes, non-governmental organizations, and volunteers collecting bat survey data and invested in bat conservation. Information from NABat can be used to inform land management and conservation decisionmaking.

The success of NABat is predicated on making reliable inferences about bat distributions and their relative abundance from data collected and processed using standardized techniques and protocols in a consistent manner over space and time. In 2015, "A Plan for the North American Bat Monitoring Program (NABat)" (Loeb and others, 2015) was developed, providing the foundation and overall direction needed for the initial implementation of NABat. Loeb and others (2015) represented the first step towards the establishment of standardized protocols, with the understanding that guidance would be refined and more specific protocols would be made available over time.

NABat relies in part on acoustic monitoring using stationary and mobile transect survey methodologies. Currently, however, acoustic data are being managed and processed using a variety of methods. These inconsistencies may introduce sources of undocumented, systematic bias that could limit the utility of these combined data for evaluating bat distributions and trends at broader scales. We believe there is a need for more specific guidance on detector settings, protocols for deploying acoustic detectors, and a standardized workflow for analyzing acoustic data. Standardized protocols and workflow can help to establish a common currency from which to improve the interpretation of acoustic data by reducing variation and uncertainty in how bat echolocation calls are collected, processed, and identified to species.

In 2017, the U.S. Geological Survey (USGS) Fort Collins Science Center hosted a workshop of bat acoustic experts with the goal of developing a suggested workflow to help standardize the analysis of acoustic data for NABat (NABat Acoustic Data Analysis Workflow Workshop, 2017). The guide that follows is a product of that workshop. While accurate and efficient analysis of bat acoustic data requires a minimum level of expertise and training, the suggested workflow is intended to help make this

[1]U.S. Geological Survey

[2]Wildlife Conservation Society Canada

[3]USDA Forest Service

[4]Bat Call Identification, Inc.

[5]U.S. Army Corps of Engineers

[6]Illinois Natural History Survey

[7]Colorado Natural Heritage Program

[8]Montana Natural Heritage Program

[9]New York State Department of Environmental Conservation

[10]National Park Service

process more repeatable and feasible for a wider pool of potential NABat partners, including those with limited resources and experience. To this end, the workflow was developed with the intention of minimizing the amount of time and effort required for processing bat acoustic data for NABat while following a "conservative" approach that reduces subjectivity and minimizes the potential for species misidentification.

The following provides general recommendations and specific workflows for the process of identifying bat species from acoustic files recorded using both stationary point and mobile transect acoustic monitoring protocols for NABat (Loeb and others, 2015). It focuses exclusively on post-processing of acoustic data. For recommendations on detector settings and detector deployment, download the "NABat Guide to Site Selection for Stationary Point Monitoring" and the "NABat Guide to Acoustic Detector Settings" available on the "Resources" page of the NABat website (https://nabatmonitoring.org/#/resources).

The described workflow includes data attribution (step 1), noise scrubbing (step 2), automated species identification (auto ID) (step 3), manual vetting (step 4), and submitting data to NABat (step 5, fig. 1). Some auto ID software automates the process and allows you to complete steps 1–3 at once. The workflow varies at step 2 and step 4 for stationary versus mobile transect monitoring because of the inherent differences between objectives (that is, species occupancy versus species relative abundance, respectively). For detailed workflows and tips for using specific software programs see chapters 1–5 and appendixes A and B of this report.

This document is NOT meant to serve in place of the user manual or official documentation provided by the software developers. It should only serve to help users follow NABat protocols while using the available software. It is strongly recommended that users are familiar with the software user's manual before using this document.

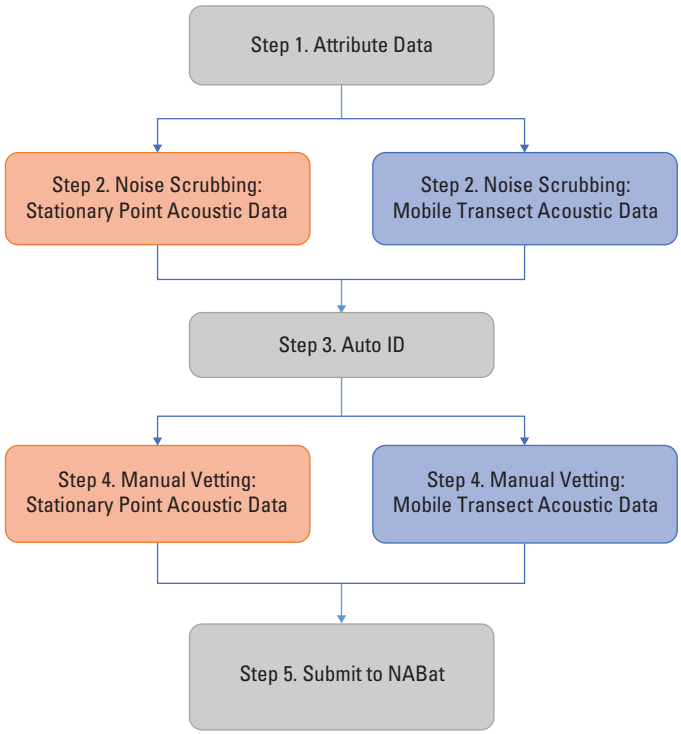


Figure 1. A general workflow for processing recorded acoustic files for the North American Bat Monitoring Program (NABat). Note: Workflow guidance varies between stationary point and mobile transect survey data at steps 2 and 4, because objectives differ between survey methodologies (site occupancy from stationary point acoustic data versus relative abundance of species from mobile transect data).

Step 1. Attribute Acoustic Files

Download cards or recorded acoustic files to a hard drive. Be sure to retain all status and log files associated with recordings (these are indispensable for trouble-shooting missing data and low data rates).

Naming Acoustic Files

Use **Grid Cell GRTS ID, Site Name, and timestamp** (using 24-hour clock notation) as a prefix for call file names (see table 1 for definitions). When put together, **Grid Cell GRTS ID** and **Site Name** provide a unique identifier for each detector deployment.

Examples

- 5867_NW_20160712_210932: This file was recorded in a NABat grid cell with GRTS ID 5867, at the NW site (or quadrant), on July 12, 2016 at 21 hours (or 9 pm) 9 minutes and 32 seconds.
- 5867_DT_20160712_214930: This file was recorded in a NABat grid cell with GRTS ID 5867, on a mobile driving transect (DT), on July 12, 2016 at 21 hours (or 9 pm) 49 minutes and 30 seconds.

To more easily compare surveys across grid cells and sites over time, maintain a consistent naming convention. For your reference, it can be helpful to develop an "authority file" of your naming conventions so (1) each code is unique and (2) additional description can be entered for each code to properly identify the site.

Depending on detector and software system used, this naming prefix can typically be pre-programmed prior to field recording, and (or) can be edited for entire batches of files during post-processing. For example, with recordings made with the Pettersson D500X ultrasound recording unit (Pettersson Elektronik AB, http://www.batsound.com/) **Grid Cell GRTS ID** and **Site Name** can be appended to timestamped files when files are scrubbed and attributed in SonoBat software v4.2.1 (Szewczak and Szewczak, 2017) using the D500x File Attributer utility or the DataWizard utility. Both utilities can be used on any waveform audio-file format (.wav) recordings, including situations where filenames cannot be altered within the detector or analysis software. For guidance on detector settings see the "NABat Guide to Acoustic Detector Settings," available for download here: https://nabatmonitoring.org/#/resources.

Assigning Metadata to Acoustic Files

It is important that each recorded acoustic file also be attributed with metadata (that is, information about the recorded file). To meet the data management requirements for NABat, **Grid Cell GRTS ID, Site Name, and Timestamp** must also be included as metadata for each file (see table 1 for definitions). It is also strongly recommended that the information in table 1 be added as metadata to individual files to help contextualize recordings. This information summarizes the recording situation and should also be entered in the associated downloadable NABat Project Database (available for download at https://nabatmonitoring.org/#/tools).

These metadata fields may be represented using the extensible Grand Unified Acoustic Notation Ontology (GUANO) metadata format as follows:

NABat|Grid Cell GRTS ID: 5867
NABat|Site Name: NW

Additional resources for attributing files with metadata will be downloadable at the NABat Project website (https://nabatmonitoring.org/#/resources). See chapters 1–5 of this report for more details on how to assign metadata using specific software.

Table 1. Required and recommended metadata fields for the North American Bat Monitoring Program (NABat) acoustic files. Metadata should be embedded in individual files. Fields with * should also be used for naming acoustic files.

[km, kilometer; WGS, World Geodetic System 1984]

Field	Required or recommended	Description/Instruction
*Timestamp	Required	Time and date when recording occurred.
*Grid Cell GRTS ID	Required	GRTS ID number of the NABat grid cell where the survey was conducted. This is also the NABat sampling priority of the grid cell based on the GRTS master sample, for example, lower GRTS ID = higher NABat sampling priority.
*Site Name	Required	A user-defined name (6-character limit) of the specific location (or point) where a detector was deployed within a single grid cell. Being consistent with site names from year to year allows for easier sorting and interpretation of the data. For example, if four stationary detectors were deployed, each within a 5 km × 5 km quadrant in the same 10 km × 10 km grid cell, Site Names used to describe the four deployment locations could be 'NW', 'NE', 'SW,' and 'SE.' Alternatively, Site Names can be based on a nearby town name, habitat type, property name, and so forth. If a mobile acoustic transect survey was conducted within the same grid, an additional unique Site Name, for example, 'DT' (mobile driving transect), would be applied.
NABat Project Name	Recommended	Your NABat Project Name is defined by the user when creating an NABat Project at https://nabatmonitoring.org/#/tools
NABat Project ID	Recommended	NABat Project ID is a unique project identifier provided to user when creating an NABat Project at https://nabatmonitoring.org/#/tools
Site coordinates	Recommended	Latitude and longitude (WGS 84).
Land unit code	Recommended	A user-defined 4-letter abbreviation describing your study area, region, park, state, or land unit. For example, if the survey is conducted in a park or refuge, use park or refuge codes (for example, YELL for Yellowstone National Park). If the survey is not carried out in a park or refuge, the user creates a 4-letter abbreviation for Land Unit Code based on the region or larger surrounding area (for example, SOCA for South Carolina, 3LMA for Three Lakes Wildlife Management Area). Note that multiple sites (Site Names) can exist within the same land unit code.
Contact information	Recommended	Name of person/entity that recorded the file.
Detector type	Recommended	Brand and model
Microphone type	Recommended	Brand and model
Microphone height	Recommended	Height (meters) of microphone above ground.
Weather proofing	Recommended	Indicate whether weather proofing was used on microphone (yes or no).
Distance to clutter	Recommended	Distance (meters) between microphone and nearest clutter (for example, vegetation, buildings, or other structure)
Type of clutter	Recommended	Nearest clutter type (for example, vegetation, buildings, or other structure).
Habitat type	Recommended	Broad habitat type surrounding microphone.
Unusual occurrences	Recommended	Indicate whether unusual occurrences took place during the recording session that may impact the interpretation of results for example, power to detector may have been low, time not adjusted for daylight savings time, recording was interrupted due to dead batteries, filled data card, microphone or cable damage, schedule programming error, late deployment, deployment varies due to non-standard microphone mounting, incorrect detector settings, and so forth.).
Activation start time	Recommended	Time when detector was activated to start recording. Note that this may be different than deployment start time.
Activation end time	Recommended	Time when detector was deactivated. Note that this may be different than deployment end time.

Step 2. Noise Scrubbing

Acoustic sampling for bats results in the recording of both bat echolocation calls and extraneous noise (that is, non-bat files). In some circumstances, files with extraneous noise can represent a large proportion of the recorded files. The goal of noise scrubbing is to identify and separate files with only extraneous noise from files with bat echolocation calls. Noise scrubbing reduces storage requirements and increases efficiency of the call identification process.

Multiple automated methods can be used to remove extraneous noise. At its core, the noise scrubbing process represents an inherent balancing act between removing non-bat sounds and low quality bat echolocation calls. An optimized noise scrubbing process will result in retention of recordings of bats potentially identifiable to species while retaining a trivial number of non-bat recordings. Achieving this balance will depend on the software employed, the parameters specified and the recording situation. For example, in areas with high levels of background noise, it may be necessary to remove a larger proportion of low-quality echolocation recordings in order to minimize the number of files that do not contain bat echolocation recordings.

Scrubbing Stationary versus Mobile Datasets

For NABat stationary acoustic monitoring, where the goal is to document species presence based on identification of high-quality echolocation recordings, noise scrubbing specifications should be more stringent to retain mostly high quality calls. Whereas for NABat mobile acoustic transects, where the goal is to document the relative abundance of each bat species, noise scrubbing should be more lenient, where parameters are set to retain all potential bat recordings.

In general, the software packages described here provide robust methods for separating bat echolocation calls from non-bat, extraneous noise and are easily customizable to be more stringent or lenient in the files that pass. However, the various methods for automated noise filtering differ. Some programs have a separate file scrubber used as a standalone step (for example, SonoBat [chapter 2.] and SCAN'R [not presented here]) while other software programs integrate file scrubbing into the process of auto ID (that is, automated species identification, see step. 3 below, for example), Bat Call Identification, (BCID, chapter 3 and EchoClass, (chapter 4), and still others have it optionally as an integrated or standalone step (for example, Kaleidoscope, chapter 1). For zero-cross (ZC) files, scrubbing can also be done in AnaLookW v4.2g (Titley Scientific, 2016) (chapter 5.) using a filter prior to being analyzed in one of the auto ID programs. When starting with a new program, it may be helpful to review samples of stationary and mobile acoustic datasets post scrubbing to determine appropriate settings.

Step 3. Auto ID

The objective of using auto ID, or automated species identification, is to rapidly determine a species classification for large amounts of data in order to determine probable presence for the species of interest. Auto ID includes additional filtering to select pulses that are suitable for identification and then classify pulses and files. Classification methods vary among software programs but all rely on statistical comparisons of unknown pulses to classifiers or algorithms developed from a known call library of selected species. A critical part of this process is that the user must select the correct set of species to be used in this classification process. This is an important step as the user needs to make sure that all of the possible species in the state or region are included in the species set (including accounting for potential range expansions), yet excluding species that are unlikely to occur. Note that some software classifiers may have limited species support. Resources for determining potential species lists for each NABat grid cell are made available at https://api.sciencebase.gov/nabatmonitoring-reports/adHocCreator?catalogId=nabat&reportId=projectReview&columns=%2Fprojects@prjctname,prjctlead,owningorg,grtscellid,grts_point,batspp, and via the "Map my Project" feature on on an NABat partner's project home page https://nabatmonitoring.org/#/home/welcome.

Software programs for auto ID have varying levels of customization for species classification, including the degree of similarity required between known (underlying reference library) and unknown recordings for a species-level identification to be made by the program. In general, a more conservative (which hopefully leads to an increase in accuracy) level of classification is desired. These specifics are included in chapters 1–5. Some programs embed species classification labels as metadata into the files of bat recordings (for example, SonoBat, Kaleidoscope Pro, BCID, and AnaLookW). Metadata formats are evolving; currently not all metadata written to a file by one program will be read by another program. Some software allows you to access and view files with auto ID metadata from within the software (SonoBat and Kaleidoscope Pro) while others require an additional software viewer be used if recordings are to be visualized (for example, AnaLookW can be used to view files that have been processed with BCID, EchoClass, or Kaleidoscope Pro).

Step 4. Manual Vetting

Auto ID software programs are limited by various issues in the analysis process that can lead to inaccurate species classifications. Generally, programs are unable to account for deviations from expected call structure due to atypical bat behavior, approach calls, cluttered environments, presence of social calls, recorded call quality issues, multiple individual bats and (or) species in a recording, trends across a sequence of call pulses, and inherent overlap that exists in call metrics, pulse shape and (or) sequence pattern between some species. Both automated classification programs and manual vetting can also be limited by their underlying libraries of known calls. When there are biases in the reference library (for example, proportion of certain pulse shapes, under-representation of a particular species, and misidentification of recorded species), identification of unknown calls can also be inaccurate.

The goal of manual vetting acoustic files for NABat is to eliminate species misclassifications resulting from the automated identification process, because species misclassifications can lead to false-positive errors (that is, documenting that a species was present in a grid cell, when it was not). To meet this goal, manual vetting should focus on ensuring that auto ID classifiers have not misclassified files based on poor recording quality, non-search phase components of calls, recordings with multiple bats that may cause one or more bats to vary their echolocation outside the known norms for the species, or echolocation calls from species other than the species suggested from the auto ID. Manual vetting is a qualitative process that requires users with extensive experience.

General Recommendations:

- Accept the fact that not all call sequences can be, or should be, definitively identified to a species using diagnostic characteristics measurable in sound viewing/analysis software.
- View the recording in "real-time" (most viewers will default to showing recordings in "compressed view") to help visualize inter-pulse intervals (the relatively long periods of silence in between call pulses). Ensure that there is a consistent inter-pulse interval indicating that the bat was performing a typical "search-phase" call type and not performing a behavior such as an inspection or acquisition ("approach-phase" call type). Approach-phase behaviors result in call pulses with parameters that differ from search phase calls such as higher frequencies, broader bandwidth, and steeper slopes. Approach-phase pulses often show a high degree of overlap among species. To examine pulse shape parameters view in "compressed time."
- Limit the potential species list for a particular acoustic survey site by the potential geographic ranges of species; if a species is less likely to be present and does not have large overlap in call characteristics with more common species in the area, include it in the analysis. Otherwise, if a species is unlikely and has overlapping call characteristics with other species in the area, it is likely best to not include this species in the potential species list, until there is more evidence to justify looking for it acoustically.
- Review a single species at a time in order to be consistent and efficient in your manual review. This can be achieved in some programs (for example, Kaleidoscope Pro, SonoBat, BCID, and AnaLookW) by sorting species-labelled files (metadata embedded in files following automated ID) and then viewing files in order by species. If sorting of files is not available within the automated ID software, then an associated viewer software can be used (for example, BCID engages AnaLookW as a viewer following auto ID), or a results output file can simply be viewed in a tabular program or database (for example, Microsoft Excel file) where files can be sorted by species, and then viewed in a separate viewer (for example, ZC recordings analyzed in EchoClass can be manually viewed in AnaLookW).
- Review the entire sequence. Look for long call sequences, for example, those with multiple consecutive pulses in a sequence, especially pulses that have consistent inter-pulse intervals and consistent shapes, slopes, and bandwidths. The more calls with definitive features, the more confident the identification.
- You may want to examine recordings immediately before or after a file to determine if they provide any context in which to understand a particular pulse pattern (for example, if a bat has circled within range of the microphone, generating multiple files, a sequence of varying pulse shapes may better elucidate the species identification).
- Assess recordings that have a good "signal to noise" ratio (identified by crisp, clean, non-saturated oscillograms in full-spectrum recordings) and without non-bat noise, echoes, or distortions in the call-pulses that can skew the qualitative or quantitative measures of the individual call pulses.
- If available, use established regional keys or rulesets for acoustic species identification (for example, see appendix A. *Case Study: Using Rule Sets to Process Acoustic Data for USDA Forest Service Lands in Northern California*).

- Files that are manually-vetted should be assigned one of the following: a standard 4 or 6-letter species label (table 3), species couplet (for example, MYCAMYYU, LANOTABR), frequency class (HighF, LowF), NoID, or NOTBAT (see table 4 for species couplet, group, and frequency class labels). Whether you choose 4- or 6-letter species labels, be consistent and avoid mixing labels for a single species. If it is potentially ambiguous as to whether an identification label in file metadata is from an auto ID or manual process, a small letter prefix is an accepted method to provide clarity. (For example, mANPA for a manually verified ANPA file to differentiate from an ANPA species label derived through other means that may also be listed in the metadata [for example filter or auto ID]; see AnalookW workflow chapter 5.). If prefixes or suffixes are used to denote different sources of identification labels, this should be clearly stated in the data entry into NABat.

Table 2. Suggested codes for acoustic detectors. Information provided by J. Tyburec (Bat Survey Solutions, LLC).

[Binary Acoustic Technology LLC, http://binaryacoustictech.com/; Pettersson Elektronik AB, http://batsound.com/; Titley Scientific, 2016; and Wildlife Acoustics, Inc., https://www.wildlifeacoustics.com/]

Detector	Detector—Make/model/mic .type	Code
BINARY ACOUSTIC	AR125 recording to PC/Mac using Spect'r	A125
BINARY ACOUSTIC	AR125-FG recording to PC/Mac using Spect'r	ARFG
BINARY ACOUSTIC	AR180 recording to PC/Mac using Spect'r	A180
BINARY ACOUSTIC	iFR-V recording to on-board media	iFRv
BINARY ACOUSTIC	AcroBat Mic Array	ABAR
PETTERSSON	D1000x with external, cabled Mic	D1Kp
PETTERSSON	D1000x with on-board Mic (for example, active recording/voucher)	D1Ka
PETTERSSON	D240x recording direct to PC/Mac	D240
PETTERSSON	D240x recording to iRiver/Zoom or other Digital Recorder	D24x
PETTERSSON	D500x with external, cabled Mic and cone off	D50o
PETTERSSON	D500x with external, cabled Mic and cone on	D50d
PETTERSSON	D500x with on-board Mic cone on (for example, active recording/voucher)	D500
PETTERSSON	M500 (USB mic) cone off; recording to PC/Mac/Tablet	M50o
PETTERSSON	M500 (USB mic) cone on; recording to PC/Mac/Tablet	M50d
TITLEY	AnaBat Express with external, cabled mic	ABex
TITLEY	AnaBat Express with on-board mic	ABeo
TITLEY	AnaBat SD1 with LoF mic	SD1l
TITLEY	AnaBat SD1 with standard mic	SD1s
TITLEY	AnaBat SD2 with LoF mic	SD2l
TITLEY	AnaBat SD2 with standard mic	SD1s
TITLEY	AnaBat Walkabout with directional accessory OFF	ABWo
TITLEY	AnaBat Walkabout with directional accessory ON	ABWd
WILDLIFE ACOUSTICS	EM-Touch with external, cabled EchoMeter Mic	EMTx
WILDLIFE ACOUSTICS	EM-Touch with on-board EchoMeter Mic	EMTo
WILDLIFE ACOUSTICS	EM-Touch2, regardless of extension cabling	EMT2
WILDLIFE ACOUSTICS	EM-TouchPRO, regardless of extension cabling	EMTP
WILDLIFE ACOUSTICS	EM3/EM3+ with on-board mic	EM3o
WILDLIFE ACOUSTICS	EM3/EM3+ with external mic	EM3x
WILDLIFE ACOUSTICS	SM2Bat-192 with SMX-US Mic	SM2s
WILDLIFE ACOUSTICS	SM2Bat-384 with SMX-US Mic	SM2s
WILDLIFE ACOUSTICS	SM2Bat+ with SMX-US Mic	SM2s
WILDLIFE ACOUSTICS	SM2Bat+ with SMX-UT Mic	SM2t
WILDLIFE ACOUSTICS	SM2Bat+ with SMX-U1 Mic	SM2u
WILDLIFE ACOUSTICS	SM3Bat with SMX-UT Mic	SM3t
WILDLIFE ACOUSTICS	SM4BAT-FS with SMM-U1 Mic	SM4u

Table 3. Species labels to be used when labeling acoustic files and submitting data to the North American Bat Monitoring Program (NABat) modified from Loeb and others (2015).

[Kaleidoscope Pro uses 6-letter labels. Regardless of whether you choose 4- or 6-letter labels, be consistent and avoid mixing labels for a single species. Adding a prefix to lowercased letters on species codes helps to differentiate manually vetted labels, m, from auto ID labels (for example, "mLANO" for label assigned to a file identified as Lasionycteris noctivagans through manual vetting)]

Common name	Scientific name	4-letter Label	6-letter Label
Pallid bat	*Antrozous pallidus*	ANPA	ANTPAL
Jamaican fruit-eating bat	*Artibeus jamaicensis*	ARJA	ARTJAM
Mexican long-tongued bat	*Choeronycteris mexicana*	CHME	CHOMEX
Rafinesque's big-eared bat	*Corynorhinus rafinesquii*	CORA	CORRAF
Townsend's big-eared bat	*Corynorhinus townsendii*	COTO	CORTO
Big brown bat	*Eptesicus fuscus*	EPFU	EPTFUS
Spotted bat	*Euderma maculatum*	EUMA	EUDMAC
Florida bonneted bat	*Eumops floridanus*	EUFL	EUMFLO
Greater bonneted bat	*Eumops perotis*	EUPE	EUMPER
Underwood's bonneted bat	*Eumops underwoodii*	EUUN	EUMUND
Allen's big-eared bat	*Idionycteris phyllotis*	IDPH	IDIPHY
Silver-haired bat	*Lasionycteris noctivagans*	LANO	LASNOC
Western red bat	*Lasiurus blossevillii*	LABL	LASBLO
Eastern red bat	*Lasiurus borealis*	LABO	LASBOR
Hoary bat	*Lasiurus cinereus*	LACI	LASCIN
Southern yellow bat	*Lasiurus ega*	LAEG	LASEGA
Northern yellow bat	*Lasiurus intermedius*	LAIN	LASINT
Seminole bat	*Lasiurus seminolus*	LASE	LASSEM
Western yellow bat	*Lasiurus xanthinus*	LAXA	LASXAN
Mexican long-nosed bat	*Leptonycteris nivalis*	LENI	LEPNIV
Lesser long-nosed bat	*Leptonycteris yerbabuenae*	LEYE	LEPYER
California leaf-nosed bat	*Macrotus californicus*	MACA	MACCAL
Pallas' mastiff bat	*Molossus molossus*	MOMO	MOLMOL
Peter's ghost-faced bat	*Mormoops megalophylla*	MOME	MORMEG
Southwestern myotis	*Myotis auriculus*	MYAR	MYOAUR
Southeastern myotis	*Myotis austroriparius*	MYAU	MYOAUS
California myotis	*Myotis californicus*	MYCA	MYOCAL
Western small-footed myotis	*Myotis ciliolabrum*	MYCI	MYOCIL
Long-eared myotis	*Myotis evotis*	MYEV	MYOEVO
Gray myotis	*Myotis grisescens*	MYGR	MYOGRI
Keen's myotis	*Myotis keenii*	MYKE	MYOKEE
Eastern small-footed myotis	*Myotis leibii*	MYLE	MYOLEI
Little brown myotis	*Myotis lucifugus*	MYLU	MYOLUC
Arizona myotis	*Myotis occultus*	MYOC	MYOOCC
Northern myotis	*Myotis septentrionalis*	MYSE	MYOSEP
Indiana myotis	*Myotis sodalis*	MYSO	MYOSOD
Fringed myotis	*Myotis thysanodes*	MYTH	MYOTHY
Cave myotis	*Myotis velifer*	MYVE	MYOVEL
Long-legged myotis	*Myotis volans*	MYVO	MYOVOL
Yuma myotis	*Myotis yumanensis*	MYYU	MYOYUM
Evening bat	*Nycticeius humeralis*	NYHU	NYCHUM
Pocketed free-tailed bat	*Nyctinomops femorosaccus*	NYFE	NYCFEM
Big free-tailed bat	*Nyctinomops macrotis*	NYMA	NYCMAC
Canyon bat	*Parastrellus hesperus*	PAHE	PARHES
Tri-colored bat	*Perimyotis subflavus*	PESU	PERSUB
Brazilian free-tailed bat	*Tadarida brasiliensis*	TABR	TADBRA

Table 4. Species couplet, group, and frequency class labels recommended for labelling files with recordings of species that are acoustically similar and can occur sympatrically (adapted from Loeb and others, 2015). Also included are labels for files without bat recordings (NOTBAT) and for files that contain a bat pulse, but no grouping or user-defined category applies. While this is not an exhaustive list, we recommend you try to use these labels for consistency, but document any additional user-defined categories you use and submit to the North American Bat Monitoring Program (NABat). For consistency, always place the species names making up a couplet label in alphabetical order.

Common name	Scientific name	Label
Pallid bat, Big brown bat	*Antrozous pallidus, Eptesicus fuscus*	ANPAEPFU
Big brown bat, Silver-haired bat	*Eptesicus fuscus, Lasionycteris noctivagans*	EPFULANO
Western red bat, Canyon bat	*Lasiurus blossevillii, Parastrellus hesperus*	LABLPAHE
Eastern red bat, Tri-colored bat	*Lasiurus borealis, Perimyotis subflavus*	LABOPESU
Eastern red bat, Little brown bat	*Lasiurus borealis, Myotis lucifugus*	LABOMYLU
Eastern red bat, Seminole bat	*Lasiurus borealis, Lasiurus seminolus*	LABOLASE
Silver-haired bat, Mexican free-tailed bat	*Lasiurus noctivagans, Tadarida brasiliensis*	LANOTABR
Hoary bat, Mexican free-tailed bat	*Lasiurus cinereus, Tadarida brasiliensis*	LACITABR
Long-eared or Keen's myotis, and Northern bat	*Myotis evotis, Myotis keenii, Myotis septentrionalis*	LEMY
California bat, Yuma bat	*Myotis californicus, Myotis yumanensis*	MYCAMYYU
Not a bat		NOTBAT
Bat, but no grouping or user-defined category applies		NoID
	User-defined categories	
User-defined frequency class	*Various species with pulses that have a minimum frequency of approximately 15–25 kHz.*	25k
User-defined frequency class	*Various species with pulses that have a minimum frequency in the range of 35–45 kHz.*	40k
User-defined frequency class	*Various species of Myotis with pulses that have a minimum frequency in the range of 35–40 kHz.*	40kMyo
User-defined frequency class	*Various species with pulses having a minimum frequency lower than ~30 kHz.*	LowF
User-defined frequency class	*Various species with pulses having a minimum frequency higher than ~30 kHz.*	HighF

For Stationary Point Acoustic Data

- Because the goal is to determine site occupancy for each species, examine and manually ID at least one high quality, confidently identified recording per species per detector per night (that is, a voucher file) that was identified using an acoustic ID program. Where possible, select noise-free, long duration call sequences that can be confidently distinguished from conspecifics.
- High quality recordings generally result from a loud signal as a bat approaches closer to a microphone. Some potential indicators of higher quality recordings for some species (for example, *Myotis* spp.) include high bandwidth calls. High bandwidth indicates that the bat has approached the microphone close enough for high frequencies to be recorded. Close approach of bats can also be assumed in the presence of harmonics (in full-spectrum recordings), but note that some calls may be oversaturated if the bat approached the microphone too closely (as seen in clipped, or "squared off," oscillograms and the presence of aliasing, instead of true harmonics); sequences with oversaturated pulses should not be considered in the analysis process.

- When corroborating automated species identification, focus your review on low clutter, search phase calls, and take precautions to avoid using approach phase calls, feeding buzzes, and social calls for most species.
  - High quality recordings for auto ID have consistent inter-pulse intervals indicative of typical search-phase behavior. Be careful not to include approach phase calls when a bat is responding to an object in its flight path, as these calls take on a different shape that is generally less desirable for differentiating species, and can confound auto ID.
  - Recordings should have been made in relatively uncluttered environments, however, low clutter calls can be difficult to obtain. For example, even when detectors are placed far from buildings, dense vegetation, or other hard surfaces bats often produce high clutter sequences when approaching the ground or in close proximity to other bats or while checking out the microphone if it is a novel item of interest on the landscape.
  - Look at the entire sequence in both "compressed" and "real time" views. This will help you see the whole picture (for example, multiple bats and or species in the recording or non-search phase calls, indicating the types of convergent approach-phase and acquisition-phase call types that all bats are capable of producing).
  - Adjust filters, thresholds, and other viewer settings as needed.
  - If possible, play the recording in real-time or time-expansion to listen for a consistent cadence between call pulses.
  - Examining files within a short period of time (for example less than 2 seconds) immediately prior and following the file of interest, may add context to better identify the species.
- To expedite review, focus manual vetting efforts on call sequences that were assigned an automated species identification. These files are more likely to contain high quality call sequences, unlike the files that did not receive an automated species identification. Spreadsheet outputs can be sorted in order of auto ID confidence by looking at the number of call pulses that contributed to the identification. In this way the longest call sequences and decisions most likely to be correct are presented first.
- Review auto ID files that have been assigned to a given species category. Confirm species identification for a minimum of one file per species per night (voucher file).
  - For example if an auto ID assigns a file a label of Species *X* because all 40 pulses in the sequence are assigned to that species, then this would be your voucher file for that species that night. If it is assigned to Species *X* but only 20 of 40 pulses matched to this species label, and the other 20 assigned to Species *Y* for which you think the sequence could equally be either species due to a lack of any diagnostic features, then you might consider a species label *XY*. Then continue to review other files that were strongly assigned the Species *X* label until one is found that represents a good voucher file. If a species' identification cannot be manually confirmed by examining the files with the highest auto ID confidence scores, you may also want to examine high quality recordings that were not assigned a species-specific auto ID label (for example, "NoID"). This is because sometimes the presence of more than one bat in a recording can confound auto-identification, despite a high quality recording.

For Mobile Transect Acoustic Data

- The goal for collecting mobile transect acoustic data for NABat is to evaluate relative species abundance. Therefore, manually vet *all* files, focusing first on the files that were assigned an automated species identification, as these are likely to be of higher quality. Sort the files by species and use the same criteria as described above for stationary point acoustic datasets.
- For files that did not receive an auto ID (that is, file-level classification results were left blank, or labeled HighF, LowF or NoID), if possible, apply filters or a sort function to enable like recordings to be viewed in series. For example, some auto ID software provides a suggestion of species pulse shapes that may be present in a file even if an auto ID could not be achieved. Alternatively, use the general call shape and characteristic frequency to sort "No ID" files by phonic group so that you have fewer species to consider at one time in the manual vetting process. For example, all low frequency bats may be viewed in series before all high frequency bats.
- When appropriate, assign a label to "No ID" files, preferentially using couplets, or categories that contain only two species (for example, LABOMYLU for pulses that have minimum frequencies ~40 kilohertz (kHz) but undulate up and down to some extent); recordings that could be of more than two possible species will receive a generic group category such as "Low Frequency bat" (for example, LowF or 25k Hz).

- Because the goal of transects is to determine relative species abundance, it is also important to identify recordings that contain more than one individual bat and (or) species. Be sure to assign multiple labels as appropriate.

The Manual Vetting Process

1. Assess call sequence quality.

There are cases when auto ID is questionable due to reduced call quality. The presence of the following quality issues likely impact the effectiveness of auto ID software. Downgrade the species identification to a species group if one or more of the following issues exist.

- Excessive noise.
- Classifier chose inappropriate calls (pulses) for classification (for example social calls, quiet/out of range calls), included noise as part, or in place of a call, or used non-search phase or high clutter calls.
- Identification is confounded by multiple species or individuals present in the call sequence.
- Insufficient number of pulses present for confident identification.
- Destructive interference caused by echoes.

2. Examine call sequence and call characteristics.

If the auto ID is correct, the basic measures of the calls and sequence (for example characteristic frequency, duration, slopes, call intervals, and so forth) should be within the typical ranges observed for that species. Sometimes these call characteristics are measured incorrectly by the auto ID software, leading to assignment of a pulse sequence of an unlikely species. When the call characteristics are not within the range typically observed for the species identified, downgrade the species identification to a species group.

3. Look for evidence of alternative species identification.

Many call sequences have characteristics that fall within the ranges of multiple species. Depending on the potential species present, look for any evidence that the recording is actually of another species. Appendix C provides a "Bat Auto ID Species Confusion Matrix" as a quick look-up guide indicating which species are commonly confused by auto ID software. If there is strong evidence of another species, or a high degree of ambiguity (for example, 50 percent of the pulses match Species *X*, and 50 percent match a highly similar Species *Y*), downgrade the species identification from the auto ID to a species group "*XY*" (for example, EPFULANO). If there is no evidence of another species, and the recording is of a high-quality bat pass, accept the auto ID as correct for that file. However, auto ID software is currently evolving, and there are known cases of areas where one species might repeatedly be called another species. There are many reasons why this might be the case, such as regional differences in some species echolocation repertoires that may not be reflected in underlying libraries or unreliable known calls in a program's library. If the expert analyst can provide suitable justification for changing a species identification from auto ID to another species label, then such justification can be provided in an appended note, such as in the file metadata.

4. Look for evidence of multiple individuals in the file.

Depending on how the detector was deployed in relation to surrounding habitat features, flight paths, and so forth, passive recordings (from stationary point surveys) can include multiple individuals in a file. This is especially true if the microphone is located near a potential roost. Sometimes you can identify new roosts, or night roosts, acoustically by such recordings, so these instances are important to document. For example, in a passive dataset, a note in the metadata might be used to indicate there are many bats, or a suspected/known roost, and so forth. This should also be included in the submission of covariate information to NABat.

If multiple bats occur in a single recording from a mobile driving transect, it is important to tally the number of individuals. This is best done by including two labels for each file. Using software that enables metadata to be stored within the file, there should be one label per individual, even if the label is the same. For example, in Kaleidoscope, AnaLookW, or SonoBat the file "5867_NW_20160712_210932" containing two bats, each identified as big brown bat or silver-haired bat, would have the following species labels: EPFULANO,EPFULANO, where a the second species label is manually entered and preceded by a comma with no spaces. Note that some software packages tally labels for you (for example, "Countlabels" tool in AnaLookW would provide a tally and show "2 EPFULANO" for the file 5867_NW_20160712_210932 in the above example), however, this is not the desired format for NABat data entry.

Step 5. Submit to NABat

The following steps are required for submitting acoustic monitoring data to NABat.

1. **Request an Account** on the NABat website by visiting https://nabatmonitoring.org/#/home/welcome and clicking on "Request an Account". Once you have created a user profile and password you, must log in to gain access to your home page "My NABat Projects" with a list of your NABat projects.

2. **Create a New NABat Project** by visiting https://nabatmonitoring.org/#/home/welcome, logging in, and clicking on "My NABat Projects."

   A. A list of current projects will appear (for new users this list will be blank unless another Project Leader has added you to an existing NABat Project.) Click "Add New Project."

   B. Enter required project information including Project Name, Owning Organization, and Project Description. Identify your role in the project. If you would like to allow other existing NABat users (that is, those with registered accounts on https://nabatmonitoring.org/#/home/welcome) to access your NABat, click "Add User" and identify their role in the project.

   C. If all or some of your projects follow the NABat priority sample design (that is, selecting grid cells following GRTS order), click "Cell Selection Tool" and follow the tool instructions to identify your NABat grid cells. Remember to provide reasons for not selecting potential grid cells in your study area or jurisdiction.

   D. If your survey locations (for example, caves, mines, stationary acoustic point locations, mobile acoustic routes) were established prior to NABat (legacy data) or selected without consideration of the NABat sample design (found data), answer 'yes' to this sample design question and enter grid cell numbers manually. Also, indicate which survey types were conducted in each of the grid cells.

   E. Click "Save Project."

3. **View Project page** by clicking on the name of your project on your home page (login is required).

4. **Download the NABat Project Database** (Microsoft Access, .accdb file) specific to your project by clicking "Download NABat Project Database". It is important that you DO NOT ALTER THE NAME OF THIS FILE. Each NABat Project is assigned a unique Project Key (see example above), which is automatically generated upon project creation and used in the naming of your NABat Project Database file. Altering the file name of your NABat Project Database will make it difficult to ensure that your database is linked to your project upon submission. The NABat Project Database can be used to enter data for all five NABat survey types (that is, Stationary Point Acoustic Surveys, Mobile Transect Acoustic Surveys, Internal Winter Hibernaculum Surveys, Internal Summer Maternity Colony Surveys, and Emergence Count Surveys). For acoustic surveys, users will need to provide the names and versions of software used for species identification. For directions on how to use the NABat Project Database download the "NABat Project Database User Manual*"* from https://nabatmonitoring.org/#/tools. Currently, using the NABat Project Database is recommended for submitting your data to NABat, however, additional pathways for data submission will become available on your Project page.

5. **Submit data to NABat** by clicking on "Choose File" on your project page. Once acoustic files have been processed (that is, bat echolocation data have been identified to species following guidance in this document) and data are entered into your **NABat Project Database**, upload the following three items.

   A. **Summary table of acoustic files:** This table is provided as output by auto ID software (.xlsx or .csv file formats are acceptable) and should include a column indicating which acoustic files were manually-vetted (see guidance below for details).

   B. **NABat Project Database**

   C. **Acoustic files** (.wav, .wac, and (or) .zc file formats). See step 1 (Attribute Acoustic Files section of this document) for guidance on naming your acoustic files. Note that the ability to upload acoustic files will depend on the speed of your internet connection and may not be possible if your connections is slow. For this reason, please prioritize submission of "voucher files" (that is, acoustic files that have been manually vetted). For stationary point acoustic data, a voucher file is a single file providing evidence that a species was present at a single detector, within a single night. For mobile transect acoustic data, every file is considered a voucher and should be uploaded. If uploading acoustic files via the internet is not possible, contact Brian Reichert at breichert@usgs.gov for mailing instructions.

Chapter 1. Processing Acoustic Data Using Kaleidoscope Pro Version 4.3.2

By Cori Lausen[2] and Susan Loeb[3]

[2]Wildlife Conservation Society Canada

[3]USDA Forest Service

Step 1. Attribute Files

- Ensure that minimum attribute data are included for each file. (See step 1, Attribute Acoustic Files that follows the Introduction of this report for more detail on attribution data).
- If input is in Anabat ZC files (Titley Scientific v.4.2g, 2016), attribute files with metadata in AnaLookW using the Global Header Change (see AnaLookW Workflow), or in Batch Tab of Kaleidoscope Pro (KSPro) (see the next step).
- If input is full spectrum (FS) files (for example, .wav file format), attribute files with metadata in the Batch Tab (by selecting "Prepend notes to output medadata") in the dropdown menu on the left side of the tab (that is, "INPUTS" section). **Note:** Metadata formats are currently evolving toward a unified system called "GUANO" which will be readable across all software programs that recognize GUANO metadata (for example, SonoBat). The process for entering metadata into GUANO will change in future versions of KSPro. In its current version (version 4.3.2), enter metadata in GUANO format by typing the following information into the end of the notes field.

GUANO|Version: 1.0
NABat|Grid Cell GRTS ID: 54405
NABat|Site Name: SW

These metadata values must each be on separate lines, and the fieldnames are spelling and case sensitive. In the example above, 54405 is the GRTS ID of your grid cell, and the detector was deployed in the NW quadrant of the grid cell.
Continue through steps 2 and 3 before processing files.

Steps 2 and 3. Noise Scrubbing and Auto ID

1. On Batch Tab, enable noise filtering—either delete or move to noise folder
2. On Batch Tab select input and output directories for each of the INPUT and OUTPUT sections. To do this use the "Browse" buttons. The OUTPUT folder must not be embedded within the INPUT folder or you will receive an error message.
3. Choose output file type. Click either WAV files or ZC files as appropriate.
    - If input is WAV files and you plan to review files in Kaleidoscope or other full spectrum recording format (FS) viewer, click WAV as the output file type.
    - If input is WAV file and you plan to review in AnaLookW or further analyze in Echoclass or BCID, click ZC as the output file type.
    - If input is ZC file, click ZC as the output file type.
    - Be sure to check off the box to include subdirectories if the input data consists of subfolders.
    - Optional (but highly recommended if your files are not already sorted into "night" folders): Under the Create Subdirectories option choose "Nightly" which will sort the new files into nightly subfolders (based on "bat nights" with the date not changing at midnight). *Ignore this step if your files are already in "night" folders.*
4. Go to Signal Parameters Tab.
    - Minimum signal of interest should be appropriate for the expected bat community.

- Call duration should be one to 50 milliseconds (ms) for mobile transects and 2–50 ms for stationary points. This will ensure that all potential bat recordings are included in the mobile transect dataset (some noise files that do not contain bats will also be included) and will potentially exclude a few bat recordings in stationary datasets but will ensure more high-quality recordings for species identification. This is to ensure no bat files are missed in the measuring of relative abundance in the mobile transect dataset, even though it is anticipated that more of the auto-identified files will remain as NoID or changed in manual vetting, such as downgrading to a species group or frequency class.
- Minimum number of pulses should be three.
- Leave the maximum inter-syllable gap at its default value of 500 ms. This applies only to the cluster analysis process, which is not part of this workflow.
- If the workflow remains within Kaleidoscope-Pro, check the Enhanced Signaling Processing box; otherwise do not check this box.

5. Go to Auto ID for Bats tab.
   - Select appropriate species for your area. Make sure to consider species that may be rare or slightly out of range.
   - Select “More Accurate-Conservative” option
6. When all settings are entered, press “Process Files” button.

Step 4. Manual Vetting

1. In the results window, sort by Folder, Matching, Date, and then by Auto ID. If some of these column names do not appear for you, select “File” => “Edit Columns” to show them. Review “Match Ratio” to confirm that this is a potentially good file, (that is, the more calls in a sequence that match the auto ID species, the better).
2. Look at the potentially good files (high matching values) to confirm they are the species identified. You may need to adjust the viewer settings, including viewing of ZC or FS pulses, FFT settings, brightness, and contrast, to best match your recordings.
3. If your manual verification agrees with the Auto ID, put the species name in the “Identification” field (this will be the same as the Auto ID, just mouse click on the Auto ID button below the “Identification” field). This will indicate to NABat that the file has been examined and been verified. There is no need to look at more than a few files if there is agreement that this species was present at a detector during the night in question.
4. If your manual verification does not agree with the Auto ID, put the revised species group label (or species if justification can be provided) in the Identification field.
5. Remember that you can enter more than one species label into the Identification field. If you see another bat species present, you can add this species label in by manually typing the label after a comma (do not use any spaces). For example, MYOLUC,LASCIN. (This process is automated by holding the control key during labelling in later KSPro versions.)
6. Save your results file.

Step 5. Submit to NABat

See the Introduction of this report for the steps for submitting data to NABat. To easily identify voucher files that should be prioritized for upload through your NABat Project page using KSPro, sort, select and save manually-vetted files.

Chapter 2. Processing Full Spectrum Acoustic Data Using SonoBat 4.2.1

By Ted Weller[3]

[3]USDA Forest Service

Step 1. Attribute Files Using SonoBat Attributer

Ensure that minimum attribute data are included for each file. (See step 1 in the Introduction of this report for more detail on attribution data). SonoBat Batch Attributor attributes recordings and (optional) simultaneously scrubs (identifies and removes) noise files.

Step 2. Noise Scrubbing using SonoBat Scrubber and Attributer

Follow these steps to remove non-bat files from dataset.

1. Output to a new directory (for example, SiteDate_scrubbed) if retention of files identified as non-bats is desired.
2. Select “Medium Scrub” option.
3. For sites with low frequency bats (less than [<]20 kHz), choose to include signals from 5–20 kHz. Low frequency bats can include *Euderma maculatum, Eumops* spp., *Lasiurus cinereus* and *Nyctinomops* spp. Generally, consider including all 5–20 kHz because it is often likely that most locations will have at least one low frequency bat species. However, for sites outside the suspected range of low frequency species, choose “exclude all signals <20 kHz.”

Step 3. Auto ID

Follow these steps to SONOBATCH the entire directory containing the recording session of interest.

Settings: If files up to 15 s long have been recorded, as recommend in Loeb and others (2015), ensure Preferences => Max Segment to Process reflects this file length.

1. Select the classifier most appropriate for your location and recording conditions.
2. Use “autofilter” generally.
3. Use “autofilter-low” in areas with low-frequency bats present (*Euderma maculatum*).
4. Use the default settings.
5. Acceptable call quality = 0.80
6. Sequence Decision Threshold = 0.90
7. Set Maximum Number of Calls to Consider per File = 16
8. (OPTIONAL) To work with output in Excel, use “Output Legacy SonoBat Sheets” and select the “Classify?” option. Alternatively, if manual vetting in SONOVET skip to next step.

Step 4. Manual Vetting

Manually vet the SONOBATCH output depending on objectives (stationary point vs mobile transect acoustic monitoring).

Stationary Point and Mobile Transect Data

Follow these steps to confirm species detections per detector per night**.**

1. Create Project in SONOVET by adding directory containing the SONOBATCH call files.
2. In the Vetting Table add a Monitoring Night Column by right-clicking on the header bar and Insert before => SonoBat Data => MonitoringNight.
3. In the Settings tab, sort the Vetting Table as follows. This sorts the results by night and species with the files with the highest probability of being confirmed by manual vetting at the top.

   Note: One can use "Save Layout" to quickly apply these settings to future SONOVET projects.

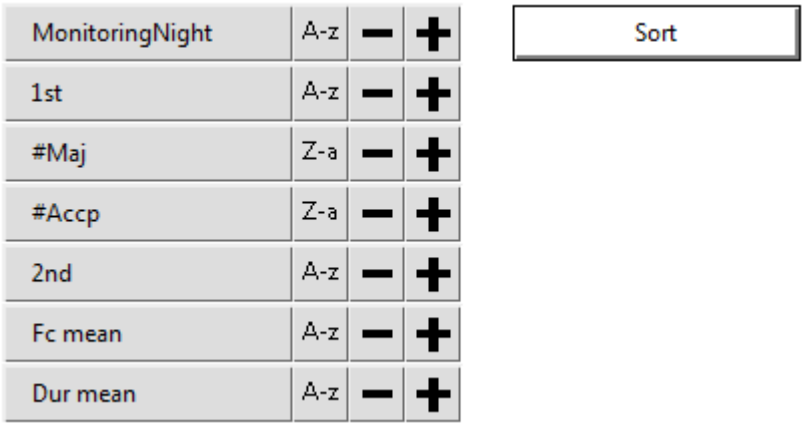


Figure 2. Vetting Table sorting criteria in SONOVET software.

4. For each monitoring night, confirm species ID for one file per species per night. Keep reviewing auto ID files where "SppAcc" = *species X* until you confirm the species, or until you have reviewed what you would consider a reasonable number of files (for example, if the species cannot be confirmed after review of the 10 "most likely" files, you might assume non-detection for that species on that night.)
5. Files are displayed in SonoBat by clicking on the file row.
6. For each file reviewed, select a standard identification code in the Species Manual ID column by right clicking the Species Manual ID cell.
7. A standard code can be a 4-letter species code, a species couplet (for example, MYCAMYYU, LACITABR), a frequency group (for example, Q40k, Q25k) or a high/low frequency class (HighF, LowF).
8. Add custom species couplets and frequency groups using Config Manual ID Defaults.
9. Assigning files to groups helps track whether files have been reviewed.

Mobile Transect Data Only

The objective is to confirm species detections for all other files. Follow steps as above, but continue vetting all files, even those that have not been assigned an auto ID. This process is made easier by sorting the table by files that are likely to belong to the same phonic group so they can be viewed in series.

Step 5. Submit to NABat

See the Introduction of this report for the steps for submitting data to NABat. To easily identify voucher files that should be prioritized for upload through your NABat Project page in SonoBat, sort, select and save manually-vetted files.

Chapter 3. Processing Acoustic Data Using Bat Call Identification ver. 2.7d (BCID)

By Ryan Allen[10]

[10]Bat Call Identification, Inc.

Step 1. Attribute files

In BCID (Bat Call Identification, v2.7d, 2015), data can be attributed in two ways—both have advantages and disadvantages.

1. Use **Header** tab in BCID—Anything that you type in this area will appear in the header of the ZC file for any file in your tree that passes the filter. The advantages are you can set the filter to look for something very specific and label files as such and can label an entire file tree at once. The disadvantage is that files that do not pass the filter (that is, noise files, poor quality calls) will not be labeled. (However, this can save a lot of processing time.)

2. Use **Global Header Change** in AnaLookW—You can change the headers of the file using the global header change options in AnaLookW. Make sure you "MARK" all files first, as changes will not take place on unmarked files (see chapter 5). This method will allow you to change all the files including noise files, but may be more time consuming.

All global positioning system (GPS) data should be entered into files using AnaHead located within AnaLookW at this time. BCID will work to include this in the near future making it easier on the user.

Data files can be arranged in any manner the user sees fit as long as all of the files to be analyzed are nested in the file directory selected to analyze the current "chosen" folder. We recommend a format of Grid Cell/Detector/Date for NABat.

Step 2. Noise Scrubbing

While the noise filtering process in BCID is relatively integrated there are some options that the user should be aware of. First, the user can change any of the parameters in the noise filter that they wish, but if this is done it should be done in a manner that is highly thought out. In addition, BCID recommends reporting significant changes in a header data type format. The filter that was used can be read on the last tab of the BCID output file.

The most important items that users can adjust within the filter are the Minimum Number of Calls to be considered in order to make an identification and the Min DP (Minimum Discriminant Probability). Increasing both or either of these numbers will have an effect on both false and true positives. For NABat use a minimum of three calls.

Given the guidance in this document, BCID would recommend experimenting with these numbers, especially the Min DP as increasing it from the default of 0.00 can help reduce false positives because the number is based on several values that deal with call quality.

If you would like to view the files as the software does in order to test your filter, you can create the filter under the filter tab within the BCID software and then load the filter into AnaLookW and view your files. This can also be useful for moving your "noise" files into separate folders.

Step 3. Auto ID

If you are using full spectrum files you must first run them through the wav to zero cross converter within the BCID software or other similar software packages.

The most important thing you can do is to choose the correct species for your area. Under the species tab in BCID you can choose a state or territory and then all of the species known to occur within that region will appear. Those that are widespread will be checked, those that are geographically isolated will be left unchecked. Those that are greyed out are not available for identification in the software.

We recommend setting the Create ANL file under the Advanced tab. This will allow the user to view the files in the next stage (manual vetting) by species label in AnaLookW. In addition, there is the option of adding the predicted species label into the header of the file by checking the corresponding box.

The final step is to use the Add Folders to Project button under the Project tab. You will select the folder at the highest level you would like your files analyzed. All files within and below the chosen folder will be included in the analysis and any labeling,

etc. that you have chosen for the software to perform. Once all files are chosen, return to Project tab and click Analyze files. This will produce a .txt document will all the files, IDs, etc. and a Microsoft Excel file with three tabs: (1) all of the files broken down by folders, (2) summaries of all folders, and (3) settings used, including the filter parameters and species selected.

Step 4. Manual Vetting

The easiest method of manual vetting files in BCID is to use the ANL file that can be created by BCID under the "Advanced" tab and opened in AnaLookW. This will allow you to open a virtual folder of all files that BCID has classified to species and quickly review them to see if any of the files are consistent with calls produced by that particular species. Adjust header labels following guidance for manual vetting described above.

After manually vetting a dataset, one could re-run the auto ID, testing various values of the Min DP setting to determine the Min DP value that produces the results most similar to your manual vetting for a particular site, geographic region, etc. This could be informative for future analyses of datasets from this site. It is important to understand that both the software and manual vetting can be incorrect on occasion. The goal is to find the number where one can achieve the largest volume of data while ensuring the accuracy of the results. Once this number is arrived at, the software can be run using this number and the robustness of the results should be much more reliable.

Step 5. Submit to NABat

See the Introduction of this report for the steps for submitting data to NABat. To easily identify voucher files that should be prioritized for upload through your NABat Project page in BCID, sort, select, and save manually-vetted files.

Chapter 4. Processing Zero-Cross Acoustic Data Using EchoClass v 3.1

By Eric Britzke[4]

[4]U.S. Army Corps of Engineers

The following describes a recommended workflow using EchoClass for processing acoustic data for the North American Bat Monitoring Program (NABat) where data were collected or converted to zero-cross files (*.00# file format).

Step 1. Attribute files

The first step in this process is attaching metadata to the files. The current version of EchoClass relies on the directory structure to provide information on the files instead of adding this metadata to the individual files (Britzke, 2012). Thus, in order to attach metadata to the individual files, use process included in chapter 5 (Recommended Workflow for Processing Zero-Cross Acoustic Data using AnaLookW).

Tips for organizing your data

The following information is taken from Britzke (2012). The data file structure must have at least two levels (no maximum) of folders for the program to run. *Additionally, the structure must be consistent throughout for each run of the software*. Keep the folder names short and do not include the "&" symbol in any folders or filenames. All of the recorded call files must be in a folder named with 8 numeric characters (for example, 20120805). This can either be the date that the files were recorded or can be a single download data as EchoClass uses this information to look for files but reads date data from the individual file. As the output of the analysis software includes information from the directory structure, (following the example below) the directory structure will populate the output with project and site information that is then ready for inclusion in a report.

Example file structure

Bats2012
- Project1
  - Grid Cell1
    - Site1
      - 20120601
      - 20120602
    - Site2
      - 20120701

- If you select the folder 20120601 the output file will be empty.
- If you select the folder Site1 you would get results from all folders named with 8 numeric characters under the Site1 folder (for example, 20120601 and 20120602).
- If you select the folder Project1 you will get results from all of the folders named with 8 numeric characters in all of the sites under the Project1 folder (for example, 20120601, 20120602, and 20120701).
- If you select the folder Bats2012 you will get results from all of the folders named with 8 numeric characters in all of the sites of all of the projects under the Bats2012 folder.

Global Positioning System (GPS) Information

Mobile Transect Acoustic Monitoring

- Make sure the gps.txt file downloaded with CFC read is located within each date folder.
- GPS_and_Sunset_Master.xls excel spreadsheet must be placed in the data directory, but can remain empty. For GPS data, the sheet must be entitled Mobile GPS Locations.
- Geographic coordinates for each bat file will be added to the latitude/longitude columns of the UserID output.

Stationary Point Acoustic Monitoring

- The latitude and longitude of each site must be entered
- Any higher data structure must also be entered

Table 5. Example stationary GPS Locations for running Bat2012 in the above data structure

Grid Cell	Site	Latitude	Longitude
Grid Cell1	Site1	11.1111	22.11111
Grid Cell1	Site2	11.2222	22.22222

Sunset/Sunrise Times

- For sunset/sunrise the sheet must be named Sunset and Sunrise Times.
- For each Site/Date, enter the appropriate Sunset and Sunrise Times in 24-hr clock notation format

Table 6. Example sunset and sunrise times for running Bat2012 in the above data structure:

Grid Cell	Site	Date	Sunset	Sunrise
Grid Cell1	Site1	20120601	20:45	05:45
Grid Cell1	Site1	20120602	20:46	05:43
Grid Cell1	Site2	20120701	20:35	06:15

Steps 2 and 3. Noise Scrubbing and Auto ID

Analyzing data with EchoClass is straightforward as there are few options that can be selected by the user. This was done to improve accuracy, repeatability, and consistency in the results among datasets. When the EchoClass software is launched, the user interface in fig. 3 appears.

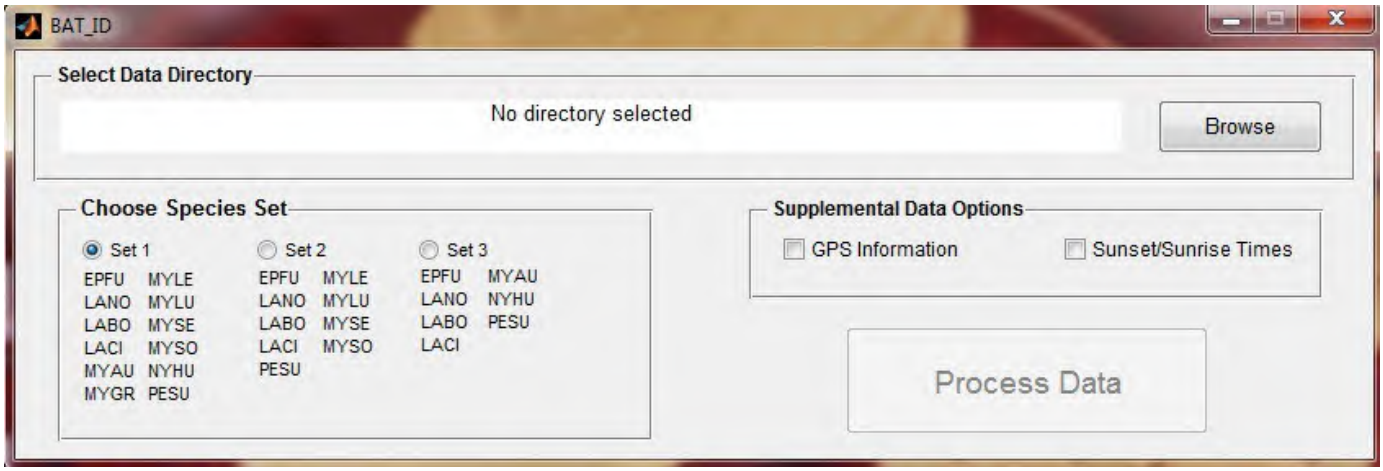


Figure 3. Startup user interface for EchoClass software (from Britzke, 2012).

1. Select the **Browse button** and navigate to the appropriate directory (see examples above).

Chose the appropriate species set. If a species is not listed in a set it will not be an option for identification in this analysis. Thus, if that species is present it will be misclassified as a species that is listed. Because of this, the user should include all possible species which *might* be present in the area.

2. Click **GPS information** if the GPS data are provided in a specific format (table 5). This will result in location information being included in the output file.

3. Click **Sunset/Sunrise Times** if you want the activity metrics to be calculated. The user must provide the sunset and sunrise times for each night for the given location (table 6). This information will also be reported in the results output.

4. Click the **Process Data** button.

As the program runs a series of popups will appear and disappear. Once completed, a Microsoft Excel file titled "User ID Report" will be created in your selected working directory (the folder selected in with the browse button).

Supplemental Data Options

For the following options to function correctly, the GPS_and_Sunset_Master.xls Excel spreadsheet must be placed in the data directory selected to run the program on (that is, if Project1 is selected, the excel sheet must be located there as well).

Step 5. Submit to NABat

See the Introduction of this report for the steps for submitting data to NABat. To easily identify voucher files that should be prioritized for upload through your NABat Project page in EchoClass, sort, select, and save manually-vetted files.

Chapter 5. Processing Zero-Cross Acoustic Data Using AnaLookW 4.2n (March 16, 2017)

By Cori Lausen[2]

[2]Wildlife Conservation Society Canada

The following chapter describes a recommended workflow using AnaLookW for processing acoustic data for the North American Bat Monitoring Program (NABat) where data were collected or converted to zero-cross files (.zc file format).

Step 1. Attribute Files

1. Ensure that minimum attribute data are included for each file. (See step 1 in the Introduction of this report for more detail on attribution data).If waypoints are not already included in your files, add GPS coordinates to stationary point acoustic data using Anahead or to transect datasets using GPS Integration Wizard prior to analysis.
    - Using Anahead (Click on Tools –> Anahead); select your folder and highlight all the files; positions; enter manually; enter the latitude and longitude in World Geodetic System 1984 (WGS84) datum.
2. (OPTIONAL, but recommended) Sort your data into nightly subfolders. This is generally advantageous because the stationary point acoustic data for NABat are analyzed by species presence per detector per night. For example, one potential hierarchical folder organization scheme includes assigning a single folder per **GRTS ID** with subfolders for each detector and mobile transect. Within each detector subfolder there should be nightly subfolders.
    - If you used a Titley Scientific detector, this is most easily achieved at the time of download (for example CFCRead for Anabat has a check box for “split nights”).
    - If you are using an auto ID software prior to using AnaLookW, many programs give you the option to sort your files by “bat-night.”
    - Any dataset can be split up by night using Tools => Folder => Split Folder in AnaLookW.
3. Add Location data to headers of files if this information is not already in the file metadata. It is highly recommended that you carry out this step even if this information is present in the filenames.
    - In AnaLookW, perform the following for *each folder*: FILE =>Mark All Files, EDIT =>Global Header Change. Add into the **LOC** field the **Grid Cell GRTS ID** and **Site Name**. For Transect folders, add **Grid Cell GRTS ID** Transect.
    - If you know how to run a scan, you can send each detector’s files (all nightly subfolders) through a single filter scan using a “blank” filter so that all files are listed in a list file (virtual subfolder, much like a playlist in iTunes). You can then open the resulting .anl file in AnaLookW and do a global header change on all files here, thus putting info into the header of all files in all nightly subfolders, instead of having to do each folder separately.

Step 2. Noise Scrubbing

Follow these next steps to remove non-bat files from your dataset.

Option 1: Kaleidoscope or Kaleidoscape Pro

- Run the files through Kaleidoscope or Kaleidoscope Pro (KSPro). You do not need to do any file conversion or auto ID, simply select to move noise files out of the dataset. Be sure to select the appropriate criteria for the noise scrubber (see KSPro workflow).

Option 2: AnaLookW

- *In AnaLookW, a*pply an "AllBats" or customized AntiNoise filter (see appendix B "Using Filters in AnaLookW"). Run a scan (Filter =>Scan) using the selected filter across a copy of the dataset (folder tree), setting the output to generate a list file (only check the ANL list box). By opening the resulting .anl file in AnaLookW File Selector, you can mark all the files which passed the filter, reverse the marks and then delete (or move) all the files now marked (the files which didn't pass the filter).

Step 3. Auto ID

Use one of the following three options to obtain ZC files with species labels, using one or more of the following options:

Option 1: Species Labels are Embedded in Files as MetaData During the Auto ID Process

SonoBat

- SonoBat is used for files that start as full spectrum. SonoBat will place a species label in the file metadata that should appear in AnaLookW once the full spectrum file is converted to ZC format (see next step). The auto ID label will be in the **Species** field of the **Header** data; or if you have selected for SonoBat to change the filename, then the species label will appear at the end of the filename. In the latter case, it is desirable to leave the filenames with SonoBat Species Labels as this may be the only record you will have of what this auto ID program assigned to a file. Subsequent manual vetting in AnaLookW will place metadata into the species field that will override the auto ID in the final results file.
- After running the auto ID process in SonoBatch, you must convert full spectrum files to ZC files in order for them to be read in to AnaLookW. Do this in KSPro, BCID, or in newer versions of AnaLookW (TOOLS => CONVERTER => WAV TO ANABAT). **Note:** Appended species labels in filenames from SonoBat are scrubbed off the end of the filename in KSPro 4.3.2.

Kaleidoscope Pro

- Kaleidoscope Pro (KSPro) can be used for any recording file type. Before processing files with the auto ID option, check the appropriate file type checkboxes in the **Batch** tab. (for example, wav as input, ZC as output). The auto ID process will place a species label in the ZC file metadata which will be seen in the **Species** field of the **Header** data once in AnaLookW. There will also be information in parentheses about the auto ID (for example matching pulses; alternate IDs—this will depend on the version of KSPro that has been used).

Bat Call Identification (BCID)

- BCID can be used for any recording file type. If you use full spectrum files, you will need to first convert them to ZC within the program. The auto ID process of BCID will place a species label in the ZC file metadata (in the **Species** field of the **Header** data, appended with -bcid). (*see* chapter 3. Processing Acoustic Data Using Bat Call Identification (BCID ver.2.7d)).

Option 2: Species Labels Are Embedded in Files as Metadata Following Application of Filters

- Follow instructions in appendix B Additional "Guidance for AnaLookW."

Option 3: Species Labels Are Provided in an Excel Spreadsheet

- The Excel spreadsheet provided as output from auto ID software (for example spreadsheet produced by EchoClass—see the EchoClass workflow in chapter 4) can be referred to during manual vetting of the files using AnaLookW as a viewer. Manual vetting will entail making changes in the Excel spreadsheet after viewing each file.

Step 4. Manual Vetting

To carry out manual vetting, follow the ruleset laid out in step 4 (after the Introduction) of this report. If you obtained files via Option 3 above, view each file in AnaLookW and adjust species labels as appropriate in the Excel spreadsheet. If you obtained files using Options 1 or 2, proceed with the following steps for manual vetting.

1. Ensure the Species List is visible. Check the option in View => Species List. This will allow you to add a species label to the metadata of each file by clicking a single button. Load or create a species list using one of the following options.
    - *Option 1:* Load a Species List
        - Click the LOAD button to the right of the species label buttons.
    - *Option 2:* Create or edit a Species List
        - Right-click each button and enter a 4-letter species code (table 3) or up to 8 letter frequency group or high/low class label (table 4).
        - Select SAVE AS to save your species list.
    - *Tips for Species Lists*
        - Include group labels appropriate for your bat community (table 4).
        - Prefix lowercased letters on species codes so it is possible to differentiate manually vetted labels, *m*, from auto ID labels (for example, “mLANO” for label assigned to a file identified as *Lasionycteris noctivagans* through manual vetting).
2. Load a file from your dataset. If your files are organized by detector and by nightly subfolders, start with night one of detector one.
3. FILE=> DISPERSE.
    1. Choose one of the following methods.
        - *Method 1*: Select current folder. This will create a sorted .anl file just for the nightly folder you have selected. You will need to repeat this step for each night’s folder for each detector.
        - *Method 2*: Select a higher order folder. **Include subfolders** (check this box). For example, you might select to do a “disperse” of one detector. This means all nightly subfolders will be included in the “disperse” and you can view all recordings of this detector as though they were in one virtual folder together. This method involves fewer steps overall than *Method 1*, but you will have to pay attention to what nightly subfolder you are in during the vetting process.
    2. Check the option for List File (.anl). Check to IGNORE PREFIXES. Then RUN. A new online software www.Anacraft.online will be available in 2018 which will facilitate multiple auto ID programs to be used on ZC recordings. This process will be different in this new program.
4. “Shift I” (or FILE => OPEN HERE) and click on **Sorted.anl** in whichever folder you directed the Disperse to start. (Sometimes you need to collapse directory and open it again to see this file—little bug! You close and reopen the folder in the left viewing pane using the ± button by folder name.)
5. Using CHOOSE FIELD, review each of the species categories. The goal is to manually verify at least one file per night for each species. Recall that the label you place into the **Header Species** field when you manually vet should be prepended with a lower case letter “m” (for manual review). Any file with an “m” before the species will assume to have been verified manually.

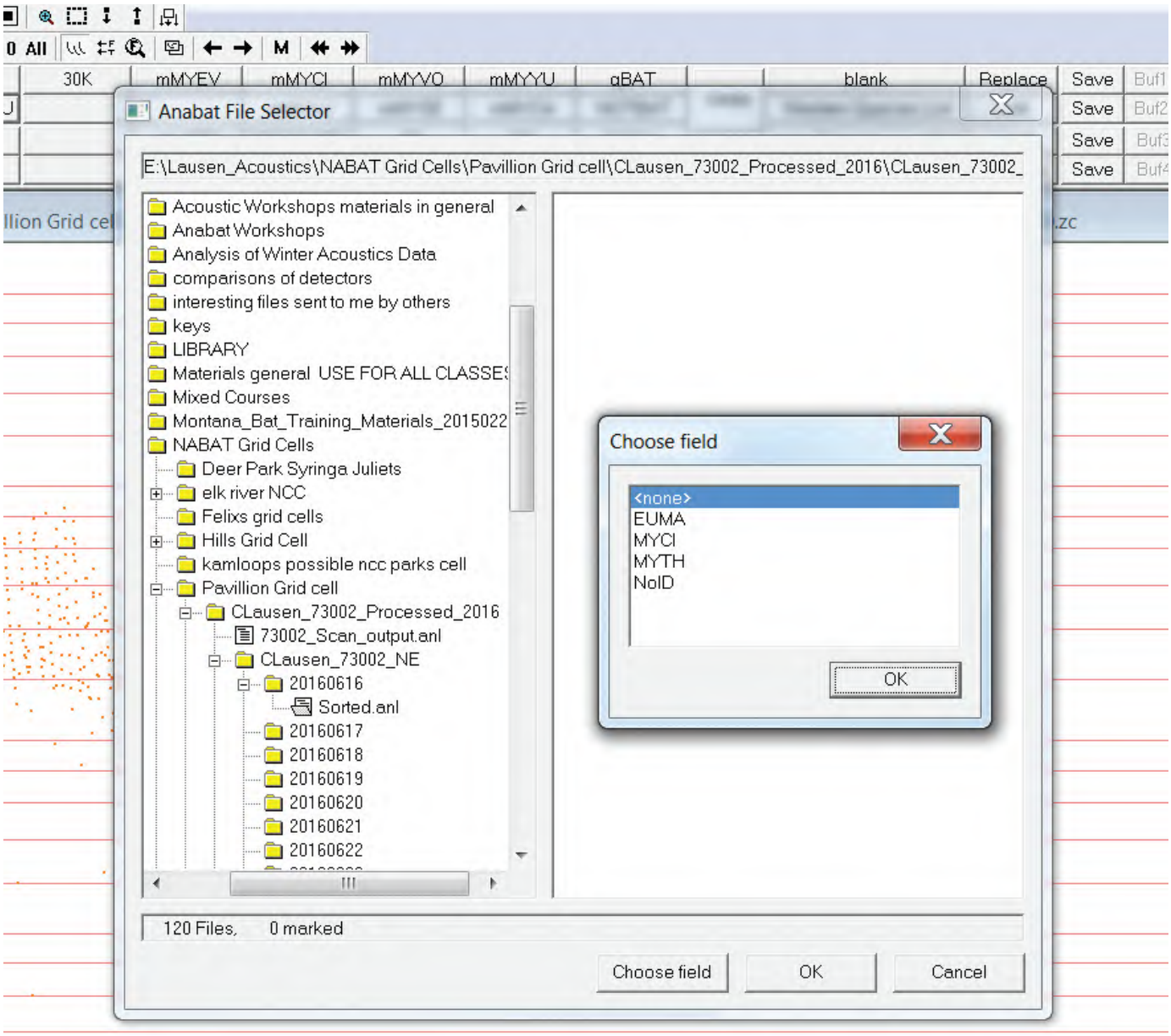


Figure 4. View of folder directory in AnaLookW.

- You can also use species couplet, group or class labels up to 8 letters, such as EPFULANO, LowF, and so forth. (see tables 3 and 4 for more labels). Since these types of labels are not used by the auto ID software, it will be clear that these labels were added during manual vetting.
- Recall that you can add multiple labels separated by a comma, with no spaces. This happens automatically when you press more than one species list button in the same file.

6. Repeat steps 3–5 until all nights of all detectors have been analyzed.

For stationary point acoustic data, you need only confirm one file of each species each night. For mobile transect acoustic data, all bat files should be reviewed.

- *Required for Mobile Transect data and recommended for stationary point acoustic data:* reviewing the "No_ID" field. These files did not get an auto ID and if you used filters, also did not get triggered by a filter.
- *Why are some files No_ID?* Files assigned the label "No_ID" are likely poor quality, high clutter recordings. However, with auto ID a file is occasionally labelled as "No_ID", even though good quality, identifiable pulses are present. This

can occur when the recorded pulses have characteristics of more than one species. However, this can also occur if two, equally well-recorded species occur in the same file. Identifying high quality recordings of two species in the same file is especially important if there are species that you think are present in your area, but have not been detected in a certain night's dataset. In stationary point acoustic data, this may be the only reason to view "No_ID" bat passes.

Mobile Transect Data Only

The goal for collecting mobile transect acoustic data for NABat is to evaluate relative species abundance. Therefore, ensure that each bat file receives a label. If there are few "No_ID" files, then you may choose to go through all of them. If there are a lot of these files (for example, >100), you may instead opt to run a few filters to group the "No_ID" files into broader categories for easier vetting. For example, you could choose to run a general "40kMyotis" filter if you have one of these available. LOAD FILTER, then FILE => MARK IF PASS FILTER. Remember that once a filter has marked files, you can quickly jump from marked file to next marked file using -/= keys and select on the species button at the top to add the label "40kMyo" (or use GLOBAL HEADER CHANGE and label "f40kMyo").

Download Results into an Excel Spreadsheet Format.

1. TOOLS => ANAHEAD
2. Select the folder in your dataset you want to summarize
3. FILE => DOWNLOAD.
4. Repeat 1 and 2 for all subfolders in the dataset.
5. In Windows Explorer, open up each Header.txt file that has been created in each folder/sub-folder, one at a time and copy/paste the output into an Excel spreadsheet.

Step 5. Submit to NABat

See the Introduction of this report for the steps for submitting data to NABat. To easily identify voucher files that should be prioritized for upload through your NABat Project page using AnaLookW, use "Mark if Labelled" and select manually-vetted files.

References

Bat Call Identification, Inc., 2015, Bat Call Identification software (ver. 2.7d): Kansas City, Mo., accessed on 03 16, 2018, at http://www.batcallid.com/.

Britzke, E., 2012, Instructions for using the EchoClass acoustic program (ver. 3.0): U.S. Army Corps of Engineers, Research and Development Center, accessed on March 16, 2018, at https://www.fws.gov/midwest/endangered/mammals/inba/surveys/inbaAcousticSoftware.html.

Lausen, C.L., Burles, D., Blejwas, K., Nagorsen, D., Govindarajulu, P. and Friis, L., 2016, Long-eared bat taxonomy—Nuclear genetic evidence eliminates the species status of Keen's Myotis (*Myotis keenii*) [poster], Joint Meeting of Society for Northwest Vertebrate Biology and Washington and Idaho Chapters of The Wildlife Society, Coeur d'Alene, Idaho, Feb. 23–24, 2016. Bethesda, The Wildlife Society, accessed on March 16, 2018, at http://wildlife.org/.

Loeb, S.C., T.J. Rodhouse, L.E. Ellison, C.L. Lausen, J.D. Reichard, K.M. Irvine, T.E. Ingersoll, J.T.H. Coleman, W.E. Thogmartin, J.R. Sauer, C.M. Francis, M.L. Bayless, T.R. Stanley, and D.H. Johnson. 2015. A plan for the North American Bat Monitoring Program (NABat) (p. 112). United States Department of Agriculture, Forest Service, Research & Development, Southern Research Station.

NABat Acoustic Data Analysis Workflow Workshop, 2017, U.S. Geological Survey, Fort Collins Science Center, Fort Collins, Colo., September 6–8, 2017.

Szewczak, J., and Szewczak, N., 2017, SonoBat ver. 4.2.1: Arcata, Ca. Sonobat, accessed March 21, 2018, at https://sonobat.com/.

Titley Scientific, 2016 AnalookW software ver. 4.2n (16 March 2017): Columbia, Mo.,Titley Scientific, accessed on March 21, 2018, at https://www.titley-scientific.com/us/.

Appendix A. Case Study—Using Rule Sets to Process Acoustic Data for USDA Forest Service Lands in Northern California

By Ted Weller[3]

[3]USDA Forest Service

The standard for which files should be considered for manual vetting will vary by location according to how common a species is expected to be and how likely it is to be confused with other species at the site. Location-based rulesets can be established to direct manual vetting towards files that require the most attention (that is, unusual species, files where SonoBat has lower levels of certainty in its auto ID). Rulesets can be codified to automatically assign species to files for which SonoBat has high levels of confidence, and assign files to frequency groups (for example HiF, Q40k) where SonoBat has low confidence or gleaned little information from the file. When establishing rulesets, take into consideration the expected probability of a species' detection in deciding how to direct manual vetting efforts. For example, at some sites, a single species can comprise greater than or equal to (≥) 50 percent of the total files recorded. In this case, confirmation of this species can be based on lower levels of certainty by SonoBat (for example, TABR 2 of 2) than we would normally accept. Rulesets are plastic and evolve over time to improve accuracy of species identification and, importantly, improve efficiency with which assignments to a species or species group are made. Rulesets begin as regional tools and evolve into sub-regional tools as we learn more about the relative probability of species occurring in the parts of the region studied. When appropriate, rulesets can be established for individual sites. In northwest California for example, two sites approximately 100 kilometers (km) apart have different rulesets. At one site, TABR is exceedingly common and LANO is less common, while at the other site, TABR is very uncommon and LANO is common. Hence we review few of the potential TABR files and more LANO files at the first site and all TABR files and very few LANO files at the second site. This saves time at both sites.

In the following, we describe a process for using established rulesets to determine activity levels by species and species groups by night in mountainous areas on USDA Forest Service land in northern California.

1. Vetting table is exported as.txt file, selecting output null as "".

2. Exported .csv file is opened in EXCEL and a Pivot Table is inserted to summarize the data.

	A	B	C	D	E	F	G	H	I	J	K	L
1	Site/Date	EPFU	LACI	LANO	MYCA	MYEV	MYLU	MYTH	MYVO	MYYU	TABR	Number of Species
2	**SE Lyon's Creek**											**5**
3	6/12/2017											0
4	6/13/2017		1	1								2
5	6/14/2017		1		1	1			1			4
6	6/15/2017			1	1							2
7	**SW Granite Springs**											**7**
8	6/12/2017											0
9	6/13/2017				2			1			1	3
10	6/14/2017			1	5		1	1				4
11	6/15/2017	1			5	1						3
12	**NW Ice House**											**7**
13	6/12/2017											0
14	6/13/2017		1	5	5	1	2			1		6
15	6/14/2017			5	5		5			2		4
16	6/15/2017		2	5	5		5		2	3		6
17	**NE Pond**											**6**
18	6/12/2017											0
19	6/13/2017			2	5	1						3
20	6/14/2017		1	3	5	1	2					5
21	6/15/2017	1		5	5		2					4

Figure 5. A standard output from SonoBat summarized in Excel (Szewczak and Szewczak, 2017).

The output table includes the number of files confirmed per night populating the species-by-night matrix. Values ≥1 will ultimately be reduced to presence/not-detected values for analysis. Here they represent a crude, proposed method of assigning confidence to species ID per night.

The following rulesets were translated into a PYTHON script (https://github.com/brendan-ward/echoclean) and pointed at text output from a SONOBATCH run.

- For EPFU, LANO, MYCA, MYCI, MYLU, MYVO, MYYU, and PAHE, we will generally only review files if #Maj=#Accp≥3, files with #Maj=4 and #Accp=5, and #Maj=5 and #Accp<=7, and #Maj=6 and #Accp<=8 should also be reviewed.
- When ANPA, COTO, EUMA, EUPE, LABL, LACI, MYEV, MYTH, NYSP, or TABR are listed in the "1st" column, review all files (up to 10 files per night) until at least five files per species per night can be confirmed.

The PYTHON script creates a "Species" column and an "Inspect (Y/N)" column. The species column is populated with a label: species, couplet (for example EPFULANO), frequency group (for example, 50k), or high/low frequency class (for example, HighF) according to SONOBATCH output parameters. Files without adequate information from SONOBATCH are identified simply as "Bat". In some cases these have been found not to be bats, despite the file having been scrubbed in earlier steps. The relative proportion of files that are not bats appears to depend on site and season (for example, bird songs and insects can sometimes trick the scrubbers). If it is important to quantify the total number of files produced by bat echolocation ('mobile transect acoustic monitoring' for NABat, Loeb and others [2015]), low-quality and non-bat files are included in manual vetting efforts.

3. Files highlighted by ruleset (via the Python script) are prioritized for manual vetting.
   - Output is sorted as follows:

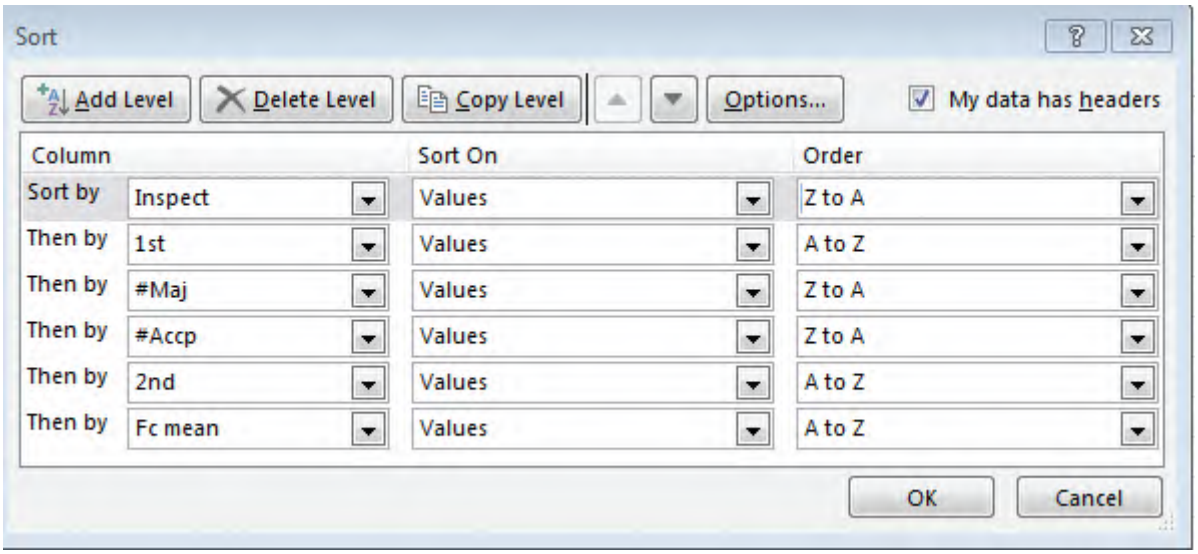


Figure 6. "Sort" criteria used to arrange summary output in Excel.

   - Sorting orders the files to be manually vetted by potential species followed by probability that they will ultimately be assigned to that species and groups them according to other potential species in the file and frequency range.
   - Each file with "Inspect=Y" is manually vetted and assigned to species or group. Manual vetting is based on comparison to reference files, regional guidance (with images) written by Ted Weller, and experience of the observer.
4. Following manual vetting, files are re-sorted excluding the "Inspect" column such that potential species ID's are listed in order of SonoBat's guidance.
   - Patterns in eventual ID's compared to SonoBat ID's are studied to refine the ruleset for each of the species.
5. Night of recording is extracted from the filename and used in a pivot table to create a matrix of number of files assigned to each species or group for each night of recording.

Appendix B. Additional Guidance for AnaLookW

By Cori Lausen[2]

[2]Wildlife Conservation Society Canada

Tips for using AnaLookW

- TOOLS => OPTIONS => DISPLAY will allow you to change colors if needed.
- TOOLS => OPTIONS => change DELAY to 300 ms (so the user can scroll through files at reasonable speed by holding the closed square bracket or W keys)—*recommended*.
- Always save files to C drive (not to desktop or My Documents), as AnaLookW does not like files that become too buried in a directory and the desktop is actually an embedded location in your hard drive!
- Mark all files (FILE => MARKING => MARK ALL). You then can use the button REPLACE in the top of the Ana-LookW screen to replace a field for all marked files (for example Highfreq instead of HighF). Recall that there is no "undo" if you make a mistake.
- To move from file to file that has a label in species field of header (for example skipping blank species), hold "Shift" and press the square bracket keys "[" or "]".
- To skip between marked files, use the "-" and "=" keys
- Reverse marks as needed, in FILE => MARKING or "right-click" on file names in Anabat File Selector Window (Shift l).
- FILE => MARK IF LABELLED (only mark those files with a species label).
- EDIT => DELETE IF MARKED. (For example, you could "Reverse all marks" after marking bat files (so marked files are the noise files), then it is possible to move or delete files if you are confident they are all "noise" (non-bat recordings).
- You can use the "m" key on your keyboard to pull up a measuring screen. (or VIEW => MEASURES). If you use numeric parameters to help manually vet, you can view measurements of single pulses or averages of pulses on the screen using this "m" key.
- You do not need to use the "Measures" screen to evaluate "Fmin" if there are many pulses, as this could be misleading. Instead, hold your curser at the bottom of the call of interest and look at the number on bottom right of the screen.
- Under VIEW => OFFDOTS you can choose to visualize your "offdots". Filters turn dots "off." By choosing to visualize "offdots" you can see which dots are not passing the filter criteria.
- You can view your file in a screen next to another screen with a reference file by selecting VIEW => TILE HORIZON-TAL (or TILE VERTICAL). You can then link both screens so they maintain the same settings by selecting the link screen button that looks like two overlapping squares. The screen you are in at the time of clicking the link screen button becomes the "Master" screen while the other screen becomes its "Slave." Alternatively, you can link them both and have both as "Masters."
- If at any point the species field is too full (for example, when Kaleidoscope Pro fills in a lot of information in parentheses after a space following the species ID label), you can move this information to the "Notes" field using COPY => PASTE.
- ****IMPORTANT**** *It is critical that the auto ID labels be retained and remain in the "Species Field" so that these data are retained through to the final spreadsheet.*

- "Buffer" is located to the far right-hand side of the species list. Use this if you want to have a "push button" way of adding a label to the "Species Field" that is, more than eight characters long. You can only have two buffer labels (top two) that will add to a "Species Field" when clicked. Enter a label into the "Buffer" by first typing into the "Species Field" exactly what you want to save into the "Buffer". Then click the "Save" button next to the "Buf1+" or "Buf2+" buttons. The "Buf" button is now lit and ready to use as another "Species Label".

Using Filters in AnaLookW

1. Obtain AnaLookW filters. It is recommended that only Strict or "Diagnostic" type species filters be used. (If you are simply scrubbing out noise files from bat files, then an "AllBats" filter can be used.)
   - Filter files (.abf files) can be obtained from trusted sources, or you can create a filter by filling in appropriate parameters.
   - If you are not an advanced user, then these parameters should be obtained from a trusted source. Parameters can be inserted into the filters using FILTER => NEW FILTER => SAVE FILTER.
2. Apply filter(s).

   Choose one of the following options.

Option 1: You can apply a filter to any given folder of bat files (FILTER => LOAD FILTER, then FILE => MARKING => MARK IF PASS FILTER, then view marked files and (or) perform EDIT => GLOBAL HEADER CHANGE).

Option 2: Use a Scan to apply one or more filters at one time. Be sure to only select the output option "ANL". This produces a "scan file" (.anl file format). Recall that using a "Scan" instead of applying a filter on a per folder basis has the advantage of seeing all files of a dataset from all subfolders at once in one "virtual folder" (.anl file). This allows actions to be completed on the dataset all at once, despite the fact they are in separate subfolders (for example, nightly folders). "Scan" files (.abs) are required if you are going to scan with more than one filter at a time.

3. Once a filter/scan has been applied, you should put a species label into the **Species** field of the header so that you know this file has passed a species-level filter. You will use species labels such as fLABO. This means you used a filter to identify a file that is likely a LABO bat pass. The use of the lower case "f" is a good idea, as AnaLookW has the ability to ignore lower case initial letters in downstream analyses. The use of a prefix such as "f" or "m" is critical for NABat downstream analyses as it conveys how the species label was determined (f = by filter; m = by manual vetting).
   - *If you applied a single filter to a folder* (MARK IF PASS FILTER) then simply use GLOBAL HEADER CHANGE to apply a label (for example, fLABO for files that passed the LABO filter).
   - *If you applied a scan of a single or multiple filters*, use the .anl file to view each field (generally each field is the name of the filter). For each field, MARK ALL, then GLOBAL HEADER CHANGE to insert a species label into the Header (for example, fLABO). Do for each field.

Conclusion: All files that passed a strict or diagnostic filter have now had a species label inserted into its metadata. You are ready to manually vet, see chapter 5, Step 4. Manual Vetting.

Appendix C. Bat Auto ID Species Confusion Matrix

This appendix provides a "Bat Auto ID Species Confusion Matrix" as a quick look-up guide indicating which species are commonly confused by auto ID software. In the matrix, red cells indicate species not currently included in classifiers used for automated species identification. Grey cells (along diagonal) are not applicable to the matrix.

Click on the link to open the Excel file: ofr2018-1068_appendixC_BatAutoID_SpeciesConfusionMatrix.xlsx

| AutoID | Potentially Confused Species | | |

For more information concerning the research in this report, contact the
Center Director, USGS Fort Collins Science Center
2150 Centre Ave., Bldg. C
Fort Collins, CO 80526-8118
(970) 226-9398

Or visit the Fort Collins Science Center website at
https://www.fort.usgs.gov/

ISSN 2331-1258 (online)
https://doi.org/10.3133/ofr20181068

Oregon Department of Fish and Wildlife
SENSITIVE SPECIES LIST

Frequently Asked Questions

It is Oregon's policy "to prevent the serious depletion of any indigenous species" (ORS 496.012). The Oregon Administrative Rules (OAR) for threatened and endangered species (OAR 635-100-0080 to 0194) are intended to help implement this policy. In accordance with these rules, species can be classified as "threatened" (any native species likely to become endangered within the foreseeable future throughout any significant part of its range within the state) or "endangered" (any native species determined to be in danger of extinction). However, recovering species when their populations are severely depleted can be difficult and expensive. In addition, designation of such species can be socially and economically divisive.

To provide a positive, proactive approach to species conservation, a "sensitive" species classification was created under Oregon's Sensitive Species Rule (OAR 635-100-0040). The Sensitive Species List focuses fish and wildlife conservation, management, and research and monitoring activities on species that need conservation attention. It serves as an early warning system for biologists, land managers, policy makers, and the public. It helps to ensure that conservation actions are prioritized, cost-efficient, and effective. Although the intent of the Sensitive Species List is to prevent species from declining to the point of qualifying as threatened or endangered, this list is not used as a "candidate" list for species to be considered for listing on Oregon's State List of Threatened and Endangered Species (OAR 635-100-0125).

What is a "Sensitive Species"?

"Sensitive" refers to fish and wildlife that are facing one or more threats to their populations and/or habitats. Consistent with OAR 635-100-0040(2), "Sensitive Species" are defined as having small or declining populations, are at-risk, and/or are of management concern. Implementation of appropriate conservation measures to address existing or potential threats may prevent them from declining to the point of qualifying for threatened or endangered status.

For the purpose of the Sensitive Species List, "species" refers to any group (taxon) of fish or wildlife that interbreeds and is substantially reproductively isolated. This interpretation of the term "species" may include species, subspecies, or a geographically-specific population grouping of a species or subspecies.

What factors are considered in designating a "Sensitive Species"?

The factors considered for designating a "Sensitive Species" include: declining population; imminent or active deterioration of primary habitat; populations impacted by Key Conservation Issues (see the Oregon Conservation Strategy (2016) for details), disease, predation, contaminants, and other natural or human-caused factors; over-utilization; inadequate existing state or federal programs for management or conservation of species and/or primary habitats; and naturally limited range or rare occurrence.

What does the "Sensitive-Critical" designation mean?

The Sensitive Species List consists of two categories, "Sensitive" and "Sensitive-Critical". Species or taxa with a "Sensitive-Critical" sub-designation are Sensitive Species of particular conservation

concern. “Sensitive-Critical” species have current or legacy threats that are significantly impacting their abundance, distribution, diversity, and/or habitat. They may decline to the point of qualifying for threatened or endangered status if conservation actions are not taken.

Are species on the list considered “Sensitive” statewide?

Species are designated as “Sensitive” by geographic groupings of population segments or habitats, or by ecoregion, depending on the taxa. Species Management Units (SMU) are the listing unit for fish (Figure 1; per the Native Fish Conservation Policy; OAR 535-007-0504(6)). Ecoregions are the listing unit for amphibians, reptiles, birds, and mammals (Figure 2). Oregon has nine ecoregions, including the: Blue Mountains, Coast Range, Columbia Plateau, East Cascades, Klamath Mountains, Northern Basin and Range, West Cascades, Willamette Valley, and Nearshore. A species may be designated as both “Sensitive” and “Sensitive-Critical” in different SMUs or ecoregions, depending on the regional level of conservation concern.

How is the Sensitive Species List used?

The Oregon Department of Fish and Wildlife (ODFW) uses the Sensitive Species List, in conjunction with the Oregon Conservation Strategy, to promote and guide conservation actions. These actions are also designed to encourage voluntary efforts that will improve species’ status. Once threats to species are identified, conservation opportunities and strategies can be developed. These actions may include:

- monitoring populations to detect either positive or negative changes in populations;
- conducting further research to identify threats and methods to address the threats;
- educating people about what these species need to persist and what actions people can take to assist in species’ conservation.
- partnering with land management agencies to maintain, improve, and restore habitat;
- providing technical expertise, incentives, and recognition to landowners who provide habitat;
- creating cooperative agreements with assurances for private landowners who provide habitat;
- cooperatively incorporating species’ needs into activities that could negatively affect them; and
- bringing together land managers, researchers, and other people to share information.

Although the Sensitive Species List is primarily a non-regulatory tool, it is referenced in the Department’s Chemical Process Mining Consolidated Application and Permit Review Standards (OAR 635 Division 420) and In-Water Blasting Permits (OAR 635 Division 425). Also, the Department’s biologists provide reviews of a variety of proposed land and water management actions based, in part, on Oregon Conservation Strategy Strategy Species and Sensitive Species list priorities. Being included on the Sensitive Species List also provides additional regulatory oversight, landowner incentives, and public records limits with other state agencies, which reference them in their Oregon Administrative Rules. These agencies include the Columbia River Gorge Commission, Department of Energy, Energy Facility Siting Council, Department of Forestry, Department of Geology and Mineral Industries, Department of Land Conservation and Development, Department of State Lands, Parks and Recreation Department, State Marine Board, and Water Resources Department.

How does the Sensitive Species List relate to the Oregon Conservation Strategy?

The Oregon Conservation Strategy (OCS) is the state’s overarching strategy for conserving fish and wildlife, and provides a shared set of priorities for addressing Oregon’s conservation needs. It serves as the official State Wildlife Action Plan for Oregon and is a requirement of the federal State Wildlife Grant Program. The OCS brings together the best available scientific information, and presents a menu of recommended voluntary actions and tools for all Oregonians to define their own conservation role. The goals of the OCS are to maintain healthy fish and wildlife populations by maintaining and restoring

functioning habitats, preventing declines of at-risk species, and reversing declines in these resources where possible. The OCS Strategy Species are species of greatest conservation need that include wildlife (i.e., amphibians, birds, mammals, and reptiles), fish, invertebrates, plants, and algae.

The Sensitive Species List is, for the most part, a subset of the species identified in the OCS. Although very similar in purpose, there are some important distinctions between the OCS Strategy Species List and the Sensitive Species List. The OCS Strategy Species List has a broader scope and is not limited by ODFW's management authorities. The Sensitive Species List is limited to fish, amphibians, reptiles, birds, and mammals; it does not include: 1) invertebrates, plants, algae, or fish and marine mammals that occur only in the nearshore ecoregion, that are identified in the OCS or 2) species already listed by the state as threatened or endangered.

For more information on the special needs, limiting factors, data gaps, recommended conservation actions, and resources available for each OCS Strategy Species, visit the Oregon Conservation Strategy website. For information on the legal status of invertebrate species, contact the Oregon Department of Agriculture and Oregon Biodiversity Information Center. For information on the legal status of plants, contact the Oregon Department of Agriculture.

What if there is not enough information to determine whether a species should be "Sensitive"?

The status of some species cannot be determined because basic information on distribution, abundance, and/or habitat associations is not known. This basic information is needed before population status or threats can be evaluated. These species are identified in the Oregon Conservation Strategy as Data Gap Species and are listed by ecoregion.

How is the Sensitive Species List updated?

The Sensitive Species List is reviewed and updated every five years. Each taxonomic group of animals is reviewed by ODFW biologists and scientific experts from other agencies, universities, and private organizations. The scientists are asked to consider new and historical information on species distribution, population trends, and biological needs; changes in threats; gaps in knowledge and data; recent conservation actions; and state and federal programs or regulations. The scientists may propose to remove, add, or re-classify species based on this information. The draft list is then peer-reviewed by state, federal, university, and consulting biologists. The Sensitive Species List is an administrative list and is not formally adopted through a rule-making process.

In addition, any person may request that a species be added to or removed from the Sensitive Species List through a written request that outlines the status of the species and how its condition meets the criteria cited in OAR 635-100-0040(6).

Why are species that are "threatened" or "endangered" under the federal Endangered Species Act included on the Sensitive Species List?

The State of Oregon and the federal government maintain separate lists of threatened and endangered species under different federal and state laws. Some species are listed as threatened or endangered under federal law but not under state law and may be included as state "Sensitive Species".

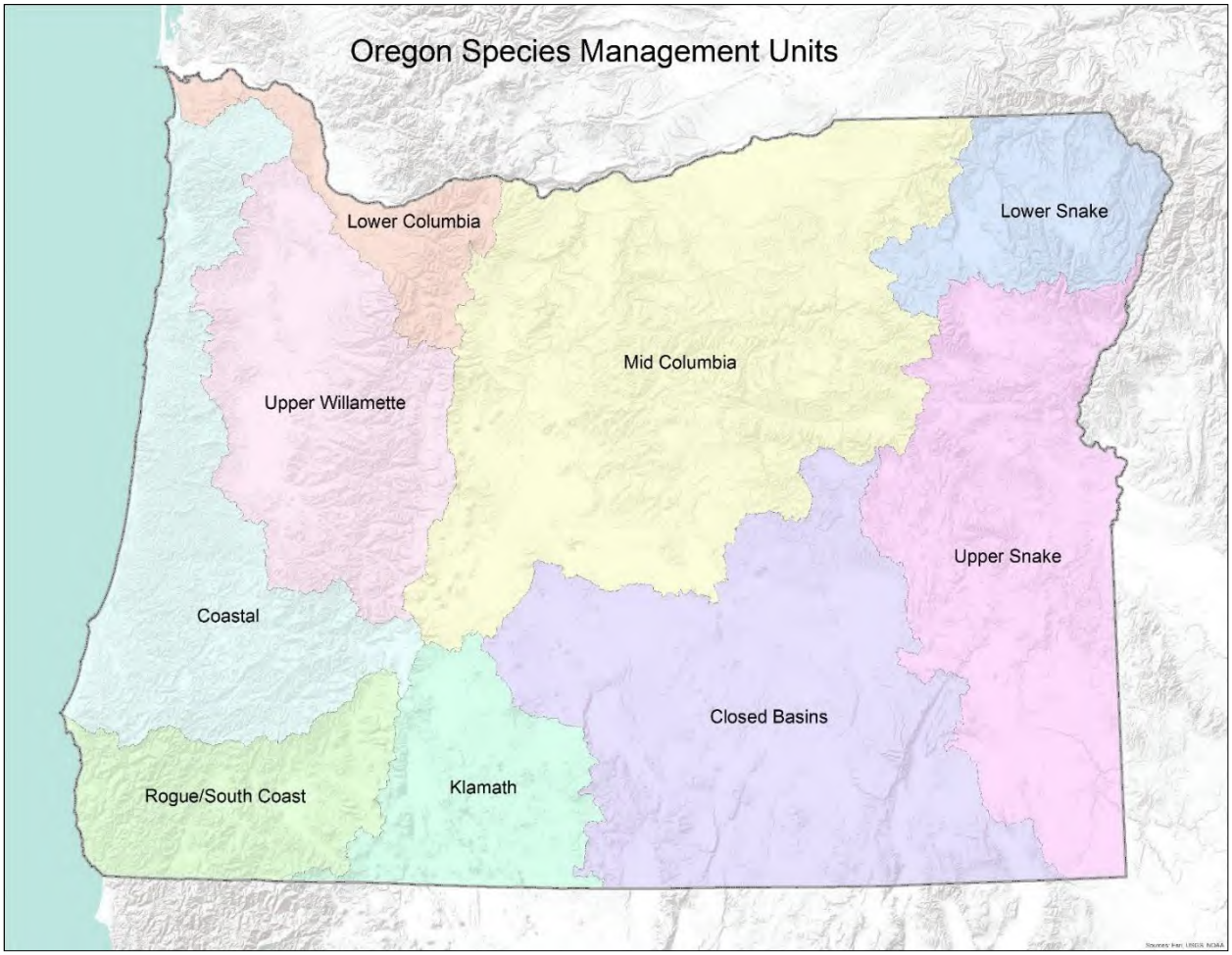


Figure 1. General location of Species Management Units (SMUs) used for determining status of fish. Note that actual SMU boundaries identified in the Sensitive Species List are species-specific and may vary between species or be at a smaller scale than indicated in this figure (especially in the Closed Basins SMU, which encompasses numerous smaller SMUs identified on the list).

Oregon Conservation Strategy Ecoregions

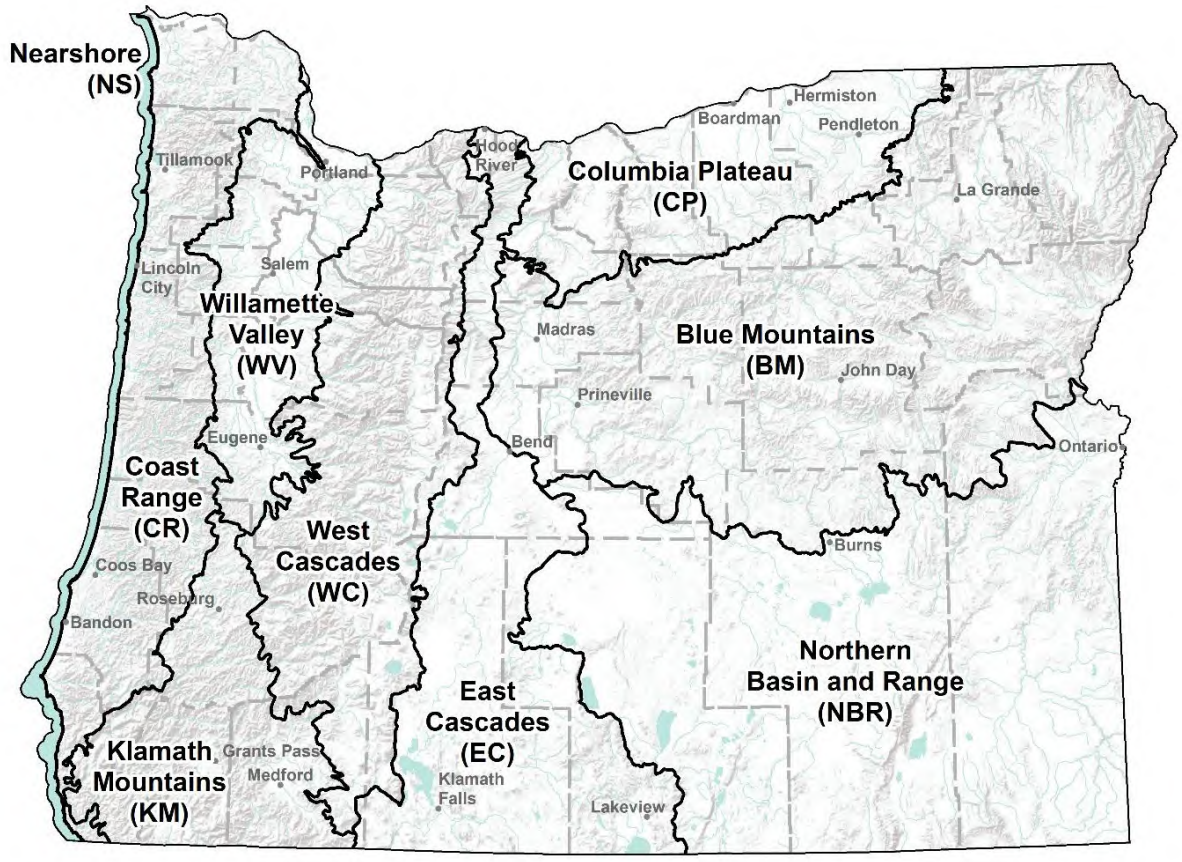


Figure 2. Ecoregions used for determining status of wildlife (i.e., amphibians, reptiles, birds, and mammals). More information about Oregon's ecoregions is available at http://www.oregonconservationstrategy.org/ecoregions/. Map produced by ODFW, Oregon Conservation Strategy GIS Analyst. Data sources: ODFW, Oregon Biodiversity Information Center, ESRI, USGS.

Oregon Department of Fish and Wildlife
SENSITIVE SPECIES LIST

The 2021 Sensitive Species List has 152 taxa, including 95 wildlife taxa (32 “Sensitive-Critical”, 71 “Sensitive”) and 58 fish taxa (17 “Sensitive-Critical”, 41 “Sensitive”). Note that some species may be designated as “Sensitive” in one ecoregion and “Sensitive-Critical” in another ecoregion. Refer to the table below (organized by taxon) for more information.

FISH

Common Name	Scientific Name	Sensitive	Sensitive-Critical
Alvord Chub	*Siphateles alvordensis*	Range-Wide (NBR)	
Borax Lake Chub	*Gila boraxobius*	Range-Wide (NBR)	
Bull Trout	*Salvelinus confluentus*	Deschutes SMU (BM, EC, WC)	Hells Canyon SMU (BM)
		Grande Ronde SMU (BM)	John Day SMU (BM, CP)
		Hood River SMU (WC)	Klamath Lake SMU (EC, WC)
		Imnaha SMU (BM)	Malheur River SMU (BM, NBR)
		Walla Walla SMU (BM)	Odell Lake SMU (EC, WC)
		Willamette SMU (WC, WV)	Umatilla SMU (BM, CP)
Chinook Salmon - Fall	*Oncorhynchus tshawytscha*	Mid-Columbia River SMU/ Deschutes ESU (BM, CP, EC)	Lower Columbia River SMU/ESU (CR, WC, WV, NS)
Chinook Salmon - Spring	*Oncorhynchus tshawytscha*	Coastal SMU/ESU (CR, KM, WC, NS)	Lower Columbia River SMU/ESU (WC, WV, NS)
		Middle Columbia SMU/ESU (BM, CP, EC, NS)	Willamette SMU/Upper Willamette River ESU (WC, WV, NS)
		Rogue SMU/Southern Oregon/Northern California Coasts ESU (CR, KM, WC, NS)	
Chum Salmon	*Oncorhynchus keta*		Coastal SMU/Pacific Coast ESU (CR, NS)
			Lower Columbia SMU, Columbia River ESU (CR, WV, NS)

Common Name	Scientific Name	Sensitive	Sensitive-Critical
Coastal Cutthroat Trout	*Oncorhynchus clarkii clarkii*	Lower Columbia SMU/ Southwestern Washington/Columbia River ESU (CR, WC, WV, NS)	
Coho Salmon	*Oncorhynchus kisutch*	Coastal Coho Salmon SMU/Oregon Coast ESU (CR, NS)	
		Klamath SMU/Southern Oregon/Northern California Coasts ESU (EC, KM, NS)	
		Rogue SMU/Southern Oregon/Northern California Coasts ESU (CR, KM, WC, NS)	
Foskett Speckled Dace	*Rhinichthys osculus robustus*	Range-Wide (NBR)	
Goose Lake Sucker	*Catostomus occidentalis lacusanserinus*	Range-Wide (EC)	
Great Basin Redband Trout	*Oncorhynchus mykiss newberrii*	Catlow Valley SMU (NBR)	
		Chewaucan SMU (NBR)	
		Fort Rock SMU (NBR)	
		Goose Lake SMU (EC)	
		Malheur Lakes SMU (BM, NBR)	
		Upper Klamath Basin SMU (EC, WC)	
		Warner Lakes SMU (NBR)	
Green Sturgeon	*Acipenser medirostris*	Northern DPS (CR, KM, NS)	
			Southern DPS (CR, KM, NS)
Miller Lake Lamprey	*Entosphenus minimus*	Range-Wide (EC)	
Millicoma Dace	*Rhinichthys cataractae*	Range-Wide (CR)	
Modoc Sucker	*Catostomus microps*	Range-Wide (EC)	
Oregon Chub	*Oregonichthys crameri*	Range-Wide (WC, WV)	
Pacific Brook Lamprey	*Lampetra pacifica*	Range-Wide (WV)	
Pacific Lamprey	*Entosphenus tridentata*	Range-Wide (CR, CP, EC, KM, WC, WV, NS)	
Pit Sculpin	*Cottus pitensis*	Range-Wide (EC, NBR)	
Steelhead - Summer / Coastal Rainbow Trout	*Oncorhynchus mykiss / irideus*	Coastal SMU/Oregon Coast ESU (CR, KM, WC)	Lower Columbia SMU/ESU (CR, WC, WV)
		Rogue SMU/Klamath Mountains Province ESU (CR, KM, WC)	

Common Name	Scientific Name	Sensitive	Sensitive-Critical
Steelhead - Summer / Columbia Basin Rainbow Trout	*Oncorhynchus mykiss / gairdneri*	Lower Snake SMU/Snake River Basin ESU (BM)	Middle Columbia SMU/ESU (BM, CP, EC)
		Upper Snake SMU/Snake River Basin ESU (BM)	
Steelhead - Winter / Coastal Rainbow Trout	*Oncorhynchus mykiss / irideus*	Willamette SMU/Upper Willamette River ESU (WC, WV)	Lower Columbia SMU/ESU (CR, WC, WV)
Umpqua Chub	*Oregonichthys kalawatseti*		Range-Wide (CR, KM, WC)
Western Brook Lamprey	*Lampetra richardsoni*	Range-Wide (BM, CR, CP, WC, WV)	
Western River Lamprey	*Lampetra ayresii*	Range-Wide (CR, CP, WV, NS)	
Westslope Cutthroat Trout	*Oncorhynchus clarki lewisi*		Range-Wide (BM, CP)
White Sturgeon	*Acipenser transmontanus*	Lower Columbia/Coastal Population (NS, CR, WV, WC)	

AMPHIBIANS

Common Name	Scientific Name	Sensitive	Sensitive-Critical
Cascade Torrent Salamander	*Rhyacotriton cascadae*	WC, WV	
Cascades Frog	*Rana cascadae*	EC, WC	
Clouded Salamander	*Aneides ferreus*	CR, KM, WC, WV	
Coastal Tailed Frog	*Ascaphus truei*	CR, KM, WC	
Columbia Spotted Frog	*Rana luteiventris*		BM, NBR
Columbia Torrent Salamander	*Rhyacotriton kezeri*	CR, WV	
Cope's Giant Salamander	*Dicamptodon copei*	CR, EC, WC	
Del Norte Salamander	*Plethodon elongatus*	CR, KM	
Foothill Yellow-legged Frog	*Rana boylii*		CR, KM, WC, WV
Larch Mountain Salamander	*Plethodon larselli*		WC
Northern Red-legged Frog	*Rana aurora*	CR, KM, WC, WV	
Oregon Slender Salamander	*Batrachoseps wrighti*	WC, WV	
Oregon Spotted Frog	*Rana pretiosa*		EC, WC
Rocky Mountain Tailed Frog	*Ascaphus montanus*	BM	
Siskiyou Mountains Salamander	*Plethodon stormi*		KM
Southern Torrent Salamander	*Rhyacotriton variegatus*	CR, KM, WV	
Western Toad	*Anaxyrus boreas*	BM, CR, EC, KM, NBR, WC	

REPTILES

Common Name	Scientific Name	Sensitive	Sensitive-Critical
California Mountain Kingsnake	*Lampropeltis zonata*	CR, CP, EC, KM, WC	
Northern Sagebrush Lizard	*Sceloporus graciosus graciosus*	CP	
Western Painted Turtle	*Chrysemys picta bellii*		BM, CR, CP, EC, WC, WV
Western Pond Turtle	*Actinemys marmorata*		CR, EC, KM, WC, WV
Western Rattlesnake	*Crotalus oreganus*		WV

BIRDS

Common Name	Scientific Name	Sensitive	Sensitive-Critical
Acorn Woodpecker	*Melanerpes formicivorus*	KM, WV	
American Three-toed Woodpecker	*Picoides dorsalis*	BM, EC	
American White Pelican	*Pelecanus erythrorhynchos*	EC, NBR	
Black Brant	*Branta bernicla nigricans*	CR, NS	
Black Oystercatcher	*Haematopus bachmani*	NS	
Black Swift	*Cypseloides niger borealis*	WC	
Black-backed Woodpecker	*Picoides arcticus*	BM, EC	
Black-necked Stilt	*Himantopus mexicanus*	NBR	
Bobolink	*Dolichonyx oryzivorus*	BM, NBR	
Brewer's Sparrow	*Spizella breweri breweri*	CP	
Burrowing Owl (Western)	*Athene cunicularia hypugaea*	NBR	BM, CP
Caspian Tern	*Hydroprogne caspia*	CR, EC, NBR, NS	
Chipping Sparrow	*Spizella passerina*	WV	
Columbian Sharp-tailed Grouse	*Tympanuchus phasianellus columbianus*		BM
Common Nighthawk	*Chordeiles minor*	CP, KM	WV
Dusky Canada Goose	*Branta canadensis occidentalis*	WV	
Ferruginous Hawk	*Buteo regalis*	BM, NBR	CP
Flammulated Owl	*Psiloscops flammeolus*	BM, EC, KM, WC	
Fork-tailed Storm-Petrel	*Oceanodroma furcata*	NS	
Franklin's Gull	*Leucophaeus pipixcan*	NBR	
Grasshopper Sparrow	*Ammodramus savannarum perpallidus*	CP, KM	WV
Great Gray Owl	*Strix nebulosa*	BM, EC, KM, WC	
Greater Sage-Grouse	*Centrocercus urophasianus*	NBR	BM
Greater Sandhill Crane	*Antigone canadensis tabida*	EC, NBR, WC	
Harlequin Duck	*Histrionicus histrionicus*	CR, WC	
Juniper Titmouse	*Baeolophus ridgwayi*	NBR	

Common Name	Scientific Name	Sensitive	Sensitive-Critical
Leach's Storm-Petrel	*Oceanodroma leucorhoa leucorhoa*	NS	
Lewis's Woodpecker	*Melanerpes lewis*		BM, CP, EC, KM, WC
Loggerhead Shrike	*Lanius ludovicianus*	BM, CP	
Long-billed Curlew	*Numenius americanus*	BM, EC, NBR	CP
Mountain Quail	*Oreortyx pictus*	NBR	
Northern Goshawk	*Accipiter gentilis atricapillus*	EC, WC	
Olive-sided Flycatcher	*Contopus cooperi*	BM, CR, WC, WV	EC
Oregon Vesper Sparrow	*Pooecetes gramineus affinis*		KM, WV
Peregrine Falcon (American)	*Falco peregrinus anatum*	CR, NBR	
Pileated Woodpecker	*Dryocopus pileatus*	BM	
Purple Martin (Western)	*Progne subis arboricola*		CR, KM, WC, WV
Red-necked Grebe	*Podiceps grisegena*		EC
Rock Sandpiper	*Calidris ptilocnemis tschuktschorum*	NS	
Sagebrush Sparrow	*Artemisiospiza nevadensis*		CP
Short-eared Owl	*Asio flammeus flammeus*	WV	
Snowy Egret	*Egretta thula*	NBR	
Streaked Horned Lark	*Eremophila alpestris strigata*		WV
Swainson's Hawk	*Buteo swainsoni*	BM, CP, EC, NBR	
Trumpeter Swan	*Cygnus buccinator*	BM, EC, NBR	
Tufted Puffin	*Fratercula cirrhata*		CR, NS
Upland Sandpiper	*Bartramia longicauda*		BM
Western Bluebird	*Sialia mexicana*	WV	
Western Meadowlark	*Sturnella neglecta*		WV
White-breasted (Slender-billed) Nuthatch	*Sitta carolinensis aculeata*	WV	
White-headed Woodpecker	*Picoides albolarvatus*		BM, EC, KM
Willow Flycatcher	*Empidonax traillii*	NBR	WV
Yellow Rail	*Coturnicops noveboracensis noveboracensis*		EC
Yellow-breasted Chat	*Icteria virens auricollis*		KM, WV

MAMMALS

Common Name	Scientific Name	Sensitive	Sensitive-Critical
American Pika	*Ochotona princeps*	BM, EC, NBR, WC	
California Myotis	*Myotis californicus*	BM, CR, EC, KM, NBR, WC, WV	
Columbian White-tailed Deer	*Odocoileus virginianus leucurus*		CR, WV
Fisher	*Pekania pennanti*		CR, KM, WC
Fringed Myotis	*Myotis thysanodes*	BM, CR, EC, KM, NBR, WC, WV	
Hoary Bat	*Lasiurus cinereus*	BM, CR, CP, EC, KM, NBR, WC, WV	
Long-legged Myotis	*Myotis volans*	BM, CR, EC, KM, NBR, WC	
Pacific Marten	*Martes caurina*	BM, CR, EC, KM, WC	
Pallid Bat	*Antrozous pallidus*	BM, CP, EC, KM, NBR	
Pygmy Rabbit	*Brachylagus idahoensis*	NBR	
Red Tree Vole	*Arborimus longicaudus*	CR, KM, WC	
Ringtail	*Bassariscus astutus*	CR, KM, WC	
Rocky Mountain Bighorn Sheep	*Ovis canadensis canadensis*	BM	
Sierra Nevada Red Fox	*Vulpes vulpes necator*	EC, KM, WC	
Silver-haired Bat	*Lasionycteris noctivagans*	BM, CR, CP, EC, KM, NBR, WC, WV	
Spotted Bat	*Euderma maculatum*	BM, CP, EC, KM, NBR	
Townsend's Big-eared Bat	*Corynorhinus townsendii*		BM, CR, CP, EC, KM, NBR, WC, WV
Western Gray Squirrel	*Sciurus griseus*	WV	
White-tailed Jackrabbit	*Lepus townsendii*	NBR	

Ecoregions: BM: Blue Mountains, CR: Coast Range, CP: Columbia Plateau, EC: East Cascades, KM: Klamath Mountains, NBR: Northern Basin and Range, WC: West Cascades, WV: Willamette Valley, NS: Nearshore



Figure 3. 2012 golden eagle nest reconnaissance survey results.

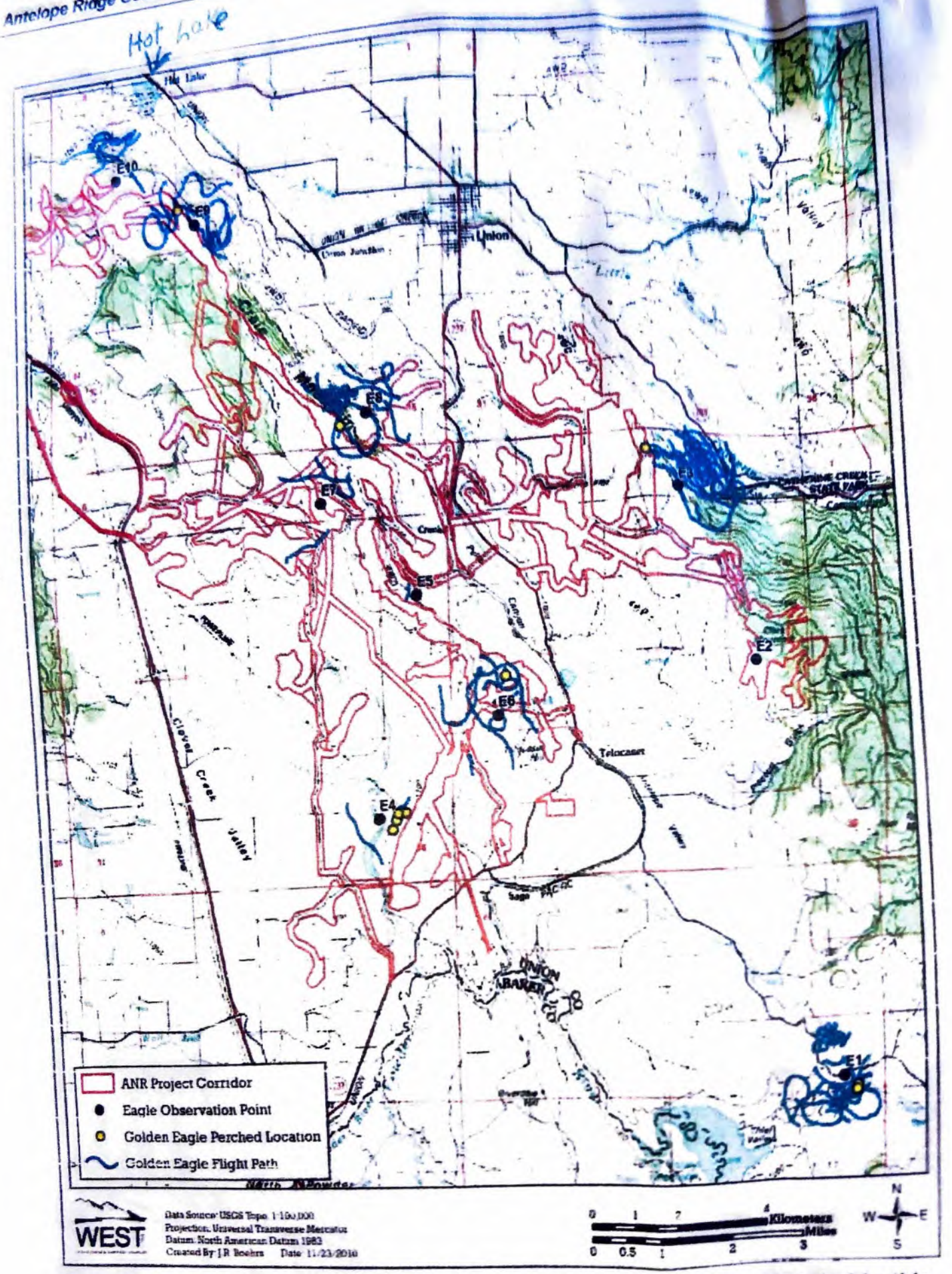


Figure 3. Golden eagle flight paths and perch locations. Flight paths presented in this figure are two dimensional and do not include information on flight height.

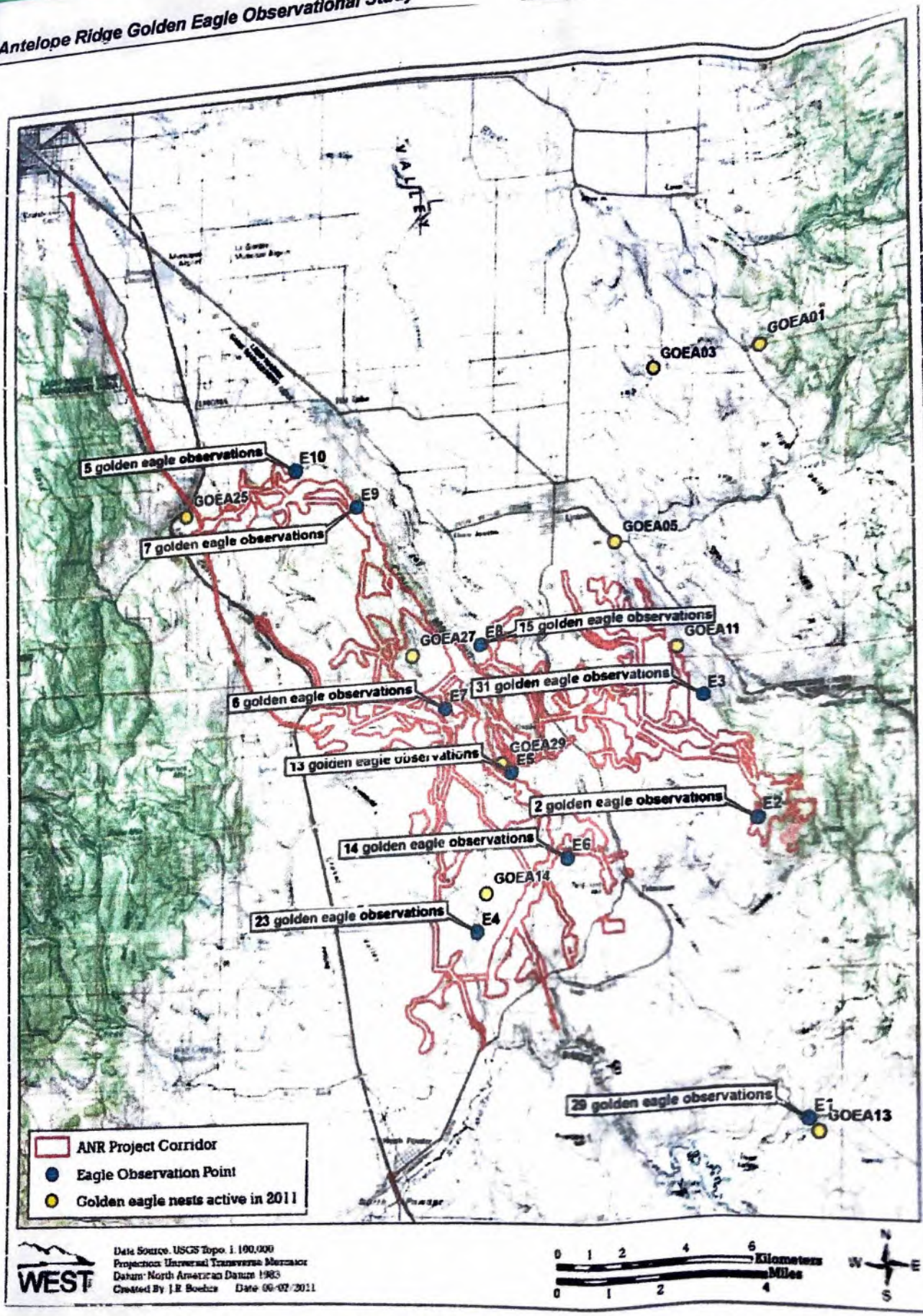


Figure 1. Number of golden eagles observed and locations of active golden eagle nests

Facts -

- The B2H line is illegal. By law it needs to be built in the energy corridor. Both Idaho Power and O.D.O.E. know this and continue anyway.
- Idaho Power has no need or fire prevention plan in place. This can not continue,
- This additional land grab can not go forward.
- I was kicked out early of the ODOE contested case and my concerns were never heard.
- I ask Greg Smith to please look into this fiasco.
- EFSC should not approve Amendment 2.
- No one from Idaho Power has talked to me. I have not seen a map.

John H. Luciani

John H. Luciani
Luciani Ranch
27633 Butter Creek Road
Echo, Or. 97826
541-379-4220

TARDAEWETHER Kellen * ODOE

From: Irene Gilbert <ott.irene@frontier.com>
Sent: Friday, May 31, 2024 12:31 AM
To: TARDAEWETHER Kellen * ODOE
Subject: Blasting Comment in Writing
Attachments: Blasting Plan Comment.docx

Thanks for accepting this into the record

To: Kellen Tardaewether May 31, 2024

From: Irene Gilbert, representing the public interest and herself as an individual

Subject: Blasting Plan and Protocol needed to comply with OAR 345-022-0020

THANK YOU FOR ALLOWING ME TO PUT IN WRITING THE ISSUE OF BLASTING RISK AND THE NEED FOR PLAN REVIEW AND APPROVAL.

The original approved site certificate for the Boardman to Hemingway Transmission Line had a process for approving the Plan for Blasting during the construction of the Boardman to Hemingway Transmission Line. The condition included review and input from the Counties in evaluation and approval of the plan to assure it provided for the safety of citizens, qualified personnel, notice and other requirements.

During the Amendment I of the site certificate the Site Certificate Order removed the review process for both the Counties and the Oregon Department of Energy. The department changed the requirement to just require a copy of whatever procedure the developer designed be provided to the Oregon Department of Energy and removed county involvement in review of the plan. They based this change on a statement that the department lacked the expertise to review the plan and their belief that the counties also lacked this expertise.

I was concerned about this issue and would have pursued it at the time, however, I was told that there was going to be no blasting. ODOE staff also stated in an email to Wendy King that there was going to be no blasting during the construction of the B2H Transmission Line. Mr. Stipple of Idaho Power made the same statement when on a field visit including Joann Rode, Greg Larkin, Mr.Larkins attorney and Jim Kreider 2 or 3 weeks ago.

Blasting continues to be listed in the Draft Proposed Order for Amendment 2 with no requirement for county review or approval of the Blasting Plan. It is stated on Page 13 of the DPO that it is one of the activities which will be occurring during construction.

Blasting is an activity that can have catastrophic consequences if not done right and if proper procedures are not followed. This transmission line will be constructed across areas with unstable ground, existing faults close to residences and across sensitive wildlife habitat. Adding the risks associated with blasting to the activities being performed absent planning and oversight is not a risk that should be allowed. Oregon OSHA is the primary agency which addresses and has rules regarding construction blasting in Oregon.

One of two site certificate actions should be taken.

1. Remove Blasting as a process to be used during the construction of the B2H Transmission Line.

   (or) add the following Site Certificate Condition:

2. “The developer will draft a Blasting Plan which addresses the elements in OSHA, Division 3, Subpart U “Blasting and Use of Explosives” for review and input from local counties prior to the use of Blasting in Construction of the transmission line. “

TARDAEWETHER Kellen * ODOE

From: Irene Gilbert <ott.irene@frontier.com>
Sent: Friday, May 31, 2024 1:37 PM
To: TARDAEWETHER Kellen * ODOE
Subject: Comment outline regarding site certificate changes
Attachments: CHANGES TO SITE CERTIFICATE CONDITIONS AND REQUESTOR (5).docx

Kellen:
Please include the attached table as public comments.
Thanks!!

I

To: Kellen Tardaewether May 30, 2024

From: Irene Gilbert on behalf of the public interest and myself as an individual

Subject: Amendment 2 of the B2H Site Certificate

CHANGES TO SITE CERTIFICATE CONDITIONS CHANGES WHICH HAVE NEGATIVE CONSEQUENCES WHICH HAVE NOT BEEN ADDRESSED. THESE CONDITION CHANGES SHOULD NOT BE MADE DUE TO THE IMPACTS TO WILDLIFE AND DAMAGES TO HISTORIC PROPERTIES WHICH WILL BE LONG TERM AND OFTEN IRREVERSABLE.

	CONDITION	CHANGE	IMPACT	REQU-ESTOR
1.	GEN-FW-06	Removes Flagging Requirements for State Protected Plants	Substantially increases likelihood of destruction of plants.	ODOE OAR 345-022-0070
2.	GEN-FW-08	Changes area for implementing avian-safe design standards when fatalities identified within site boundary to micrositing corridor.	Limits identification and mitigation required for avian fatalities to micrositing corridor and provides for no formal monitoring to identify fatalities.	NOT IDENT-IFIED. OAR 345-022-0060
3.	GEN-HC-01	Changes Historic Properties Management Plan from the original site	NOT LISTED AS A CHANGE	NOT IDENT-IFIED OAR 345-022-0090

		certificate to the RFA2 revision		
4.	GEN-HC-02	Changes requirements for Historic Properties Management Plan		OAR 345-022-0090
5.	GEN-FW-01	Changes area notice to ODFW for providing and requesting information from ODFW from Site Boundary to Micrositing Corridor when there may be new impacts.	ODFW will not be notified of changes that could require changes to Fish Passage plan or other protections for threatened or endangered fish species.	NOT IDENT-IFIED- OAR 345-022-0060 and OAR 345-022-0070
6.	GEN-NC-02	CANNOT LOCATE THIS CONDITION		
7.	PRE-SS-01	Changes the requirements for subsurface soil and geological conditions from the site to the micrositing area.	Creates a significant risk to the safety and health of citizens due to the unstable nature of areas being crosses by this transmission line as has been previously documented in the file material for the Site Certificate.	NOT IDENT-IFIED
8.	PRE-FW-01	Allows option of completion of biological surveys based upon	Reduces the area requiring surveys for Fails to require pre construction wildlife	NOT IDENT-IIED

		either the site boundary or the micrositing area.	surveys in a large enough area to provide identification and mitigation for 4 specific avian species, multiple additional wildlife species, fish presence, and wetands. The area does not identify species or wetlands requiring setbacks that are located outside the micrositing corridor.	OAR 345-022-0060 and OAR 345-022-0070
9.	PRE-FW-02	Changes the required pre-construction surveys from the site boundary to the micrositing corridor.	Limits the area requiring surveys for Washington Ground Squirrels, Raptor Nests, Pygmy rabbits, State-listed Threatened and Endangered Plants, Greater Sage Grouse. The area will not include species outside the micrositing Corridor requiring setbacks to protect the species	NOT IDENT-IFIED OAR 345-022-0060 and OAR 345-022-0070
10.	PRE-FW-03	Changes the requirements for mitigation for impacts to Sage-Grouse Habitat to remove the	Changes designed to avoid documentation and required mitigation resulting from changes in traffic and road	IP OAR 345-022-0060 and OAR

		requirement for pre-construction traffic studies and removes the requirement for identification and mitigation for indirect impacts from substantially modified roads.	impacts as a result of this development may result inlisting Sage Grouse as Endangered which will have devastating consequences for the citizens and economic stability of Eastern Oregon.	345-022-0070
11.	PRE-FW-04	Removes the requirement for pre-construction traffic studies for sage grouse habitat with high population richness, core area habitat, low density habitat and general habitat based upon ODFW maps.	This change removes the data necessary to determine the impact of the Transmission Line on the survival and listing of Sage Grouse as Endangered or Threatened and risks the results identified in PRE-FW-03 listed above as only a portion of the consequences.	IP OAR 345-022-0060 and OAR 345-022-0070
12.	CON-FW-02	Removed the requirement that IP report active pygmy rabbit colonies or the roost of a State Sensitive bat species observed during biological surveys required by FW Conditions 15 and 16 which	Removes the requirement to report these at risk wildlife species during the surveys which will occur prior to the start of construction. Only when construction is actually underway is there a requirement to report and	NOT LISTED AS A CHA OAR 345-022-0060 and OAR 345-022-0070NGE!

		were renumbered to PRE-FW-01 and PRE-FW-02 in RFA2	apparently the assumption that construction will stop until the Department is notified of the siting and consult with ODFW regarding the impacts. There is no proposed monitoring being required to assure that the reporting occurs and construction stop until the impacts are addressed.	
13.	CON-FW-03	Changes requirements for identification of non-raptor native migratory bird species nests from the site boundary to the micrositing corridor.	Limiting the survey rquirements to the micrositing corridor fails to provide information that allows for setbacks from the nesting species of these federally protected birds.	NOT IDENTI-FIE OAR 345-022-0060 and OAR 345-022-0070D
14.	CON-TE-02	Changes the requirements for protection of Threatened and Endangered Plants to only include state listed T &E Plants	Changes a significant amount of additional language and I am unclear if this is an improvement or reduction in protections.	IP and ODOE OAR 345-022-0060 and OAR 345-022-0070
15.	OPR-FW-03	Removes required data	Removing data from pre-construction	IP OAR 345-022-

I

		from pre-construction traffic studies required by Condition 21 in Sage Grouse Habitat report. Condition 21 removed the required pre-construction traffic studies in Sage Grouse habitat.	traffic surveys in Sage Grouse habitat makes it impossible to determine the impacts and necessary mitigation to compensate for impacts of the development on Sage Grouse habitat and species survival.	0060 and OAR 345-022-0070
16.	OPR-FW-04	Removes reference to pre-construction traffic studies in Sage Grouse habitat.	Removing pre-construction traffic studies means there Is no baseline data to make any determination regarding the impacts of this development on sage grouse habitat either directly or indirectly.	*IP*

ITEM AND NEGATIVE IMPACT

NUMBER	Negative Impact	Statute or Rule
1	Employees will have no visual reminder of location of protected plants which will significantly increase the likelihood that they will be destroyed.	OAR 345-022-0060
2.	Previous site certificate required reporting of avian fatalities within the site boundary. Limits area for reporting avian fatalities to the micrositing area and	OAR345-022-0000 General requirements

	provides for no formal monitoring to identify avian fatalities. The micrositing corridor extends only 250 feet from the center of the transmission line. Avian fatalities are likely to move beyond this narrow area even when fatally injured due to forward movement of species. Monitoring required by Oregon Statutes cannot be limited to incidental discoveries	that mandate the council include conditions that provide for the public's safety. OAR 345-022-0060 and OAR 345-022-0070
3 & 4	The Cultural Resources and Historic Properties Plan fails to identify and provide mitigation for sites and objects located outside the direct impact area of the development facilities. This standard requires direct and indirect impacts to Historic Properties including sites and objects on private property. The Oregon Supreme Court in their order in the StopB2H v E FSC case stated that the developer would be addressing this and The Department of Interior is initiating a review of the treatment of Historic Properties in the B2H development. The information in the DPO fails to address and mitigate for indirect impacts to non-listed sites and objects.	OAR345-022-0090
5.	Change from using the site boundary to using the siting corridor minimizes the number of instances that will be reported and will result in avian impacts not being reported or mitigated for	OAR 345-022-0060 and OAR 345-022-0070
7.	The rule requires these studies to be done for the entire site and the surrounding area. That is the requirement for an initial application and needs to apply to the amendment adding land to the site.	OAR 345-022-0022
8.	Providing either site boundary or micrositing area for surveys fails to comply with the standard requiring	OAR 345-022-0060

	wildlife habitat impacts to be identified for the site and the area within one half mile of the site boundary. Failure to do this will mean that wildlife resources will not be identified that need to be avoided resulting in the loss of habitat and destruction of Threatened and Endangered Species.	and OAR 345-022-0070
9.	Change in review from considering site boundary to considering only the micrositing corridor will mean that species requiring setbacks will not be identified and there will be damages not identified, avoided or mitigated for	OAR 345—022-0060 and OAR 345-022-0070
10.	When there are no pre-construction traffic studies, there is no basis for determining the impacts the development is having on Sage Grouse or to determine the need for mitigation.	OAR-022-0060 and OAR 345-022-0070
11	See Number 10 removing pre-construction studies.	
12	I provided extensive comments regarding the problems with not requiring pre-construction survey. There is no monitoring when developers are expected to report wildlife habitat dentified during the course of construction and it is questionable that contractors will stop construction and report all instances of identified habitat or animals	OAR 345-022-0070
13	Limiting raptor nest identified to the micrositing boundary instead of the site boundary is not consistent with EFSC rules requiring the study area to contain the area within the site boundary and ½ mile beyond the site boundary	OAR 345-022-0060 and 345-022-0070

TARDAEWETHER Kellen * ODOE

From: Tamra Mabbott <tmabbott@co.morrow.or.us>
Sent: Tuesday, May 21, 2024 8:45 AM
To: TARDAEWETHER Kellen * ODOE
Cc: Daisy Goebel; Eric Imes; Corey Sweeney; ESTERSON Sarah * ODOE
Subject: Re: B2H Signed Letter

Kellen - thank you for your follow up. I believe the letter has a Scrivner's error. I'm not sure how the "1.2 miles wide" was added.
It would not be timely to send a follow up but please note for the record.
Thank you. Tamra

From: TARDAEWETHER Kellen * ODOE <Kellen.TARDAEWETHER@energy.oregon.gov>
Sent: Monday, May 20, 2024 8:35 AM
To: Tamra Mabbott <tmabbott@co.morrow.or.us>
Cc: Daisy Goebel <dgoebel@co.morrow.or.us>; Eric Imes <eimes@co.morrow.or.us>; Corey Sweeney <mcweed@co.morrow.or.us>; ESTERSON Sarah * ODOE <Sarah.ESTERSON@energy.oregon.gov>
Subject: RE: B2H Signed Letter

[EXTERNAL EMAIL] - STOP and VERIFY - This message came from outside of Morrow County Gov

---

Good morning Tamra,

Thank you for the DPO comment letter. I'll save it to the record and pass it along to IPC and EFSC.

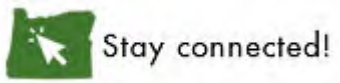
Please note:

- The expanded site boundary is .5 miles wide (.25 miles on both sides from the center line of transmission routes and roads), not 1.2 miles wide.
- If approved, the expanded site boundary area would not be an approval to locate facility components (routes, roads, work areas) within that area. If approved, IPC would only be able to locate facility components within the micrositing areas.
- The expanded site boundary is a wider area that is evaluated for resources under Council standards and would enable a streamlined review of future micrositing adjustments under the Amendment Determination Request (ADR) pathway designated under OAR 345-027-0357.
- The widths of the micrositing areas are:
    - For the 500-kV transmission line and communication stations, a 500-foot-wide area.
    - For Longhorn Station, approximately 190 acres.
    - For access roads, 100 or 200-feet in width, depending on the nature of the road.
    - For temporary work areas (MUAs, pulling and tensioning sites, and light duty fly yards), from 4 to 23 acres.
- Within those micrositing areas, the actual final operational ROW width is smaller, as follows:
    - Single-circuit 500-kV transmission line – 250 feet. In forest lands – 300 feet
    - Along the east edge of Naval Weapons Systems Training Facility (NWSTF) Boardman – 90 feet
    - Roads – Approximately 14 feet (note that the widths for construction roads is wider and part of the RFA2 request.

Let me know if you have any questions or additional comments and talk soon!

Kellen

Kellen Tardaewether
Senior Siting Analyst
550 Capitol St. NE Salem, OR 97301
C: 503-586-6551
P (In Oregon): 800-221-8035



From: Tamra Mabbott <tmabbott@co.morrow.or.us>
Sent: Friday, May 17, 2024 4:22 PM
To: TARDAEWETHER Kellen * ODOE <Kellen.TARDAEWETHER@energy.oregon.gov>
Cc: Daisy Goebel <dgoebel@co.morrow.or.us>; Eric Imes <eimes@co.morrow.or.us>; Corey Sweeney <mcweed@co.morrow.or.us>
Subject: Fw: B2H Signed Letter

Kellen - attached is the letter from Morrow County RE the B2H RFA2.
Thank you.
Tamra

From: Valerie Ballard <vballard@co.morrow.or.us>
Sent: Thursday, May 16, 2024 3:03 PM
To: Tamra Mabbott <tmabbott@co.morrow.or.us>
Subject: B2H Signed Letter

Hi Tamra,

Here is the letter to ODOE for B2H.

And thank you for the note about my sandals 🙂

Valerie Ballard
Executive Assistant
Morrow County Administration and Board of Commissioners
541-676-5613 ext. 5303
PO Box 788
110 N Court St.
Heppner, OR 97836
vballard@co.morrow.or.us

BOARD OF COMMISSIONERS

110 N Court St. • P.O. Box 788
Heppner, OR 97836
541-676-5613
www.co.morrow.or.us

David Sykes, Chair
Jeff Wenholz, Commissioner
Roy Drago Jr., Commissioner

May 15, 2024

Kellen Tardaewether, Senior Siting Analyst
Oregon Department of Energy
550 Capitol Street NE
Salem, OR 97301

RE: Boardman to Hemingway Transmission Line – Preliminary Request for Amendment 2

Dear Ms. Tardaewether:

Thank you for the opportunity to provide comments. The purpose of this letter is to address the Request for Amendment (RFA2) for the Boardman to Hemingway Transmission Line Project (B2H). It is our understanding that the request includes an amendment to the site boundary and micrositing area to accommodate:

1. Eleven transmission line alternative locations impacting several parcels in Morrow County.
2. Refinement of the location of temporary work areas and roads.
3. Expansion of the Site Boundary and increasing the micro-siting corridor from 200 feet to 1.2 miles.

Additions proposed within Morrow County are identified in the table below, provided in the applicant's request:

Table 2: RFA2 Proposed Transmission Line Route, Access Road, and Work Area Additions

Proposed Micrositing Area Additions[1]	Length of Addition – Transmission Line (miles)	Length of Addition – Access Road (miles)	Work Areas (acres)	Micrositing Area (acres)	Description of Micrositing Area Addition
Morrow County					
Boardman Junction alternative[2]	0.6	--	3.9	5.1	Slight design modification to west to span I-84
Bombing Range SE alternative[3]	1.0	0.4	0.8	5.7	Slight design modification to east to avoid impacts to pivot irrigation
West of Bombing Range Road Alternative 1 (ASC Approved Alternative)	--	--	1.8	--	Pulling-tensioning site adjustments
Ayers Canyon alternative[4]	8.7	24.2	63.6	893.9	Alignment shifted to southeast per landowner request
Other Access Road and Work Area Changes for ASC Approved Route	--	1.7	34.6	19.8	Road and pulling-tensioning site adjustments
Morrow County – Total	**10.3**	**25.4**	**75.4**	**924.5**	

Morrow County has reviewed the applicant's submitted materials to the extent practical given the limited comment period. Morrow County wishes to highlight the substantial increase in acreage included in the Site Boundary. Staff could not find the calculated "Site Boundary" acreage increase specifically identified in the application materials, but in most locations the width of the site boundary will be widened from the approved 1-200 feet to 1.2 miles. It is not clear to what extent affected landowners were consulted and/or compensated for the additional impacts to private property. Additionally, we request that the certificate holder obtain a Road Use Agreement from Eric Imes, Morrow County Public Works Director for B2H construction. Prior Comments related to B2H and RFA1 are still applicable.

As always, Morrow County appreciates the opportunity to coordinate with you and other Department staff. Should you have any questions about this comment letter, or need additional information, please do not hesitate to contact Tamra Mabbott, Planning Director, (541) 922-4624.

Sincerely,

MORROW COUNTY BOARD OF COMMISSIONERS

David Sykes, Chair

Recused

Jeff Wenholz, Commissioner

Roy Drago Jr., Commissioner

Enclosures:

Encl. 1—Applicable IPC Site Boundary Change Maps
Encl. 2—Applicable IPC Proposed Micrositing Area Additions Maps

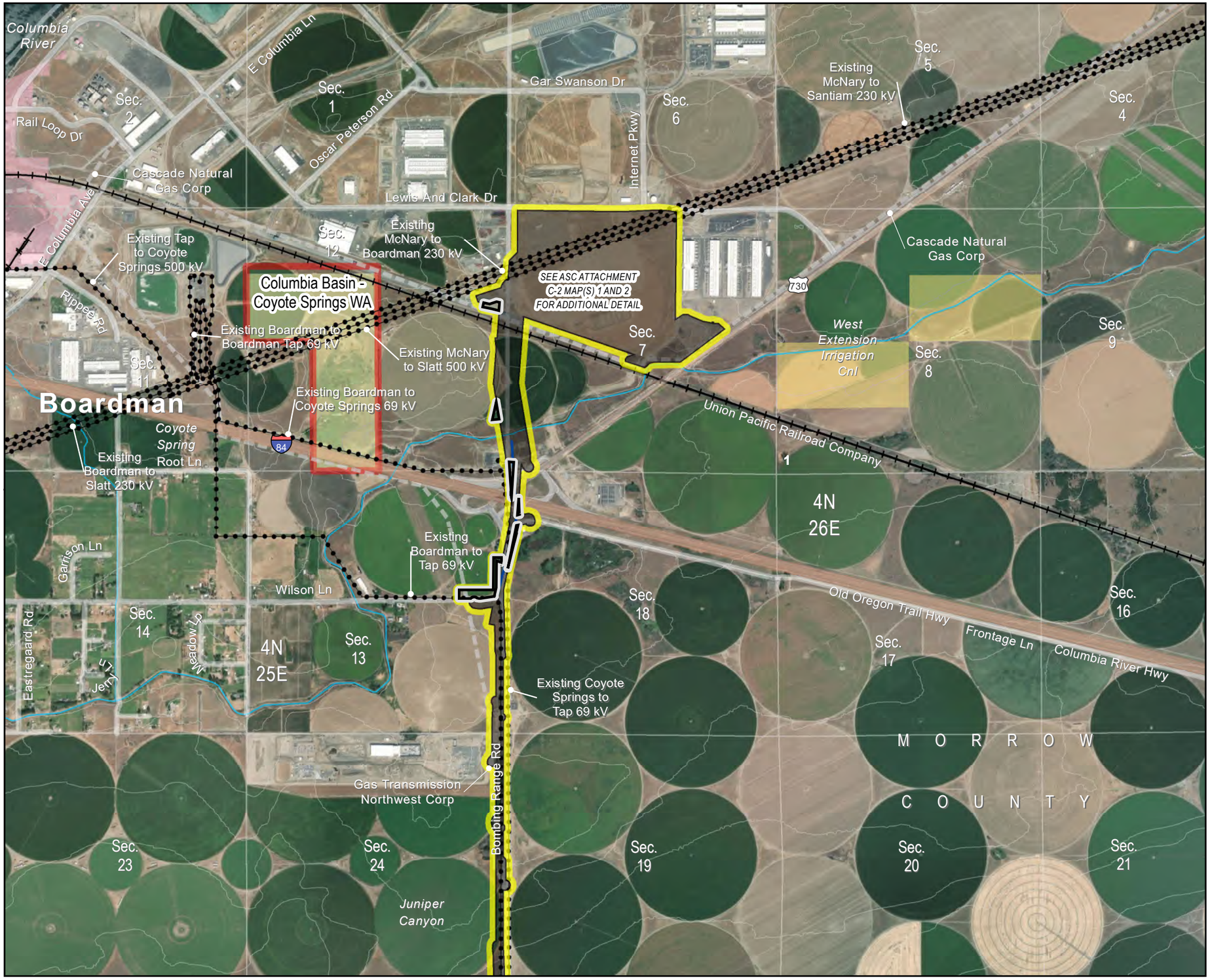
cc: Eric Imes, Morrow County Public Works Director

Boardman to Hemingway
Transmission Project
Request for Amendment 2

Figure 8-1
Proposed Site Boundary

Morrow

Map 1



Project Features
- Proposed Site Boundary
- Proposed Micrositing Area Addition
- Previously Approved Micrositing Area

Land Status
- Bureau of Land Management
- Bureau of Reclamation
- Military Reservation or Corps of Engineers
- Other Federal
- Private

Important Siting Constraints and Other Features
- 20-ft Contours
- Existing Transmission Line
- Pipeline
- Stream
- Interstate
- Highways
- Public Roads
- Protected Area (EFSC)
- Railroad

Notes:
Not intended for construction or any uses other than intended purpose.

Project features current as of March 9, 2023.

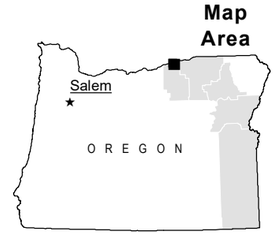
Data Source(s):
BLM, Esri, FAA, NPS, ODFW, ODOT, StreamNet, USGS, Velocity, Ventyx

Imagery:
Source: Esri, Maxar, Earthstar Geographics, and the GIS User Community

N

2,000
Feet

Map Area



IDAHO POWER
An IDACORP Company

\\cess706gisfs1\CES\Projects\BOI\UtilServ\Boardman_Hemingway\Reports\002_Oregon_Energy_Siting_Council\06_RFA2\Exhibits\Project Location\FIG 8-1 RFA2_Site Boundary Changes_MAPBOOK_20231205.mxd 3/26/2024

Boardman to Hemingway
Transmission Project
Request for Amendment 2

Figure 8-1
Proposed Site Boundary

Umatilla

Map 2

Project Features
- Proposed Site Boundary
- Proposed Micrositing Area Addition
- Previously Approved Micrositing Area

Land Status
- Bureau of Land Management
- Military Reservation or Corps of Engineers
- Private

Important Siting Constraints and Other Features
- 20-ft Contours
- Existing Transmission Line
- Pipeline
- Stream
- Interstate
- Public Roads
- Railroad
- Airport Controlled Airspace (Height Restrictions Apply)

Notes:
Not intended for construction or any uses other than intended purpose.

Project features current as of March 9, 2023.

Data Source(s):
BLM, Esri, FAA, NPS, ODFW, ODOT, StreamNet, USGS, Velocity, Ventyx

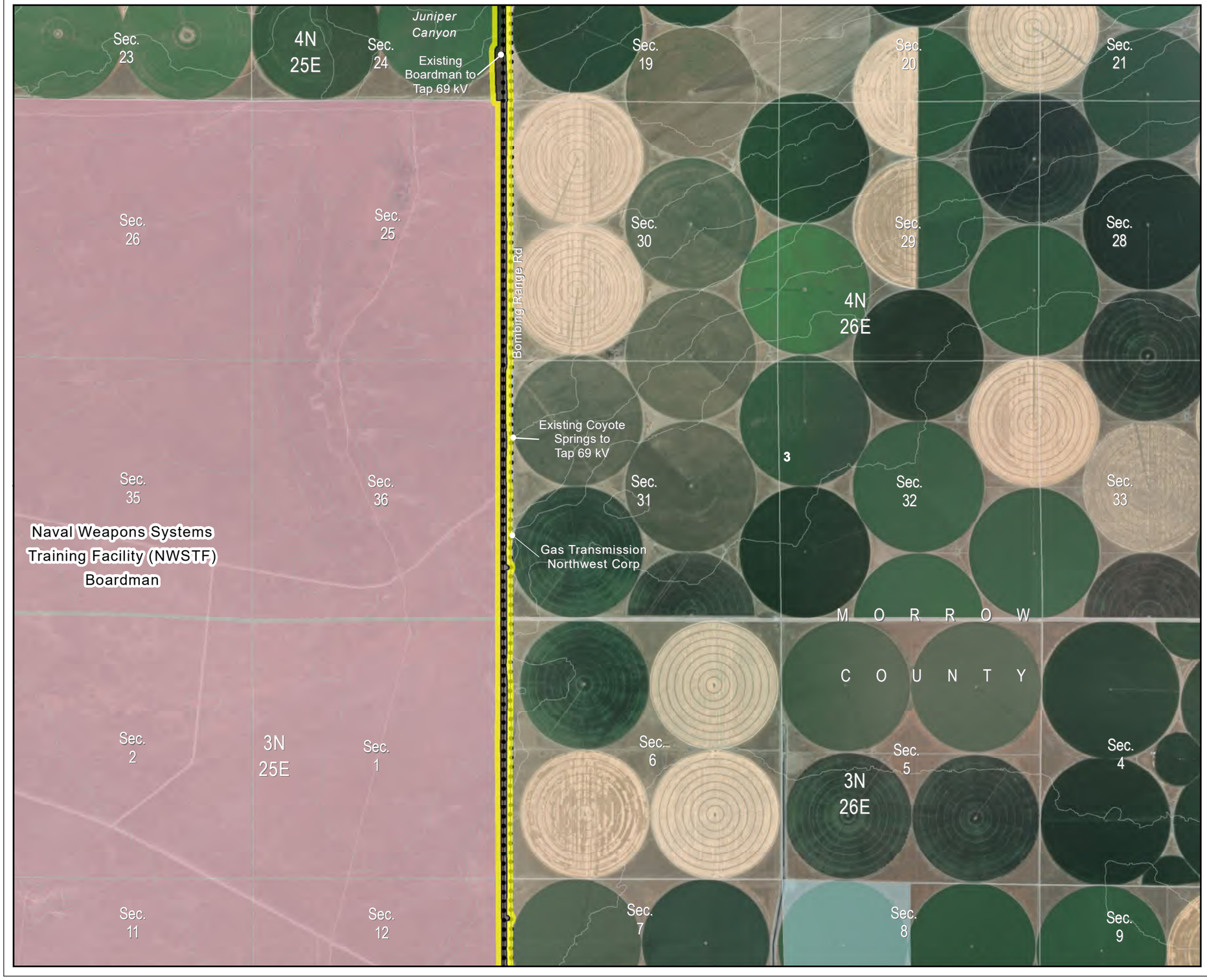
Imagery:
Source: Esri, Maxar, Earthstar Geographics, and the GIS User Community

N
2,000
Feet

Map Area
Salem
OREGON

IDAHO POWER
An IDACORP Company

\\cess706gisfs1\CES\Projects\BOI\UtilServ\Boardman_Hemingway\Reports\002_Oregon_Energy_Siting_Council\06_RFA2\Exhibits\Project Location\FIG 8-1 RFA2_Site Boundary Changes_MAPBOOK_20231205.mxd 3/26/2024



Boardman to Hemingway Transmission Project
Request for Amendment 2

Figure 8-1
Proposed Site Boundary

Morrow

Map 3

Project Features
- Proposed Site Boundary
- Previously Approved Micrositing Area

Land Status
- Military Reservation or Corps of Engineers
- Private
- State or Local

Important Siting Constraints and Other Features
- 20-ft Contours
- Existing Transmission Line
- Pipeline
- Public Roads

Notes:
Not intended for construction or any uses other than intended purpose.

Project features current as of March 9, 2023.

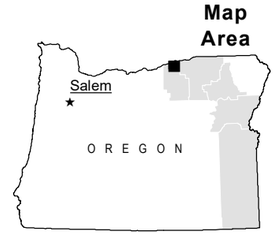
Data Source(s):
BLM, Esri, FAA, NPS, ODFW, ODOT, StreamNet, USGS, Velocity, Ventyx

Imagery:
Source: Esri, Maxar, Earthstar Geographics, and the GIS User Community

N

2,000
Feet

Map Area



IDAHO POWER
An IDACORP Company

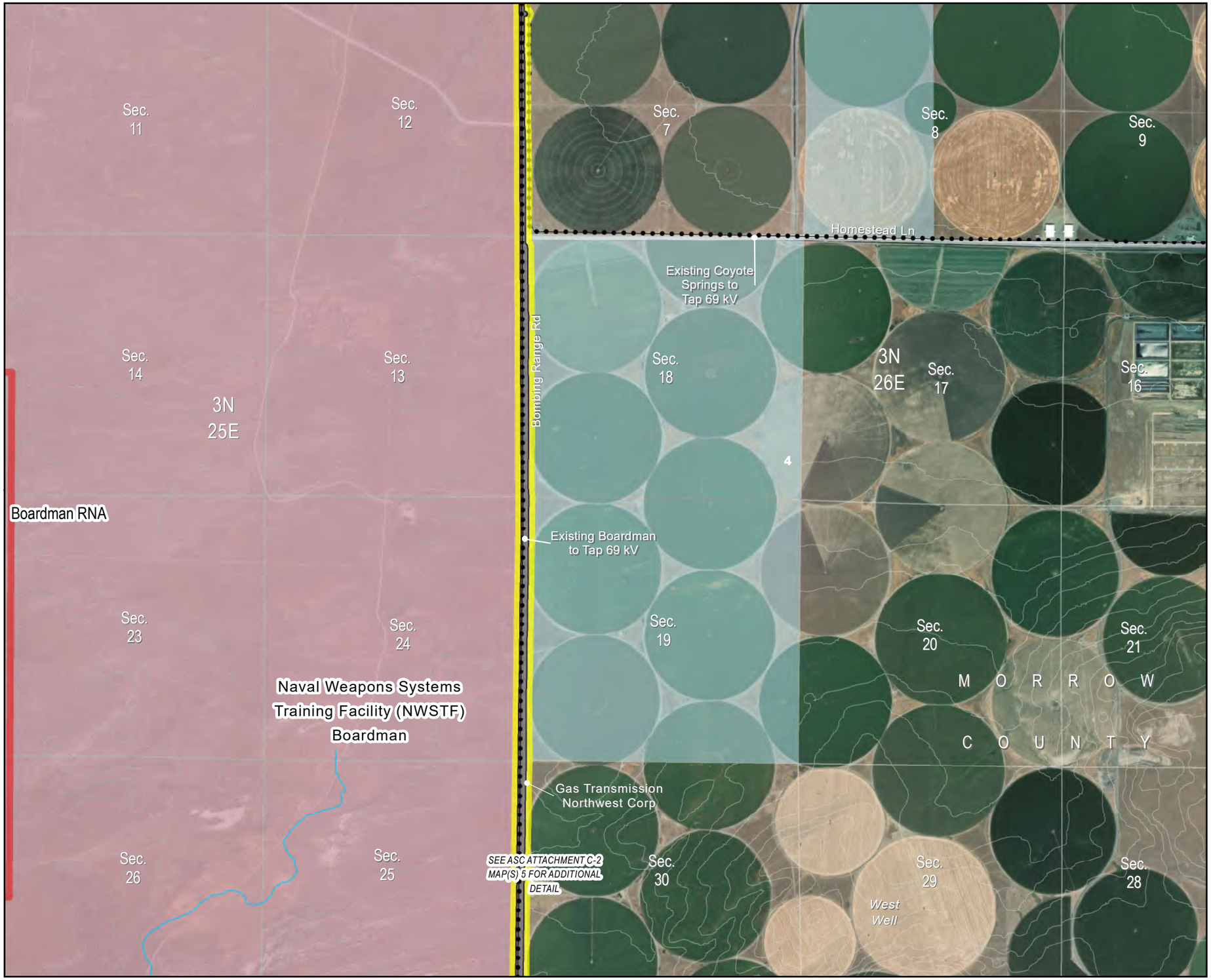
\\cess706gisfs1\CES\Projects\BOI\UtilServ\Boardman_Hemingway\Reports\002_Oregon_Energy_Siting_Council\06_RFA2\Exhibits\Project Location\FIG 8-1 RFA2_Site Boundary Changes_MAPBOOK_20231205.mxd 3/26/2024

Boardman to Hemingway
Transmission Project
Request for Amendment 2

Figure 8-1
Proposed Site Boundary

Morrow

Map 4



Project Features
- Proposed Site Boundary
- Previously Approved Micrositing Area

Land Status
- Military Reservation or Corps of Engineers
- Private
- State or Local

Important Siting Constraints and Other Features
- 20-ft Contours
- Existing Transmission Line
- Pipeline
- Stream
- Public Roads
- Protected Area (EFSC)

Notes:
Not intended for construction or any uses other than intended purpose.

Project features current as of March 9, 2023.

Data Source(s):
BLM, Esri, FAA, NPS, ODFW, ODOT, StreamNet, USGS, Velocity, Ventyx

Imagery:
Source: Esri, Maxar, Earthstar Geographics, and the GIS User Community

N

2,000
Feet

Map Area



IDAHO POWER
An IDACORP Company

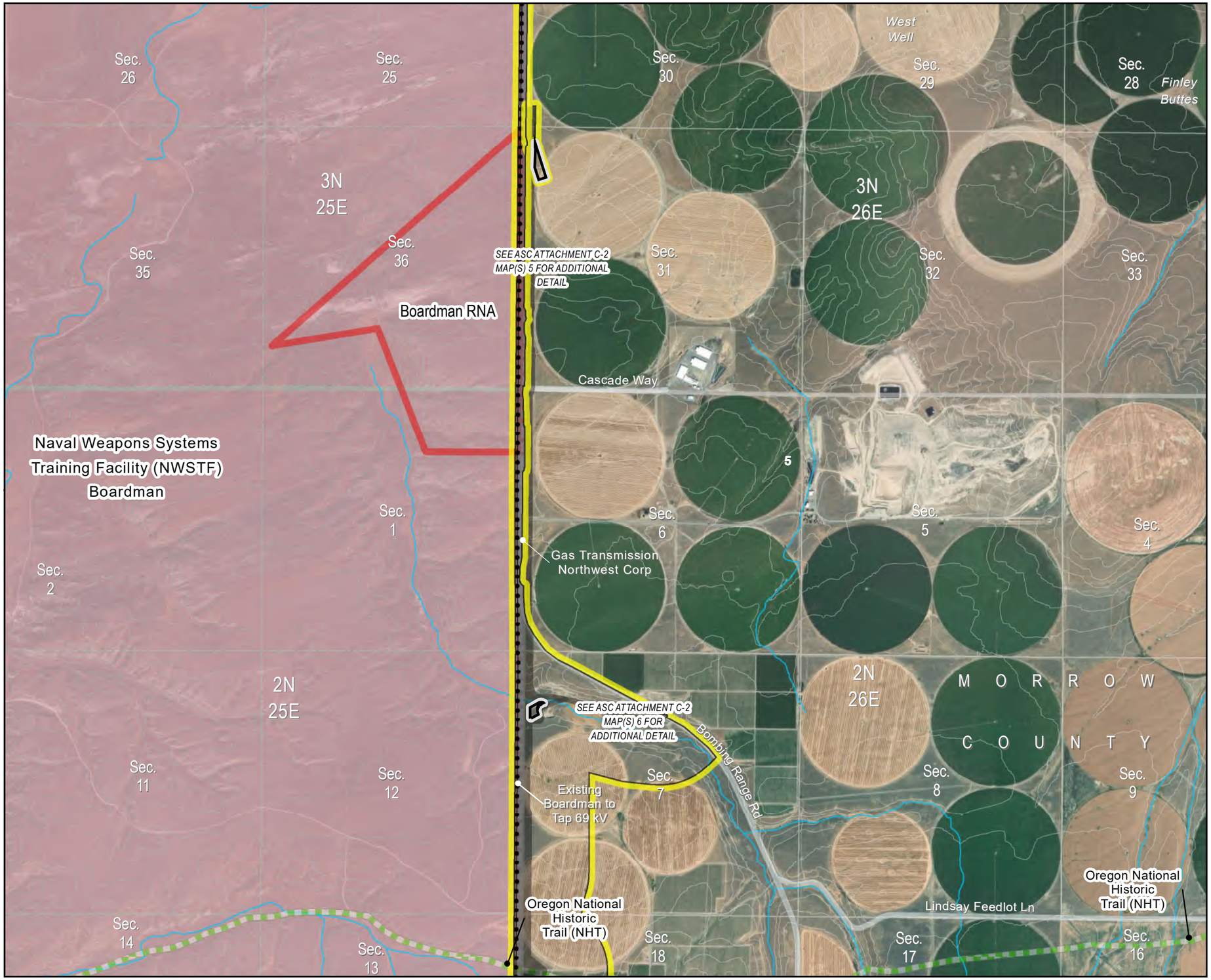
\\cess706gisfs1\CES\Projects\BOI\UtilServ\Boardman_Hemingway\Reports\002_Oregon_Energy_Siting_Council\06_RFA2\Exhibits\Project Location\FIG 8-1 RFA2_Site Boundary Changes_MAPBOOK_20231205.mxd 3/26/2024

Boardman to Hemingway
Transmission Project
Request for Amendment 2

Figure 8-1
Proposed Site Boundary

Morrow

Map 5



Project Features
- Proposed Site Boundary
- Proposed Micrositing Area Addition
- Previously Approved Micrositing Area

Land Status
- Military Reservation or Corps of Engineers
- Private

Important Siting Constraints and Other Features
- 20-ft Contours
- Existing Transmission Line
- Pipeline
- Stream
- Oregon National Historic Trail (NHT)
- Public Roads
- Protected Area (EFSC)

Notes:
Not intended for construction or any uses other than intended purpose.

Project features current as of March 9, 2023.

Data Source(s):
BLM, Esri, FAA, NPS, ODFW, ODOT, StreamNet, USGS, Velocity, Ventyx

Imagery:
Source: Esri, Maxar, Earthstar Geographics, and the GIS User Community

N

2,000
Feet

Map Area



IDAHO POWER
An IDACORP Company

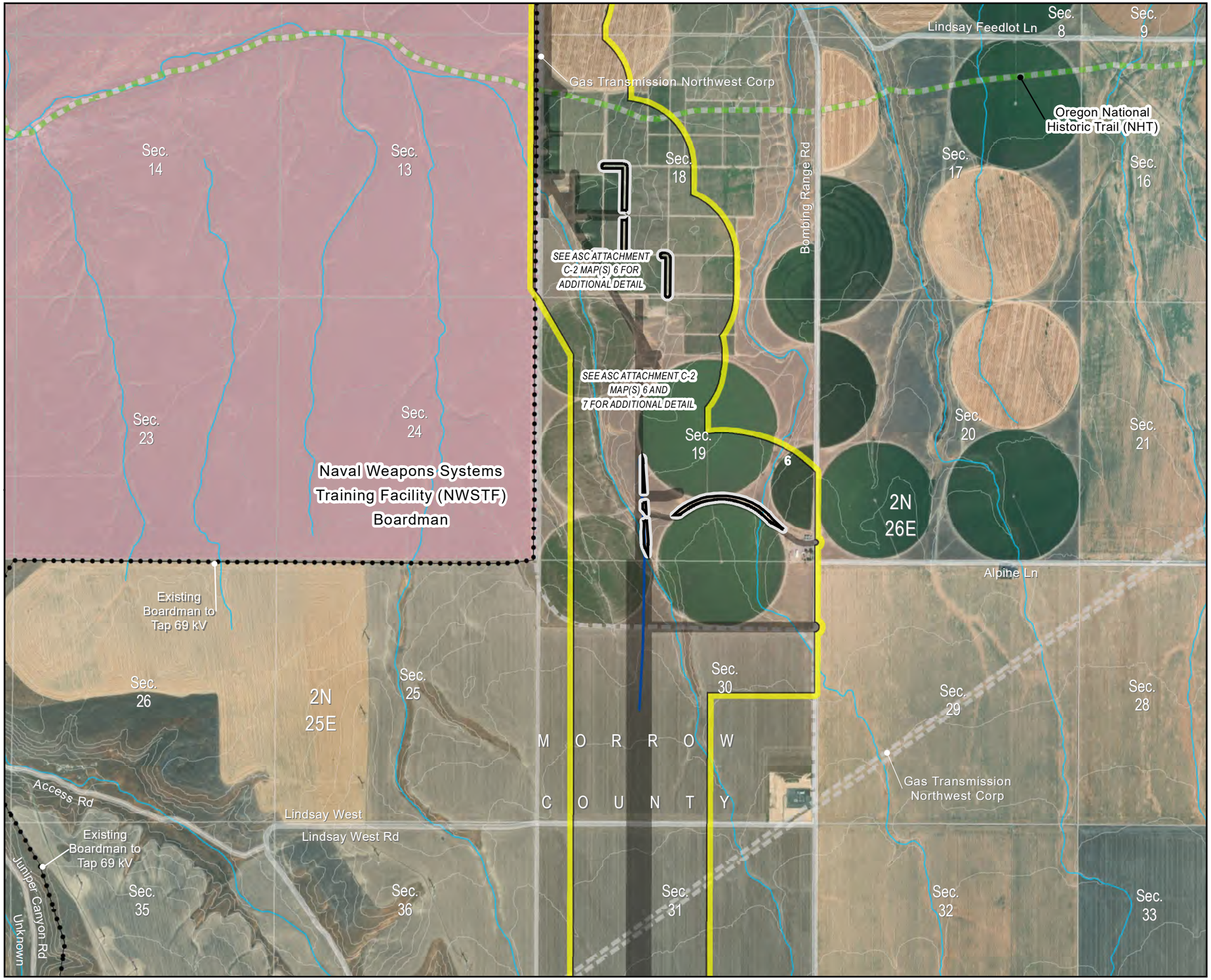
\\cess706gisfs1\CES\Projects\BOI\UtilServ\Boardman_Hemingway\Reports\002_Oregon_Energy_Siting_Council\06_RFA2\Exhibits\Project Location\FIG 8-1 RFA2_Site Boundary Changes_MAPBOOK_20231205.mxd 3/26/2024

Boardman to Hemingway
Transmission Project
Request for Amendment 2

Figure 8-1
Proposed Site Boundary

Morrow

Map 6



Project Features
- Proposed Site Boundary
- Proposed Micrositing Area Addition
- Previously Approved Micrositing Area

Land Status
- Military Reservation or Corps of Engineers
- Private

Important Siting Constraints and Other Features
- 20-ft Contours
- Existing Transmission Line
- Pipeline
- Stream
- Oregon National Historic Trail (NHT)
- Public Roads

Notes:
Not intended for construction or any uses other than intended purpose.

Project features current as of March 9, 2023.

Data Source(s):
BLM, Esri, FAA, NPS, ODFW, ODOT, StreamNet, USGS, Velocity, Ventyx

Imagery:
Source: Esri, Maxar, Earthstar Geographics, and the GIS User Community

N

2,000
Feet

Map Area



IDAHO POWER
An IDACORP Company

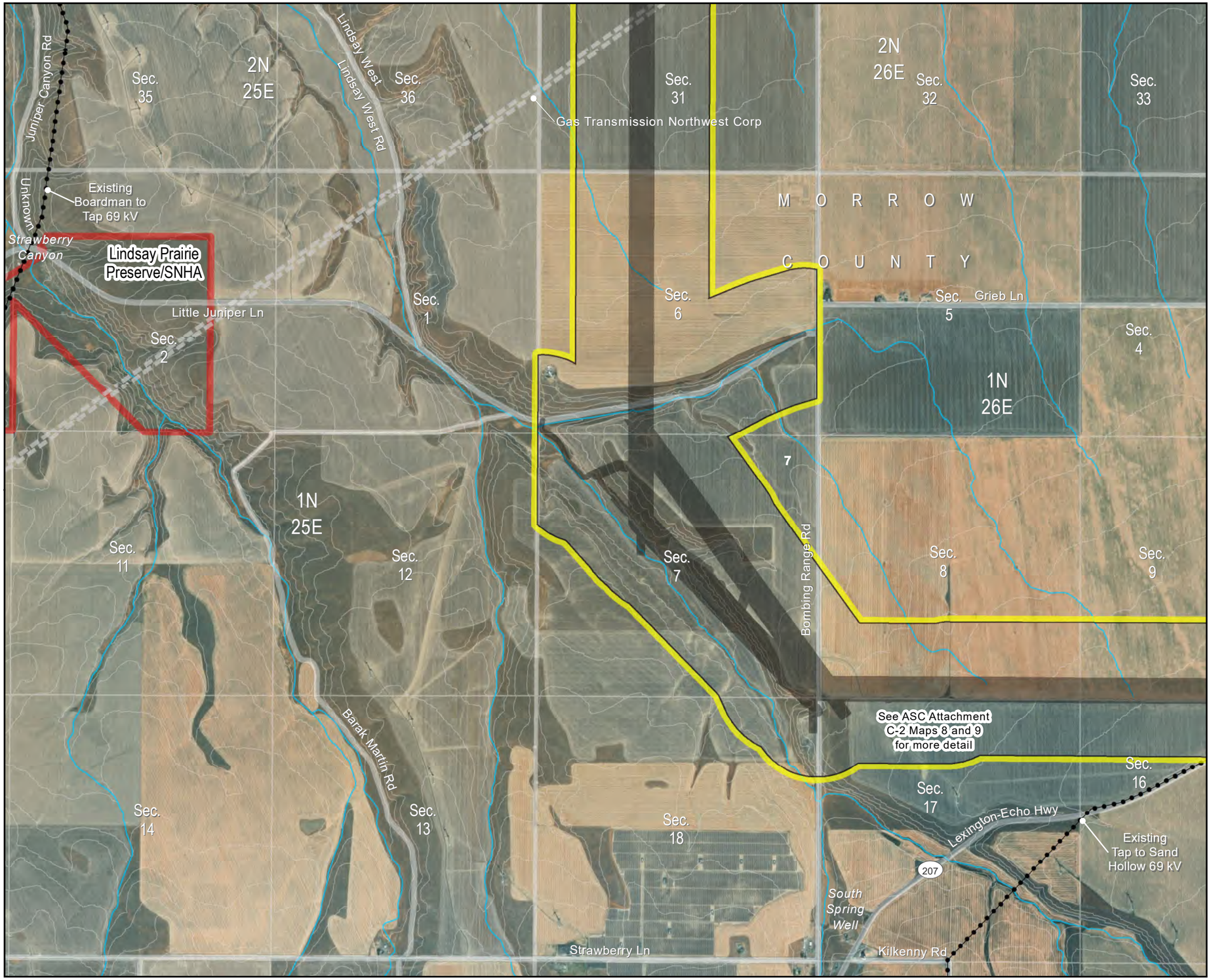
\\cess706gisfs1\CES\Projects\BOI\UtilServ\Boardman_Hemingway\Reports\002_Oregon_Energy_Siting_Council\06_RFA2\Exhibits\Project Location\FIG 8-1 RFA2_Site Boundary Changes_MAPBOOK_20231205.mxd 3/26/2024

Boardman to Hemingway
Transmission Project
Request for Amendment 2

Figure 8-1
Proposed Site Boundary

Morrow

Map 7



Project Features
- Proposed Site Boundary
- Previously Approved Micrositing Area

Land Status
- Private

Important Siting Constraints and Other Features
- 20-ft Contours
- Existing Transmission Line
- Pipeline
- Stream
- Public Roads
- Protected Area (EFSC)

Notes:
Not intended for construction or any uses other than intended purpose.

Project features current as of March 9, 2023.

Data Source(s):
BLM, Esri, FAA, NPS, ODFW, ODOT, StreamNet, USGS, Velocity, Ventyx

Imagery:
Source: Esri, Maxar, Earthstar Geographics, and the GIS User Community

N

2,000
Feet

Map Area



IDAHO POWER
An IDACORP Company

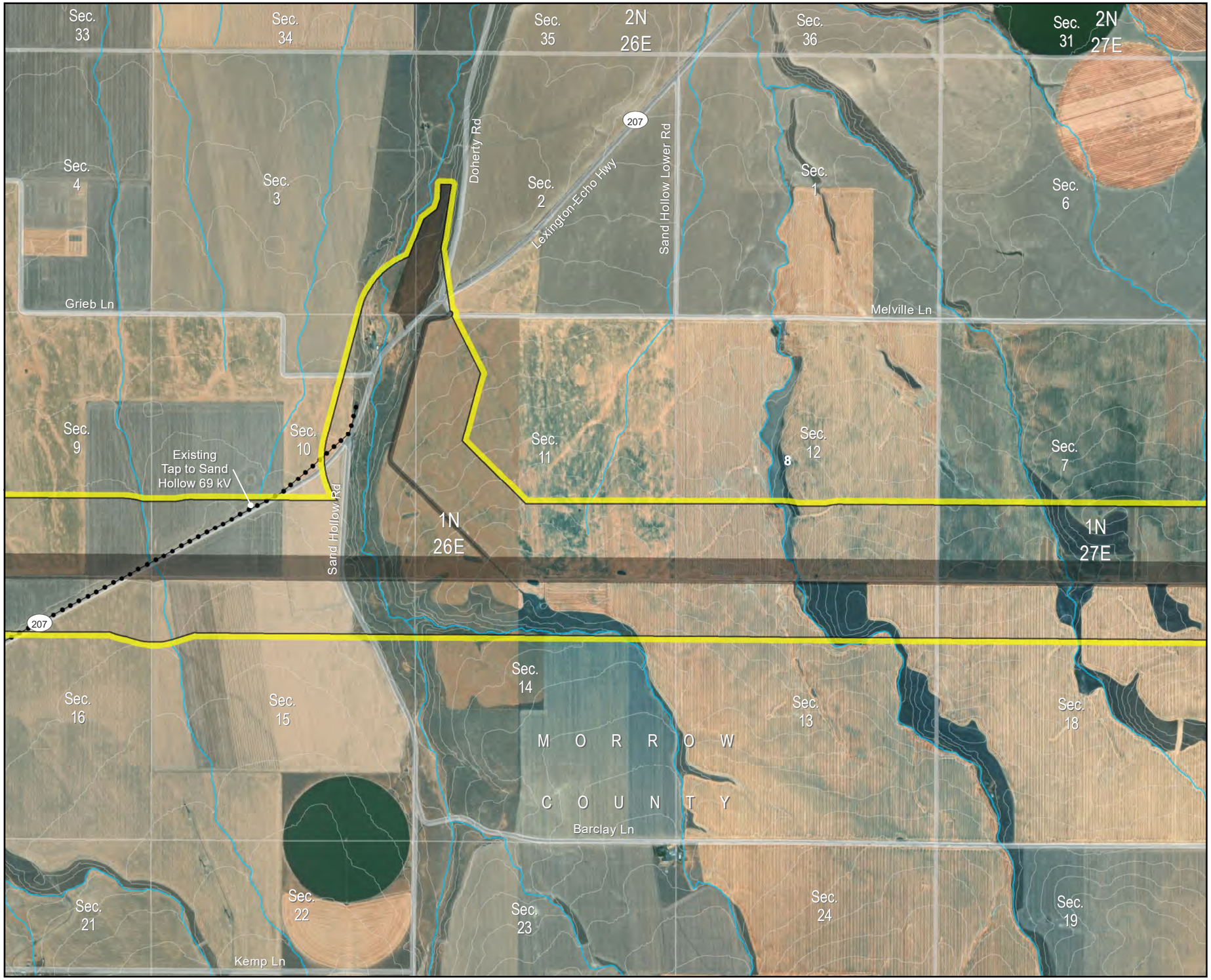
\\cess706gisfs1\CES\Projects\BOI\UtilServ\Boardman_Hemingway\Reports\002_Oregon_Energy_Siting_Council\06_RFA2\Exhibits\Project Location\FIG 8-1 RFA2_Site Boundary Changes_MAPBOOK_20231205.mxd 3/26/2024

Boardman to Hemingway
Transmission Project
Request for Amendment 2

Figure 8-1
Proposed Site Boundary

Morrow

Map 8



Project Features
- Proposed Site Boundary
- Previously Approved Micrositing Area

Land Status
- Private

Important Siting Constraints and Other Features
- 20-ft Contours
- Existing Transmission Line
- Stream
- Public Roads

Notes:
Not intended for construction or any uses other than intended purpose.

Project features current as of March 9, 2023.

Data Source(s):
BLM, Esri, FAA, NPS, ODFW, ODOT, StreamNet, USGS, Velocity, Ventyx

Imagery:
Source: Esri, Maxar, Earthstar Geographics, and the GIS User Community

N

2,000
Feet

Map Area



IDAHO POWER
An IDACORP Company

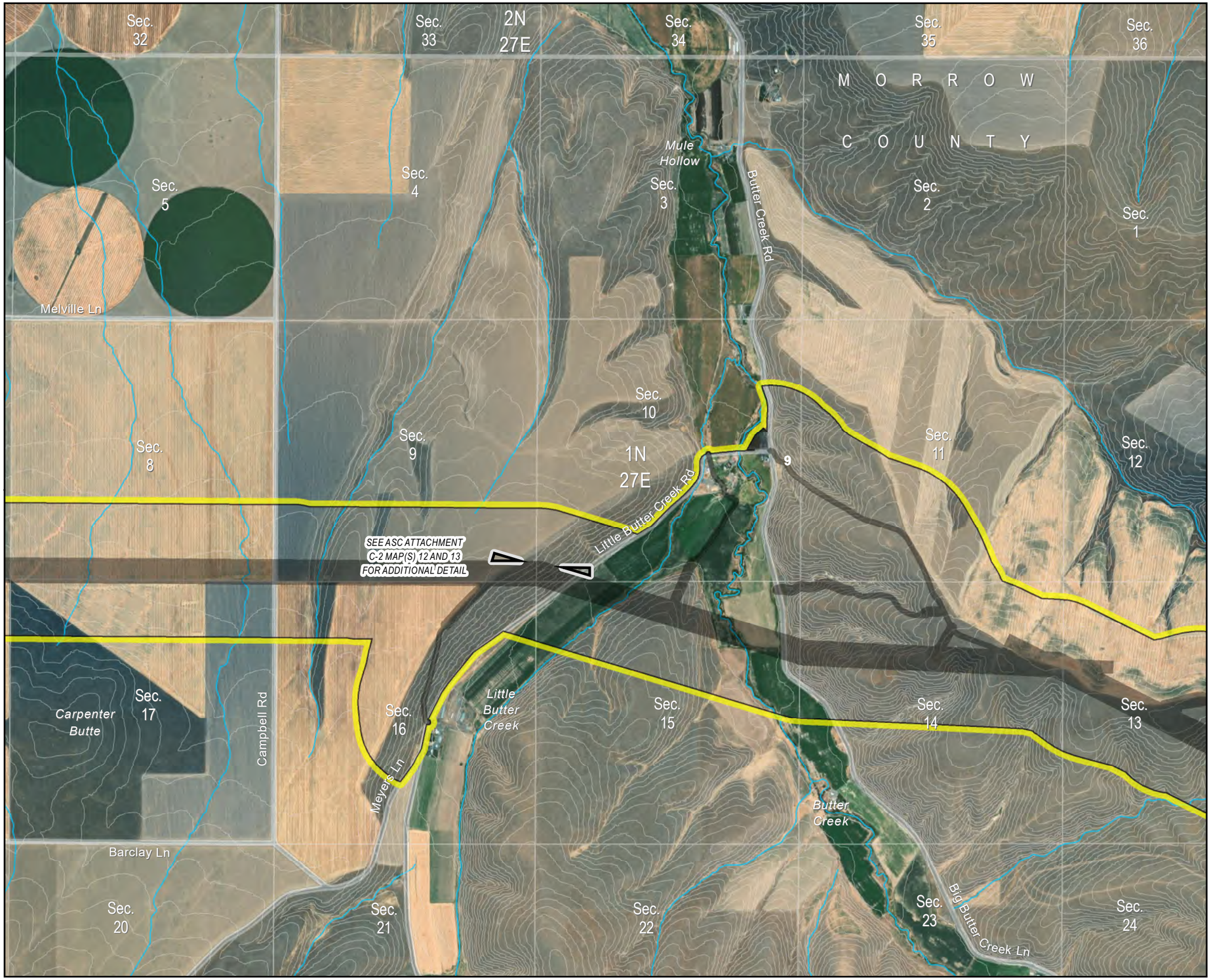
\\cess706gisfs1\CES\Projects\BOI\UtilServ\Boardman_Hemingway\Reports\002_Oregon_Energy_Siting_Council\06_RFA2\Exhibits\Project Location\FIG 8-1 RFA2_Site Boundary Changes_MAPBOOK_20231205.mxd 3/26/2024

Boardman to Hemingway
Transmission Project
Request for Amendment 2

Figure 8-1
Proposed Site Boundary

Morrow

Map 9



Project Features
- Proposed Site Boundary
- Proposed Micrositing Area Addition
- Previously Approved Micrositing Area

Land Status
- Private

Important Siting Constraints and Other Features
- 20-ft Contours
- Stream
- Public Roads

Notes:
Not intended for construction or any uses other than intended purpose.

Project features current as of March 9, 2023.

Data Source(s):
BLM, Esri, FAA, NPS, ODFW, ODOT, StreamNet, USGS, Velocity, Ventyx

Imagery:
Source: Esri, Maxar, Earthstar Geographics, and the GIS User Community

N

2,000
Feet

Map Area



IDAHO POWER
An IDACORP Company

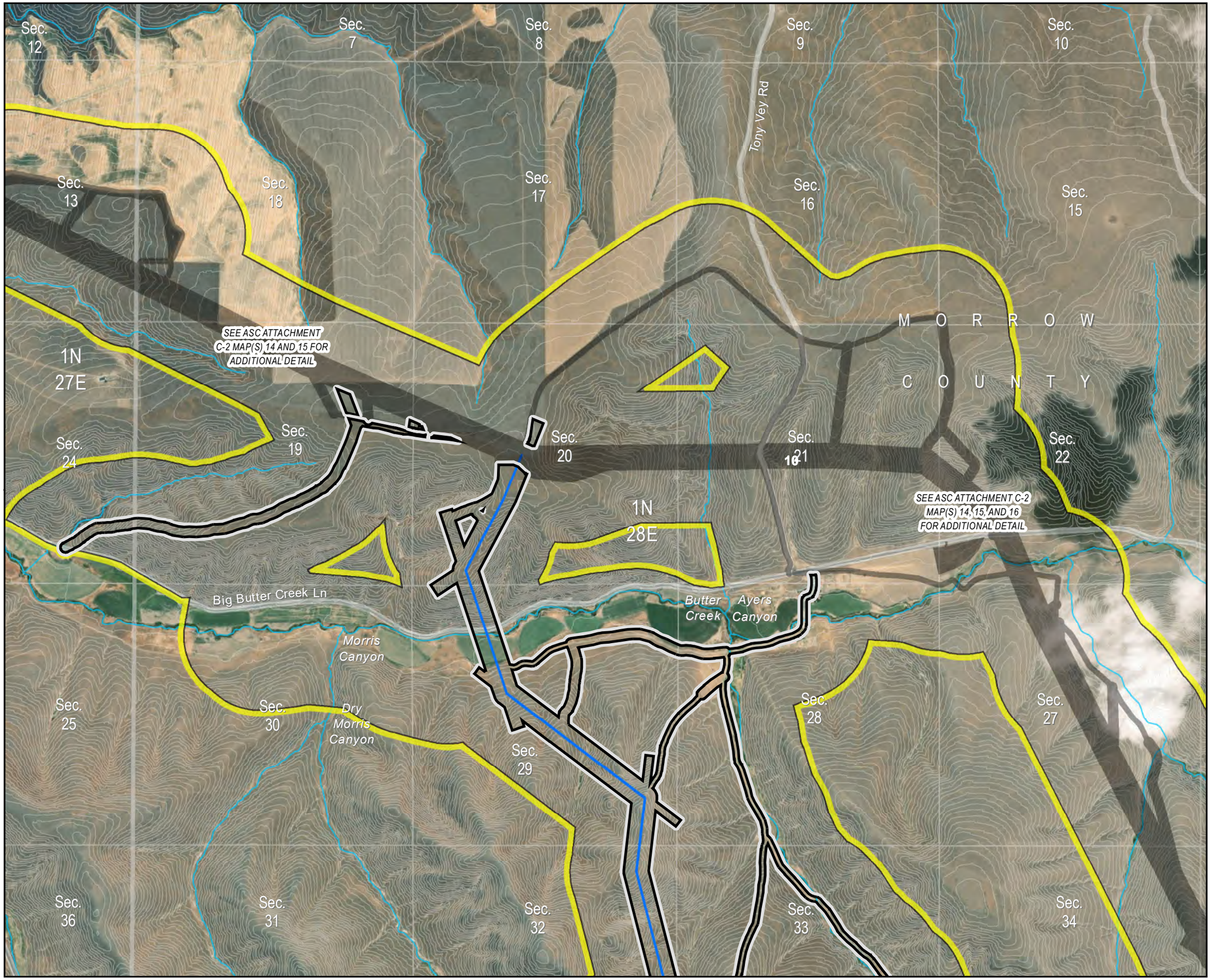
\\cess706gisfs1\CES\Projects\BOI\UtilServ\Boardman_Hemingway\Reports\002_Oregon_Energy_Siting_Council\06_RFA2\Exhibits\Project Location\FIG 8-1 RFA2_Site Boundary Changes_MAPBOOK_20231205.mxd 3/26/2024

Boardman to Hemingway
Transmission Project
Request for Amendment 2

Figure 8-1
Proposed Site Boundary

Morrow

Map 10



Project Features
- Proposed Site Boundary
- Proposed Micrositing Area Addition
- Previously Approved Micrositing Area

Land Status
- Private

Important Siting Constraints and Other Features
- 20-ft Contours
- Stream
- Public Roads

Notes:
Not intended for construction or any uses other than intended purpose.

Project features current as of March 9, 2023.

Data Source(s):
BLM, Esri, FAA, NPS, ODFW, ODOT, StreamNet, USGS, Velocity, Ventyx

Imagery:
Source: Esri, Maxar, Earthstar Geographics, and the GIS User Community

N

2,000
Feet

Map Area



IDAHO POWER
An IDACORP Company

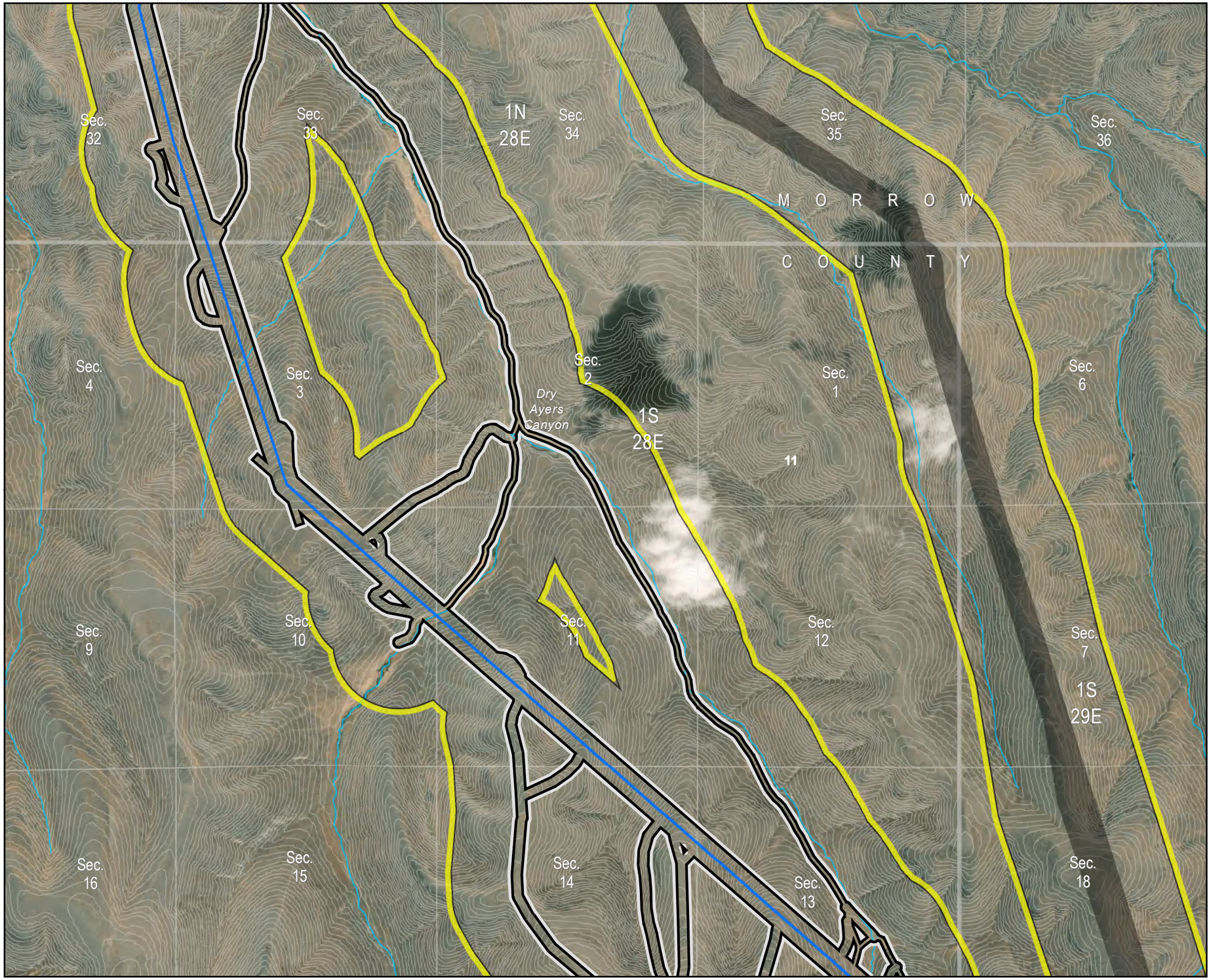
\\cess706gisfs1\CES\Projects\BOI\UtilServ\Boardman_Hemingway\Reports\002_Oregon_Energy_Siting_Council\06_RFA2\Exhibits\Project Location\FIG 8-1 RFA2_Site Boundary Changes_MAPBOOK_20231205.mxd 3/26/2024

Boardman to Hemingway
Transmission Project
Request for Amendment 2

Figure 8-1
Proposed Site Boundary

Morrow

Map 11



Project Features
- Proposed Site Boundary
- Proposed Micrositing Area Addition
- Previously Approved Micrositing Area

Land Status
- Private

Important Siting Constraints and Other Features
- 20-ft Contours
- Stream

Notes:
Not intended for construction or any uses other than intended purpose.

Project features current as of March 9, 2023.

Data Source(s):
BLM, Esri, FAA, NPS, ODFW, ODOT, StreamNet, USGS, Velocity, Ventyx

Imagery:
Source: Esri, Maxar, Earthstar Geographics, and the GIS User Community

N

2,000
Feet

Map Area



IDAHO POWER
An IDACORP Company

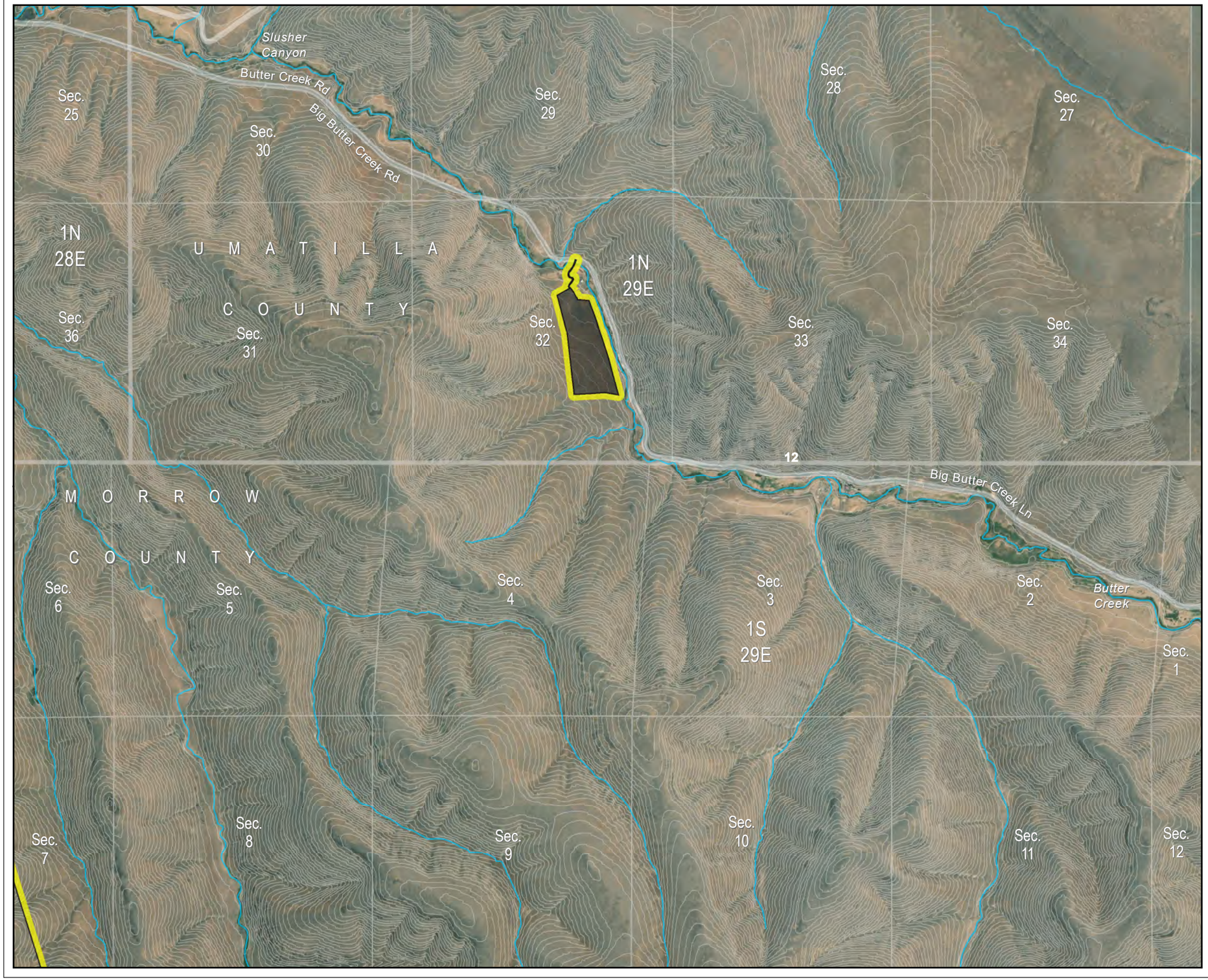
\\cess706gisfs1\CES\Projects\BOI\UtilServ\Boardman_Hemingway\Reports\002_Oregon_Energy_Siting_Council\06_RFA2\Exhibits\Project Location\FIG 8-1 RFA2_Site Boundary Changes_MAPBOOK_20231205.mxd 3/26/2024

Boardman to Hemingway
Transmission Project
Request for Amendment 2

Figure 8-1
Proposed Site Boundary

Morrow

Map 12



Project Features
- Proposed Site Boundary
- Previously Approved Micrositing Area

Land Status
- Private

Important Siting Constraints and Other Features
- 20-ft Contours
- Stream
- Public Roads

Notes:
Not intended for construction or any uses other than intended purpose.

Project features current as of March 9, 2023.

Data Source(s):
BLM, Esri, FAA, NPS, ODFW, ODOT, StreamNet, USGS, Velocity, Ventyx

Imagery:
Source: Esri, Maxar, Earthstar Geographics, and the GIS User Community

N

2,000
Feet

Map Area



IDAHO POWER
An IDACORP Company

\\cess706gisfs1\CES\Projects\BOI\UtilServ\Boardman_Hemingway\Reports\002_Oregon_Energy_Siting_Council\06_RFA2\Exhibits\Project Location\FIG 8-1 RFA2_Site Boundary Changes_MAPBOOK_20231205.mxd 3/26/2024

Boardman to Hemingway
Transmission Project
Request for Amendment 2

Figure 8-1
Proposed Site Boundary

Morrow

Map 13

Project Features
- Proposed Site Boundary
- Proposed Micrositing Area Addition
- Previously Approved Micrositing Area

Land Status
- Private

Important Siting Constraints and Other Features
- 20-ft Contours
- Stream

Sec. 14
Sec. 13
Sec. 18
Sec. 17
Sec. 16
Sec. 23
Sec. 24
Sec. 19
Sec. 20
Sec. 21
Buttermilk Canyon
1S 29E
Sec. 29
SEE ASC ATTACHMENT C-2 MAP(S) 17, 18, AND 19 FOR ADDITIONAL DETAIL
Sec. 30
Sec. 25
Sec. 26
1S 28E
Sec. 28
M O R R O W
C O U N T Y
Sec. 35
Sec. 36
Sec. 31
Sec. 32
Sec. 33

Notes:
Not intended for construction or any uses other than intended purpose.

Project features current as of March 9, 2023.

Data Source(s):
BLM, Esri, FAA, NPS, ODFW, ODOT, StreamNet, USGS, Velocity, Ventyx

Imagery:
Source: Esri, Maxar, Earthstar Geographics, and the GIS User Community

N
2,000
Feet

Map Area
Salem
O R E G O N

IDAHO POWER
An IDACORP Company

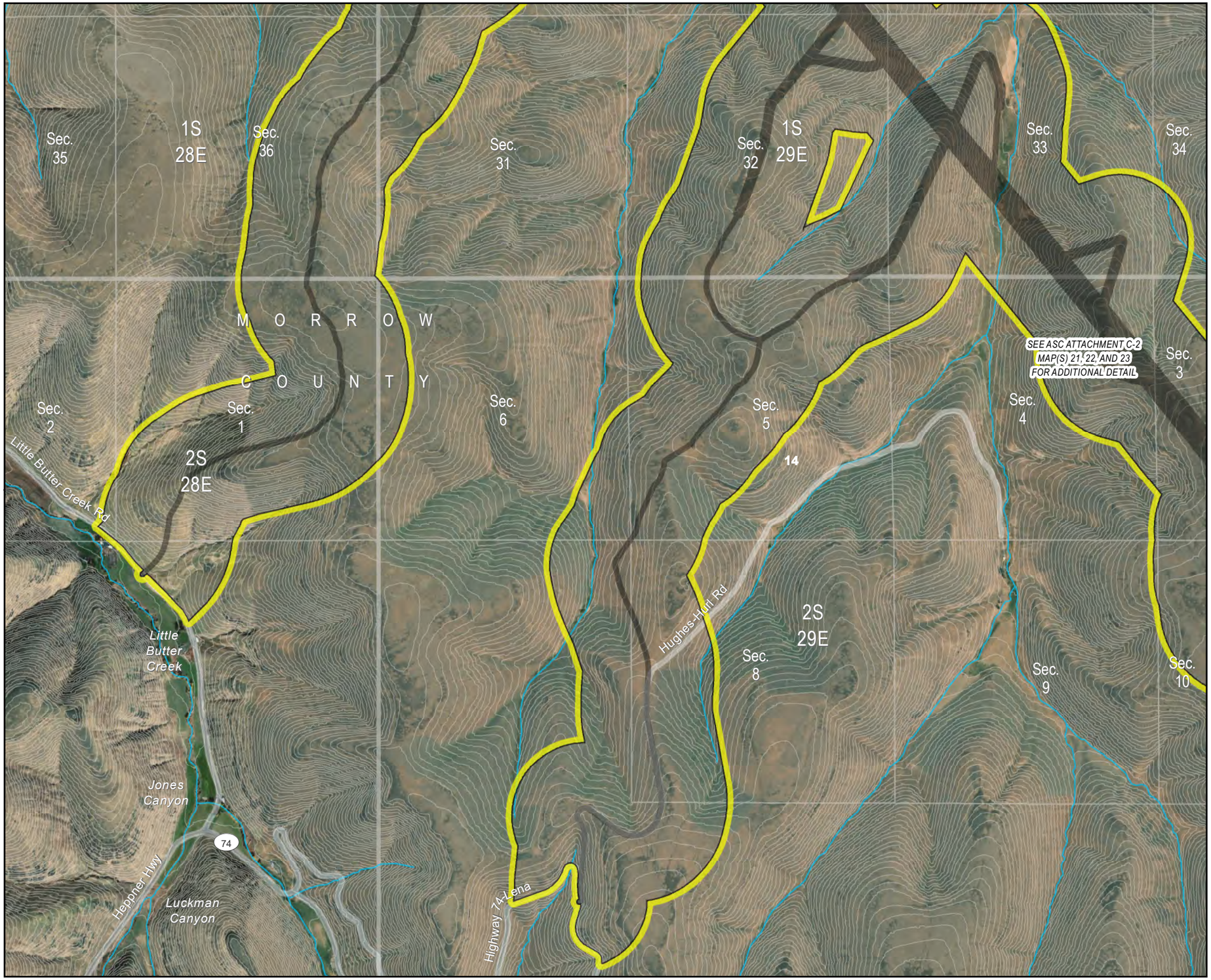
\\cess706gisfs1\CES\Projects\BOI\UtilServ\Boardman_Hemingway\Reports\002_Oregon_Energy_Siting_Council\06_RFA2\Exhibits\Project Location\FIG 8-1 RFA2_Site Boundary Changes_MAPBOOK_20231205.mxd 3/26/2024

Boardman to Hemingway
Transmission Project
Request for Amendment 2

Figure 8-1
Proposed Site Boundary

Morrow

Map 14



Project Features
- Proposed Site Boundary
- Previously Approved Micrositing Area

Land Status
- Private

Important Siting Constraints and Other Features
- 20-ft Contours
- Stream
- Public Roads

Notes:
Not intended for construction or any uses other than intended purpose.

Project features current as of March 9, 2023.

Data Source(s):
BLM, Esri, FAA, NPS, ODFW, ODOT, StreamNet, USGS, Velocity, Ventyx

Imagery:
Source: Esri, Maxar, Earthstar Geographics, and the GIS User Community

N

2,000
Feet

Map Area



IDAHO POWER
An IDACORP Company

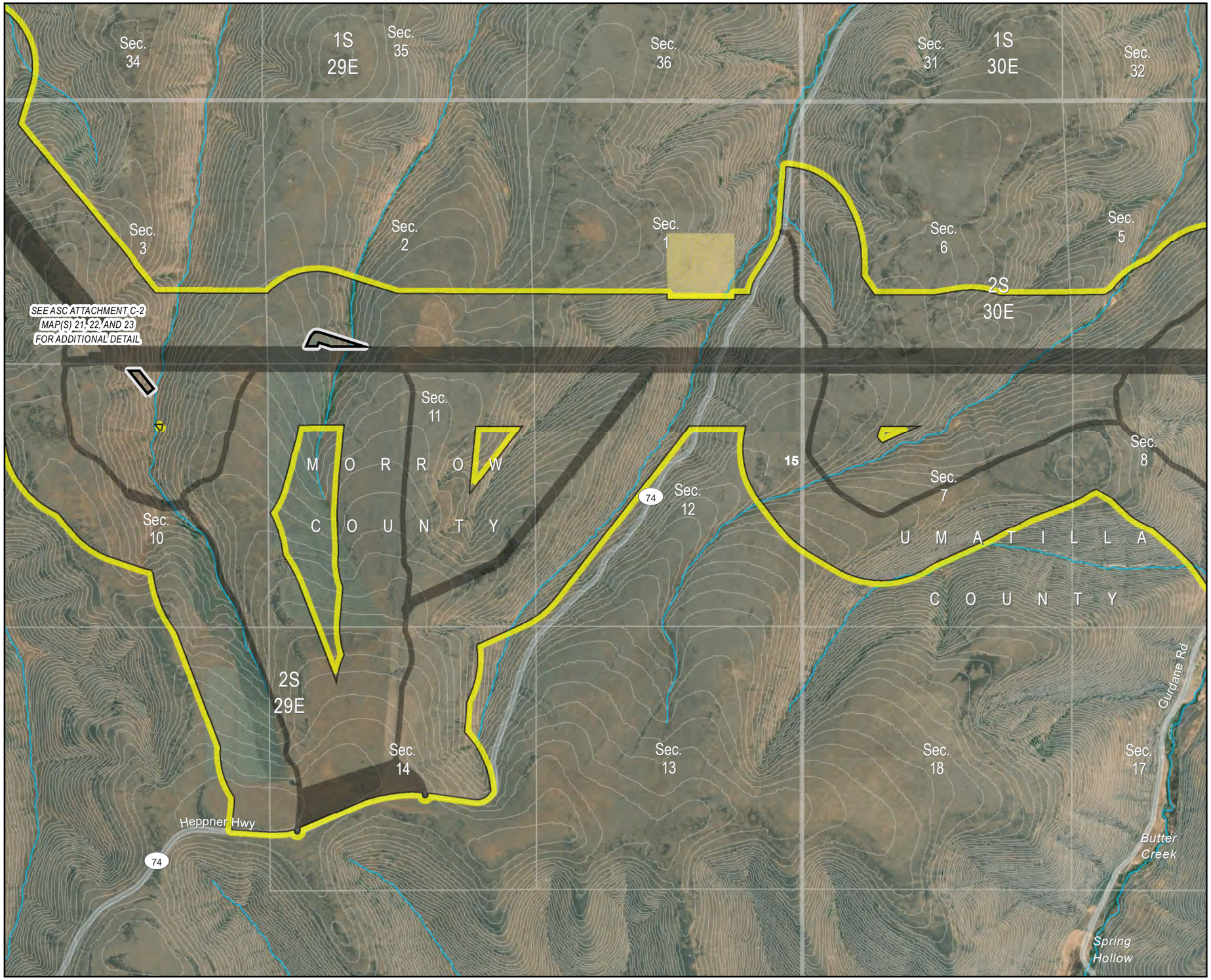
\\cess706gisfs1\CES\Projects\BOI\UtilServ\Boardman_Hemingway\Reports\002_Oregon_Energy_Siting_Council\06_RFA2\Exhibits\Project Location\FIG 8-1 RFA2_Site Boundary Changes_MAPBOOK_20231205.mxd 3/26/2024

Boardman to Hemingway
Transmission Project
Request for Amendment 2

Figure 8-1
Proposed Site Boundary

Morrow

Map 15



Project Features
- Proposed Site Boundary
- Proposed Micrositing Area Addition
- Previously Approved Micrositing Area

Land Status
- Bureau of Land Management
- Private

Important Siting Constraints and Other Features
- 20-ft Contours
- Stream
- Public Roads

Notes:
Not intended for construction or any uses other than intended purpose.

Project features current as of March 9, 2023.

Data Source(s):
BLM, Esri, FAA, NPS, ODFW, ODOT, StreamNet, USGS, Velocity, Ventyx

Imagery:
Source: Esri, Maxar, Earthstar Geographics, and the GIS User Community

N

2,000
Feet

Map Area



IDAHO POWER
An IDACORP Company

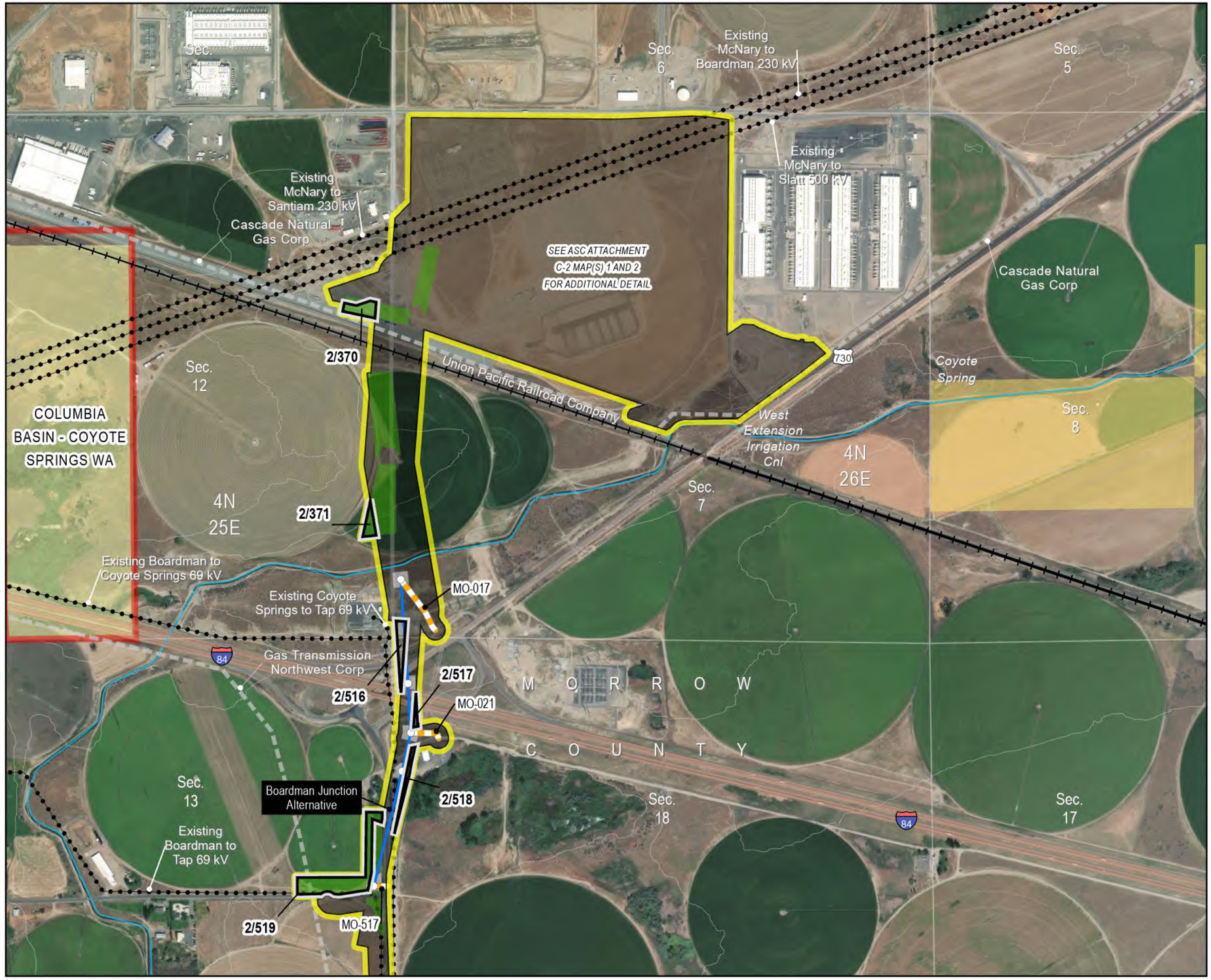
\\cess706gisfs1\CES\Projects\BOI\UtilServ\Boardman_Hemingway\Reports\002_Oregon_Energy_Siting_Council\06_RFA2\Exhibits\Project Location\FIG 8-1 RFA2_Site Boundary Changes_MAPBOOK_20231205.mxd 3/26/2024

Boardman to Hemingway
Transmission Project
Request for Amendment 2

Figure 4-1
RFA2 Proposed Micrositing Area Additions

Morrow County

Map 1



Project Features
- Proposed Site Boundary
- Proposed Micrositing Area Addition
- Previously Approved Micrositing Area
- Towers_RFA2

Access (Unique ID)
- New Road, Primitive
- Transmission Centerline

Work Areas
- Pulling and Tensioning
- Structure Work Area

Important Siting Constraints and Other Features
- 20-ft Contours
- Existing Transmission Line
- Pipeline
- Stream
- Interstate
- Highways
- Railroad
- Protected Area (EFSC)

Land Status
- Bureau of Land Management
- Bureau of Reclamation
- Other Federal
- Private

Notes:
Not intended for construction or any uses other than intended purpose.

Project features current as of December 5, 2023.

Data Source(s):
BLM, Esri, FAA, NPS, ODFW, ODOT, StreamNet, USGS, Velocity, Ventyx

Imagery:
World Imagery: Maxar

N

1,000
Feet

Map Area



IDAHO POWER
An IDACORP Company

\\cess706gisfs1\CES\Projects\BOI\UtilServ\Boardman_Hemingway\Reports\002_Oregon_Energy_Siting_Council\06_RFA2\Exhibits\Project Location\FIG 4-1 RFA2_Site Boundary Changes_MAPBOOK_20240117\Maps\FIG 4-1 RFA2_Site Boundary Changes_MAPBOOK_20240117.aprx 3/31/2024

Boardman to Hemingway
Transmission Project
Request for Amendment 2

Figure 4-1
RFA2 Proposed Micrositing Area Additions

Umatilla County

Map 2



Project Features
- Proposed Site Boundary
- Proposed Micrositing Area Addition

Work Areas
- Multi-Use Area

- Existing Transmission Line
- Pipeline
- Stream
- Interstate
- Railroad

Land Status
- Private

Notes:
Not intended for construction or any uses other than intended purpose.

Project features current as of December 5, 2023.

Data Source(s):
BLM, Esri, FAA, NPS, ODFW, ODOT, StreamNet, USGS, Velocity, Ventyx

Imagery:
World Imagery: Maxar

N

1,000
Feet

Map Area



IDAHO POWER
An IDACORP Company

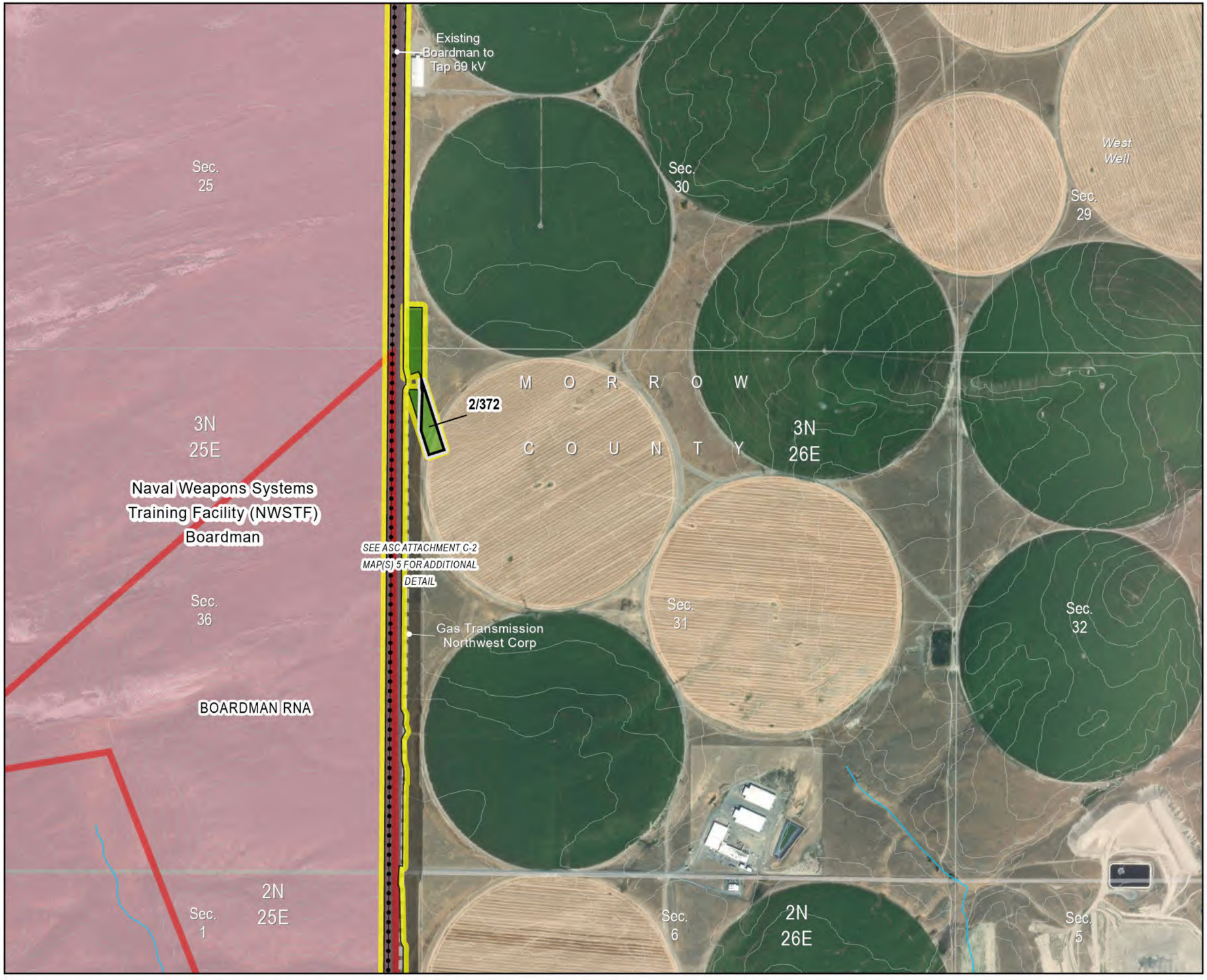
\\cess706gisfs1\CES\Projects\BOI\UtilServ\Boardman_Hemingway\Reports\002_Oregon_Energy_Siting_Council\06_RFA2\Exhibits\Project Location\FIG 4-1 RFA2_Site Boundary Changes_MAPBOOK_20240117\Maps\FIG 4-1 RFA2_Site Boundary Changes_MAPBOOK_20240117.aprx 3/31/2024

Boardman to Hemingway
Transmission Project
Request for Amendment 2

Figure 4-1
RFA2 Proposed Micrositing Area Additions

Morrow County

Map 3



Project Features
- Proposed Site Boundary
- Proposed Micrositing Area Addition
- Previously Approved Micrositing Area

Work Areas
- Pulling and Tensioning

Important Siting Constraints and Other Features
- 20-ft Contours
- Existing Transmission Line
- Pipeline
- Stream
- Protected Area (EFSC)

Land Status
- Military Reservation or Corps of Engineers
- Private

Notes:
Not intended for construction or any uses other than intended purpose.

Project features current as of December 5, 2023.

Data Source(s):
BLM, Esri, FAA, NPS, ODFW, ODOT, StreamNet, USGS, Velocity, Ventyx

Imagery:
World Imagery: Maxar

N

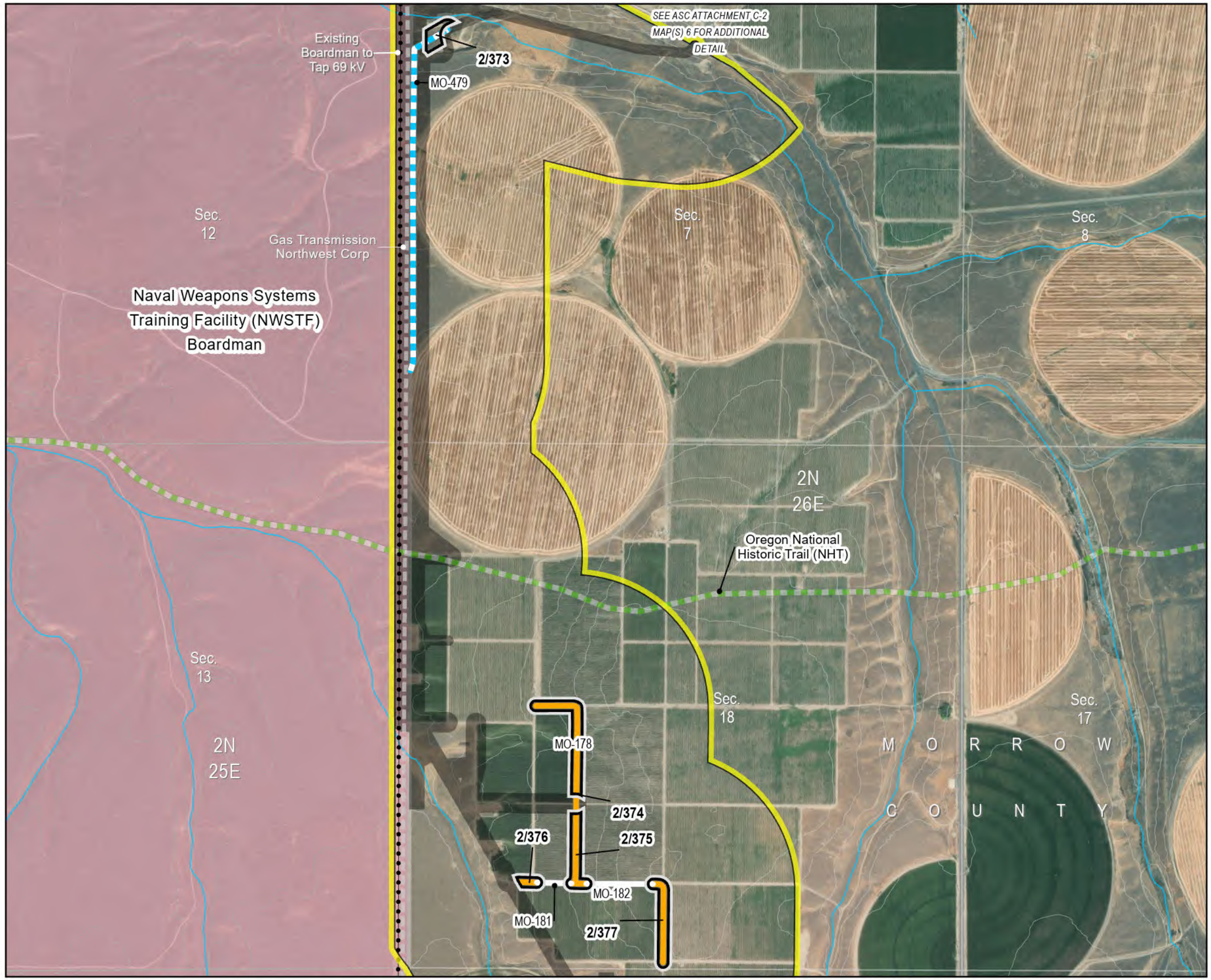
1,000
Feet

Map Area



IDAHO POWER
An IDACORP Company

\\cess706gisfs1\CES\Projects\BOI\UtilServ\Boardman_Hemingway\Reports\002_Oregon_Energy_Siting_Council\06_RFA2\Exhibits\Project Location\FIG 4-1 RFA2_Site Boundary Changes_MAPBOOK_20240117\Maps\FIG 4-1 RFA2_Site Boundary Changes_MAPBOOK_20240117.aprx 3/31/2024



Boardman to Hemingway
Transmission Project
Request for Amendment 2

Figure 4-1
RFA2 Proposed Micrositing Area Additions

Morrow County

Map 4

Project Features
- Proposed Site Boundary
- Proposed Micrositing Area Addition
- Previously Approved Micrositing Area

Access (Unique ID)
- Existing Road, No Substantial Modification, 0-20% Improvements
- Existing Road, Substantial Modification, 21-70% Improvements
- New Road, Bladed

Important Siting Constraints and Other Features
- 20-ft Contours
- Existing Transmission Line
- Pipeline
- Stream
- Oregon National Historic Trail (NHT)

Land Status
- Military Reservation or Corps of Engineers
- Private

Notes:
Not intended for construction or any uses other than intended purpose.

Project features current as of December 5, 2023.

Data Source(s):
BLM, Esri, FAA, NPS, ODFW, ODOT, StreamNet, USGS, Velocity, Ventyx

Imagery:
World Imagery: Maxar

N

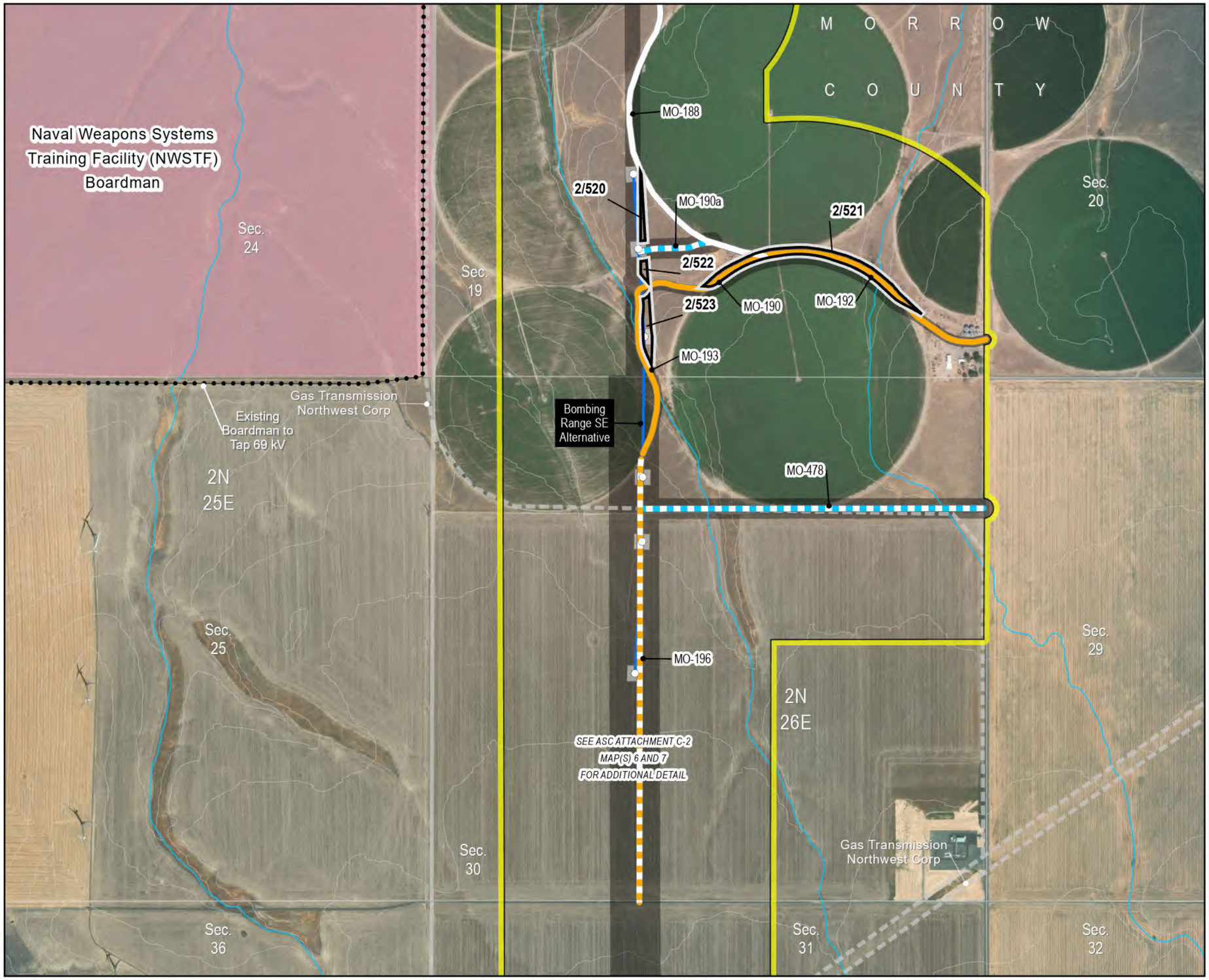
1,000
Feet

Map Area



IDAHO POWER
An IDACORP Company

\\cess706gisfs1\CES\Projects\BOI\UtilServ\Boardman_Hemingway\Reports\002_Oregon_Energy_Siting_Council\06_RFA2\Exhibits\Project Location\FIG 4-1 RFA2_Site Boundary Changes_MAPBOOK_20240117\Maps\FIG 4-1 RFA2_Site Boundary Changes_MAPBOOK_20240117.aprx 3/31/2024



Boardman to Hemingway Transmission Project
Request for Amendment 2

Figure 4-1
RFA2 Proposed Micrositing Area Additions
Morrow County

Map 5

Project Features
- Proposed Site Boundary
- Proposed Micrositing Area Addition
- Previously Approved Micrositing Area
- Towers_RFA2

Access (Unique ID)
- Existing Road, No Substantial Modification, 0-20% Improvements
- Existing Road, Substantial Modification, 21-70% Improvements
- New Road, Bladed
- New Road, Primitive
- Transmission Centerline

Work Areas
- Structure Work Area

Important Siting Constraints and Other Features
- 20-ft Contours
- Existing Transmission Line
- Pipeline
- Stream

Land Status
- Military Reservation or Corps of Engineers
- Private

Notes:
Not intended for construction or any uses other than intended purpose.

Project features current as of December 5, 2023.

Data Source(s):
BLM, Esri, FAA, NPS, ODFW, ODOT, StreamNet, USGS, Velocity, Ventyx

Imagery:
World Imagery: Maxar

N
1,000
Feet

Map Area
Salem
O R E G O N

IDAHO POWER
An IDACORP Company

\\cess706gisfs1\CES\Projects\BOI\UtilServ\Boardman_Hemingway\Reports\002_Oregon_Energy_Siting_Council\06_RFA2\Exhibits\Project Location\FIG 4-1 RFA2_Site Boundary Changes_MAPBOOK_20240117\Maps\FIG 4-1 RFA2_Site Boundary Changes_MAPBOOK_20240117.aprx 3/31/2024

Boardman to Hemingway
Transmission Project
Request for Amendment 2

Figure 4-1
RFA2 Proposed Micrositing Area Additions

Morrow County

Map 6

Sec. 8
Sec. 9
1N
27E
Sec. 10
Sec. 11
2/378
2/379
SEE ASC ATTACHMENT C-2 MAP(S) 12 AND 13 FOR ADDITIONAL DETAIL
Sec. 16
Sec. 17
M O R R O W
C O U N T Y
Sec. 15
Sec. 14
Butter Creek
Little Butter Creek

Project Features
- Proposed Site Boundary
- Proposed Micrositing Area Addition
- Previously Approved Micrositing Area

Work Areas
- Pulling and Tensioning

Important Siting Constraints and Other Features
- 20-ft Contours
- Stream

Land Status
- Private

Notes:
Not intended for construction or any uses other than intended purpose.

Project features current as of December 5, 2023.

Data Source(s):
BLM, Esri, FAA, NPS, ODFW, ODOT, StreamNet, USGS, Velocity, Ventyx

Imagery:
World Imagery: Maxar

N
1,000
Feet

Map Area
Salem
OREGON

IDAHO POWER
An IDACORP Company

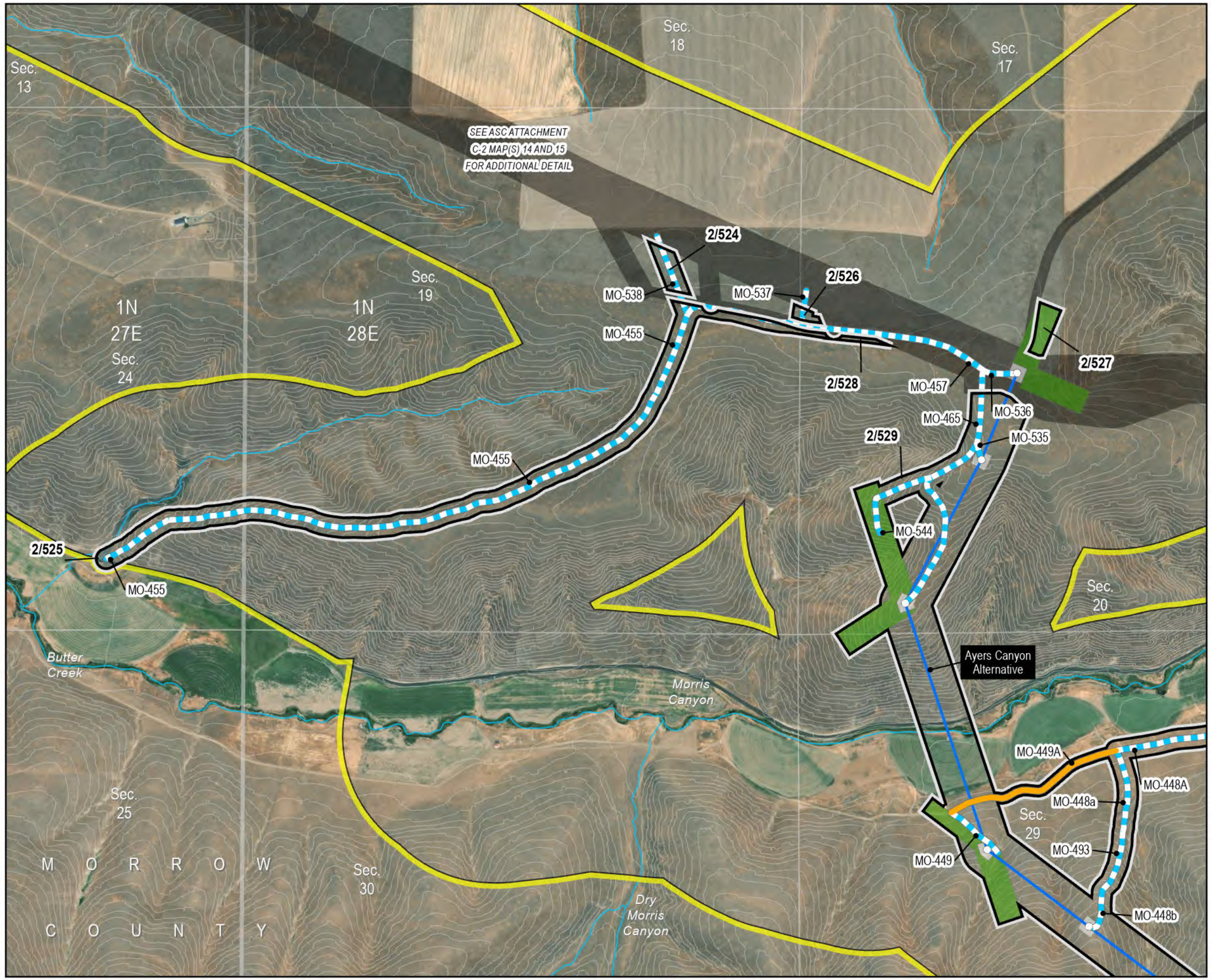
\\cess706gisfs1\CES\Projects\BOI\UtilServ\Boardman_Hemingway\Reports\002_Oregon_Energy_Siting_Council\06_RFA2\Exhibits\Project Location\FIG 4-1 RFA2_Site Boundary Changes_MAPBOOK_20240117\Maps\FIG 4-1 RFA2_Site Boundary Changes_MAPBOOK_20240117.aprx 3/31/2024

Boardman to Hemingway
Transmission Project
Request for Amendment 2

Figure 4-1
RFA2 Proposed Micrositing Area Additions

Morrow County

Map 7



Project Features
- Proposed Site Boundary
- Proposed Micrositing Area Addition
- Previously Approved Micrositing Area
- Towers_RFA2

Access (Unique ID)
- Existing Road, Substantial Modification, 21-70% Improvements
- New Road, Bladed
- Transmission Centerline

Work Areas
- Pulling and Tensioning
- Structure Work Area

Important Siting Constraints and Other Features
- 20-ft Contours
- Stream

Land Status
- Private

Notes:
Not intended for construction or any uses other than intended purpose.

Project features current as of December 5, 2023.

Data Source(s):
BLM, Esri, FAA, NPS, ODFW, ODOT, StreamNet, USGS, Velocity, Ventyx

Imagery:
World Imagery: Maxar

N

1,000
Feet

Map Area



IDAHO POWER
An IDACORP Company

\\cess706gisfs1\CES\Projects\BOI\UtilServ\Boardman_Hemingway\Reports\002_Oregon_Energy_Siting_Council\06_RFA2\Exhibits\Project Location\FIG 4-1 RFA2_Site Boundary Changes_MAPBOOK_20240117\Maps\FIG 4-1 RFA2_Site Boundary Changes_MAPBOOK_20240117.aprx 3/31/2024

Boardman to Hemingway
Transmission Project
Request for Amendment 2

Figure 4-1
RFA2 Proposed Micrositing Area Additions

Morrow County

Map 8



Project Features
- Proposed Site Boundary
- Proposed Micrositing Area Addition
- Previously Approved Micrositing Area

Access (Unique ID)
- Existing Road, Substantial Modification, 21-70% Improvements
- New Road, Bladed

Important Siting Constraints and Other Features
- 20-ft Contours
- Stream

Land Status
- Private

Notes:
Not intended for construction or any uses other than intended purpose.

Project features current as of December 5, 2023.

Data Source(s):
BLM, Esri, FAA, NPS, ODFW, ODOT, StreamNet, USGS, Velocity, Ventyx

Imagery:
World Imagery: Maxar

N

1,000
Feet

Map Area



IDAHO POWER
An IDACORP Company

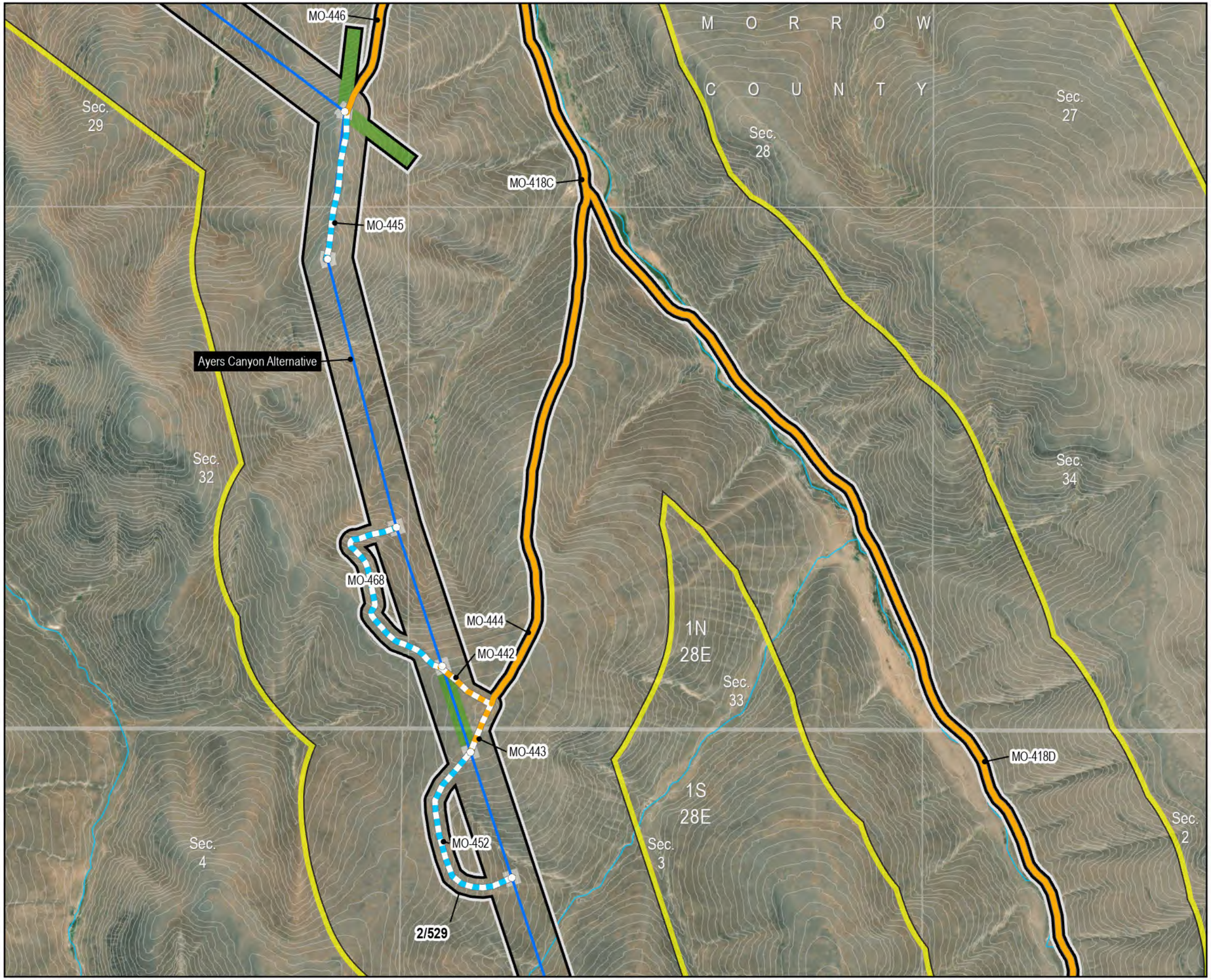
\\cess706gisfs1\CES\Projects\BOI\UtilServ\Boardman_Hemingway\Reports\002_Oregon_Energy_Siting_Council\06_RFA2\Exhibits\Project Location\FIG 4-1 RFA2_Site Boundary Changes_MAPBOOK_20240117\Maps\FIG 4-1 RFA2_Site Boundary Changes_MAPBOOK_20240117.aprx 3/31/2024

Boardman to Hemingway
Transmission Project
Request for Amendment 2

Figure 4-1
RFA2 Proposed Micrositing Area Additions

Morrow County

Map 9



Project Features
- Proposed Site Boundary
- Proposed Micrositing Area Addition
- Towers_RFA2

Access (Unique ID)
- Existing Road, Substantial Modification, 21-70% Improvements
- New Road, Bladed
- New Road, Primitive
- Transmission Centerline

Work Areas
- Pulling and Tensioning
- Structure Work Area

Important Siting Constraints and Other Features
- 20-ft Contours
- Stream

Land Status
- Private

Notes:
Not intended for construction or any uses other than intended purpose.

Project features current as of December 5, 2023.

Data Source(s):
BLM, Esri, FAA, NPS, ODFW, ODOT, StreamNet, USGS, Velocity, Ventyx

Imagery:
World Imagery: Maxar

N

1,000
Feet

Map Area



IDAHO POWER
An IDACORP Company

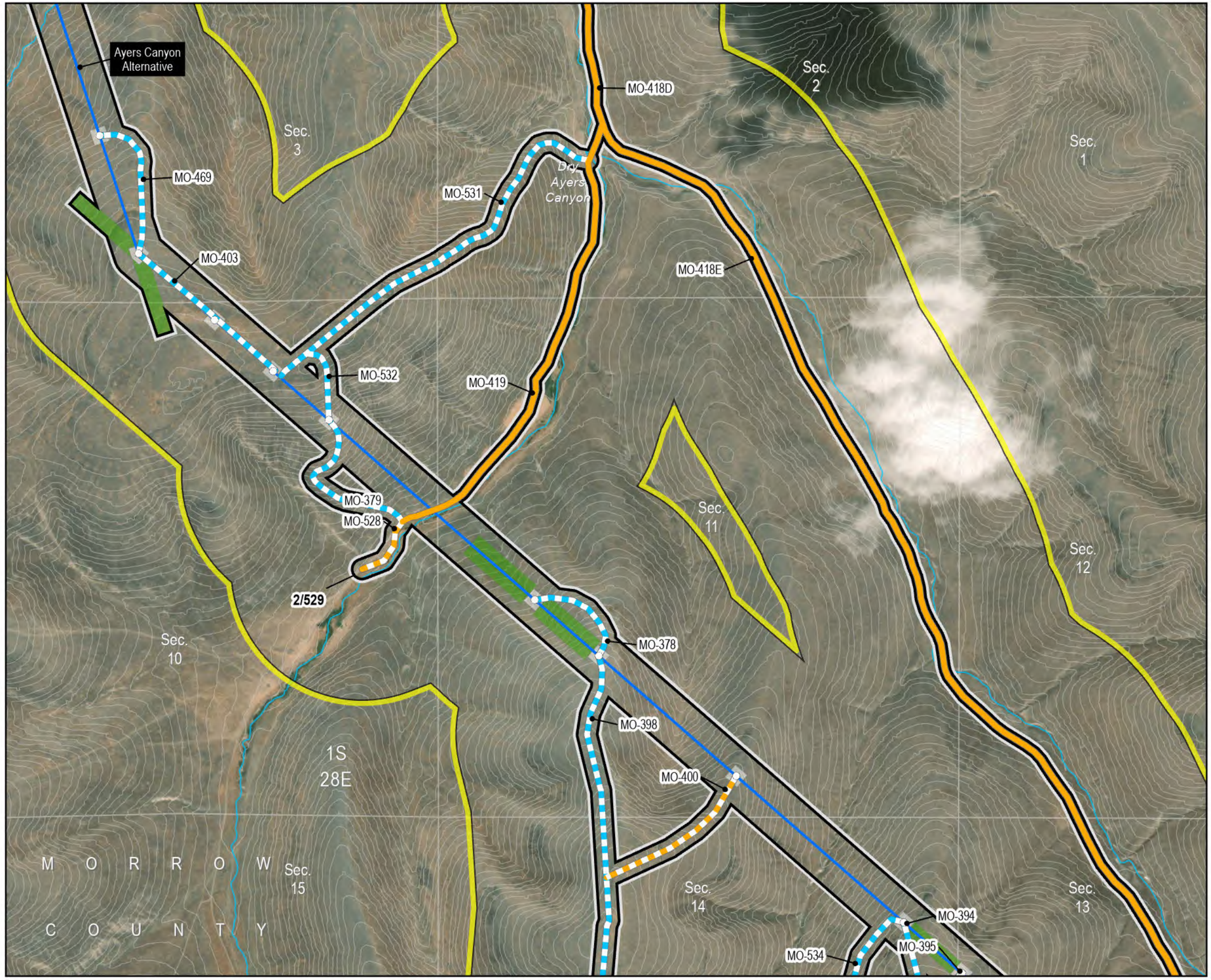
\\cess706gisfs1\CES\Projects\BOI\UtilServ\Boardman_Hemingway\Reports\002_Oregon_Energy_Siting_Council\06_RFA2\Exhibits\Project Location\FIG 4-1 RFA2_Site Boundary Changes_MAPBOOK_20240117\Maps\FIG 4-1 RFA2_Site Boundary Changes_MAPBOOK_20240117.aprx 3/31/2024

Boardman to Hemingway
Transmission Project
Request for Amendment 2

Figure 4-1
RFA2 Proposed Micrositing Area Additions

Morrow County

Map 10



Project Features
- Proposed Site Boundary
- Proposed Micrositing Area Addition
- Towers_RFA2

Access (Unique ID)
- Existing Road, Substantial Modification, 21-70% Improvements
- New Road, Bladed
- New Road, Primitive
- Transmission Centerline

Work Areas
- Pulling and Tensioning
- Structure Work Area

Important Siting Constraints and Other Features
- 20-ft Contours
- Stream

Land Status
- Private

Notes:
Not intended for construction or any uses other than intended purpose.

Project features current as of December 5, 2023.

Data Source(s):
BLM, Esri, FAA, NPS, ODFW, ODOT, StreamNet, USGS, Velocity, Ventyx

Imagery:
World Imagery: Maxar

N

1,000
Feet

Map Area



IDAHO POWER
An IDACORP Company

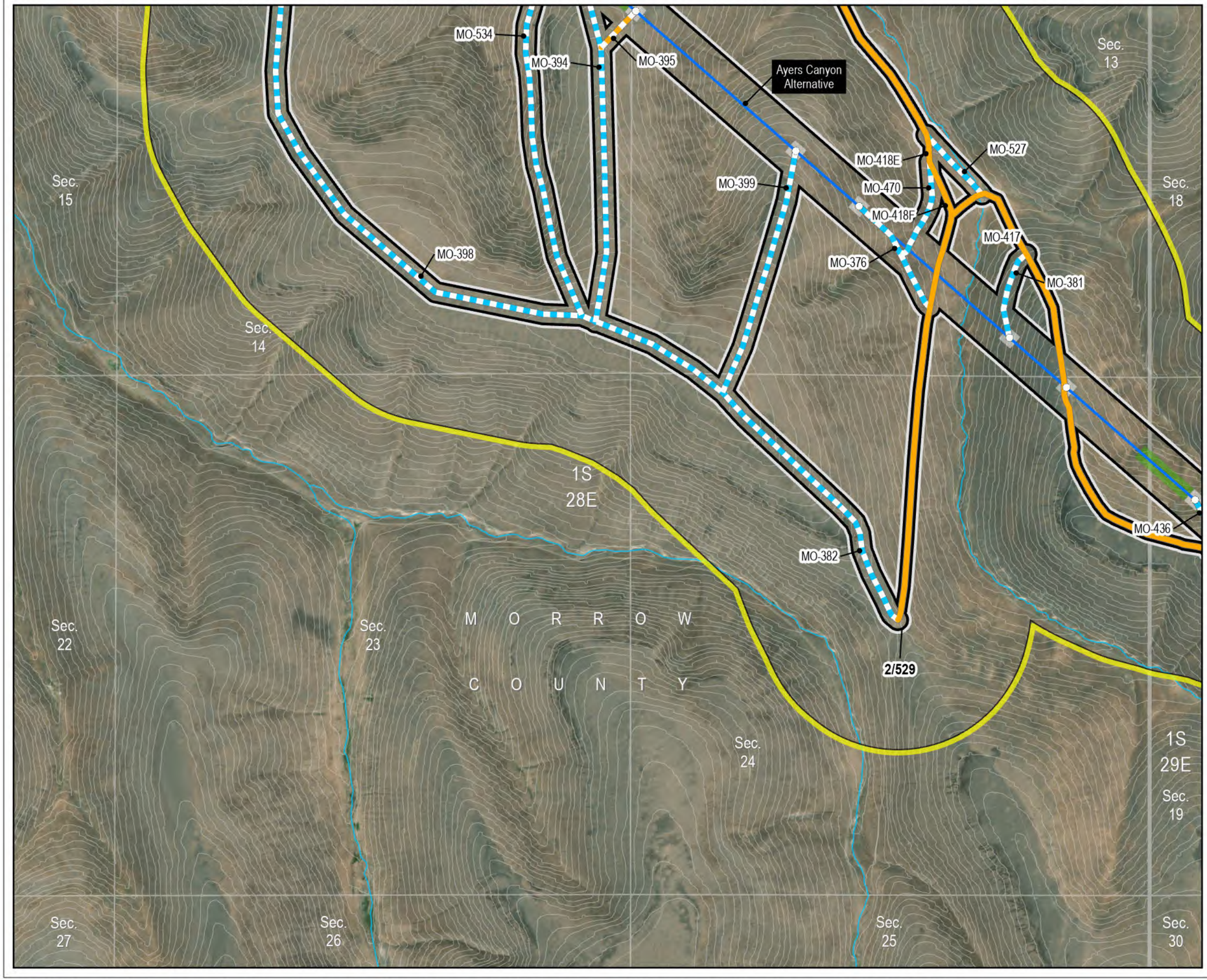
\\cess706gisfs1\CES\Projects\BOI\UtilServ\Boardman_Hemingway\Reports\002_Oregon_Energy_Siting_Council\06_RFA2\Exhibits\Project Location\FIG 4-1 RFA2_Site Boundary Changes_MAPBOOK_20240117\Maps\FIG 4-1 RFA2_Site Boundary Changes_MAPBOOK_20240117.aprx 3/31/2024

Boardman to Hemingway
Transmission Project
Request for Amendment 2

Figure 4-1
RFA2 Proposed Micrositing Area Additions

Morrow County

Map 11



Project Features
- Proposed Site Boundary
- Proposed Micrositing Area Addition
- Towers_RFA2

Access (Unique ID)
- Existing Road, Substantial Modification, 21-70% Improvements
- New Road, Bladed
- New Road, Primitive
- Transmission Centerline

Work Areas
- Pulling and Tensioning
- Structure Work Area

Important Siting Constraints and Other Features
- 20-ft Contours
- Stream

Land Status
- Private

Notes:
Not intended for construction or any uses other than intended purpose.

Project features current as of December 5, 2023.

Data Source(s):
BLM, Esri, FAA, NPS, ODFW, ODOT, StreamNet, USGS, Velocity, Ventyx

Imagery:
World Imagery: Maxar

N

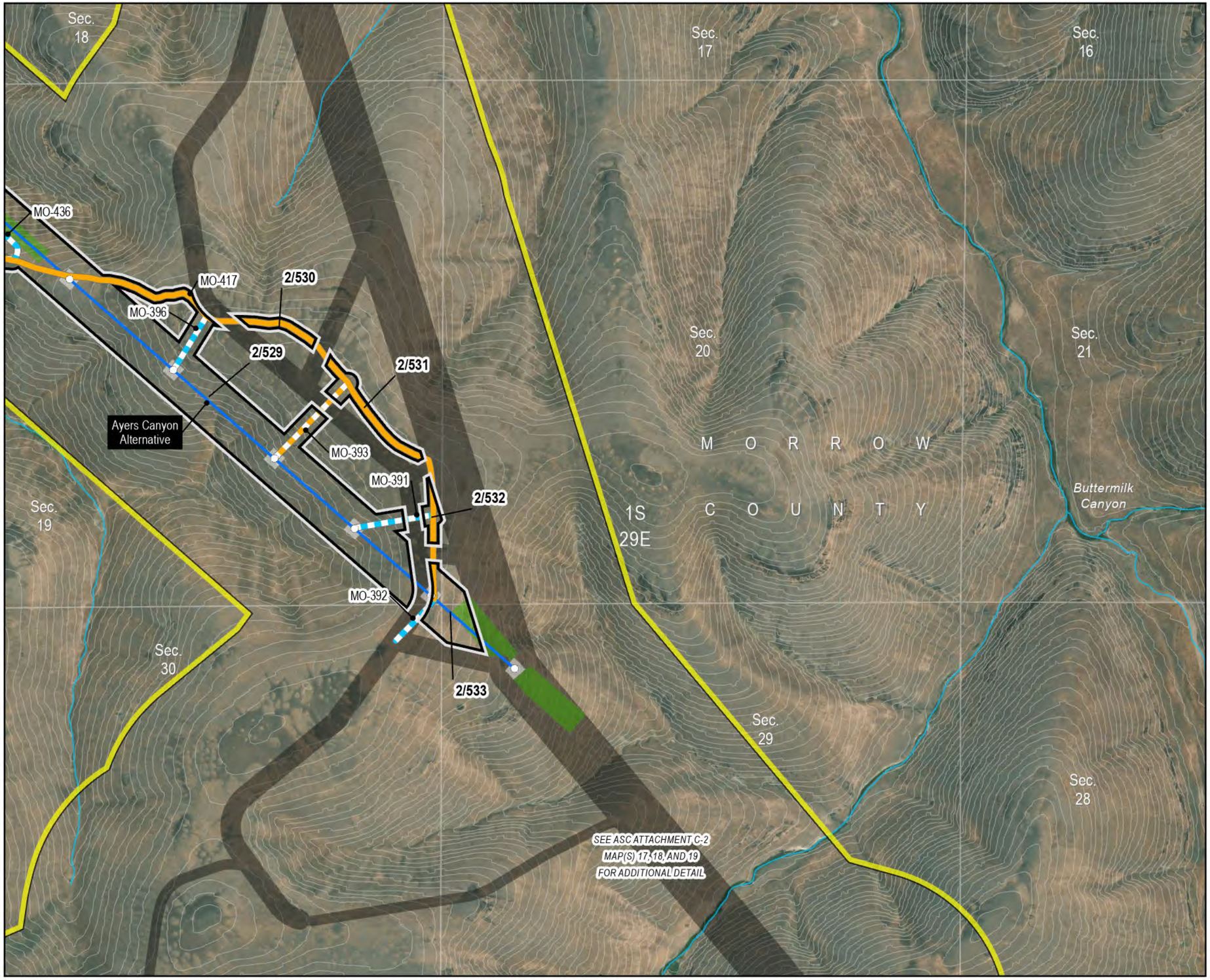
1,000
Feet

Map Area



IDAHO POWER
An IDACORP Company

\\cess706gisfs1\CES\Projects\BOI\UtilServ\Boardman_Hemingway\Reports\002_Oregon_Energy_Siting_Council\06_RFA2\Exhibits\Project Location\FIG 4-1 RFA2_Site Boundary Changes_MAPBOOK_20240117\Maps\FIG 4-1 RFA2_Site Boundary Changes_MAPBOOK_20240117.aprx 3/31/2024



Boardman to Hemingway Transmission Project
Request for Amendment 2

Figure 4-1
RFA2 Proposed Micrositing Area Additions
Morrow County

Map 12

Project Features
- Proposed Site Boundary
- Proposed Micrositing Area Addition
- Previously Approved Micrositing Area
- Towers_RFA2

Access (Unique ID)
- Existing Road, Substantial Modification, 21-70% Improvements
- New Road, Bladed
- New Road, Primitive
- Transmission Centerline

Work Areas
- Pulling and Tensioning
- Structure Work Area

Important Siting Constraints and Other Features
- 20-ft Contours
- Stream

Land Status
- Private

Notes:
Not intended for construction or any uses other than intended purpose.

Project features current as of December 5, 2023.

Data Source(s):
BLM, Esri, FAA, NPS, ODFW, ODOT, StreamNet, USGS, Velocity, Ventyx

Imagery:
World Imagery: Maxar

N

1,000
Feet

Map Area



IDAHO POWER
An IDACORP Company

\\cess706gisfs1\CES\Projects\BOI\UtilServ\Boardman_Hemingway\Reports\002_Oregon_Energy_Siting_Council\06_RFA2\Exhibits\Project Location\FIG 4-1 RFA2_Site Boundary Changes_MAPBOOK_20240117\Maps\FIG 4-1 RFA2_Site Boundary Changes_MAPBOOK_20240117.aprx 3/31/2024

Boardman to Hemingway
Transmission Project
Request for Amendment 2

Figure 4-1
RFA2 Proposed Micrositing Area Additions

Morrow County

Map 13

Project Features
- Proposed Site Boundary
- Proposed Micrositing Area Addition
- Previously Approved Micrositing Area

Access (Unique ID)
- New Road, Primitive

Work Areas
- Pulling and Tensioning

Important Siting Constraints and Other Features
- 20-ft Contours
- Stream

Land Status
- Private

Notes:
Not intended for construction or any uses other than intended purpose.

Project features current as of December 5, 2023.

Data Source(s):
BLM, Esri, FAA, NPS, ODFW, ODOT, StreamNet, USGS, Velocity, Ventyx

Imagery:
World Imagery: Maxar

1,000
Feet

Map Area

Salem

OREGON

IDAHO POWER
An IDACORP Company

\\cess706gisfs1\CES\Projects\BOI\UtilServ\Boardman_Hemingway\Reports\002_Oregon_Energy_Siting_Council\06_RFA2\Exhibits\Project Location\FIG 4-1 RFA2_Site Boundary Changes_MAPBOOK_20240117\Maps\FIG 4-1 RFA2_Site Boundary Changes_MAPBOOK_20240117.aprx 3/31/2024

TARDAEWETHER Kellen * ODOE

From: ODOE ITService * ODOE
Sent: Friday, May 24, 2024 8:43 AM
To: TARDAEWETHER Kellen * ODOE
Subject: New Public Comment submitted for project : B2H Transmission Line Amendment 2 DPO

Organization:
Submitted by: John Milbert
Email: jmfisherman9@gmail.com
Zip Code: 97850

Siting Project Phase: *DPO*

Comment Summary:
Idaho Power's application to amend the B2H site boundaries is an egregious, unwarranted land grab! The proposed increase would add more than 100,000 acres to the existing boundaries, an increase of more than 400%, making it more than five times as large as is currently approved! This unconscionable action is a prime example of Idaho Power's ongoing policy of deception regarding the proposed transmission line! They recognize the truth only as an obstacle to be overcome! Greed before need!

Please Click on the following link to view the full Comment Details

TARDAEWETHER Kellen * ODOE

From: PIKE Brandon <Brandon.PIKE@odav.oregon.gov>
Sent: Tuesday, May 28, 2024 2:50 PM
To: TARDAEWETHER Kellen * ODOE
Subject: RE: Email Summary of Public Notice of Complete Request for Amendment 2 for the Boardman to Hemingway Transmission Line Site Certificate, Issuance of Draft Proposed Order on RFA2, Public Comment Period on RFA2 and DPO, and Public Hearing

You don't often get email from brandon.pike@odav.oregon.gov. Learn why this is important

Hi Kellen,

Thank you for providing an opportunity for the Oregon Department of Aviation (ODAV) to comment on this application.

ODAV has reviewed the proposal and prepared the following comment(s):

1. The Boardman to Hemingway project was previously reviewed by ODAV, with associated aeronautical studies completed (aviation reference nos. 2023-ODAV-198-OE through 2023-ODAV-296-OE, 2023-ODAV-298-OE through 2023-ODAV-406-OE, and 2023-ODAV-555-OE through 2023-ODAV-598-OE). Any new or relocated transmission lines not previously reviewed by ODAV or the FAA may require the applicant to submit notice of construction to ODAV and the FAA. The applicant can use the FAA's notice criteria tool to determine if the proposed amendment will require additional notices to be filed with the FAA and ODAV.

Please reach out if you have questions or concerns.

Best,

BRANDON PIKE
OREGON DEPARTMENT OF AVIATION
AVIATION PLANNER

PHONE 971-372-1339
EMAIL brandon.pike@odav.oregon.gov
3040 25TH STREET SE, SALEM, OR 97302
WWW.OREGON.GOV/AVIATION

*****CONFIDENTIALITY NOTICE*****
This e-mail may contain information that is privileged, confidential, or otherwise exempt from disclosure under applicable law. If you are not the addressee or it appears from the context or otherwise that you have received this e-mail in error, please advise me immediately by reply e-mail, keep the contents confidential, and immediately delete the message and any attachments from your system.

From: TARDAEWETHER Kellen * ODOE <kellen.tardaewether@energy.oregon.gov>
Sent: Tuesday, April 16, 2024 4:02 PM
To: hkerns@bakercountyor.gov; bnichols@bakercountyor.gov; salderson@bakercountyor.gov; cwitham@bakercountyor.gov; Burgess Tatiana <Tatiana.Burgess2@dhsoha.state.or.us>; Dan.Joyce@malheurco.org; rjacobs@malheurco.org; Jim.Mendiola@malheurco.org; tmabbot@co.morrow.or.us; swrecsics@co.morrow.or.us; dsykes@co.morrow.or.us; jwenholz@co.morrow.or.us; rdrago@co.morrow.or.us; vballard@co.morrow.or.us; megan.davchevski@umatillacounty.gov; cindy.timmons@umatillacounty.gov; john.shafer@umatillacounty.gov; dan.dorran@umatillacounty.gov; shartell@union-county.org; panderes@union-county.org; dbeverage@union-county.org; mscarfo@union-county.org; huntingtoncityof@gmail.com; cityofnp@eoni.com; cityofadrian@hotmail.com;

kpettigrew@cityofboardman.com; dave@echo-oregon.com; karen@islandcityhall.com; RStrope@cityoflagrande.org; cityadmin@cityofcove.org; david@umatilla-city.org; lexington.oregon@gmail.com; teri.bacus@cityofpilotrock.org; citymanager@cityofstanfield.com; admin@cityofunion.com; hkerns@bakercountyor.gov; mayor@bakercity.gov; bsmith@hermiston.or.us; manager@ci.irrigon.or.us; tfuller@cityofvale.com; haines@cascadeaccess.com; BLEAKNEY Leann <lbleakney@nwcouncil.org>; CANE Jason * OSFM <Jason.CANE@state.or.us>; JOHNSON James * ODA <James.JOHNSON@oda.oregon.gov>; BROWN Jordan A * ODA <jordan.a.brown@oda.oregon.gov>; PIKE Brandon <Brandon.PIKE@odav.oregon.gov>; SVELUND Greg * DEQ <svelund.greg@deq.state.or.us>; SOMERS Lindsay N * ODFW <Lindsay.N.Somers@odfw.oregon.gov>; THOMPSON Jeremy L * ODFW <Jeremy.L.THOMPSON@odfw.oregon.gov>; TOKARCZYK John A * ODF <John.A.TOKARCZYK@odf.oregon.gov>; MCCLAUGHRY Jason * DGMI <Jason.MCCLAUGHRY@dogami.oregon.gov>; JININGS Jon * DLCD <Jon.JININGS@dlcd.oregon.gov>; FOOTE Hilary * DLCD <Hilary.FOOTE@dlcd.oregon.gov>; SALGADO Jessica * DSL <Jessica.SALGADO@dsl.oregon.gov>; BACHELLER Noel * OPRD <noel.bacheller@oregon.gov>; CASWELL Heide * PUC <Heide.Caswell@puc.oregon.gov>; PAL Sudeshna * PUC <Sudeshna.Pal@puc.oregon.gov>; CLEARANCE ORSHPO * OPRD <orshpo.clearance@oregon.gov>; POULEY John * OPRD <John.POULEY@oprd.oregon.gov>; JOHNSON Ian * OPRD <Ian.JOHNSON@oprd.oregon.gov>; BJORK Mary F * WRD <mary.f.bjork@oregon.gov>; cburri@blm.gov; skokos@usbr.gov; callianneharris@usbr.gov; kimberly.peacher@navy.mil; sm.fs.umainquiries@usda.gov; D.L. Teeman <dlteeman.burns.paiute@gmail.com>; calla.hagle@burnspaiute-nsn.gov; TearaFarrowFerman@ctuir.org; Carey Miller <careymiller@ctuir.org>; austin.smithjr2@ctwsbnr.org; Bobby Bruno <robert.brunoe@ctwsbnr.org>
Subject: FW: Email Summary of Public Notice of Complete Request for Amendment 2 for the Boardman to Hemingway Transmission Line Site Certificate, Issuance of Draft Proposed Order on RFA2, Public Comment Period on RFA2 and DPO, and Public Hearing

This message was sent from outside the organization. Treat attachments, links and requests with caution. Be conscious of the information you share if you respond.

Good afternoon,

Please see the email summary of the Notice for the Boardman to Hemingway Draft Proposed Order on Request for Amendment 2. Thank you and let me know if you have any questions,

Kellen

Kellen Tardaewether
Senior Siting Analyst
550 Capitol St. NE Salem, OR 97301
C: 503-586-6551
P (In Oregon): 800-221-8035



From: Oregon Department of Energy <odoe@cd.energy.oregon.gov>
Sent: Tuesday, April 16, 2024 3:51 PM
To: TARDAEWETHER Kellen * ODOE <kellen.tardaewether@energy.oregon.gov>
Subject: Email Summary of Public Notice of Complete Request for Amendment 2 for the Boardman to Hemingway Transmission Line Site Certificate, Issuance of Draft Proposed Order on RFA2, Public Comment Period on RFA2 and DPO, and Public Hearing

Click here if you are having trouble viewing this message.

Email Summary of Public Notice of Complete Request for Amendment 2 for the Boardman to Hemingway Transmission Line Site Certificate, Issuance of Draft Proposed Order on RFA2, Public Comment Period on RFA2 and DPO, and Public Hearing

On April 16, 2024, the Oregon Department of Energy (ODOE) issued its Draft Proposed Order (DPO) on Request for Amendment 2 (RFA2) of the Boardman to Hemingway Transmission Line Site Certificate. On the same date, the Department issued a Public Notice of a public comment period on the Complete RFA2, DPO, and public hearing. These documents and the notice are available on the Department's website.

RFA2 seeks Council approval to:

- Add micrositing areas to:
  - Relocate the transmission line in 12 locations including approximately 40 miles of 500-kV transmission line alternatives and 98.5 miles of associated access road modifications, and 0.6 mile of 230-kV transmission line alternatives;
  - Refine 58 miles of roads resulting from additional design and engineering review and proposed alternative temporary work areas;
- Expand the site boundary for most of the facility including portions associated with the approved ASC, RFA1, and proposed RFA2 micrositing area additions;
- Add a Midline Capacitor Station, located on approximately 10 acres within the previously approved site boundary in Union County;
- Widen the width of roads used for construction based on the slope of the terrain;

- And amend language of site certificate condition(s): GEN-GS-06, GEN-NC-01, PRE-RT-01, CON-TE-02, PRE-FW-03, PRE-FW-04, OPR-FW-03, OPR-FW-04 and OPR-RT-01.

The approved but not constructed facility is an approximately 300 mile (275 miles in Oregon), single circuit, 500 kilovolt (kV) electrical transmission line which includes transmission towers, a substation, and access roads as well as removal of approximately 12 miles of existing 69-kV transmission line, rebuilding of approximately 1 mile of a 230-kV transmission line, and rebuilding of approximately 1 mile of an existing 138-kV transmission line.

The facility and proposed RFA2 changes are located in five counties in Oregon: Morrow, Umatilla, Union, Baker, and Malheur; and in the City of North Powder. The certificate holder is Idaho Power Corporation.

Comment Period:
A 45-day comment period is now open. The public may comment on the RFA2, DPO, and DPO Attachments including the amended site certificate and revised conditions. Written comments on the DPO and RFA2 must be received by ODOE **by the close of the public hearing on May 30, 2024** and must be submitted in writing through the public comment portal, via oral or written comments submitted at the public hearing, or by mail, email, or fax to:

Kellen Tardaewether, Senior Siting Analyst
Oregon Department of Energy
550 Capitol Street NE, 1st Floor
Salem, OR 97301
Email: kellen.tardaewether@energy.oregon.gov
Fax: 503-373-7806

The goal of the online comment portal is to provide a convenient option to submit input on projects. To get started, choose the "B2H Transmission Line Amendment 2 DPO" project from the drop-down menu. Click "Next" and follow the instructions on screen. You will receive an email confirmation after submitting your comment.

ODOE also has a new docket system available which displays comments that have been submitted. Comments for this RFA2 and DPO will be posted to the docket and will normally be available to view within 3 business days of receipt.

Public Hearing:

A Public Hearing on the RFA2 and DPO will be held on May 30, 2024 both virtually and in person in Boardman OR, to provide the public opportunity to comment.

Date: May 30, 2024
Start Time: 5:30 p.m. Pacific Time (PT)
End Time: no earlier than 6:30 p.m. PT
Location: Port of Morrow Riverfront Center (Riverfront Room 2)
Marine Dr NE, Boardman, OR 97818

More details, including how to participate remotely, are included in the Public Notice that is available on the project website.

Additional Information:
Public Notice on Request for Comments on the Complete Request for Amendment 2, Draft Proposed Order, and Public Hearing are available online.

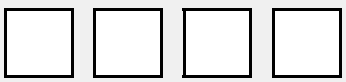
You received this notice either because you previously signed up for email updates related to specific siting projects or all Energy Facility Siting Council activities. You will automatically receive all future notices unless you unsubscribe via ClickDimensions or by contacting ODOE.

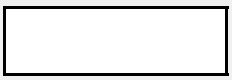
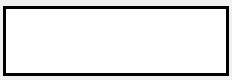
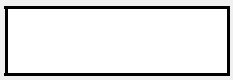
If you have any questions or comments about ClickDimensions please feel free to contact ODOE's Administrative Assistant Nancy Hatch at 503-428-7905, toll-free in Oregon at 800-221-8035, or email to Nancy.Hatch@energy.oregon.gov

---

Oregon Department of Energy
Leading Oregon to a safe, equitable, clean, and sustainable energy future.

The Oregon Department of Energy helps Oregonians make informed decisions and maintain a resilient and affordable energy system. We advance solutions to shape an equitable clean energy transition, protect the environment and public health, and responsibly balance energy needs and impacts for current and future generations.



AskEnergy@oregon.gov | 503-378-4040 | 550 Capitol St. NE in Salem
Click here to unsubscribe or here to change your Subscription Preferences.

TARDAEWETHER Kellen * ODOE

From: TARDAEWETHER Kellen * ODOE
Sent: Wednesday, May 29, 2024 9:44 AM
To: Robert Strope
Subject: RE: Email Summary of Public Notice of Complete Request for Amendment 2 for the Boardman to Hemingway Transmission Line Site Certificate, Issuance of Draft Proposed Order on RFA2, Public Comment Period on RFA2 and DPO, and Public Hearing
Attachments: Extracted pages from FIG 4-1 Proposed Micrositing Area Additions_searchable.pdf

Hi Robert,

Thanks for the email and phone conversation to go over your concerns of the changes proposed in RFA2. Attached is a map of the RFA2 changes proposed within the vicinity of Morgan Lake Park. The yellow line is the proposed expanded site boundary, which is an area that is evaluated for potential resources but is not an area where IPC would be approved to locate facility components. The areas where IPC would be approved (if approved) to locate facility components are the narrower micrositing areas within the expanded site boundary. For instance, in this map, the only RFA2 proposed micrositing area addition is the road segment southeast of Morgan Lake Park. The previous evaluation done in the Final Order on Application for Site Certificate (Final Order on ASC) still applies to the facility where no facility components would be located within the boundary of the Park; Land Use Condition 17 requires that if the Morgan Lake alternative route segment is selected at final facility design, the certificate holder shall provide the Department a copy of the Memorandum of Agreement, if executed, between the City of La Grande and certificate holder for improvements at Morgan Lake Park; and Recreation Condition 1 which requires shorter H-frame towers within the viewshed of the Park.

Hope this helps clarify the changes. Thanks!

Kellen

OREGON DEPARTMENT OF ENERGY

Kellen Tardaewether
Senior Siting Analyst
550 Capitol St. NE Salem, OR 97301
C: 503-586-6551
P (In Oregon): 800-221-8035

Stay connected!

From: Robert Strope <RStrope@cityoflagrande.org>
Sent: Tuesday, May 28, 2024 3:08 PM
To: TARDAEWETHER Kellen * ODOE <kellen.tardaewether@energy.oregon.gov>
Subject: RE: Email Summary of Public Notice of Complete Request for Amendment 2 for the Boardman to Hemingway Transmission Line Site Certificate, Issuance of Draft Proposed Order on RFA2, Public Comment Period on RFA2 and DPO, and Public Hearing

Hi Kellen,

Hope you had a wonderful, long weekend! I left you a voice message a couple minutes ago. I have been out of the office for a couple of weeks and playing catch up. We are concerned that the proposed changes could create a much more significant impact than when we negotiated mitigation with B2H and are therefore opposed to the revision unless there are requirements that they come back to the table if they do deviate from what was originally envisioned in their application.

Thanks!

Robert

Robert A. Strope, MPA
City Manager
City of La Grande
rstrope@cityoflagrande.org
(541) 962-1309
(541) 963-3333 fax

CONFIDENTIALITY NOTICE*: This transmission is intended only for the use of the individual(s) named as recipients. It may contain information that is privileged, confidential and/or protected from disclosure under applicable law including, but not limited to, the attorney client privilege and/or work product doctrine. If you are not the intended recipient of this transmission, please notify the sender immediately by telephone. Do not deliver, distribute or copy this transmission, disclose its contents, or take any action in reliance on the information it contains.*

///

From: TARDAEWETHER Kellen * ODOE <kellen.tardaewether@energy.oregon.gov>
Sent: Tuesday, April 16, 2024 4:02 PM
To: hkerns@bakercountyor.gov; bnichols@bakercountyor.gov; salderson@bakercountyor.gov; cwitham@bakercountyor.gov; Burgess Tatiana <tatiana.burgess@malheurco.org>; Dan.Joyce@malheurco.org; rjacobs@malheurco.org; Jim.Mendiola@malheurco.org; tmabbot@co.morrow.or.us; swrecsics@co.morrow.or.us; dsykes@co.morrow.or.us; jwenholz@co.morrow.or.us; rdrago@co.morrow.or.us; vballard@co.morrow.or.us; megan.davchevski@umatillacounty.gov; cindy.timmons@umatillacounty.gov; john.shafer@umatillacounty.gov; dan.dorran@umatillacounty.gov; shartell@union-county.org; panderes@union-county.org; dbeverage@union-county.org; mscarfo@union-county.org; huntingtoncityof@gmail.com; cityofnp@eoni.com; cityofadrian@hotmail.com; kpettigrew@cityofboardman.com; dave@echo-oregon.com; karen@islandcityhall.com; Robert Strope <RStrope@cityoflagrande.org>; cityadmin@cityofcove.org; david@umatilla-city.org; lexington.oregon@gmail.com; teri.bacus@cityofpilotrock.org; citymanager@cityofstanfield.com; admin@cityofunion.com; hkerns@bakercountyor.gov; mayor@bakercity.gov; bsmith@hermiston.or.us; manager@ci.irrigon.or.us; tfuller@cityofvale.com; haines@cascadeaccess.com; BLEAKNEY Leann <lbleakney@nwcouncil.org>; jason.cane@state.or.us; JOHNSON James * ODA <James.JOHNSON@oda.oregon.gov>; BROWN Jordan A * ODA <Jordan.A.BROWN@oda.oregon.gov>; PIKE Brandon <Brandon.PIKE@odav.oregon.gov>; SVELUND Greg * DEQ <svelund.greg@deq.state.or.us>; SOMERS Lindsay N * ODFW <Lindsay.N.Somers@odfw.oregon.gov>; THOMPSON Jeremy L * ODFW <Jeremy.L.THOMPSON@odfw.oregon.gov>; TOKARCZYK John A * ODF <John.A.TOKARCZYK@oregon.gov>; MCCLAUGHRY Jason * DGMI <Jason.MCCLAUGHRY@dogami.oregon.gov>; JININGS Jon * DLCD <jon.jinings@state.or.us>; FOOTE Hilary * DLCD <Hilary.FOOTE@dlcd.oregon.gov>; SALGADO Jessica * DSL <Jessica.SALGADO@dsl.oregon.gov>; BACHELLER Noel * OPRD <noel.bacheller@oregon.gov>; CASWELL Heide * PUC <Heide.CASWELL@puc.oregon.gov>; PAL Sudeshna * PUC <Sudeshna.Pal@puc.oregon.gov>; CLEARANCE ORSHPO * OPRD <orshpo.clearance@oregon.gov>; POULEY John * OPRD <John.Pouley@oregon.gov>; JOHNSON Ian * OPRD <Ian.Johnson@oregon.gov>; BJORK Mary F * WRD <mary.f.bjork@oregon.gov>; cburri@blm.gov; skokos@usbr.gov; callianneharris@usbr.gov; kimberly.peacher@navy.mil; sm.fs.umainquiries@usda.gov; D.L. Teeman <dlteeman.burns.paiute@gmail.com>; calla.hagle@burnspaiute-nsn.gov; TearaFarrowFerman@ctuir.org; Carey Miller

<careymiller@ctuir.org>; austin.smithjr2@ctwsbnr.org; Bobby Bruno <robert.brunoe@ctwsbnr.org>
Subject: FW: Email Summary of Public Notice of Complete Request for Amendment 2 for the Boardman to Hemingway Transmission Line Site Certificate, Issuance of Draft Proposed Order on RFA2, Public Comment Period on RFA2 and DPO, and Public Hearing

STOP and VERIFY - This message came from **outside** of the City of La Grande.

Good afternoon,

Please see the email summary of the Notice for the Boardman to Hemingway Draft Proposed Order on Request for Amendment 2. Thank you and let me know if you have any questions,

Kellen

Kellen Tardaewether
Senior Siting Analyst
550 Capitol St. NE Salem, OR 97301
C: 503-586-6551
P (In Oregon): 800-221-8035
Stay connected!

From: Oregon Department of Energy <odoe@cd.energy.oregon.gov>
Sent: Tuesday, April 16, 2024 3:51 PM
To: TARDAEWETHER Kellen * ODOE <kellen.tardaewether@energy.oregon.gov>
Subject: Email Summary of Public Notice of Complete Request for Amendment 2 for the Boardman to Hemingway Transmission Line Site Certificate, Issuance of Draft Proposed Order on RFA2, Public Comment Period on RFA2 and DPO, and Public Hearing

Click here if you are having trouble viewing this message.

OREGON DEPARTMENT OF ENERGY ENERGY FACILITY SITING COUNCIL

Email Summary of Public Notice of Complete Request for Amendment 2 for the Boardman to Hemingway Transmission Line Site Certificate, Issuance of Draft

Proposed Order on RFA2, Public Comment Period on RFA2 and DPO, and Public Hearing

On April 16, 2024, the Oregon Department of Energy (ODOE) issued its Draft Proposed Order (DPO) on Request for Amendment 2 (RFA2) of the Boardman to Hemingway Transmission Line Site Certificate. On the same date, the Department issued a Public Notice of a public comment period on the Complete RFA2, DPO, and public hearing. These documents and the notice are available on the Department's website.

RFA2 seeks Council approval to:

- Add micrositing areas to:
    - Relocate the transmission line in 12 locations including approximately 40 miles of 500-kV transmission line alternatives and 98.5 miles of associated access road modifications, and 0.6 mile of 230-kV transmission line alternatives;
    - Refine 58 miles of roads resulting from additional design and engineering review and proposed alternative temporary work areas;
- Expand the site boundary for most of the facility including portions associated with the approved ASC, RFA1, and proposed RFA2 micrositing area additions;
- Add a Midline Capacitor Station, located on approximately 10 acres within the previously approved site boundary in Union County;
- Widen the width of roads used for construction based on the slope of the terrain;
- And amend language of site certificate condition(s): GEN-GS-06, GEN-NC-01, PRE-RT-01, CON-TE-02, PRE-FW-03, PRE-FW-04, OPR-FW-03, OPR-FW-04 and OPR-RT-01.

The approved but not constructed facility is an approximately 300 mile (275 miles in Oregon), single circuit, 500 kilovolt (kV) electrical transmission line which includes transmission towers, a substation, and access roads as well as removal of approximately 12 miles of existing 69-kV transmission line, rebuilding of approximately 1 mile of a 230-kV transmission line, and rebuilding of approximately 1 mile of an existing 138-kV transmission line.

The facility and proposed RFA2 changes are located in five counties in Oregon: Morrow, Umatilla, Union, Baker, and Malheur; and in the City of North Powder. The certificate holder is Idaho Power Corporation.

Comment Period:
A 45-day comment period is now open. The public may comment on the RFA2, DPO, and DPO Attachments including the amended site certificate and revised conditions. Written comments on the DPO and RFA2 must be received by ODOE **by the close of the public hearing on May 30, 2024** and must be submitted in writing through the public comment portal, via oral or written comments submitted at the public hearing, or by mail, email, or fax to:

Kellen Tardaewether, Senior Siting Analyst
Oregon Department of Energy
550 Capitol Street NE, 1st Floor
Salem, OR 97301
Email: kellen.tardaewether@energy.oregon.gov
Fax: 503-373-7806

The goal of the online comment portal is to provide a convenient option to submit input on projects. To get started, choose the "B2H Transmission Line Amendment 2 DPO" project from the drop-down menu. Click "Next" and follow the instructions on screen. You will receive an email confirmation after submitting your comment.

ODOE also has a new docket system available which displays comments that have been submitted. Comments for this RFA2 and DPO will be posted to the docket and will normally be available to view within 3 business days of receipt.

Public Hearing:
A Public Hearing on the RFA2 and DPO will be held on May 30, 2024 both virtually and in person in Boardman OR, to provide the public opportunity to comment.

Date: May 30, 2024
Start Time: 5:30 p.m. Pacific Time (PT)
End Time: no earlier than 6:30 p.m. PT
Location: Port of Morrow Riverfront Center (Riverfront Room 2)
Marine Dr NE, Boardman, OR 97818

More details, including how to participate remotely, are included in the Public Notice that is available on the project website.

Additional Information:
Public Notice on Request for Comments on the Complete Request for Amendment 2, Draft Proposed Order, and Public Hearing are available online.

You received this notice either because you previously signed up for email updates related to specific siting projects or all Energy Facility Siting Council activities. You will automatically receive all future notices unless you unsubscribe via ClickDimensions or by contacting ODOE.

If you have any questions or comments about ClickDimensions please feel free to contact ODOE's Administrative Assistant Nancy Hatch at 503-428-7905, toll-free in Oregon at 800-221-8035, or email to Nancy.Hatch@energy.oregon.gov

---

Oregon Department of Energy
Leading Oregon to a safe, equitable, clean, and sustainable energy future.

The Oregon Department of Energy helps Oregonians make informed decisions and maintain a resilient and affordable energy system. We advance solutions to shape an equitable clean energy transition, protect the environment and public health, and responsibly balance energy needs and impacts for current and future generations.



Share Share Share

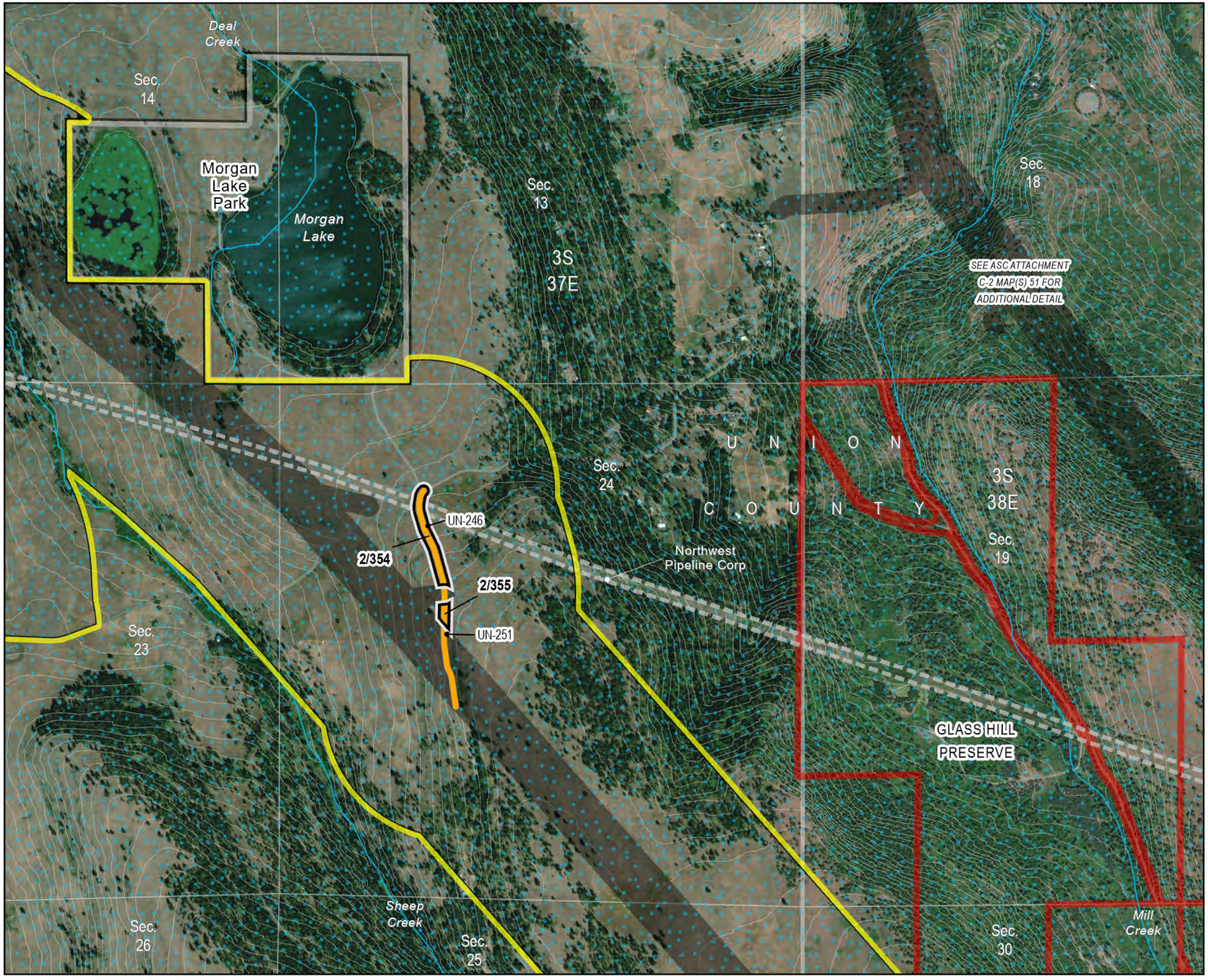
AskEnergy@oregon.gov | 503-378-4040 | 550 Capitol St. NE in Salem
Click here to unsubscribe or here to change your Subscription Preferences.

Boardman to Hemingway
Transmission Project
Request for Amendment 2

Figure 4-1
RFA2 Proposed Micrositing Area Additions

Union County

Map 35



Project Features
- Proposed Site Boundary
- Proposed Micrositing Area Addition
- Previously Approved Micrositing Area

Access (Unique ID)
- Existing Road, Substantial Modification, 21-70% Improvements

Important Siting Constraints and Other Features
- 20-ft Contours
- Pipeline
- Stream
- Morgan Lake Park
- Protected Area (EFSC)
- Elk Winter Range

Land Status
- Private

Notes:
Not intended for construction or any uses other than intended purpose.

Project features current as of December 5, 2023.

Data Source(s):
BLM, Esri, FAA, NPS, ODFW, ODOT, StreamNet, USGS, Velocity, Ventyx

Imagery:
World Imagery: Maxar

N

1,000
Feet

Map Area



IDAHO POWER
An IDACORP Company

\\cess706gisfs1\CES\Projects\BOI\UtilServ\Boardman_Hemingway\Reports\002_Oregon_Energy_Siting_Council\06_RFA2\Exhibits\Project Location\FIG 4-1 RFA2_Site Boundary Changes_MAPBOOK_20240117\Maps\FIG 4-1 RFA2_Site Boundary Changes_MAPBOOK_20240117.aprx 3/31/2024

TARDAEWETHER Kellen * ODOE

From: Marie Lyon <marie.lyon@gmail.com>
Sent: Thursday, May 30, 2024 9:50 AM
To: TARDAEWETHER Kellen * ODOE
Cc: jim kreider
Subject: Written Comment on B2H requested RFA2 Changes

You don't often get email from marie.lyon@gmail.com. Learn why this is important

Hello Kellen:

Please acknowledge receipt of this email by return email and include the content in the public comments for the RFA2 Request.

We are affected landowners in Malheur County and want the Oregon Department of Energy to carefully consider the requested changes to the Site Boundary for B2H.

Our land was originally slated for miles of road construction and permanent easement to access the Transmission Line which will lie just outside our property lines. We were able to show Idaho Power that there was another, easier way to access the corridor from west of our property on BLM land, which would mean they had less road to build, on the other side of the original corridor. We came to an agreement with Idaho Power and they removed our land from a portion of the corridor and will not request any easement over our land. We were very pleased with the Idaho Power representatives that agreed to work with us to reroute that access road away from our property.

Then the RFA2 was proposed, which now includes nearly half of our 230+ acre property, including our home and much of our irrigated crop land. We have been told, in writing, that no facilities will be placed on our property and that the boundary will be "reduced: on property not affected. However, we are asking that the expanded site boundary be removed entirely from our land. This should be done for all landowners, not affected by the line, but still falling within the expanded site boundary. The corrected maps and legal description should then be on file with the Oregon Department of Energy. If this is not done, and our land is still included in the expanded site boundary, our property will be worth nearly nothing. As it stands we will still be impacted greatly because of the line being built adjacent to our property, with the devaluation and ruined viewshed that the towers and visible construction and access roads will cause.

It seems that Idaho Power is asking to increase the acreage of the line by over 4 times, "in case" they want to change something in the future. After all these years this should have been completed and not be allowed to be a land grab "just in case". Their many years of planning should have foreseen all the areas needed for this line and micrositing, and we are worried that they will have too much power and too little oversight if they choose to expand into more private property later.

Our small farm was our destination semi-retirement, and a legacy for our grown children and grandchildren. This has been a heartache for years, and this expanded site boundary, which seems unnecessary in our case (and we suspect in many other cases), just adds to the worries. The Oregon Department of Energy must have an obligation to help protect private lands, and that can be done by requiring that the expanded site boundary is removed to only the necessary small corridor that contains the transmission line and micrositing. In our case, that means removing it entirely.

Thank you for your consideration.
Christopher and Margie Marie Lyon
Lyon Family Living Trust
878 Coyote Gulch Ranch
Adrian, OR 97901

TARDAEWETHER Kellen * ODOE

From: Greg Larkin <larkingreg34@gmail.com>
Sent: Thursday, May 30, 2024 11:09 AM
To: TARDAEWETHER Kellen * ODOE
Subject: Greg Larkin's comments on RAF2 NOISE #2
Attachments: Greg Larkin Comments on RAF2 NOISE 5_30_2024.odt

Good morning, Kellen~

Please accept Greg Larkin's comments on noise for the RAF2.

ATTACHED document this time!

Thank you,
Greg Larkin
59655 Morgan Lake Road
La Grande, OR 97850

To: Kellen Tardaewether May 30, 2024
Senior Siting Analyst, ODOE

From: Greg Larkin, identified as Noise Sensitive Receptor #115 on the Boardman to Hemmingway (B2H) power line.

The concerns and comments are:

My residence, which is in a particularly quiet area, is located near several of the B2H towers/power lines. Idaho Power Company (IPC) sent me a map of the B2H project in 2007. The first formal correspondence that I received from IPC identifying and addressing my status as Noise Sensitive Receptor (NSR {residence}) was on February 24, 2024 when I received the Operational Noise Complaint Response Plan. I was informed in the cover letter that although IPC has **modeled** the corona noise impacts at my residence and **does not expect that they'll exceed regulatory levels**, they'd send me information to respond to the Noise Complaint Process just in case.

My residence is/will be approximately 627 feet from the power lines when it is built. I predict the corona noise it produces will be in exceedance of the Department of Environmental Quality (DEQ) standards, above 20 dBa . Inclement weather produced by high elevation (~4600') very windy mountain ridges, wet and rainy Spring and Fall seasons and Winters that produce copious amounts of snow. All make corona noise worse which I predict will harm my quality of life . I will also be exposed to the noise pollution/intrusion of the line construction which I have no recourse to oppose, report or complain. ORS 340-035-0035 (1) and **ORS 467.010**.

It is important to state that ALL NSRs on the B2H line need assigned baseline dBas, as well as ongoing monitoring. Changes to the site certificate conditions regarding the location and numbers of noise sensitive properties mean that there needs to be a review of noise impacts to private residences. The requirements regarding noise sensitive properties do not comply with ORS 467.030, Oregon Administrative Rule 340, Division 035 and the Oregon Sound Measurement Procedures Manual. which all continue to be in force as state law.

EFSC has historically evaluated noise by following the requirements of the above statutes and rules, however, they have used different methods, interpretations, and procedures to evaluate noise in the Site Certificate for the Boardman to Hemingway Transmission line**.**

It should not be the burden of land owners to prove what the dBa is at their residence or demand monitoring and mitigations. IPC has the burden of proving what they're saying with preponderance of evidence that the B2H power line will not harm the NSR residents. ORS 340-035-0035 (1). It is imperative that all NSR's are informed, protected, and future mitigation followed. Then, once the actual baselines are known, the negotiations can **begin** with the NSRs. To NOT do so before hand, disadvantages the NSR because the extent or degree of impact is not really confirmed. For example, If windows were a mitigation measure that the NSR was agreeable too, not knowing the real extent of the exceedance hampers the ability to negotiate the type of window's sound ratings.

Also, the Monitoring Posts used for the noise studies IPC chose for residences dBas are not representative of my property or an NSR property, therefore all NSRs should get the Site Specific monitoring (as required by the DEQ manual, **340-035-0005**) and it needs to be paid by the developer using an Acoustical Engineer agreeable to all parties.

The evidence is such: At my residence on September 12, 2021, Kerrie Standlee , P.E., at DSA Acoustical Engineers, Inc., conducted sample noise monitoring which resulted in approximately 21 dBA. IPC performed a sample noise dBa at monitoring site MP 100 (on the windy ridge near Morgan Lake Park .8 mile from my residence) and it registered at 31dBA-- NOT representative! Standlee's was only a quick sample to meet the ALJ deadlines for testimony. (Exhibit 1). Therefore, a follow up and more accurate monitoring measurement must be taken BEFORE (not after) my negotiation on Noise mitigation.

In the Operational Noise Complaint Response Plan am particularly concerned with the reference to a 12 month "burn in" period. There is no reference or exception in Oregon law which would require me to be subjected to a year of noise trespass on the use of my home and property. The complaint process is flawed. How, practically speaking, can an impacted NSR measure the exceedence? Saying the time, date, weather patterns, doesn't necessarily confirm anything. Once there is a complaint, IPC needs to take action to monitor, measure, and work with the NSR owner for resolutions or changes to the noise easement. The steps as proposed are complex and delay the company's response, putting most of the burden on the property owner which is NOT what we believe the EFSC or State of Oregon wants.

SITE CERTIFICATE CONDIITION:
Idaho Power will perform on site noise measurements to establish actual current ambient noise levels prior to the start of construction where it is projected that noise levels are predicted to increase by 15 dB or more. Follow-up monitoring will occur on an annual basis if requested by the property owner during the first ten years of operation.

SUMMARY:
EFSC rules also require ongoing monitoring to assure that there is compliance with the standards set including the 20 dB limit on increases in the current ambient noise levels. There are many residences where the projected noise level increases will be 15 dB or greater. In all these instances, there is a significant likelihood that the assigned noise levels may not be accurate and noise levels could increase by more than the 20dB exception allowed. The burden of proving that there are not exceedances lies with the developer, not the property owner. This responsibility is even greater due to the many areas where procedures used did not follow the state noise rule requirements and there was no study completed to validate that the results would be the same with the changed procedures.

Only when the procedures used are equal to or stricter than the state noise rules can counties or cities implement noise rules using different procedures than those in the state rules. This standard would also apply to EFSC. Even if it were determined that the multiple instances where the procedures used failed to follow those in the state rules were determined to be "equal to or stricter" , it does not waive the requirements of the Oregon Statutes. ORS 469.507 requires ongoing monitoring of environmental and ecological effects of construction and operation of the development and ORS 469.597(2) staties that the site certificate holder shall perform the testing and sampling necessary for the monitoring program or require the operator of the plant to perform the necessary testing or sampling.

In order to comply with the above Oregon Statutes, the following site certificate is necessary:

AREAS WHERE ACCORDING TO THEIR APPLICATION AND SITE CERTIFICATE, IDAHO POWER WAS NOT REQUIRED TO FOLLOW OREGON NOISE RULES:

1.The sound measurements used to establish Ambient Noise Level calculations required in 4.6.1(e) require the removal of noise readings from external sources such as sounds from passing vehicles, traffic, aircraft, or trains.

2. Sound measurements to establish the existing Noise Level were not completed at the individual residences.

3. Sound measurements were taken outside and the Noise rules require the determination of noise exceedances to occur at the same location as the initial noise measurement. Idaho Power used noise measurements outside the home to determine the noise level before the transmission line was energized and have made predictions comparing those measurements with noise levels inside the house after the transmission line is energized to decide if there will be exceedances to the 10 decibel Ambient Noise Standard in Oregon law.

4. No evaluation was conducted to assure that the changed procedures resulted in outcomes which are consistent with those obtained through compliance with the plain language of the Oregon Noise Rules.

5. Oregon Noise rules state that to decide if the level of noise is "infrequent", you determine how many days noise exceedances are likely to occur by considering how many days in a year the noise level is predicted to be higher than the standard during one or more hrs. during a 24 hr. day. The Oregon Department of Energy and Energy Facility Siting Council reinterpreted the rule to state that noise exceedances were "infrequent" by comparing the total number of hrs. of high noise level in a year as a block of time compared to the number of hrs. in a 365 day year.

6. The Site Certificate uses figures regarding how often weather would create corona noise above the Noise standard by looking at the hrs. between 12:00 midnight and **5:00 a.m. This is not done in the Oregon Noise rules.**

7. For the areas where Idaho Power did actual sound measurements to determine the existing noise level, they included periods of high wind , The Oregon noise rules state that sound measurements are to be removed from the calculation any time the wind speed is higher than 10 mph.

8. A google search for: "Can a person file a civil claim after an Oregon Agency approves an exemption from the noise rules": returned the following information:

""In Oregon, a person who has been exposed to noise exceedances may have legal options even after an agency approves a noise exception."

"If an agency approves a noise exception (such as granting a variance), it does not necessarily prevent affected individuals from seeking legal recourse. Civil suits can be filed by individuals who believe their rights have been violated due to excessive noise. The statute of limitations for personal injury cases in Oregon generally gives an injured person two years from the date of the injury to file a lawsuit. Therefore, if someone has suffered harm or nuisance due to noise exceedances, they may consider pursuing a civil suit against the responsible party or agency."

STATUTES AND RULES FOR LEGAL CONSIDERATION

OAR 340-035-0035 requires that the council include in the site certificate conditions in the site certificate to ensure compliance with the statutes, standards and rules described in **ORS 469.501** and **ORD 469.503.** Council must implement this statutory framework by adopting findings of fact, conclusions of law, and conditions of approval concerning the facilities compliance with the EFSC Standards for Siting Facilities at OAR 345, Divisions 22, 24, 26 and 27. (Final Order on the ASC for the B2H Transmission Line 9/27/22, Page 88).

ORS 467.010. Intent of the State of Oregon's "legislative policy" on noise pollution and control, as it not providing protection per:

> "The Legislative Assembly finds that the increasing incidence of noise emissions in this state at unreasonable levels is as much a threat to the environmental quality of life in this state and the health, safety and welfare of the people of this state as is pollution of the air and waters of this state. To provide protection of the health, safety and welfare of Oregon citizens from the hazards and deterioration of the quality of life imposed by excessive noise emissions, it is hereby declared that the State of Oregon has an interest in the control of such pollution, and that a program of protection should be initiated. To carry out this purpose, it is desirable to centralize in the Environmental Quality Commission the authority to adopt reasonable statewide standards for noise emissions permitted within this state and to implement and enforce compliance with such standards. [1971 c.452 §1]"

Oregon Statute
ORS 467.030
Adoption of noise control rules, levels and standards:

(1) In accordance with the applicable provisions of ORS chapter 183, the Environmental Quality Commission shall adopt rules relating to the control of levels of noise emitted into the environment of this state and including the following:

(b) Requirements and specifications for equipment to be used in the monitoring of noise emissions.

(c) Procedures for the collection, reporting, interpretations and use of data obtained from noise monitoring activities.

2) The Environmental Quality Commission shall investigate and**, after appropriate public notice and hearing, shall establish maximum permissible levels of noise emission for each category established, as well**

as the method of measurement of the levels of noise emission.

Department of Environmental Quality
Chapter 340, Division 35

340-035-0005

Policy
In the interest of public health and welfare, and in accordance with ORS 467.010, it is declared to be the public policy of the State of Oregon:

(1) To provide a coordinated state -wide program of noise control to protect the health, safety and welfare of Oregon citizens from the hazards and deterioration of the quality of life imposed by excessive noise emission:

(2) To facilitate cooperation among units of state and local governments in establishing and supporting noise control programs consistent with the state program and to encourage the enforcement of viable noise control regulations by the appropriate local jurisdiction;

(3) To develop a program for the control of excessive noise sources which shall be undertaken in a progressive manner, and each of its objectives shall be accomplished by cooperation among all parties concerned.

SOME OREGON RULES TO COMPLY WITH ABOVE NOISE STATUTE:

OAR 345-035-0015 Definitions

(5) "**Ambient Noise"** means the all-encompassing noise associated with a given environment, being usually a composite of sounds from many sources near and far.

(7) **"Any One Hour"** means any period of 60 consecutive minutes during the 24-hour day.

(12) "**Department'** means the Department of Environmental Quality.

(59) "Statistical Noise Level" means the noise level which is equaled or exceeded a stated percentage of the time. An L10 = 65 dBA implies that in any hour of the day 65 dBA can be equaled or exceeded only 10% of the time, or for 6 minutes.

OAR 345-035-0035

(3) Measurement:

(a) **Sound measurements procedures shall conform** to those procedures which are adopted by the Commission and set forth **in Sound Measurement Procedures Manual (NPCS-1)**, or to such other procedures as are approved in writing by **the Department**;

(b) Unless otherwise specified, the appropriate measurement point shall be that point on the noise sensitive property, described below, which is further from the noise source:

(A) 25 feet (7.6 meters) toward the noise source from that point on the noise sensitive building nearest the noise source;

(B) That point on the noise sensitive property line nearest the noise source. Note: Required measurement point is located outside the home.

New Sources Located on Previously Unused Site:

(i) No person owning or controlling a new industrial or commercial noise source located on a previously unused industrial or commercial site shall cause or permit the operation of that noise source if the noise levels generated or indirectly caused by that **noise source increase the ambient statistical noise levels, L10 or L50, by more than 10 dBA in any one hour**, or exceed the levels specified in Table 8, **as measured at an appropriate measurement point, as specified in subsection (3)(b) of this rule**, … Note: The plain language specifically states that an exceedance occurs when the noise increases 10 dBA "in any one hour" which is defined in the rule above as meaning a period of 60 minutes in a 24 hr. period.

(ii) The ambient statistical noise level of a new industrial or commercial noise source on a previously unused industrial or commercial site shall include all noises generated or indirectly caused by or attributable to that source including all of its related activities. Sources exempted from the requirements of section (1) of this rule, which are identified in subsections (5)(b)–(f), (j), and (k) of this rule, shall not be excluded from this ambient measurement.

The ODOE AND EFSC approved an exception and a variance to the stature and rules for complying with the site certificate. The Oregon DEQ no longer approves exceptions, variances, or other requests for things such as designating areas as "quiet areas" where noise levels should be lower than the standard, etc..

EXHIBIT 1: Document regarding B2H Noise Rebuttal Testimony Review Project # 103211. Surrebuttal Report-final.docx, December 3, 2021, Page 7 of 17.

TARDAEWETHER Kellen * ODOE

From: ODOE ITService * ODOE
Sent: Thursday, May 30, 2024 11:18 AM
To: TARDAEWETHER Kellen * ODOE
Subject: New Public Comment submitted for project : B2H Transmission Line Amendment 2 DPO

Organization:
Submitted by: Meg Cooke Cooke
Email: meganlatebird@hotmail.com
Zip Code: 97850

Siting Project Phase: *DPO*

Comment Summary:
B2H has continuously and intentionally under-estimated the true costs of this project from the beginning. They under-estimated the amount of acres involved, now asking for an expansion from 24, 000 to over 100, 000, which is more than 4 times the original ask. They under-estimated the cost by offering only $1.00 to landowners for the use of their land. Had B2H been honest about the true ecological and economic costs from the get go, this project would/should never have been approved. No More!

Please Click on the following link to view the full Comment Details

TARDAEWETHER Kellen * ODOE

From: sam myers <sam.myers84@gmail.com>
Sent: Thursday, May 30, 2024 2:48 PM
To: TARDAEWETHER Kellen * ODOE; B2H Stop
Subject: Sam Myers Public comment on B2H RFA-2 May 30, 2024
Attachments: Sam Myers Public comment on B2H RFA-2 May 30, 2024.pdf

Sent from my iPad

Public comment by Sam Myers, on B2H RFA-2
May 30th 2024

The Siting Council is now the last Gate Keeper, protecting landowners and the environment from the dangerous tactics of Idaho Power, seeking to have unfettered freedom in routing B2H through Oregon.

The B2H transmission line has already been moved in some areas as landowners requested changes, in those negotiated moves so far if the transmission line moved out of its original site boundary those new areas should be fully studied and vetted to make sure impacts are not made. In this current B2H update it seems they're asking for a blank slate to do whatever they deem necessary. In the update letter we received we take note that IPC will make these changes only when landowners request them or they're “necessary for engineering or construction purposes.” This is way too vague of an explanation and it offers Idaho Power way too much power to move and exert itself out of the site boundary without proper oversight and approval. I would like to cite the following organizational expertise oar 345- 022--0010 (1)

To issue a site certificate, the Council must find that the applicant has the organizational expertise to construct, operate and retire the proposed facility in compliance with Council standards and conditions of the site certificate. To conclude that the applicant has this expertise, the Council must find that the applicant has demonstrated the ability to design, construct and operate the proposed facility in compliance with site certificate conditions and in a manner that protects public health and safety and has demonstrated the ability to restore the site to a useful, non-hazardous condition. The Council may consider the applicant’s experience, the applicant’s access to technical expertise and the applicant’s past performance in constructing, operating and retiring other facilities, including, but not limited to, the number and severity of regulatory citations issued to the applicant.

I would contend that Idaho Power has failed to demonstrate the ability to design transmission lines. Based on my earlier OPUC findings I proved that Idaho Power has not engineered the towers to a level of enhanced reliability standards (data which was ultimately not considered because the OPUC staff was not compelled by my evidence). I have also noticed that a midline capacitor station needs to be added to the project and that some access roads were improperly designed. These issues demonstrate IPC's lack of ability to design. It also points out they seem to have a lack of technical expertise to know specifications used in all facets of the design and construction of a transmission line.

*Further on the subject of Idaho Powers selection of contractors; they chose contractors to conduct B2H site surveys that provided inaccurate results which had to be re-surveyed by different contractors. I'm concerned that Idaho Power hired powerline contractors that offered the lowest bid or chose them because other contractors have passed on the opportunity due to the design or route?

*In reference to:

IPC finds that the change in site boundary requested in RFA2 is consistent with OAR 345-027-0050(1). The proposed site boundary change is also similar in nature and consistent with other ODOE project authorizations, including: the Montague Wind Power Facility and the Wheatridge Renewable Energy Facility II. (Attachment 4-2 Site Boundary Memo)

*The precedence that IPC uses in support of their request for the site boundary expansion is not an adequate comparison and doesnot compare to the number of acres in this project (101,600 acres). I may be mistaken, but WheatRidge and Montague are facilities using favorable landowner properties and B2H is using lands subject to condemnation and I fail to see these as accurate comparisons.

B2H impacts me personally as I am trying to farm on ground that the transmission line traverses. Idaho Power has not contacted us personally to consult with us on any items and we have not spoken with them since the OPUC contested case which ended almost 1 year ago, it is my assertion that Idaho Power does not have the expertise to properly consult with landowners. These communications are outlined in the most recent federal MOU, which are the suggested federal guidelines for transmission placement and construction. The MOU guidelines specifically request that engagement begin early and continue with all parties involved in the project until the very end. Idaho Power seems to be shortcutting this MOU because of a lack of proper Staffing and continues to Short Circuit the process with legal maneuvers.

I'm concerned that Idaho Power will use this amendment to steamroll over landowners without proper consultation or approval. I strongly suggest that EFSC require all ADR's to be approved by the landowners and the public.

In my case this site boundary revision has created anxiety for myself because I have no idea what is going to happen with the transmission line routing concerning access roads and what Idaho Power may choose to change. It is extremely unsettling because our farm is already going to be severely negatively impacted by this transmission line. The contested case process has left us with unmitigated impacts because Idaho Power chose to ignore our fire risk and soil damage concerns from the beginning. This site revision Amendment only serves to make matters worse by potentially crossing through fields instead of maintaining a boundary edge. The standard I cannot underscore

enough is that any extension from the site boundary not in the original certificate should be treated as a brand new project where parties can adequately and publicly cite their concerns and proper mitigation can happen.

Our farm has historical significance; it was adopted into the Century Farm and Ranch program in 2005. The B2H route is just North of our Homestead and is already going to devastate the landscape that we know currently. We are concerned that further erosion of our landscape with unknown changes in the site boundary is simply unacceptable to us .

Idaho Power currently has a wildfire mitigation plan on file at OPUC this current plan is frankly unacceptable and leaves out significant cropland impacts from fire. Iit is an exceedingly underdeveloped plan. We are concerned that the RFA-2 is not in compliance with the new Wildfire prevention and risk mitigation standard. Much work needs to be done to reconcile this new Wildfire standard. I am confused about how that is going to happen. Proper Wildfire Policy seems much more Paramount in this process than granting more authority to Idaho Power without proper; review, transparency and regulation.

Morrow County authorities have designated this Butter Creek area as ‘Wildland Urban interface”, unfortunately the current B2H route traverses directly through this Urban interface Zone and remains in close proximity making it highly impacting for many homes and Farms, any relocation or revisions need to be fully scrutinized in this area because of those heightened impacts.

The Draft Proposed Order for RFA-2 of the B2H Site Certificate fails to require a full review of the area added to the site boundary required by OAR 345-027-0375(2)(a) by limiting reviews of siting standards to micrositing corridors rather than the site boundary. The site boundary cannot be expanded without completing the evaluation required to show with a preponderance of evidence that the area added complies with all requirements applicable to an initial application.

This draft site certificate seeks to make changes well beyond the current microsiding corridors rules, making changes well outside the original site boundary. This level of expansion is unprecedented and should not be allowed; only the original micro sighting rules should remain applicable in this project

I strongly suggest that this RFA-2 amendment is rejected because any changes outside the site boundary should go through the type A amendment process. I'm concerned that Idaho Power is seeking to provide unsupported claims in its public explanation of

this amendment. It is extremely disappointing to me that Idaho Power continues to get away with distorting the facts to the public while it seeks to maximize its own profits by creating a legal Short Circuit in the process. Idaho Power has a poor record of public involvement a poor record of land owner negotiation, we have heard of local examples where Idaho Power distorted the facts in an effort to expedite the process it's too bad that Idaho Power can not be held more accountable and frankly needs to be held more accountable, not less in each step along the way to constructing B2H

I would also like to note that this is my opinion; Idaho Power seems to have a history of shedding its responsibility in a number of aspects having to do with B2H. Idaho Power shed its responsibility to negotiate with landowners for a right of entry on to landowners property for surveying purposes; rather than make the effort to create Right of Entry documents for landowners they subpoenaed landowners to court proceedings to force access onto private property. This initial interaction with Idaho Power was extremely frustrating, requiring legal counsel expenses and led to much anxiety placed upon us. It was a horrible first step in dealing with Idaho Power's legal maneuvering. Idaho Power chose the legal system to gain entry onto private property. Idaho Power has shed its responsibility to limit project related fires, which places local firefighters and responders into additional danger which is likely to occur in rural locations. Idaho Power shed their responsibility through legal maneuvers to remove themselves from any responsibility of soil damage from fires occurring because of B2H. Idaho Power shed its responsibility to incorporate elevated reliability standards into its structural design of B2H.
* I am very cautious of Idaho Power's ability to maintain the entire project because of their actions that led to the Powerline and Lime Hill fires in which their $1.5 million settlement was not an admission of liability.
Idaho Power now seeks to shed its responsibility in this amendment to properly consult and negotiate with landowners; gather and consider public opinion, along with allowing proper regulatory oversight having to do with changes made outside the current site boundary.

/s/ Sam Myers

TARDAEWETHER Kellen * ODOE

From: sam myers <sam.myers84@gmail.com>
Sent: Friday, May 31, 2024 4:48 PM
To: TARDAEWETHER Kellen * ODOE; B2H Stop; Wendy King
Subject: Public comment #2
Attachments: Public comment #2.pdf

Sent from my iPad

Public comment by Sam Myers, on B2H RFA-2 added in extended comment deadline period, May 31, 2024

After attending the energy facility siting council public comment meeting on Thursday, May 30, 2024; it has become very obvious that Idaho Power does not have the necessary organizational expertise to plan, engineer, construct or operate a 500 KV transmission line like B2H. Furthermore, they are attempting to limit landowners' ability to negotiate with IPC.

Kellen Tardaewether attempted to explain the unbelievably complicated amendment (RFA-2). She struggled to describe the changes, and the audience was unable to comprehend all the changes described in the 800+ page document. It also became clear that Idaho Power is now relying on the ODOE to do their organizational homework for this project. As an example, we discovered that IPC had incorrectly designed access roads in the original site proposal, and the roads were not designed to the specific standards required. It is alarming that IPC did not figure out this major detail in the beginning stages of the project. Additionally, Kellen Tardaewether revealed multiple slides where landowner interface by Idaho Power clearly had not been done. The amendment is riddled with options that should have been settled with the landowner before burdening the ODOE with needless information; muddying the waters and making it impossible for the public to challenge.

If this amendment is granted it can actually LIMIT the ability of landowners to negotiate with IPC. Tardaewether showed a slide in the presentation to demonstrate how IPC developed options on a given site. This actually reveals how restricted the options are for that particular site. The options are now narrowed to only 2 choices. Perhaps the landowner might want a different choice entirely. A vote in favor of this amendment could damage landowner's ability to have a voice in local siting situations.

Idaho Power is using an amendment in order to cover-up their own incompetence. They were unable to make contact with landowners and properly negotiate a solution in the siting process, so now they've come to the ODOE with an amendment to fix it. This demonstrates a lack of thorough examination and analysis of even the most simple requirements for the project. It reveals the poor work done by IPC to complete the proper landowner interface phase of the project. The siting council has to deny Idaho Power this massive amendment because it demonstrates that IPC's work is incomplete, lacking thorough analysis, and devoid of engineering expertise. It calls into question the entirety of the project: If they cannot engineer something as simple as a road, where might the other errors of professional engineering and details appear?

It is becoming more and more apparent that the ODOE is unfairly showing favoritism for Idaho Power. We are seeing this blind allegiance with every issue the ODOE sweeps under the rug, and fixing whatever Idaho Power needs done. The ODOE is now propping up the project; literally doing Idaho Power's work for them, demonstrating the incompetence of Idaho Power. This undeniable favoritism puts landowners and communities at risk for failed engineering - which could cause massive damages.

Who has the proper oversight here? Major operational problems can occur because of this favoritism. Operating 500KV lines without aggressive oversight is blatantly dangerous. This is unacceptable and a dereliction of the fundamental mission of ODOE. The siting council must recognize that ODOE is turning a blind eye to the Idaho Power's ineptitude.

The siting council is the last gatekeeper able to hold IPC accountable. What has IPC done over the last year to encourage progress? It appears that IPC is unable to complete the requirements necessary to build B2H. Idaho Power continues to make fundamental mistakes and relies on a legal team or the ODOE to bail them out.

AT THIS TIME I WANT TO FORMALLY ASK IPC TO CONTACT ME IN ORDER TO NEGOTIATE THE USE OF WHEATRIDGE TRANSMISSION CORRIDOR FOR PLACEMENT OF B2H.

/s/ Sam Myers

TARDAEWETHER Kellen * ODOE

From: Kevin March <kmarch1961@gmail.com>
Sent: Thursday, May 30, 2024 2:43 PM
To: Energy Siting * ODOE
Cc: TARDAEWETHER Kellen * ODOE
Subject: RFA2 Comment from Kevin March
Attachments: Kevin March_ Comments Regarding RFA2 - Google Docs.pdf

Please find my comments regarding the B2H RFA2 proposal attached as a PDF document.

Sincerely,

Kevin March

May 30, 2024

Oregon Department of Energy
Attn: Energy Facility Siting
550 Capitol Street NE
Salem, OR 97301

Sent Via EMail: energy.siting@energy.oregon.gov

Subject: Kevin March: Comments Regarding RFA2

RE: Inaccurate and Incomplete Data for Streams in RFA2 Proposed Area

Dear Chair and Members of the Energy Facility Siting Council:

Oregon's wild fish populations are in steep decline. 2022 Snake River Basin Steelhead counts were by far the lowest ever recorded. Chinook Salmon are on the endangered species list. Chief among the many issues compounding this decrease in our native fish population is habitat loss.

Idaho Power's RFA2 with its substantial increase in access roads, the increase of site boundaries to potentially ½ mile, as well as the proposed widening of roads on slopes could and would do great harm to the uplands, and specifically to the ephemeral streams and associated wetlands of our Northeast Oregon rivers that these power lines and roads would cross and despoil.

Ephemeral streams are critical to intermittent and perennial stream health. They are important for water quality for all downstream and instream water users.. Ephemeral streams are critical components of anadromous and native local fish habitat health. Yet ephemeral streams are highly understudied and undercounted, and are not acknowledged by Idaho Power in RFA2.

Idaho Power, at best, studied and mapped a very limited number of ephemeral streams within the original ASC. RFA2, without adequate studies, would only increase the potential impact to and the potential degradation of ephemeral streams and their habitat. Idaho Power is in violation of ORSs and OARs by treating these important waters as dirt rather than the essential component of watershed and fish habitat health that they are.

The following is from a letter from former Governor Kate Brown to the EPA when proposals were floated to decrease federal protections of ephemeral streams:

> *"Oregon supports EPA and the Corps' inclusion of intermittent streams, however, excluding ephemeral streams from the definition of the Waters of the U.S. is a distinction without a difference. These waters are essential to protecting the*

overall health of a watershed including the protection of drinking water, recreation, fish, wildlife and their habitats, as well as economies dependent on those systems. Stream networks with significant ephemeral and intermittent extents are commonplace in eastern Oregon and throughout the arid West. In fact, the United States Geological Survey's National Hydrography Dataset (NHDPlusV2) categorizes over half of the waterways in Oregon as intermittent or ephemeral. Oregon is encouraged to see intermittent streams included in the proposed definition of Waters of the United States; this aspect of the definition must remain in any final rule.

Headwater streams are often ephemeral. These are important for the overall function of a watershed for sediment, nutrient, and flood control, and they help maintain biological diversity, and are essential for the water quality in downstream perennial streams, which are essential for Oregon's fish and wildlife, including ecologically and economically valuable cold-water species like salmon, steelhead, and trout, as well as other native fish and wildlife. The ability of those perennial waters to function as habitat for those species throughout the year is tied to this larger stream network. For example, during summer months when stream flows are low and water temperatures are elevated, some fish species rely on localized pockets of cooler water for survival delivered by these upstream networks. Many of these "cold water refugia" exist because subsurface hydrologic connections persist even after the seasonal loss of surface connectivity. While Oregon is not suggesting that subsurface water be included in the definition of the Water of the United States, ephemeral waters feed surface and subsurface flows and contribute critical cold water flows to downstream waters.

The conclusions above are supported by a 2019 American Fisheries Society Special Report , which documents the critical roles headwater streams and wetlands, including those that are intermittent or ephemeral, play in sustaining the nation's ecosystems, imperiled species, recreational and commercial fisheries, and cultures. This report is replete with Oregon examples including the role of headwaters in the recovery and delisting of Oregon Chub and Modoc Sucker, which in 2014 and 2015, respectively, became the first and second fish species ever to be delisted from the federal Endangered Species Act due to recovery. When considered cumulatively across the drainage network, intermittent and ephemeral waters are vital for determining the quality of perennial water and, hence, the beneficial uses supported in downstream perennial reaches and the health of economies tied to these resources.

In Oregon, salmon and steelhead are a vital part of our natural heritage, culture, and economy. These iconic fish support commercial and recreational fisheries that contribute millions of dollars to the nation's economy each year. The economic contributions of these fisheries are particularly important in many rural and coastal communities in Oregon. For example:

• Oregon's recreational salmon and steelhead fisheries provided an economic impact of $53.8 million in 2013 and $57.1 million in 2014.
• Between 2012 and 2017, commercial ocean troll and recreational ocean fisheries for salmon in Oregon provided an average annual personal income impact of over $19 million with much of that impact delivered to coastal communities.

• Even beyond salmon and steelhead, recreational fishing is an economic driver across Oregon. In 2011, the year of the most recent National Survey of Fishing, Hunting and Wildlife-Associated Recreation, 638,000 recreational anglers spent over 5.6 million days of fishing in Oregon with total fishing-related expenditures exceeding $640 million.

In addition, ephemeral waters in drier climates, such as in Eastern Oregon, vary spatially and temporally. For example, the Oregon Department of Fish and Wildlife (ODFW) conducted annual status surveys for redband trout in an eastern Oregon basin (Rock Creek) from 2007 to 2012. The interannual variability in the number of sites visited that were dry was substantial (2007 - 56% dry; 2009 - 18% dry; 2010 & 2011 - 0% dry; 2012 -75% dry). Despite this variability and the large extent of drying in some years, ODFW concluded "redband trout in this system appear to be abundant relative to other areas in the northern portion of the Great Basin."Aquatic habitat that is periodically and unpredictably dry does not necessarily cease to be important habitat for Oregon's fish and wildlife."[1]

This letter to the EPA highlights the importance of ephemeral streams and the habitat they contribute to, but there is much more.

A 1973, four year study[2] on the Rogue River by Oregon Fish and Game (now ODFW) biologist Fred Everest found that one of the most productive streams for threatened steelhead spawning was a stream that, during the study period, was dry during August through October (an ephemeral stream). He found that adult steelhead and all other native fish can spawn in the ephemeral waters, which are then used by the juveniles as rearing habitat, where they have less danger from predators. The study showed that juveniles will use the calmer waters present in the ephemeral streams during flooding events for calmer, less turbulent habitat, as well as the food and shelter from predators this habitat affords. Evers found that when these ephemeral waters seasonally decrease or become dry, the juveniles will migrate downstream to intermittent and perennial streams to continue their development.

Idaho Power's proposed B2H route crosses numerous river watersheds including the Umatilla, Grande Ronde , Powder and Burnt River basins and uplands. A watershed, according to OAR 635-415-0005, "is composed of its streams, tributaries and

[1] https://www.epa.gov/system/files/documents/2021-11/or_09-30-2021_508.pdf pages 12-13
[2] https://www.wildsteelheaders.org/science-friday-ephemeral-streams-provide-key-steelhead-habitat/

associated uplands".[3] "Headwaters and wetlands represent a substantial portion of the freshwater network within watersheds. Headwaters dominate freshwater riverine systems in both density and length (Larned et al., 2010; Datry et al., 2014). For instance, in the conterminous United States (CONUS), conservative estimates indicate that headwaters constitute over 79% of the freshwater river length and drain approximately 70% of the land area (Colvin et al., 2019)." [4]

Studies have shown that ephemeral streams initiate in areas where there are 2 acres of upstream watersheds in steep areas and up to 24 acres of upstream watersheds in flat areas. Many of these ephemeral streams have connectivity to systems containing anadromous fish, and most **all** have connectivity with native fish bearing streams.

Ephemeral streams are an important part of each watershed and are a vital component of these tributaries and uplands defined by OAR (OAR 635-415-0005) and provide critical habitat for **all** native fish including Oregon's endangered and threatened salmon and steelhead.

The National Hydrography Dataset estimates that 18% of streams nationwide are ephemeral, with a much higher percentage in the arid west. 5,301 miles of streams are mapped in the Upper Grande Ronde river basin in the USGS High Resolution National Hydrography Dataset. Trout Unlimited estimates that for every mapped river mile, there are 1.5 miles of ephemeral streams which are poorly or not mapped at all. The Journal Of Arid Environments stated that "The algorithm extracted ephemeral stream lengths approximately 900% greater than those identified in the National Hydrography Dataset."[5] This is a huge amount of unmapped streams.

Clearly, the historic mapping of ephemeral streams is poor, at best. However, "While limitations in current headwater and wetland datasets exist, emerging approaches using LiDAR, other remote sensing platforms, field and remote monitoring, machine learning, and modeling can help to close gaps created by these limitations."[6] There are tools with which to map these streams and they are readily available.

The Oregon legislature, acknowledging the importance of ephemeral streams and their habitat, passed forestry laws in 2022 "...that required stream buffers for some ephemeral headwater streams. These are streams that are seasonal, or sometimes present during significant rainfall, but are dry at other times of the year. Oregon law did not previously require forest landowners to leave buffers of uncut trees around these types of streams, but protections for these streams, either in the form of no-cut buffers or a logging equipment limitation zone, were added because they feed into fish-bearing streams and aquatic habitats."[7]

---

[3] OAR 635-415-0005
[4] https://www.sciencedirect.com/science/article/abs/pii/S0012825222003142
[5] https://www.sciencedirect.com/science/article/abs/pii/S0140196316300313
[6] https://www.sciencedirect.com/science/article/abs/pii/S0012825222003142
[7] https://oregonforestlaws.org/water-and-fish

Ephemeral streams are also important for wetland riparian areas. (9) “Riparian area” means a zone of transition from an aquatic ecosystem to a terrestrial ecosystem, dependent upon surface or subsurface water, that reveals through the zone’s existing or potential soil-vegetation complex the influence of such surface or subsurface water. A riparian area may be located adjacent to a lake, reservoir, estuary, pothole, spring, bog, wet meadow, muskeg or ephemeral, intermittent or perennial stream.”[8]

The Best Practices[9] for aquatic conservation have long held that overall watershed health is directly related to the fisheries the watershed supports, irregardless of whether the fish are present in all of the streams within the watershed.

ODFW’s own fish passage biologist Greg Apke had this to say about ephemeral streams:

> Q. “Can very small streams and even streams that are considered ephemeral streams hold pools that could sustain steelhead smolts during dry periods?
>
> A. Yes.
>
> Q. Would you agree that the small streams can be important habitat for steelhead survival?
>
> A. Yes.”[10]

Yet Idaho Power has used the Division of State Lands definition of ephemeral streams, which is that they are not streams; by this definition they are nothing more than dirt. Idaho Power identifies 0.3 acres of category 2 ephemeral stream habitat that will be disturbed, and 0 acres of category 3 ephemeral stream habitat that will be disturbed in the entire route. They identified 0 acres of ephemeral streams on the alternative route that will be disturbed.[11]

This is an absurd number. This analysis was flawed in the original ASC, but it is even more so with Idaho Power’s proposed increase in the site boundaries to ½ mile and the proposed increase in the number of access roads and the size of roads constructed on slopes.

Idaho Power had this to say of ephemeral streams: “Based on consultation with the USACE (Turaski and Nelson 2013) and for purpose of this Project, IPC is treating ephemeral streams as WOTUS; therefore, ephemeral streams are included in the JPA

---

[8] 541.890 Definitions for ORS 541.890 to 541.969. As used in ORS 541.890 to 541.969

[9] Williams, J.E. , C.A. Wood, and M.P. Dombeck (editors). 1997. Watershed restoration: principles and practices.
American Fisheries Society, Bethesda, Maryland.

[10] Greg Apke (ODFW) Cross-Examination Hearing Testimony, P19 L5-11

[11] B2HAPPDoc1-16.1 ApASC Exhibit P1_Wildlife_Main thru Att P1-6 -Includes RAIs 2013-2016_2017-06-28.pdf. page 122

for the USACE's consideration. In contrast, as discussed above, ephemeral streams are not considered WOS subject to DSL's jurisdiction and are not addressed in Exhibit J. "[12] Once again, the DSL definition of an ephemeral stream is that it is not a stream, it is dirt.

Oregon law says this of Upland Habitat in the Dept. of State Lands, Chapter 141 (141-085-0510): "Essential Indigenous Anadromous Salmonid Habitat (ESH)" means the streams designated pursuant to ORS 196.810 that are necessary to prevent the depletion of indigenous anadromous salmonid species during their life history stages of spawning and rearing, and any adjacent off-channel rearing or high-flow refugia habitat with a permanent or seasonal surface water connection to an ESH stream." This is exactly what ephemeral and intermittent streams are and what they offer ; "**any adjacent off-channel rearing or high-flow refugia habitat with a permanent or seasonal surface water connection to an ESH stream**".

ODOE asks of Idaho Power in regards to ephemeral streams: "The Department has requested in previous reviews of Table PI-2 Exhibits P and Q that **ephemeral streams be surveyed during the analysis of fish habitat and fish presence**."[13] (emphasis added)

The above is very important. **ODOE asks that ephemeral streams be surveyed for fish habitat and presence**. How and what did Idaho Power do for this "analysis?"

For stream analysis/identification and to differentiate between ephemeral, intermittent, and perennial streams, Idaho Power used a system entitled Streamflow Duration Assessment Method for the Pacific Northwest (SDAM) "SDAMs are rapid field assessment methods that use hydrological, geomorphological, and/or biological indicators, observable in a single site visit, **to classify streamflow duration as perennial, intermittent, or ephemeral at the reach scale**."[14] Yet which, **if any**, ephemeral streams were analyzed by Idaho Power is unclear.

Idaho Power says "In 2013 and 2016, individual SDAM forms were not filled out for all intermittent and perennial streams; however, the SDAM methodology (Nadeau 2011 and 2015) was used by field staff as needed for determining flow duration, and forms were filled out only at select representative streams."[15]

---

[12] https://www.oregon.gov/energy/facilities-safety/facilities/Facilities%20library/2018-09-28-B2H-ASC-Exhibit-J-aPart-1.pdf page j-9

[13] B2HAPPDoc1-16.1 ApASC Exhibit P1_Wildlife_Main thru Att P1-6 -Includes RAIs 2013-2016_2017-06-28.pdf. page 26 of 957

[14] https://www.epa.gov/streamflow-duration-assessment/streamflow-duration-assessment-method-pacific-northwest#what

[15] https://www.oregon.gov/energy/facilities-safety/facilities/Facilities%20library/2018-09-28-B2H-ASC-Exhibit-J-aPart-1.pdf page j-14

What does this even mean? What does Idaho Power mean by "as needed" and who determined "select representative streams"? Did Idaho Power analyze **any** ephemeral streams? For that matter, how did Idaho Power select the "representative" streams determined to be intermittent or perennial in the Application?

SDAM's manual states that "Performance of the current method does vary somewhat in different hydrological settings and at different times; for instance, it performs better during the spring for semiarid and very wet climate classes."[16]

The manual goes on to say: "The reach should first be walked to ascertain whether it is completely dry, or if areas of standing water where aquatic macroinvertebrates may collect remain."[17] Once again, it is absolutely unclear when and if IPC did any analysis of ephemeral streams on the Route, and which intermittent and perennial streams it analyzed, and if it did not follow the SDAM manual, what did it follow? And exactly when and what time of year did it do this analysis? Which streams did they "selectively" study?

In the water year 2013 while Idaho Power was doing some of these studies, NOAA said this about snowpack in Eastern Oregon "below and much below normal snowpack was observed for central and eastern Oregon."[18] In fact, Oregon was in a severe multi-year drought during this time, bringing into question the validity of "select" stream analysis for intermittent and perennial streams and wetlands, much less ephemeral streams (which flow in direct response to rainfall events) in all of the watersheds along the route.

SDAM's manual also says this about stream analysis: "As with wetland delineation, for best results we recommend that the method be applied during the growing season."[19] Once again though, the Idaho Power "analysis" was carried out during a period of drought and during the driest part of the summer for the higher terrain of the Route.

In addition, Idaho Power had this to say about surveys for wetlands: "The survey area used for wetland and waters was the analysis area. In 2011, surveys occurred from June 24 to October 7. Surveys in Oregon started in Morrow County then moved to Umatilla, Malheur, Baker, and finally Union counties. This order was used to capture the lower elevation areas in Oregon first, where wetlands would be harder to identify as the season progressed, before moving to higher elevations where wetlands would be easier to identify later in the season. Additional surveys were conducted in 2012, 2013, and 2016 in order to capture changes that were made to the Site Boundary, including the addition of alternative routes. Future survey efforts are identified in Table P1-1."[20]

---

[16] https://www.epa.gov/system/files/documents/2022-03/sdam-pnw_nov-2015-final.pdf
[17] Ibid
[18] https://www.ncei.noaa.gov/access/monitoring/monthly-report/snow/201303
[19] https://www.epa.gov/system/files/documents/2022-03/sdam-pnw_nov-2015-final.pdf page 13
[20] https://www.oregon.gov/energy/facilities-safety/facilities/Facilities%20library/2018-09-28-B2H-ASC-Exhibit-P1-Part-1-Main-to-Attach-P1-6.pdf page P1-19

So, during a multi-year drought, IPC did its wetland surveys for Union County very late in the summer, or even well into the fall as it supposedly had done for stream analysis. This is not a proper analysis. Wetlands and ephemeral and intermittent streams along with their connectivity could absolutely change character later in the season, looking dry and void of aquatic life, when earlier in the season they provided habitat and refugia to numerous native fish species.

The SDAM manual says this about "streamflow indicator assessment" which is the differentiation criteria for ephemeral, intermittent and perennial streams:

"Indicator assessment is based on direct observation and should not include predictions of what could or should be present. Disturbances and modifications to the stream should be described in the "Notes" section of the assessment form and taken into consideration when drawing conclusions from the information collected. It is also important to explain the rationale behind conclusions reached, and when necessary that rationale should be supported with photos and other documentation of the reach condition and any disturbances or modifications that were taken into consideration. Stream reaches are categorized as perennial, intermittent, or ephemeral on the basis of five indicators. To apply this method, all indicators should first be evaluated, and the field assessment form (Appendix B) completed. The indicators are then considered sequentially, similar to using a dichotomous key (see Drawing Conclusions). The answers to each step of the key determine the relevant indicator for the next step."[21]

These indicators are as follows:

1-3) The presence of certain types of macroinvertebrates
4) Wetland plants in or near streambed
5) Slope

SDAM also states that the stream is at least intermittent if not perennial when "One or more individuals of an amphibian or snake life stage (adult, juvenile, larva, or eggs) identified as obligate or facultative wet (Table 2) are present in the assessment reach."[22]

I did brief surveys of land near Morgan Lake, just west of La Grande in an area the lines and access roads will traverse. According to the landowner, Idaho Power has not been on his land to survey. To our knowledge this area has not been included in Idaho Power's "select analysis" of streamflows and SDAM has not been followed.

[21] https://www.epa.gov/system/files/documents/2022-03/sdam-pnw_nov-2015-final.pdf page 18/36
[22] ibid page 25/36

This is what I found (on 5/21/2024) near or at a site where a tower is slated to be constructed [23]. It is rather obviously an amphibian:



[23] Coordinates: 45.29983 N, 118.14634 W

This was found at the same location:



These photos satisfy SDAM's criteria for at least intermittent, if not perennial stream designations. They show amphibians and macroinvertebrate damselflies (Calopterygidae). Yet on Idaho Power's maps, there are no streams or wetlands of any kind shown at this location. The water from this location flows directly into Sheep Creek, a stream designated as Essential Salmonid Habitat by DSL, and a stream with resident and listed species present.

This next photo (from 5/28/2024) of a pebble snail (Pleuroceridae,) is from a nearby location [24]. Again, Idaho Power apparently has the stream that contains this designated as dirt:



[24] Coordinates 45.31061 N, 118.17275 W

I also have a video from the same day showing riffle beetles (Elmidae), water plants and water striders (Gerridae), though I was not able to embed the video in a PDF. This video is on the same day and identified by the same coordinates as the pebble snail above. I plan to submit this video as evidence during the proceedings if I am allowed a contested case. The video can be furnished with a request to kmarch1961@gmail.com

These photos and the video satisfy the criteria for this water as, at minimum, an intermittent stream according to SDAM, and potentially a perennial stream. This stream is not on Idaho Power's map. Idaho Power has not satisfied SDAM and could potentially put a road right over or through this stream because they have not followed the criteria specified in SDAM to differentiate and map the stream types.

The waters from this stream flow into Sheep Creek, just above the confluence of Sheep Creek and Rock Creek. This unmapped water is contiguous with native and anadromous fish bearing streams, and most likely support the cold water refugia and safe protective habitat most needed by juvenile fish as stated earlier in this paper.

Because they support such important anadromous fish habitat, Rock Creek and Sheep Creek (tributaries to the Grande Ronde River) have had a tremendous amount of work done for fish habitat improvement, a project called the Rock Creek Project. "This Rock Creek Project encompasses nearly 16 miles of fish habitat on Rock, Little Rock, Sheep, Graves, and Little Graves creeks within the UGC-2 and UGS-16 recovery plan assessment units. UGS-16 has been identified by the BiOp Expert Panel as one of the highest priority geographic units to protect and restore summer steelhead habitat. UGC-2 is identified as having high intrinsic potential for Chinook in the lower reaches of Rock Creek and low to medium intrinsic potential for Chinook within upper stream reaches."[25]

Again I will point out the importance of this Upland habitat for stream and fish habitat health and according to DSL, Chapter 141 (141-085-0510): "Essential Indigenous Anadromous Salmonid Habitat (ESH)" means the streams designated pursuant to ORS 196.810 that are necessary to prevent the depletion of indigenous anadromous salmonid species during their life history stages of spawning and rearing, and any adjacent off-channel rearing or high-flow refugia habitat with a permanent or seasonal surface water connection to an ESH stream."

Importantly, the Oregon Department of Energy had this to say about the route in regards to fish in the Proposed Order for the Application of Site Certificate (ASC):

"Note that pursuant to ORS 509.585 and OAR 635-412- 0020, fish passage is required in all waters that currently or historically contained native migratory fish. This potentially includes waters classified as perennial, intermittent, or **ephemeral**. See RAI J11 for

[25] https://granderonderiver.org/habitat-project/?sid=9

additional information." (emphasis added)[26] **An access road built across streams such as the one illustrated will block any and all native migratory fish passage.**

There is a serious disconnect here from the critical importance of ephemeral streams for native fish survival, the fish passage requirements, the DSL definition of ephemeral streams, and the "surveys" that Idaho Power did or did not do in "select representative" ephemeral or intermittent streams. These are antithetical and contradictory; Idaho Power's approach is absolutely not "Best Practices", and in violation of OAR 635-415-0005, OAR 635-412-0035, OAR 345-021-0010, OAR 345-021-0010(1)(p), OAR 345-021-0010(1)(q), ORS 509.585 and OAR 635-412- 0020 and ignores Essential Salmonid Habitat as defined in DSL Chapter 141 (141-085-0510).

My short analysis of a small basin on one very small upland of the 270 mile route clearly shows a lack of proper, if any analysis by Idaho Power. Ephemeral streams must be a part of the habitat described in OAR 635-415-0005 as "**Any habitat recognized as a contributor to sustaining fish and wildlife populations on a physiographic province basis over time**."

Oregon fish passage criteria for OAR 635-412-0035 are not satisfied if ephemeral streams are considered dirt and have not been analyzed. Fish passage criteria are not met if only "select" intermittent streams were studied, and are not satisfied if SDAM forms were not filled out for all intermittent and perennial streams. Fish passage OARs are not satisfied if Idaho Power can have a half mile wide corridor with which to build roads, install powerline towers, and damage habitat while severing connectivity within this extremely important habitat.

Idaho Power also does not have a list of threatened species in these intermittent and ephemeral waters to satisfy OAR 345-021-0010. It does not have a complete list because it did not study them, or if the "select representative" streams were actually studied, but during the latter part of the summer during an extended period of drought.

The rule informing the applicant what must be included in their application is covered in Division 21 of the EFSC rules. It is clear from the ASC that Idaho Power has not compiled with OAR 345-021-0010(1)(p) and (q); and moreover they continued to not include this essential information for the analysis.

"OAR 345-021-0010(1)(p) requires that Exhibit P include the following information about the fish and wildlife habitat and species, other than the species addressed in Exhibit Q, that could be affected by the Project:
(A) A description of biological and botanical surveys performed that support the information in this exhibit, including a discussion of the timing and scope of each survey.
(B) Identification of all fish and wildlife habitat in the analysis area, classified by the habitat categories as set forth in OAR 635-415-0025 and a description of the characteristics and condition of that habitat in the analysis area, including a table of the

[26] B2HAPPDoc1-16.1 ApASC Exhibit P1_Wildlife_Main thru Att P1-6 -Includes RAIs 2013-2016_2017-06-28.pdf page 2-3

areas of permanent disturbance and temporary disturbance (in acres) in each habitat category and subtype.
(C) A map showing the locations of the habitat identified in (B).
(D) Based on consultation with the Oregon Department of Fish and Wildlife (ODFW) and appropriate field study and literature review, identification of all State Sensitive Species that might be present in the analysis area and a discussion of any site-specific issues of concern to ODFW.
(E) A baseline survey of the use of habitat in the analysis area by species identified in (D) performed according to a protocol approved by the Department and ODFW.
(F) A description of the nature, extent and duration of potential adverse impacts on the habitat identified in (B) and species identified in (D) that could result from construction, operation and retirement of the proposed facility"

Idaho Power has stated that they would use "mitigation banking" to make up for the loss of habitat, but if they do not have accurate data reflecting the true amount of ephemeral and intermittent streams affected by this project, they can not possibly know how much "banking" is needed.

If ephemeral streams are not identified as habitat, the proposed mitigation is not adequate. The mitigation plan is in error because the habitat has not been fully quantified. It omits most ephemeral streams, and some intermittent streams in the habitat quantification that sustains our threatened fish and fisheries. Therefore, the metrics used for the mitigation banking are not accurate and must be reviewed and revised before approval of the site condition, with its mitigation banking, can be granted.

In conclusion, incorrect data and omissions of data in regards to ephemeral and intermittent streams are a serious issue in the RFA2. Correcting these omissions would give Idaho Power the opportunity to correct their erroneous data so that there is no destruction or damage to our native fish habitat and the species it supports.

- Ephemeral streams are a critical component of the uplands of a watershed as per OAR 635-415-0005
- Ephemeral streams are critical habitat during periods of low flow for our states indigenous fish species, whether they are endangered and threatened anadromous fish, or local native species
- Ephemeral streams, even when appearing dry, can have subsurface flows and connectivity to downstream waters, which is important in maintaining cold water refugia for our local and anadromous fish species
- Ephemeral streams are not dirt. They are a vital part of our river systems, and integral to the ecology and habitat of our watersheds
- Mapping and hydrological analysis of ephemeral streams is poor at best and non-existent at worst, and better mapping techniques are now available. Idaho Power could and should have used these techniques to better assess streams in the watersheds spanned by the Route
- Access roads, towers, and the equipment associated with their construction jn RFA2 could and would destroy many of these streams, severing connectivity to their associated perennial streams and the native fish species sustained by them

- Idaho Power's maps of streams in the small area I analyzed are inaccurate and brings into question the accuracy of stream analysis on the entire proposed route
- Idaho Power's "select" analysis of ephemeral, intermittent and perennial streams and wetlands were performed during a multi-year period of drought with many areas "studied" during the driest period of the year and does not give a true picture of morphology and habitat
- Idaho Power did not follow the guidelines within the SDAM manual, Idaho Power's reference for the study of and clarification/distinction of ephemeral streams, intermittent and perennial streams
- RAF2 will not meet the requirements set forth in ORS 509.585 and OAR 635-412- 0020 until a more complete analysis of the ephemeral streams throughout the project is undertaken
- RAF2 will not meet the requirements set forth in OAR 345-021-0010(1)(p) until a more complete analysis of the fish and habitat within ephemeral streams and their contiguity with intermittent and perennial streams is undertaken
- RAF2 will not meet the requirements set forth in OAR 345-021-0010(1)(q) until a more complete analysis of the fish and habitat within ephemeral streams and their contiguity with intermittent and perennial streams is undertaken
- RAF2 will not meet the requirements set forth in OAR 635-415-000 and OAR 635-415-0005 if ephemeral stream habitat loss for the watersheds within the entire Project are not included in the proposed mitigation measures
- RAF2 will not meet the requirements set forth in OAR 635-412-0035 if access roads are built through streams prior to a Fish Passage analysis
- RAF2 will not sustain Essential Salmonid Habitat as recognized in OAR 635-415-0005

Sincerely,

/s/ Kevin March

Kevin March
206 Main Avenue
La Grande, OR 97850

kmarch1961@gmail.com
(541) 962-5726

GHCC GREATER HELLS CANYON COUNCIL

May 30, 2024

Regarding:
Boardman to Hemingway transmission line
Request for Amendment 2 (RFA2) submitted by Idaho Power

To: **Kellen Tardaewether**, Senior Siting Analyst
Oregon Department of Energy
550 Capitol Street NE 1st Floor
Salem, OR 97301

Sent by email: kellen.tardeaewether@energy.oregon.gov

Dear Kellen Tardaewether,

I am writing on behalf of the Greater Hells Canyon Council (GHCC) to provide comments on the proposed Request for Amendment 2 (RFA2) submitted by Idaho Power for the Boardman to Hemingway (B2H) transmission line.

Greater Hells Canyon Council is a non-profit conservation organization based in northeastern Oregon. Our mission is to connect, protect, and restore the wild lands, waters, native species and habitats of the Greater Hells Canyon Region, ensuring a legacy of healthy ecosystems for future generations.

The proposed Amendment RFA2 would significantly add to the environmental impacts of the B2H project. The environmental impacts resulting from Idaho Power's original application for B2H already create serious environmental problems. RFA2 would allow additional detrimental impacts over a 300 mile long transmission line *without additional surveys or analysis*. Quite frankly, this is outrageous.

We strongly urge the Oregon Department of Energy to deny RFA2.

RFA2 proposes significant additions to the project *without additional surveys or analysis* including:

- Widening the B2H site boundaries by up to ½ mile for over 300 miles of transmission line.
- Adding a mid-line capacitor station to boost electric output so it can be exported out of state.

- Adding additional access roads and thereby further fragmenting wildlife habitat connectivity, increasing the spread of invasive weeds, and increasing herbicide use in undeveloped lands.
- Changing site conditions resulting in weakened protections for fish and wildlife.
- Additional potential amendments to a project that already creates damages to wild lands, fish and wildlife habitat, and connectivity of habitats.

Please consider the likelihood that important wildlife or botanical features are located within the new pathways that would be authorized by RFA2. For example, an eagle nest, elk calving grounds, a wetland, or a unique botanical site would be negatively impacted or destroyed by construction, transportation, or other activities related to the powerline. Fish and wildlife habitat are valuable resources to be protected, not treated as an afterthought.

As proposed, B2H will cause negative economic and environmental justice impacts to the communities of eastern Oregon. These are the lowest-income counties in Oregon and they would be negatively impacted by B2H. These same counties would receive little or no economic benefits from B2H. These economic and social justice impacts must not be ignored.

A recent "Socioeconomic Report" was commissioned by Eastern Oregon Counties Association, the US Forest Service, Wallowa Resources, and Eastern Oregon University. As reported in La Grande's newspaper *The Observer* on December 3, 2022, "Economic data indicates that if the 10 Eastern Oregon counties in the region were a state, it would rank as the 48th poorest in the United States, with a median household income of $49,853.50, ahead of only Mississippi and West Virginia."

Constructing B2H through this region for the benefit of an out-of-state, investor-owned, for-profit corporation is the opposite of a "public benefit" for the communities of eastern Oregon. It is also the opposite of "environmental justice." We urge the Department of Energy to seriously consider the negative economic and environmental justice impacts of the B2H proposal and deny RFA2.

We must also remind the Department of Energy that these land use impacts caused by B2H have significant economic and environmental justice impacts that are detrimental to eastern Oregon communities.

Damages to wildlife habitat related to B2H are significant, widespread, and harmful. These negative impacts to wildlife habitat, forests and grasslands have very real consequences for important aspects of our local economy including outdoor recreation, tourism, and hunting as well as our overall quality of life. RFA2 or any other Amendments must thoroughly survey for ***all additional*** potential impacts that may affect wildlife, fish, and their habitats!

Thank you for the opportunity to provide these comments. Please don't hesitate to contact me with any questions.

Sincerely,

Brian Kelly

Brian Kelly, Senior Advisor
Greater Hells Canyon Council
La Grande, OR
brian@hellscanyon.org

ESTERSON Sarah * ODOE

From: Sarah.ESTERSON@energy.oregon.gov
Subject: Wendy King Public Comment on B2H RFA-2
Attachments: Wendy King Public Comment on B2H RFA-2.pdf

From: Wendy King (via Google Docs) <wkingproshop@gmail.com>
Sent: Thursday, May 30, 2024 4:26 PM
To: TARDAEWETHER Kellen * ODOE <kellen.tardaewether@energy.oregon.gov>
Cc: john@myersfarmco.com
Subject: Wendy King Public Comment on B2H RFA-2

Wendy King attached a document

Wendy King (wkingproshop@gmail.com) has attached the following document:

Thank you for your consideration.

Wendy King Public Comment on B2H RFA-2

Google LLC, 1600 Amphitheatre Parkway, Mountain View, CA 94043, USA
You have received this email because wkingproshop@gmail.com shared a document with you from Google Docs.

Public Comment on B2H RFA-2 May 30, 2024

The RFA-2 transmission line alternatives have been requested and approved by landowners, however, Idaho power would have us believe that the expansion of the ASC approved site boundary is an effort to streamline additional landowner requests. However, the recent letter titled **B2H UPDATE** by Idaho Power states, “We will make these changes only when landowners request them or they’re necessary for engineering or construction purposes.” Their language leaves the door wide open to make changes based only on Idaho Power’s needs. Because Idaho Power has had their shot at engineering B2H for many years, and achieved their certificate, it seems unimaginable that they have further adjustments that weren’t accounted for in the approved route, especially the midline capacitor station. The correction to road widths is another reason to contemplate their ability to design and construct a transmission facility. This very issue shows to me either the lack of accurate engineering or a total manipulation of the site certificate process to work in their favor. Organizational Expertise:OAR 345-022-0010 (1):

> *To issue a site certificate, the Council must find that the applicant has the organizational expertise to construct, operate and retire the proposed facility in compliance with Council standards and conditions of the site certificate. To conclude that the applicant has this expertise, the Council must find that the applicant has demonstrated the ability to design, construct and operate the proposed facility in compliance with site certificate conditions and in a manner that protects public health and safety and has demonstrated the ability to restore the site to a useful, non-hazardous condition. The Council may consider the applicant’s experience, the applicant’s access to technical expertise and the applicant’s past performance in constructing, operating and retiring other facilities, including, but not limited to, the number and severity of regulatory citations issued to the applicant.*

ODOE has to reflect, would EFSC have approved the original site certificate had this amendment been part of it? Our family in Morrow County asked for a re-route in April of 2023, and were given no consideration. Since then, there have been no landowner consultations with our family.
The ayers canyon alternate in Morrow County Oregon is the perfect springboard to move the line into the Wheatridge transmission Corridor and spare multiple EFU croplands. Because ODOE and EFSC cannot even suggest this relocation, it is likely Idaho Power will never study or offer it as an amendment.

Landowners wanting line relocation on their property may have to face discounted easement compensation in order for Idaho Power to consider it. This tactic is of course outside EFSC jurisdiction but shows how Idaho Power operates in their own best interest.

I am very concerned that Idaho Power will use an Amendment Determination Request (ADR) to achieve their own refinements for engineering or construction purposes alone, leaving landowners out of the process. I strongly suggest that the EFSC require all ADR's be approved by the landowners and the public that will be impacted.

Expanding the site boundary with the possibility of moving the transmission line over additional areas of our farm has the potential of adversely impacting our multi-generational families. The revised route may result in unacceptable noise levels at our homestead, may be strung over our high value cropland, impacting the great horned owls (which is in direct conflict with the Migratory Bird Treaty Act) that reside in our hay sheds, and may justify carving additional roads through our homestead location. If this is allowed without adequate studies it may impose significant changes to our accepted farm practices and significantly increase the cost of accepted farm practices like aerial chemical application and movement of products from field to storage and market. By allowing the expanded site boundary, Idaho Power may justify moving the line through yet more fields and disregard the usual constraints of siting along the edges of fields, existing roadways, or natural boundaries, (rather than through existing fields) because they only have to show they did so generally. The ORS 215.275 does not require the complete avoidance or elimination of impacts to accepted farm practices. Idaho Power can simply move its transmission line within yet another of our fields as they did in the original siting, and we have no recourse, no advocacy, just land added to our condemnation trial.

Historic, Cultural and Archaeological Resources OAR • 345-022-0090
The Bartholomew-Myers Farm is a historical resource. It was adopted into the Century Farm and Ranch Program (CFR1093) and is NRHP Eligible (Criterion A). The original CFR application, completed in 2005 reflects: "While farming challenges remain, all of those on the farm enjoy the beautiful countryside and respect the great heritage that we have on the Bartholomew-Myers Farm." The B2H approved route north of our homestead is already an eye-sore in the viewshed of our historical farm. If B2H were to be relocated closer to our homestead, we would contest. We formally request access to the Confidential Attachment S-10 Intensive level survey- visual assessment of historic properties report in Exhibit S of the original B2H application as it includes information about our property, how it was studied, and how line relocation might impact the results.

Ultimately, Idaho Power's request for an expanded site boundary presents all parties with a vague proposal and yet, we are supposed to respond with specificity. We cannot guess what Idaho Powers' intentions are nor can the EFSC. Moving forward, our family has tremendous concern that an expanded site boundary will give way to a second or third transmission line without consultations with us or other landowners.

Idaho Power is solely responsible for jeopardizing the hard work, engineering and coordinating with landowners (the 12 transmission line alternatives) by adding the request for ½ mile expanded site boundary at a late stage of the RFA-2 undertaking. Idaho Power further explains that if RFA-2 is denied, "Landowners would lose everything they've worked with Idaho Power to include in RFA-2." (B2H Update 5-2024 page 2). By brokering the addition of an expanded site boundary to RFA-2, Idaho Power is attempting to capture 2 for 1 amendments in EFSC with one fell swoop, playing off community support for landowners.

Even though Idaho Power has a Wildfire Mitigation Plan on file at OPUC in UM 2209, our family has concerns that RFA-2 is not in compliance with the new: Wildfire Prevention and Risk Mitigation standard 345-022-0115 (a)(D) . Because the line is routed through the Butter Creek Wildland Urban Interface, any line relocation within that zone will potentially impose elevated risk. Myers farm is within the Butter Creek Wildland Urban Interface as identified in the Morrow County Community Wildfire Protection Plan 2018-2019 Update.

*In reference to:

IPC finds that the change in site boundary requested in RFA2 is consistent with OAR 345-027-0050(1). The proposed site boundary change is also similar in nature and consistent with other ODOE project authorizations, including: the Montague Wind Power Facility and the Wheatridge Renewable Energy Facility II. (Attachment 4-2 Site Boundary Memo)

*The precedence that IPC uses in support of their request for the site boundary expansion is not an accurate comparison and doesn't compare to the number of acres in this expansion (101,600 acres). I may be mistaken, but WheatRidge and Montague are facilities using favorable landowner properties and B2H is using lands subject to condemnation and these comparisons are not valid.

Also, In light of RFA-2 Site Boundary Expansion, I am concerned Multiple OAR and ORS and EFSC Rules, Statutes and Standards have not been met and this complicated network of protections require in depth studies by a third party to review the lawfulness and potential impact to all landowners of record within B2H expanded site boundary. I reserve the right to contest RFA-2 in reference to the prior protections listed.

The Draft Proposed Order for RFA-2 of the B2H Site Certificate fails to require a full review of the area added to the site boundary required by OAR 345-027-0375(2)(a) by limiting reviews of siting standards to micrositing corridors rather than the site boundary. The site boundary cannot be expanded without completing the evaluation required to show with a preponderance of evidence that the area added complies with all requirements applicable to an initial application.

The Draft Site Certificate allows expansion and changes to the areas of the “micrositing corridors” into other areas of the site that have not met the review requirements to include the areas in the “site boundary.”

Prior to authorizing the requested site boundary expansion, the developer must complete all analysis of surveys and other activities required by the Oregon Administrative Rules. This includes, but is not limited to meeting the requirements of Chapter 21, 22, 24, and 27.

The developer may not utilize a Type C review under OAR 345-027-0380 prior to completing and providing results of all surveys, reviews, and certificate amendment activities required by Chapter 21, Chapter 22, EFSC rules, and those identified in the Second Amended Project Order for B2H Transmission line during a public process.

I’m in agreement with relocating the transmission line within the 12 landowners properties. However, I am not in agreement with adding a half mile to the site boundary because its purpose is not clear and ultimately the expanded area will not undergo essential studies and surveys. I recommend to the council that if the RFA-2 is approved, every landowner must be in agreement of the micrositing and that condition be written into the site certificate. If the expanded site boundary is approved, I request that the ½mile site boundary be removed from record when the micrositing corridor is approved and written as a condition.

Thank you for your Consideration,
Wendy King

TARDAEWETHER Kellen * ODOE

From: Wendy King (via Google Docs) <wkingproshop@gmail.com>
Sent: Friday, May 31, 2024 4:34 PM
To: TARDAEWETHER Kellen * ODOE
Cc: sam.myers84@gmail.com; john@myersfarmco.com
Subject: Second Public comment of Wendy King
Attachments: Second Public comment of Wendy King.pdf

You don't often get email from wkingproshop@gmail.com. Learn why this is important

Wendy King attached a document

Wendy King (wkingproshop@gmail.com) has attached the following document:

For your Consideration.

Second Public comment of Wendy King

Google LLC, 1600 Amphitheatre Parkway, Mountain View, CA 94043, USA
You have received this email because wkingproshop@gmail.com shared a document with you from Google Docs.



May 31, 2024

B2H RFA-2: Second Public Comment of Wendy King:

Thank you for the opportunity to express my concerns pertaining to the request to amended conditions:

Conditions NC-01, NC-02, and NC-03 do not mitigate adequately for protection of public health, safety and welfare of Oregonians, and therefore are noncompliant with ORS 467.010, OAR 340-035-0005 (policy), OAR 345-035-0015 (definitions) and OAR 345-035-0035 (measurements), and ORS 469.507 and ORS 469.507(2) and (mitigation monitoring).

I am concerned the conditions NC-04 and and NC-05 will make it too difficult to secure any relief if the transmission line is located any nearer our homestead. It is imperative that all
NSR's are informed, protected, treated and negotiated with in good faith, and future mitigation followed.

With respect to HPMP, I formally request information pertaining to the PSMMP plans for my family Century Farm, the Bartholomew-Myers CFR Property in Morrow County.

Without knowing where the transmission may ultimately land, (through the certificate holders' use of ADR's) and the possibility that our family may not be given opportunity to contest a route change that adversely affects our enjoyment of our property and our agriculture practices, I cannot agree with or lend support of B2H RFA-2.

Sincerely,
Wendy King

ESTERSON Sarah * ODOE

From: Sarah.ESTERSON@energy.oregon.gov
Subject: RFA2_DPO Comments-Stop B2H Coalition
Attachments: RFA2_DPO Comments_StopB2H_24-05-30.pdf

From: fkreider@campblackdog.org <fkreider@campblackdog.org>
Sent: Thursday, May 30, 2024 4:36 PM
To: TARDAEWETHER Kellen * ODOE <Kellen.TARDAEWETHER@energy.oregon.gov>
Subject: RFA2_DPO Comments-Stop B2H Coalition

Kellen,

Please accept the public comments from Stop B2H Coalition regarding RFA2 on the B2H Project. I am also going to place into the portal next. Please let me know if you received this. Thank you.

Sincerely,



C. Fuji Kreider
On Behalf of the Stop B2H Coalition
Copy: STOP BOD



"Protect Our Land, Preserve Our Heritage"

STOP B2H Coalition

60366 Marvin Road
La Grande, Oregon 97850
www.stopb2h.org
info@stopb2h.org
541-406-0727

May 30, 2024

Kellen Tardaewether, Senior Siting Analyst
Oregon Department of Energy
550 Capitol Street NE, 1st Floor
Salem, OR 97301
Email: kellen.tardaewether@energy.oregon.gov

Comments on the Draft Proposed Order on Idaho Power's Request for Amendment 2 (RFA2) – Boardman to Hemingway Transmission Line (B2H)

Table of Contents:

I. Introduction 2

II. Issues: 4

1. Noncompliant Definitions 4
2. Site condition recommendations re: landowner protections 7
3. Inadequate Maps 10
4. Protected Areas 15
5. Financial Assurance 16
6. Noise Control 22

III. Site Condition Recommendations – Summary List 26

IV. Conclusion 28

V. Attachments:

1. Land Area calculations 29
2. IPC marketing/lobbying mailer to landowners; a case of reality on the ground. 30
3. IPC Letter to NSR's – with complaint process. 32

I. Introduction

The Stop B2H Coalition ("STOP") is a nonprofit public interest organization with over 1,000 individual members and 8 organizational members representing thousands of additional individuals. Established in 2017, we have a two-fold mission,[1] or in short: to stop the line, and to "*protect our land and preserve our heritage."* Since the site certificate was issued, our activities have focused on the "right-siting" of the B2H to be more protective of our lands, natural resources, and heritage. Along the way we have strongly advocated for improvements in ODOE/EFSC rules and processes to be more inclusive and participatory for the public.

Idaho Power's (IPC's[2]) latest amendment rendition, "Request for Amendment 2" (RFA 2) is a wolf in sheep's clothing. An **expansion of the site boundary from 24,000 acres to 96,000 acres, a 300% increase, is striking![3]** Additionally, there will be more and wider access roads, some with greater slopes subject to erosion.[4] All of this to "accommodate landowners?"[5]

STOP completely objects to the whole premises of this land grab schema created by Idaho Power. It is filled with terminology obfuscation, without legal foundation and will be addressed under Issue 1, below. The company is trying to strategically position themselves (gaming the EFSC rules) to either cut corners or violate landowners (and the public's) due process rights in the future (addressed under Issues 1 and 2). The company is also gaming the public and public officials by not providing adequate maps from which a person could meaningfully participate and for landowners to even understand what is happening on their land! (This is addressed under Issue 3 with examples). All of this to mask the fact that this request is massive and STOP believes its intent is to speed up sensitive negotiations with landowners, in order to cut corners and the landowner out of the process.

While it is true, RFA2 may "help" some landowners, nothing in the existing site certificate, conditions, or EFSC processes are stopping Idaho Power from continuing to file amendments when there is a landowner or grouping of landowners ready to propose a micrositing change. Or, if IPC needs more engineering changes at that time, they would include that in the RFA as well, along with documentation of compliance with siting standards and laws.

---

[1] "To stop the approval and construction of an unneeded 305 mile, 500 kV transmission line through Eastern Oregon and Western Idaho, thereby: protecting environmental, historical and cultural resources; preventing degradation of timber and agricultural lands and the Oregon National Historic Trail; promoting energy conservation and innovative developments in renewable energy, energy storage and distribution. "

[2] Idaho Power Company maybe be referred to herein as: IPC, the developer, the applicant, the company.

[3] **Attachment 1**: Land conversion calculation.

[4] Under RFA2 "in areas where the slope of the road is approximately 30 percent, the road may **need to be widened up to 120' and restored back to its operation width of 14'**." pp. 42-42 of 855 in the DPO. The ASC, RFA1, and RFA combined would total over 500 miles of new and substantially improved access roads

[5] From memo approving analysis area changes, p 2, staff report for the DPO hearing/meeting, and IPC's marketing piece to landowners **(Attachment 2).**

Clearly, it is hard work to site a transmission line. Some of us (IPC, ODOE staff, local officials and the public) have been at this for over 15 years. But the applicant coming into the process at this late date and requesting something this huge, claiming they might need *more* engineering changes or micro-siting adjustments with landowners, is either remarkably incompetent or planned and deceitful.

Then there is the mid-line capacitor station. IPC encompasses its footprint inside the approved site boundary however there has never been mention of this supporting facility until now and all support facilities should have been identified a long time ago. In RFA 2, a new never before mentioned mid-line capacitor station is taking up 10 acres in Union County. After all these years of study, "what should they have known, and when should they have known it?"[6] This is a "boundary creep" strategy by utilities: i.e.: go in with a small foot print then use amendments to expand the footprint and build larger facilities, creating more negative impacts.[7]

Now that the site certificate has been issued, Idaho Power is asking for what they really want: access to more land (96,000 acres), a quick decision-making process (i.e.: Amendment Determination Request-ADR or Type B or C amendments), that effectively would allow the agency and applicant to make decisions about a landowner's land[8] without involving them. The mid-line capacitor station which was not mentioned before, appeared out of thin air to fit into the 10-acre space IPC gave it in the ASC 6 years ago.

How many resources will be impacted when the size of the site boundary is essentially tripled? The applicant using Type B or C Amendments, without public input, will range freely working with an agency charged to hurry up and site these facilities quicker. The landowner need not know about changes on their land. The public must have a seat at the table to moderate the utility's lust for profit and an agencies pressure to move faster. During the ASC contested case, many resources needed mitigations in order to comply with the standards. As RFA 2 moves forward, the public needs to be at the table to ensure the process complies with all laws and Council standards applicable to an original site certificate application (OAR 345-027-0375(2)(a)[9]).

The bond or letter of credit required under OAR 345-022-0050 (Retirement and Financial Assurance Standard) and OAR 345-025-0006(8) (Mandatory Site Conditions) is not adequate given the increased financial risks of the partners and the company (discussed below under Issue 5). During the first contested case, Council made it clear that they wanted to be able to review the Bond issue from time to time and as may be necessary, given any changing circumstances.[10] This is a good time to review the fiscal stability and risk of the project between the partners. The B2H price tag is hovering between $1.8-

[6] A common term used in prudency review at the public utilities' commissions.

[7] For example, the EFSC sited Wind farm expansions in Umatilla County.

[8] When referencing "landowners," it's meaning is broad, encompassing private and public lands, and non-profit lands (eg: conservation lands).

9 Similar to the blanket exemptions and variances that the company received under noise control.

[10] B2H EFSC Meeting Day 1 PCCO-PO-Exception Hearing Condensed 2022-08-29, pages 132 -160.

1.9b, there is a small skilled labor market due to all the new transmission projects, which has created supply chain issues in the industry.

RFA 2 triples the size of the project under the ruse of landowner accommodation, in reality it is another "blanket" approach to compliance from Idaho Power.[11] EFSC should demand better quality from the company and better protections for Oregonians and our resources!

STOP urges Council to either deny RFA 2, or remand RFA 2 back to Idaho Power to:

- complete their landowner negotiations and engineering design changes,
- adopt STOP's recommended conditions (herein) which we believe will be more protective of landowners and the public, and
- allow Idaho Power to return with more realistic amendment requests that are specific to changes in parcels or the facility that are inside or outside the already approved micro-siting corridor (as was done in RFA1),
- while using the Type A amendment process that demonstrates compliance with all EFSC laws and standards.

If the landowners are to be accommodated (per the mailer—Attachment 2) and given their rights, we have better suggestions in our Recommendations for Site Conditions (addressed below under Issue 2).

II. Issues

The following are STOP's specific issues; and when applicable, our Site Condition suggestions or recommendations regarding the Draft Proposed Order and RFA2:

Issue 1: The December 20,2023 decision memo does not interpret the OAR's cited correctly therefore the Written Approval of Revised Analysis Areas under OAR 345-027-0360 is incorrect and invalid. Authorization to change a site boundary is not allowed under 345-027-0360(3) nor ORS 469.300(22).

The decision memo does not tie the legal logic together to understand the justification of the site boundary expansion. That leaves the reader to map out and connect the sections of the OAR's and ORS's cited to attempt to understand the logic used to justify the authority to redefine the term "site boundary." This decision increases and redefines site boundary, micrositing area, study area, corridor, and assorted combinations of these words. IPC tried to explain it in their "Terminological Note to Attachments" (below) but it further confuses and does not clarify.

[11] Similar to the blanket exemptions and variances that the company received under noise control.

ODOE cites authority to make changes in 345-027-0360(3)[12]. This section states, "(3) For any Council standard that requires evaluation of impacts within an analysis area, the analysis area is the larger of either the study areas, as defined in OAR 345-001-0010 (Definitions)(59), or the analysis areas described in the project order for the application for site certificate, unless otherwise approved in writing by the Department following a pre-amendment conference.'

The first section discusses the analysis area in relation to the study area. The study area is further defined by OAR 345-001-0010 (Definitions)(59) which states, "the study area is an area that includes all the area within the site boundary and the area within the following distances from the site boundary." It goes on to list distances from the site boundary for particular resources. The last item states, "unless otherwise approved in writing by the Department following a pre-amendment conference." No pre-conference approval has been offered to justify a site boundary expansion. Therefore, this decision memo has no basis of fact to support the department's decision to authorize the applicant to extend the site boundary or micrositing area by ¼ mile either side of the centerline (half-mile total width increase).

Additionally, the ODOE memo of 12/20/2023[13] approving the changes, states that the changing definitions of site boundary and micrositing corridors has been used in the past on wind projects. The B2H is a 300-mile linear facility consuming about 96,000 acres of very varied climate and terrain. Applying EFSC standards to a nearly 300-mile, 96,000-acre linear facility is very different than applying them to a stationary facility like a wind or solar farm. No examples of the circumstances or decision memos have been offered to justify the metrics of the comparison between wind farms and a 300-mile 500 kV transmission line. STOP urges Council to acquire and review these precedent setting wind farm examples and explain how these names/terms have changed for wind farms and evaluate those conditions on a linear facility.

To further muddy the waters of understanding, in the first pRFA2 submitted in June 2023, there were proposed micro-siting changes but terminology remained intact from the ASC, Contested Case, Final Order, and Site Certificate and Conditions. However, in this pRFA2 and the DPO, in order to accommodate the developer's land grab, we are faced with a Chef's "word salad" to decipher. Below, from the Second pRFA2 submitted on Dec. 15, 2023[14] **the very last page**, under Section "Figures" attempts to clarify:

"TERMINOLOGICAL NOTE TO ATTACHMENTS

> Idaho Power Company is proposing to redefine the term "site boundary" as part of RFA2. The site boundary would be expanded to include the area within 0.25 mile of either side of the transmission line centerline and within 0.25mile of either side of access road centerlines. This generally creates a 0.5-mile-wide site boundary.

12 ODOE approval letter p 1

13 https://www.oregon.gov/energy/facilities-safety/facilities/Facilities%20library/B2HAMD2-ODOE-Letter-Approving-Analysis-Areas-for-pRFA2-OAR-345-027-0360(3)-2023-12-20.pdf

14 2023-12-15-B2HAMD2-Revised-pRFA2, p. 158.

> The previously approved site boundary, as described in the ASC Exhibit C, is now referred to as the "micrositing area." RFA2 includes proposed micrositing area additions as well as the expanded site boundary. Additional details regarding the definition of site boundary and micrositing area are included in Attachment 6-1.
>
> The terminology used in these attachments does not reflect the changes in terminology proposed in RFA2. In general, when reading these attachments (with a few exceptions noted below), the term "site boundary" should be read as "micrositing area." For Attachment 6-1, Redline Site Certificate, IPC made the terminology changes throughout that document and the remaining uses of "site boundary" in that attachment refer to the expanded site boundary proposed in RFA2. For cultural resources attachments (7-13 and 7-14), the term "site boundary" is used to refer to the Project location as well as the location of cultural resources identified during surveys. The terminology change described here only applies to the use of "site boundary" in reference to the Project location." [emphasis added]

The roots of this scheme are the known facts that IPC is still negotiating with landowners and continuing to re-design various components of the facility and support facilities like access roads. In Union County alone, they still have not determined which alternative route in a number of areas, and other people are still negotiating with the company over land access.

STOP and our members are/were participating in several ODOE rulemaking processes and amendments. We knew that landowner negotiations were underway and amendments would likely be coming in. And Idaho Power said that they would work with landowners in good faith. In the OPUC's docket on the CPCN Idaho Power convinced the Commissioners that they wouldn't need more land parcels and that while amendments would occur, they will not be a constraint to the project, as demonstrated in the OPUC Order[15]:

> "Idaho Power explains that the requested site certificate amendment does not require condemnation of new land parcels and that its phased construction approach allows it to proceed with construction elsewhere in the event of any delays from the amendment process." p. 27

So, what is the real problem here and why the big blanket expansion? Is it the perennial excuse of needing to expedite their process?[16] Or it is more nefarious and there are problems with particular landowners in which case this expansion would resolve their problems?

As mentioned above, we understand the difficulty in siting a large transmission project. But expediting the process of careful negotiations with people whose land is being taken must be denied. And cutting corners (by changing the rules) to avoid siting constraints should not be tolerated. This schema in RFA2

[15] OPUC Order-23-225 p. 27. Docket re: land condemnation (CPCN) or eminent domain.
[16] Federal Dashboard –won't finish all permitting until end of 2024.

was created to change the definitions, at the detriment of many landowners and the public of eastern Oregon.

First it disadvantaged us in this proceeding due to the gobbledygook language; second, it should not be approved because according to the rules, IPC should bring each amendment – whether due to landowner micrositing agreements or engineering re-designs -- to Council as necessary. If this becomes too burdensome for the Council, we recommend (in the spirit of being helpful) to require the company to propose micro-siting requests in groups of 2-5 or 5-10 changes, as was done in RFA1.[17]

Finally, and possibly the most significant problem if RFA2 if approved as proposed, is **the future uncertainty it opens**. All decision power is vested in the company and the department--while the public, local governments, and private landowners, can be cut-out completely. The reason this may occur is because this amendment will allow an ADR or Type C Amendment process,[18] which could violate due process rights, particularly of the landowners; but the counties, cities, and public, as well.

To put this more explicitly: if approved, IPC will work with landowners or land managers and negotiate on micro-siting, and they will complete their incomplete engineering designs. Then, they would simply need to file an ADR[19] or Type B or C[20] rather than apply for an Amendment. To protect everyone, **STOP proposes under Issue 2. (next) site condition recommendations** to improve and remedy the situation. STOP opposes ODOE's recommendation to approve RFA 2 as proposed and urge Council to remand RFA 2 as described in the Introduction (above.)

Issue 2: Site Condition Recommendations: If RFA 2 is approved, new site conditions must be required, to protect the public – and better "accommodate landowners."

In the ODOE letter of 12/20/23, approving the analysis areas, it clearly states that the intent of this amendment is to accommodate landowners. While this is commendable, it obviously has become a bigger challenge than the company expected. So, rather than being a "good neighbor" and continue to negotiate individually, the request is for a blanket, sweeping brush of more land and weaker rules. This amendment sets-up an unlevel playing field, giving the developer more power over the landowners[21] which could negatively impact public health and safety, and the environment.

Under the ADR or Type C processes, ODOE and EFSC may amend a site certificate to authorize changes in the location of facility components without requiring an amendment complying with the requirements of a Type A or Type B amendments **when the changes will occur within the existing**

[17] This clustering-type of approval was also used by La Grande Rural Fire Department in annexation of properties.
[18] ADR = Amendment Determination Request and Type C amendment processes are both administratively shortened approaches which disadvantage and exclude landowners and the public.
[19] **ADR = Amendment Determination Request** OAR 345-027-0357
[20] **Type C Amendment = Type C Review Process for Pre-Operational Requests for Amendment** OAR 345-027-0380
[21] When referencing "landowners," it's meaning is broad, encompassing private and public lands, and non-profit lands (eg: conservation lands).

approved site boundary.[22] This is why Idaho Power and the DPO are recommending the amendment; an ADR is much easier. However, not only does **this process assume that the entire site boundary has been reviewed under council standards and Oregon statutes** (also see Issue 3, below); but the ADR process runs so quickly and administratively that the public and local officials will never know in time. Landowners may not even know it's happening on their property – yet the state and developer could decide. This is Not right!

STOP would like to offer some balancing approaches to this siting and amendment request. Even though we do not represent any specific landowner (we are a public interest organization) we still have many members who are landowners, land managers of public places, and users of parks and protected areas. Therefore, we propose the following site conditions for Council consideration.

Site Certificate Conditions - Recommendation 1:[23]

> *Prior to approving a site boundary expansion or amendment of the site certificate, the developer must complete all requirements to amend an approved site certificate, using a Type A amendment process for analysis, surveys, and activities required by Oregon EFSC statutes and rules. This includes, but is not limited to meeting the requirements of Chapter 22, 24, and 27, and providing landowners and the public with necessary specificity of maps, surveys, and additional information upon request and in a timely manner to be able to meaningfully participate in the amendment process.*

Site Certificate Conditions - Recommendation 2:[24]

> *If amendments are proposed to the site boundary and/or micrositing corridor using an Amendment Determination Request (ADR process) 345-027-0357, an agreement or letter of concurrence from the landowner or land/property manager, must be included in the application to the Department, under subsection (4)(d); and a public comment period will commence for 60 days.*

Related recommendation on ADR process: Once the Department's rulemaking housing-keeping projects get to Chapter 027, STOP recommends that 345-027-0357(4) be amended to *require* this agreement or concurrence letter (just as proposed in the site condition recommendation, above). It could be implied now, under subsection (4)(d): "Any additional information the certificate holder believes will assist the Department's evaluation." Yet, we urge the Council to level this playing field and formalize this sub-section in new rules. This gives the property owners and land managers, a voice about the proposed change/amendment and how it will or won't protect the resource(s), and public health and safety; they can explain any condemnation orders or other restrictions or opportunities that

---

[22] OAR 345-027-0357(2)

[23] This recommendation is further addressed under Issue 3 (below) in the context of maps. RFA2 maps are severely lacking specificity necessary for landowners and the public to evaluate.

[24] **This site condition only applies if the Council approves RFA 2 or applicable components therein**.

may be applicable. We also believe that this would give the Council, as policy advisors and siting decision makers, a picture of reality on the ground, rather than only hearing from the developer and department.

Site Certificate Conditions - Recommendation 3:[25]

> *Once there is an agreement and decision about a the new Micrositing Corridor, the remaining land (the .5 mile) will be removed from the "RFA2 Site Boundary," returning the Site Boundary width to the original ASC, the Final Order on B2H, and Final Order on AMD1, that is: a 500'-wide site boundary corridor with a 250'-wide micro-sited corridor.*[26] *All maps, property and site descriptions, including legal references, will be updated, provided to the landowner, and filed with the department within 60 days from Council's approval.*

Anything wider or larger than what is absolutely necessary to "accommodate land owners' interests" (as IPC states) is simply unjust and unfair. Yet, the DPO insists that accommodating landowners is the reason that this RFA2 is needed and that everything will go back to the narrower corridors once the micrositing has been finalized. Therefore, this condition is important, protective, and not unreasonable to include given the rationale provided by IPC and the department to approve this RFA2.

IPC and the DPO frequently point out that in some areas the site boundary expansion is not being requested and they will maintain the current micrositing corridor. This is what STOP is proposing and what we hope continues. That is: continue with landowner micrositing negotiations and engineering and follow the current rules and terminology; bring requests for amendments--once the specifics are known and decided--to ODOE/EFSC. To hijack EFSC terminology: the public deserves "specific specificity" to be able to respond most effectively to this RFA 2.

///

[25] **This site condition only applies if the Council approves RFA 2 or applicable components therein.**

[26] Despite years of documentation, the 250' micro-siting corridor would actually be in violation of OAR 345-001-0010(20), which states the width of a transmission line should not be greater than 100' each side of center.

Issue 3: All map sets presented in RFA 2 do not meet the standard(s) as enumerated in:

1. OAR 345-021-0010(1)(c)(A)
2. OAR 345-021-0010(1)(c)(B)[27]
3. OAR 345-001-0010(55),[28]
4. Application for site certificate Exhibit C Sections 2.0 and 3.0

The 4 items above will be discussed in more detail below along with 2 other main points for Issue 3.

Sufficient Specificity and Significant Issue of Law

OAR 345-027-0367(3)(e)(F) states: To raise an issue with sufficient specificity, a person must present facts, on the record of the public hearing, that support the person's position on the issue.

OAR 345-027-0371(9) states: After identifying the issues properly raised the Council must determine whether any properly raised issue justifies a contested case proceeding on that issue. To determine that an issue justifies a contested case proceeding, the Council must find that the request raises a significant issue of fact or law that is reasonably likely to affect the Council's determination whether the facility, with the change proposed by the amendment, meets the applicable laws and Council standards included in chapter 345 divisions 22, 23 and 24. If the Council does not have jurisdiction over the issue raised in the request, the Council must deny the request.

Sufficient Specificity and Significant Issue of Facts

1) In OAR 345-021-0010(1)(c)(A) it states in part, A map or maps showing the proposed locations of the energy facility site, all related or supporting facility sites and all areas that might be temporarily disturbed during construction of the facility in relation to major roads, water bodies, cities and towns, important landmarks and topographic features.

   The maps supplied in RFA 2 do not show all areas that will be disturbed as required in this OAR. Private, county, state, and federal roads that will be used in constructing the B2H, that are **outside** the site boundary, are not shown on the maps provided. These communities that support the construction of B2H will be temporarily disturbed during construction and those disruptions are not clearly noted. In Union County, a person can no longer call the Public Works Director to ask what permits IPC has filed for. We now need to initiate a Freedom of Information (FOI) request to get that information. STOP wants the public to know the impacts on their neighborhood and lands but we/they cannot get that information, or at least not quickly. Thus, the applicant is non-compliant with this section of the rule and the maps should be re-done and distributed to the public for comments before this RFA is considered by Council. Inside the site boundary the same situation is occurring.

2) OAR 345-021-0010(1)(c)(B) states in part, including the total land area (in acres) within the proposed site boundary.

   RFA 2 does not state the correct increase in the number of the acres being added to the site boundary. The approved site boundary is approximately 24,000 acres and now, an estimated total of 96,000 of acres are proposed **(see Attachment 1).** Yet, in the DPO, Table 2: RFA2 Proposed Transmission Line Route, Access Road, and Work Area Additions" pp. 31-33 of 855, the total addition stated is only 4,000 acres approximately. This is

27 Exhibit C Project Location 2018 pdf p 8-10

[28] Error-is # 54, 55 is site certificate.

grossly misleading because the amendment seeks a *site boundary* addition—not a *micrositing* addition as the table is apparently displaying.

3) OAR 345-001-0010(55) as sited in the Application for site certificate Exhibit C 2.0 and 3.0 and the Second Amended Project Order, Section III(c) states, "shall indicate the "site boundary" as defined in OAR 345-001-0010(55).[29]

   a) Maps shall indicate the "site boundary" as defined in OAR 345-001-0010(55)

      OAR 345-001-0010(55) does not define site boundary therefore this section and any parts of the RFA 2 (and all prior amendments, the site certificate, site conditions, and ASC) that rely on this definition are invalid;

   b) Major roads shall be named

      The roads on the maps in Figure 4-1 RFA 2 Proposed Micrositing Area Additions, except I-84, are not labeled in the Union County section. On map 39 between blue and orange outlined and non-outlined road sections segments starting with UN-*** and 2/*** are well labeled. Glass Hill Road, the only county road in the area, is not on the map so is not labeled. Logically it would be a major support road to get materials to the construction sites but it is not on the map. Therefore, it is difficult to know the impacts of the B2H on these roads. Many of the other maps in Union County exhibit the same lack of detail.

   c) It is impossible to tell what roads are where. How is a landowner to know what is being done with roads on their land. (See maps below.)

4) In the Application for site certificate Exhibit C Sections 2.0 and 3.0 places additional conditions on the OAR's mentioned above. It states,

   > "Maps shall indicate the "site boundary" as defined in OAR 345-001-0010(55). Maps shall provide enough information for property owners potentially affected by the facility to determine whether their property is within or adjacent to the site boundary. Major roads shall be named. IPC shall include maps drawn to a scale of 1 inch = 2,000 feet or smaller when necessary to show detail. The Department requests that IPC share GIS data for the proposed facility in a format that is compatible with current Department software programs; accurate GIS data will help streamline the application review process for the Department and reviewing agencies.
   >
   > Maps shall clearly show the boundaries of the proposed corridor within which the transmission line would be constructed, and shall include familiar landmarks such as roads and existing power lines that reviewing agencies and affected landowners may use to identify the proposed route. Aerial photographs with all roads identified are helpful for public interpretation and review. The site boundaries of all proposed related or supporting facilities, including but not limited to access roads, temporary laydown areas, switching stations/substations, must also be identified. Maps showing access roads included as related or supporting facilities shall clearly depict where existing roads or road segments are proposed to be in the site boundary. Also, clearly identify the county and city jurisdictions in which facility components are proposed to be located. All county and city jurisdictions in which facility components are proposed to be located are appointed as SAGs by EFSC.
   >
   > Exhibit C shall contain a table listing the approximate land areas for both temporary disturbances associated with construction and permanent footprint of structures associated with facility operation for

[29] [29] Error-is # 54, 55 is site certificate.

each type of disturbance or structure. This information needs to be consistent with information provided in other exhibits."

a) In the first paragraph it states, "The Department requests that IPC share GIS data for the proposed facility in a format that is compatible with current Department software programs; accurate GIS data will help streamline the application review process for the Department and reviewing agencies."

The department requested and received an incomplete set of GIS files from IPC. They received the following layers: stations, towers, communication distribution lines, Access, ROW, routes, site boundary, and disturbance. There are more mapsets/layers in the GIS program that are shareable. The following are paper mapsets/layers on the departments public one drive for RFA 2. Wetlands, geology, protected areas, fish and wildlife habitat, scenic areas, cultural, recreational, noise, soils, zoning, waters and wetlands, fish and wildlife habitat, property owners of record, etc.. The electronic files are far superior in quality and flexibility to the paper mapsets. The electronic files are a tremendous source of visual information for the landowner and other parties. If IPC has the files in a GIS program and can share them than why not?

STOP first asked IPC for these files around 2017. They refused. STOP then asked the department and after determining that it was a public document because of the EFSC process STOP received the files. The department was kind enough to convert the GIS files to the KML format that free public software, like Google Earth pro can read. The GIS layers exported changed over time adding some, taking away others, and renaming others. Having this was a very powerful tool for STOP to work with landowners to really see and model, layer by layer, utilizing 2 and 3 dimensional views as well as flyovers of what was being proposed on their property. Something the paper maps cannot do. If IPC has the GIS files and can convert to KML format and can share them than why not? (See examples-maps below.)

In asking Joe Stipple of IPC for all the mapsets/layers for RFA 2 all he would share is a similar map set to ODOE's. Department staff do not have all the mapsets/layers either. We apologize to staff for saying they had those mapsets/layers at the last EFSC meeting.

b) In the second paragraph it states, Aerial photographs with all roads identified are helpful for public interpretation and review.

Aerial photographs were encouraged too but we see none. The intent seems to be to inform the landowner/public of the route's location and the impacts on their land in the construction, operation, and decommissioning of the transmission line. A fly over in one of these mapping programs would have gone a long way in accomplishing that goal of informing the landowner and public.

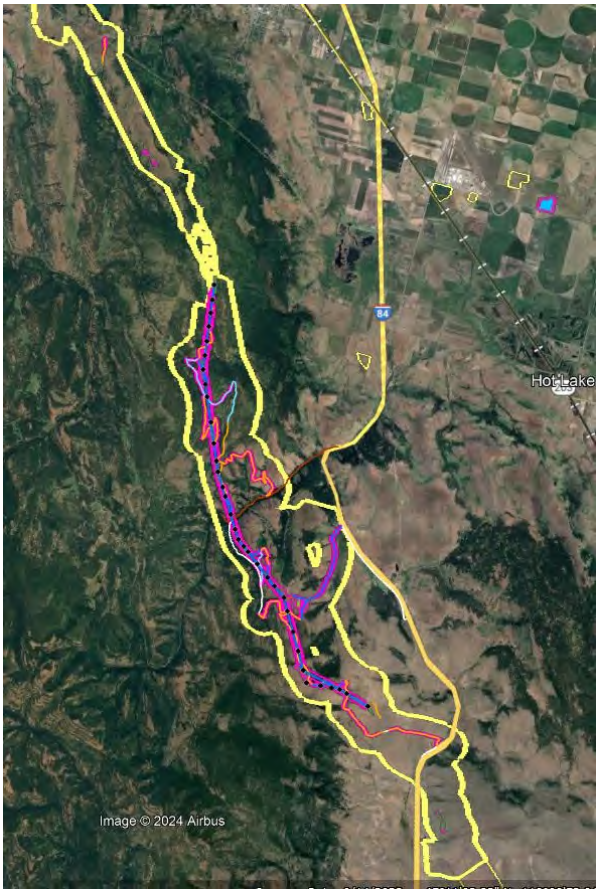
5) In discussions with staff over how to get the KLM files in more peoples' hands the ORESA tool is mentioned as an alternative. The ORESA tool is not for the faint of heart as there is a learning curve. It is much harder than using the KML files in google earth pro and does not have the detail. It was designed for a different purpose.

What follows are an electronic and paper map comparison of the Glass Hill Preserve. As the maps are currently drawn, we cannot locate and put together all the parcels in the Glass Hill Preserve. The Glass Hill Preserve, in RFA 2, is now a protected area. Therefore, we are unable to determine the impacts of RFA 2 on the preserve. This information needs to be made public in digital form so an analysis can be done. STOP proposes a new Site Condition to remedy this situation, see below, Recommendation 4.

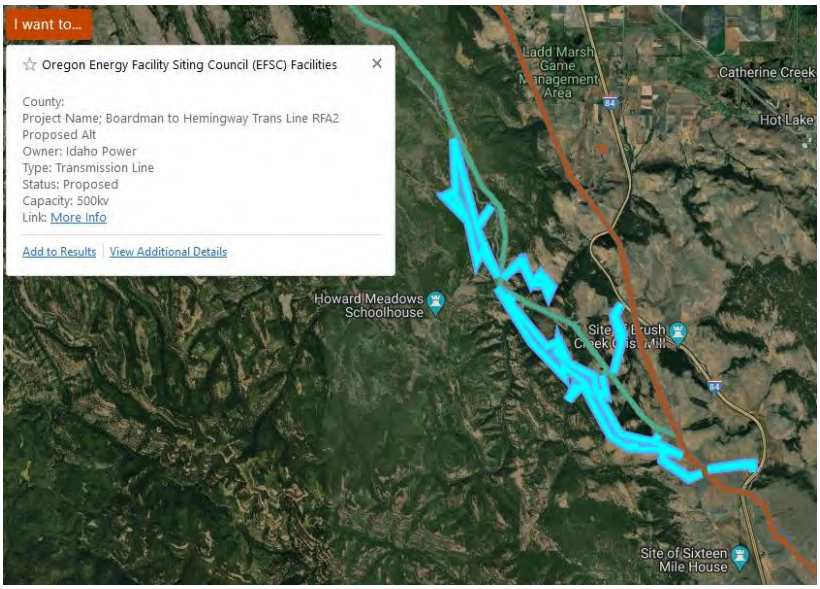
a) Electronic

Both programs have no layer for protected areas. The google earth pro file gives greater detail and has 8 layers specifically related to the project. These layers can be turned on and off to give the user multiple levels of information for management to minimize impact.

KLM file



ORESA image



b) Paper

Two mapsets are available that address project boundaries. They are:

1. Figure 4-1 RFA2 Proposed Micrositing Area Additions (scale 1,000 feet) -- pages 35, 37, and 38 skipping 36.[30] The full boundary of the Glass Hill Preserve cannot be determined by putting these 3 pages together.
2. Figure 8-1 Proposed Site Boundary (scale 2,000 feet) and pages 29, 30, and 32 skipping 31 (again). The full boundary of the Glass Hill Preserve cannot be determined by putting these 3 pages together.

This again demonstrates that the public using the maps, and for those able to get and use the KLM files, they still cannot find valuable and important pieces of information. Therefore, the requirements for mapping in the OAR's, the Second Amended Project Order, Section III(c), and Exhibit C, Application for a Site Certificate, it is clear that the legal requirements bestowed on the Department are not being met and the department must find a way to meet those standards before this amendment goes forward.

6) Staff's December 20, 2023 memo using OAR 345-027-0360 determines that the requested expansion of the site boundary to 0.5 mile, ¼ mile either side of the center line.

Unfortunately, there are many areas in the site boundary that greatly exceed the .5 mile with discretion limits. In the map below the site boundary is 1.45 miles wide. Combining the .5 mile for the approved and alternate routes gives 1 mile. That is still about ½ beyond the combined limit. If google earth pro was used to fly down the B2H line at altitude the excess taking of the site boundary would be clear. Remember, IPC was fine with site certificate

[30] 36 is out in the Grande Ronde valley by the airport 5.7 miles air miles away.

boundaries for over a decade. The suggestion is that this extra distance is needed to accommodate landowners. For more on the realities "in the field and on the ground," see Attachment 2.



Considering all the problems that STOP and landowners have had with understanding RFA2 clearly, STOP proposes another Site Condition Recommendation, as follows:

Site Condition Recommendation 4:

> *All maps and layers that the applicant has developed will be distributed to the department and the public in electronic form and in file formats that are readable by free publicly available software in order for an application to be deemed complete. These layers will include but not be limited to: stations, towers, communication distribution lines, Access, ROW, routes, site boundary, disturbance, wetlands, geology, protected areas, fish and wildlife habitat, scenic areas, cultural, recreational, noise, soils, zoning, waters and wetlands, fish and wildlife habitat, property owners of record.*

Issue 5: Protected Area is Noncompliant with the Rule.

The EFSC rules on Protected Areas[31] were amended in 2022, finally allowing the acknowledgement of protected areas designated after 2007. The new rule is in effect -- and it has been in effect well before the pRFA2 application was deemed "complete" (even before it was *received*). Regardless, Idaho Power has been aware of this protected area for a long time.[32] **Therefore, IPC and the recommended DPO is out of compliance with OAR 345-022-0040-Protected Areas standard.** The specific area out of compliance is also called the **Glass Hill State Natural Area of Union County**.[33]

There may be other protected areas of out compliance as well, considering that there are 88 protected areas within the "analysis areas of ASC, RFA1, and RFA2."[34] For example, in "Table 23: Protected Areas within Analysis Area for ASC Approved Routes, Approved Micrositing Area Additions, Proposed RFA2 Micrositing Area Additions"[35] includes legend-type footnotes on p. 156: #3 states: "Potential impacts from approved routes in *Final Order on ASC* not evaluated for protected area." (emphasis included). Therefore, once deeper analysis is available, there may be more noncompliance issues that surface and amendments needed.

The Glass Hill Preserve (aka **Glass Hill State** Natural Area), is being crossed by the B2H line in a very sensitive area on two sides of Winn Meadow, a high mountain wetland with Trifolium douglasii Federal species of Concern that is a candidate for State listing.[36] The rule does not allow a transmission crossing in a protected area unless: an existing transmission line is within 500 feet,[37] which is not the case here; or if there is no viable alternative,[38] which there are.

---

[31] OAR 345-022-0040
[32] Contested Case: exparte communications, Link to one drive.
[33] Not the "Glass Hill Preserve" but for this purpose, we will continue with this title.
[34] DPO p. 147 of 855.
[35] Ibid, pp. 148-156 of 855.
[36] See: Geer testimony …
[37] Ibid, subsection (3)(b).
[38] Ibid, subsection (2)(a).

ODOE and EFSC may claim that this issue has already been litigated; but things have changed. First, the rule! The back story on the rule and rulemaking process, when IPC attorneys communicated in an exparte manner, during the parallel contested case process, is complicated. However, it is resolved with the amended rule on protected areas--and IPC knows very well about the area. Fast-forward to present, IPC will say that if RFA2 is not approved, they will revert back to the old route/version (the site certificate). This veers on blackmail and should not be allowed.[39]

Second, the Glass Hill Preserve landowners and Whitetail Forest, LLC have presented alternatives specifically for the area.[40] And more recently, in an attempt to prevent serious damages, particularly to the Winn Meadow wetland and its hydrological conditions/features, as well as Federal Species of Concern/State Candidate plant species, they have been in verbal and email communication with Joe Stippel (IPC Project Manager) to find a resolution without impacting neighboring landowners.

Either way, there will need to be either new mitigations and/or routing to enable compliance in this area. In other words, expect another amendment soon. In the meantime, **EFSC must not allow non-compliance in this area!**

Issue 5: Retirement-Financial Assurance standard is still out of compliance with the Mandatory Conditions and the Site Conditions must be further amended due to Risk.

The updated cost estimate to retire the facility, with proposed RFA2 changes, is $170,276,273 (in Q1 2024 dollars).[41] An increase of approximately $30 million since the original Site Certificate.
The issue of an adequate bond or letter of credit continues to be raised as a significant issue in the B2H project siting because non-compliance with this standard puts the entire State of Oregon, taxpayers and rate payers at risk. This is why it is also one of the Standards whereby the Council cannot apply its balancing determination.[42] Council must comply with OAR 345-027-0375(2)(d) which requires a review of the requirements of OAR 345-022-0050, which simply states:

> "To issue a site certificate, the Council must find that:
> (1) The site, taking into account mitigation, can be restored adequately to a useful, non-hazardous condition following permanent cessation of construction or operation of the facility.
>
> (2) The applicant has a reasonable likelihood of obtaining a bond or letter of credit in a form and amount satisfactory to the Council to restore the site to a useful, non-hazardous condition."

There are also **Mandatory Conditions** for all Site certificates. OAR 345-025-0006(8) states that this assurance: **bond or letter of credit, must be maintained for the life of the project**. While Council may adjust some of the conditions, such as varying amounts for construction vs. operational periods, STOP believes that it is imperative that Council review this issue more frequently than every five years (per

[39] Another example of landowner blackmail tactics is described in **Attachment** 2 after the IPC mailer/letter to landowners.
[40] Geer,
[41] Staff report for this meeting (external memo, p. 12 of 22), Referring to Table 26 of the DPO (page 172).
[42] OAR 345-022-0000(3)(c)

current Condition 5). We also urge Council to seek advice of an independent expert on the matter routinely.

Per the two-part series of presentations to Council regarding, bonds, letters of credit, Council rules and practices, templates, and more, by staff,[43] Christopher Clark provides background:

> "The Council has adopted rules requiring each certificate holder to provide a surety bond or letter of credit before beginning construction of a facility. The bond or letter of credit must be provided in a form and amount satisfactory to the Council to restore the site to a useful, nonhazardous condition, and must be maintained at all times until the facility has been retired. OAR 345-025-0006(8). These requirements provide assurance that the people of Oregon will not be burdened with the costs of restoring the site if the certificate holder is unable or unwilling to properly decommission the facility following permanent cessation of construction or operation of the facility."[44]

He goes further explaining that: "The lack of a clear and effective mechanism to ensure that a certificate holder maintains a bond or letter of credit until the facility has been retired could expose the State to unacceptable risk." (p. 3 of 4, same memo as above).

In the Final Order and original Site Certificate, Council chose to follow Idaho Power's suggested method/mechanism for meeting the bond requirements (see Conditions 4 and 5[45]). STOP continues to contend that this method is not protective of Oregonians; and ODOE and the Council will claim that this issue has been litigated already. However, clear from the deliberations of Council during the "exceptions hearings," Council expressed concerns as well. After the very lengthy hearing and discussions, Council decided that they would:

> "[R]etain the authority to adjust the bond or letter of credit amount up to the full amount at any time under the terms of the site certificate. Further, as directed by Council, the condition requires that the 5-year report be presented to Council and include an evaluation and recommendation, based on review of report results, by the Department and, if appropriate, a **third-party consultant**. The **condition allows the Council to consider whether or not the approach towards the financial assurance instrument remains appropriate** and would account for unforeseen shifts in the power grid or the certificate holder's financial condition."[46] [emphasis added]

[43] Memo to Council, September 10, 2021, Agenda Item D (Information Item): Overview of the Energy Facility Siting Council's Retirement and Financial Assurance standard (Part 2) for the September 24, 2021 EFSC Meeting, from Sarah Esterson.
[44] Memo to Council, August 12, 2021, Subject Agenda Item G (Action Item), Surety Bond Template Update for the August 27, 2021 EFSC Meeting, from Christopher M. Clark, Siting Policy Analyst & Rules Coordinator. Page 1 of 4.
[45] 2024-04-16-B2H-AMD2-Draft-Proposed-Order-Combined
[46] Ibid, p. 188 of 855, including footnotes: 173 See 2020-03-13-Approved-January-Minutes and 2020-01-24-EFSC-Meeting-Recording Pt 1 of 2; at approx. 11:00 minutes. B2H EFSC Meeting Day 1 PCCO-PO-Exception Hearing Condensed 2022-08-29, pages 132 -160.

The DPO does not make recommendations for change to the financial assurance conditions with the exception of updated amounts/costs necessary to restore the site. The narrative infers that the mid-line capacitor is the only substantial change and laments that the bond issue has been addressed already.

Additionally, the department emphasizes that: since "the certificate holder is a regulated utility by the Oregon Public Utility Commission and […] if necessary, the utility could recover costs from its ratepayers…"[47] This is insulting to eastern Oregon ratepayers and irresponsible from a fiduciary standpoint. There is **not a guarantee** that the OPUC would grant rate recovery. That comes later in the OPUC processes during prudency review and rate cases. To make this point, OPUC Commissioner Hardie said in LC 68[48]:

> *"Transmission must be developed with very long lead times. Because circumstances may change in the future, and new information may be presented at a later date, the ultimate development of the B2H project is not a foregone conclusion. We agree with Staff that a host of changed circumstances could require Idaho Power to reevaluate its course, including but not limited to significant changes in co-participant shares and commitments, project costs, load needs, power market liquidity and depth, and capabilities and costs of alternative technologies.* ***Idaho Power should be prepared for such reevaluation and to change course should such information or circumstances emerge." (emphasis added)*** **[**Commission Order 18-176 p. 10-11.]

Changing Conditions and Risk:

PacifiCorp (PAC) is the 55% partner in this project. PAC poses increasing risk due to alternative company investments and mounting liability costs from pay-outs and court settlements from wildfires.

Regardless of the EFSC orders, siting process, and conditions, the bottom line is that the developers[49] will decide in their "iterative processes"[50] what capital investments and infrastructure projects that they will choose to invest in. Let's be clear, PAC is the controlling interest here, and Council and staff should not be putting blinders on their eyes.

Within the partnership, and the "Joint Funding Agreement,"[51] there is a decision-making entity called, the "Construction Funding Committee" who will have ultimate authority in decision-making for the project. In this group the voting rights align with the % of partners' investments; hence, PAC is the majority decider at 55%. Idaho Power has had difficulties in the past with partner relations and commitments, PAC in particular has been very slow to commit to the Joint Funding Agreement.[52] It

[47] B2HAPPDoc31 Final Order on ASC and Attachment 2022-09-27, Section IV.G. Also: 2024-04-16-B2H-AMD2-Draft-Proposed-Order-Combined p176, FN 174.
[48] Docket LC 68; Order 18-176, pp. 10-11.
[49] Developers in this case are also the owners, investors, and partners. These terms may be used interchangeably.
[50] "Iterative processes" are common among the regulators of the investor-owned utility. For example, the OPUC and IPUCs most importantly, will review Integrated Resource Plans (IRPs) every two years; and while they do not "approve" plans, they do approve Action Items (short-term under 5-year actions). Annually, the OPUC will review Oregon's utilities' wildfire mitigation plans; and the OPUC considers these iteratively as well. **ODOE should make this financial assurance review and adjust conditions as an iterative process as well.**
[51] PAC's 2023 IRP Chapter 1, page 28, 98-99.
[52] STOP's Closing Comments LC74, 1/8/2021, pp. 7, 8-12.

would be prudent for Council to change and update this financial assurance site condition to maintain a closer eye and view on this rapidly changing situation. (STOP's recommendations will be offered below).

Recently, PAC's 10-K filing with the Security and Exchange Commission (SEC), p. 88, states:

> "PacifiCorp's litigation risk associated with the Wildfires is inherently uncertain and the ultimate outcomes of the associated claims could materially and adversely affect PacifiCorp's financial condition and results of operations and its ability to obtain financing, to fund its operations, capital investments and settlements arising from the Wildfires, and to obtain and fund third-party liability insurance coverage."

With regards to wildfire insurance, on page 93 of the SEC filing it warns:

> "[t]he Registrants are subject to increasing risks from catastrophic wildfires and may be unable to obtain enough third-party liability insurance coverage at a reasonable cost or at all and insurance coverage on existing wildfire claims could be insufficient to cover all losses, all of which could materially affect the Registrants financial results and liquidity."

Not to be understated, is the obvious fact that PAC is embroiled in serious lawsuits over their wildfire liabilities as this illustrative list demonstrates:

- "Pacific Power faces $42.5 billion in new wildfire claims, seeks more rate increases"
- "Warren Buffett's PacifiCorp faces $30 billion of new wildfire claims"
- "Verdict in Oregon wildfires case highlight risks utilities face amid climate change"
- "US government may sue PacifiCorp, a Warren Buffet utility, for nearly $1B in wildfire costs"

PAC is not alone when it comes to wildfire risks.[53] In Idaho Power's IDACORP 10-K Annual report 2023, it states: "Liability from fires could adversely impact IDACORP's and Idaho Power's business, financial condition, and results of operations, and Idaho Power's WMP [wildfire mitigation plans] and other protocols may not prevent such liability."[54]

Idaho Power's SEC report also addresses the partners' risks and how they may impose more:

> "Co-owners of Idaho Power's generation and transmission assets may have unaligned goals and positions due to the effects of legislation, regulations, capital requirements, load growth amounts, changes in our industry, or other factors, which could at times adversely impact Idaho Power's ability to construct and operate those facilities in a manner most suitable to Idaho Power." (p. 29)

It also notes that differences in co-owners' willingness or ability to continue participation or the timing of facility construction, modification, or decommissioning could lead to operational restrictions, financial impacts, and uncertainty regarding cost recovery of such assets. This highlights the complexity of joint

[53] Not long ago in Baker County, OR., IPC was fined over $1miilion from a resulting fire at a substation: Aug. 25, the US Dept of Justice issued "Idaho Power to Pay $1.5 million in civil Settlement for Powerline and Lime Hill Fires."
[54] IDACORP 10-K 2023 p. 24.

ownership, and STOP believes that ODOE/EFSC has been indifferent to the fact that the applicant is not the only risk factor in play.

All Investor-owned utilities in Oregon, like PAC, are seeking very high-rate increases[55] and Idaho Power is among them as well. The Idaho PUC denied the company's full rate request increase and reduced the amount[56]; the rate increase case at the OPUC is pending until October.

In an April 19, 2024 memo IPC informed the OPUC that the energization date of the B2H had to be pushed back from summer to fall 2026. This is increasing the net present value (NPV) of the B2H compared to other portfolios making it less competitive. The Company stated:

> "Due to the increased level of uncertainty surrounding several important near-term decisions, the 2023 IRP has been prepared in a manner intended to provide the flexibility and adaptability necessary to inform decisions as more information becomes known before the next planning cycle."

While this may not be of interest to EFSC, it will be important in OPUC decision making in terms of rate recovery (mentioned more below) and seemingly OPUC rate recovery is being relied on as a financial assurance, per comments in meetings and in the DPO.

STOP cannot stress enough the fiduciary, legal--and moral--responsibility that the Council has when considering the bond issue within this RFA2, and into the future. STOP recommends an "iterative process," of review and updating this condition, because of the rapidly changing environment. Then, based on an external, independent consultant's review, verifying documents from financial institutions, and other applicable documentation for Council consideration, decisions would be made for adjusting and amending the Financial Assurance (aka Bond) Conditions.

In *this iteration*, Idaho Power presented an updated letter from Wells Fargo which states:

> "Based upon Idaho Power's current credit ratings, profile, and information we have as of the date hereof, and subject to acceptable pricing, terms, and requisite internal approvals, and assuming no market disruption, **Wells Fargo** confirms to you that it would be highly interested in arranging (as administrative agent under the existing credit facility or otherwise), and **believes it would be successful at arranging, a syndicated letter of credit in an amount up to $180 million** (the "LC Facility") **for a period not to exceed five years** (the tenor of the $400 million credit facility) for the purpose of ensuring Idaho Power's obligation that the site of the Boardman-to-Hemingway transmission project be restored to a useful and non-hazardous condition."[57] [emphasis added]

[55] Judicially noted.

[56] Settlement reached at IPUC on IPC rate increase proposal

[57] RFA #2, Attachment 7-20. Decommission and Letter of Credit https://oregonenergy-my.sharepoint.com/:f:/g/personal/askenergy_odoe_state_or_us/Er1RrIKI4RpMg1Utb7siRX4BAldBJHQXYA1PUo61tVU0KQ?e=Aq9WeV navigate to Attachment 7-20 in the One Drive.

This letter may be an improvement from the last letter in 2018[58], during the original application for site certificate (ASC), in which they said the likelihood for credit would be for $141 million and only for up to 3 years. Now the letter reads that they *believe* they would be successful at arranging credit for $180 million for up to five years. However, five years is still not sufficient for the life of the project per the EFSC standard.

Given the risks discussed above, the short-term nature of the Wells Fargo letter, and that the OPUC is not offering financial assurance that IPC so confidently claims, STOP urges the Council to make condition changes to implement one or more of the following**: 1) insist on the letter of credit (per the rule) – not a "likelihood" letter from Wells Fargo; 2) insist on a more robust timeframe that complies with OAR 345-022-0050(2) and the Mandatory Condition OAR 345-025-0006(8), i.e.: the duration.** The ratepayers, and tax payers deserve this level of protection given the financial risks created from the wildfire litigations and the changing energy landscape (technologies and investments[59]) of the NW grid and partner investments. These are the reasons that we are recommending the following Condition.

Site Condition Recommendation 5:

1) *In lieu of a bond, a formal letter of credit must be obtained by Idaho Power by an EFSC approved financial institution(s) and approved by Council before construction begins and maintained throughout the life of the project (per Mandatory Condition). Alternatively, if the "1/16th" method of paying the bond over four-year construction period (Condition 4) is retained by EFSC because Council is authorized to vary the amounts between construction and operation,[60] STOP recommends that the full amount attained by year-four remain in place for the life of the project to ensure compliance.*
2) *OPR-RT-01 (Condition 5) d. should be changed to more frequent intervals, no more than every 2-3 years. This will assist the Council in maintaining their fiduciary responsibilities and due diligence.*
3) *Documentation of proper insurance should be included in the required report to the Council, as a bond is not the only assurance instrument available.*

The recommendations above, if adopted, would need to be edited/incorporated into the already lengthy Site Conditions 4 and/or 5.

[58] Wells Fargo letter of the likelihood of credit.
[59] Applicable recent articles: on GETs and 3 Ways…
[60] OAR 345-025-0006(8)

Issue 6: Site Conditions Recommendation for Noise Control. Conditions NC-01, NC-02, and NC-03 do not mitigate adequately for protection of public health, safety and welfare of Oregonians, and therefore are noncompliant with ORS 467.010, OAR 340-035-0005 (policy), OAR 345-035-0015 (definitions) and OAR 345-035-0035 (measurements), and ORS 469.507 and ORS 469.507(2) and (mitigation monitoring).

NSR's or Noise Sensitive Receptors[61], need special (and customized) mitigation and consideration given the fact they will experience unwelcomed noise pollution intrusions into their lives, forever. Therefore, to be the most protective of their health, safety and welfare, mitigation plans need to work—and be monitored for compliance.

Idaho Power could not meet Oregon's noise control standards for the project; and EFSC granted them a blanket exception and variance to the rules in the Final Order (see NC-04 and NC-05). Elaborate mitigation and complaint processes were created but they fall short in two major ways: 1) they lack of an accurate starting point (baseline) from which to create the mitigation plan; and 2) IPC once again obfuscates the complaint process (length and complexity) and inserts unrealistic conditions (NSR burdened with costs and strapped with the burden of proving exceedances). These conditions are not practical or fair, and the complaint process conclude without any resolution steps or appeal steps.

Baselines, monitoring representation, modeling, and mitigation plans.

It is important to state that ALL NSRs on the B2H line need an accurate assigned baseline dBA, before negotiations begin, as well as ongoing monitoring as the project ages. Changes to the site certificate conditions have increased the number of predicted NSRs along the route—particularly in Malheur County where there are noise sensitive clusters. There needs to be a monitoring to establish baseline for these new NSRs. While ODOE will say this has been litigated, STOP contends that the requirements regarding noise sensitive properties do not fully comply with ORS 467.030, ORS 467.030, OAR 340-035 and the Oregon Sound Measurement Procedures Manual NPCS-1 which all continue to be in force as state law.

EFSC has historically evaluated noise by following the requirements of the above statutes and rules, however, they have used different methods, interpretations, and procedures to evaluate noise in the Site Certificate for the Boardman to Hemingway Transmission line. These were litigated in the contested case, however, basic requirements such as accurate baselines, good faith negotiations, and effective monitoring remain as components of compliance.

It should not be the burden of land owners to prove what the dBA is at their residence or to have to demand site-specific monitoring and mitigations. IPC has the burden of proving what they're saying with preponderance of evidence that the B2H line will not harm the NSR residents.[62] It is imperative that all NSR's are informed, protected, treated and negotiated with in good faith, and future mitigation followed.

[61] Sometimes also referred to as: noise sensitive properties.
[62] ORS 340-035-0035 (1).

Once the actual baselines are known, the negotiations can **begin** with the NSRs. To NOT do so before hand, disadvantages the NSR because the extent or degree of impact is not really confirmed. For example, if windows were a mitigation measure that the NSR was agreeable too, not knowing the real extent of the predicted exceedance hampers the ability to negotiate for the proper type of window sound ratings.[63]

The Monitoring Posts (MP's) used for the IPC noise studies may not be representative of various properties assigned to a particular MP due to terrain and other micro-siting adjustments that are occurring now with landowners. Although representative modeling was allowed/upheld in the contested case, when the rubber meets the road: all NSRs with predicted exceedances (unless requested otherwise) should get the "site-specific monitoring" to determine their true baseline[64]; and the baseline monitoring needs to be paid by the developer using an Acoustical Engineer agreeable to all parties.

During the contested case, in September of 2021, Kerrie Standlee,[65] P.E., at DSA Acoustical Engineers, Inc., conducted sample baseline noise monitoring which resulted in approximately 21 dBA at a very rural residence in Union County. IPC performed a lengthier noise monitoring sample on site MP 100 (totally on the high windy ridge near Morgan Lake Park, without consulting on the predominant wind conditions and not near this or another NSR) and it registered at 31dBA. Granted, Mr. Standlee's monitoring was only a quick sample for a night, to meet the ALJ deadlines for testimony. But it was enough of a doubt – especially given the wide disparity of the dBA results, that STOP believes follow up and more accurate monitoring measurement must be taken BEFORE (not after) negotiation on Noise mitigation plans, for any newly identified NSR and for any NSR already identified (the 41 in Attachment X-4) that would like to dispute their "representative" MP's results – before negotiations begin—e.g.: the NSRs assigned to MP 100.

The complaint process is flawed and essentially amounts to a reporting and filing process. **(See Attachment 3)** How, practically-speaking, can an impacted NSR measure the exceedance and provide their own data? They do not have the expensive and highly-calibrated acoustical monitoring devices, and those commercially available for rent do not measure lower than 30 dBA. Reporting the time, date, weather patterns, for the complaint doesn't necessarily confirm anything. Although it could *inform* rainfall amounts on those days which in turn *could predict* if the exception NC-04 and variance NC-05 could be applied? Still, once there is a complaint, IPC needs to take action to monitor/measure and work with the NSR owner for resolutions or changes to the noise mitigation plan/easement. The steps in the complaint process, as proposed, are complex, bureaucratic, and delay the company's response, putting most of the burden on the property owner once again, which is NOT what we believe EFSC wanted nor complaint with the intent of the State of Oregon's "legislative policy" on noise pollution and control, as it not providing protection per:

[63] NC-01 and NC-02, navigate to Attachment 1: Draft Second Amended Site Certificate (red-line).
[64] as required by the DEQ manual, Sound Measurement Procedures Manual (NPCS-1.)
[65] Kerrie Standlee of formerly: Kerrie Standlee and Associates, one of ODOE's noise consultants.

> "The Legislative Assembly finds that the increasing incidence of noise emissions in this state at unreasonable levels is as much a threat to the environmental quality of life in this state and the health, safety and welfare of the people of this state as is pollution of the air and waters of this state. To provide protection of the health, safety and welfare of Oregon citizens from the hazards and deterioration of the quality of life imposed by excessive noise emissions, it is hereby declared that the State of Oregon has an interest in the control of such pollution, and that a program of protection should be initiated. To carry out this purpose, it is desirable to centralize in the Environmental Quality Commission the authority to adopt reasonable statewide standards for noise emissions permitted within this state and to implement and enforce compliance with such standards. [1971 c.452 §1]"[66]

EFSC rules also require ongoing mitigation monitoring to assure that there is compliance with the noise control standards--including the 20 dBA limit on increases[67] in the current ambient noise levels. As ODOE explains in the DPO and cited in the Final Order,[68] the line will sag over time, conductors and other protective surface coatings will age and the potential of increased corona noise *will occur* over time as the project ages. But at this time, there are no sound mitigation technologies that are effective:

> "The Council previously found that typical noise abatement technologies, such as insulators, silencers, and shields, are not reasonable technologies for transmission lines due to length; and safety and operational limitations. Council imposed Noise Control 1 Condition 3 (CON-NC-01) requiring that the transmission line be designed in a manner that would reduce the potential for corona noise, including a requirement that the design include a triple bundled configuration with sufficient subconductor spacing (results in reduction in audible corona noise and radio interference)."[69]

> "Noise Control Condition 3 requires the certificate holder to construct the proposed transmission line using materials to reduce corona noise such as the use of a triple bundled conductor configuration for 500 kV transmission lines, maintain tension on all insulator assemblies to ensure positive contact between insulators, maintain tension on all insulator assemblies to ensure positive contact between insulators, and to protect conductor surface to minimize scratching or nicking."[70]

Therefore, given the life of the project—into perpetuity or 100-year estimate, the NC-03 condition will need assurance that this mitigation measure (site condition NC-03) is and continues to be in compliance. Hence, a mitigation monitoring plan must be included in the protective site conditions, which it is not, in

---

[66] ORS 467.010

[67] 20 dBA is the allowable increase of the Ambient Degradation Standard considering both the exemption/variance (at 10 dBA) and the allowable by rule increase of 10 dBA.

[68] "The corona effect (corona) is audible noise that emits from transmission lines and facility structures caused from the partial electrical breakdown of the insulating properties of air around the conductors of a transmission line." p. 660 Final Order.

[69] Boardman to Hemingway Transmission Line – Draft Proposed Order on Request for Amendment 2 - April 16, 2024 p. 266; 2024-04-16-B2H-AMD2-Draft-Proposed-Order-Combined, pp. 277-278.

[70] Ibid, Site conditions, NC-03. cite page.

order to comply with ORS 469.507 (requires ongoing monitoring).

There are many residences where the projected noise level increases will be 15 dBA or greater. In all these instances, there is a significant likelihood that the assigned noise levels may not be accurate and noise levels could increase by more than the 20 dBA exception allowed. The burden of proving that there are not exceedances lies with the developer, not the property owner. This responsibility is even greater due to the fact that many areas *were assigned background measurements.* To date there has not been any confirmation of the background ambient sound measurement at the individual NSRs with the exception of the 17 actual MPs used in the study.[71]

STOP proposes the following Noise Control Condition improvements which will better comply with the above cited laws and rules/standards and will increase the protections for Oregonians experiencing the noise intrusions.

Site Condition Recommendation 6:

To be edited under NC-01*:*

> *All new NSRs (per RFA2) and any existing NSR designees, upon request, will be offered site-specific noise monitoring for a two-week period, paid by the developer, to determine the accurate--not representative--ambient noise background level for that NSR. The updated and accurate (site-specific) baseline data will be used for negotiations on the individualized noise mitigation plans.*

To be edited under NC-02:

a) If subsequent noise monitoring (following a complaint investigation) would inform or resolve a noise complaint, then the developer will retain and pay for the mutually agreed upon *acoustical engineer to conduct on-site monitoring to inform the complaint resolution. This needs to be in place of the two parties coming up with their own sound measurement data, currently in the complaint process.*

b) A conclusion to the complaint process will be added that mentions an appeal process or guidance: e.g.: referred to the Council (not department), or an alternative court resolution process, or if still no agreement found, a court remedy may be needed for final appeal and resolution.

To be edited under NC-03: *A deliberate mitigation monitoring plan must be added to the Noise Control conditions.* This was partially litigated previously during the contested case, but not in the context of compliance with ORS 469.507. It was mentioned by STOP as a good type of "best practice" considering that new masking technologies may come into existence over the life of the project (50-100 years). However, upon reflection, in the absence of a mitigation monitoring condition, there is NOT compliance with the Oregon statute and this condition needs to remedy the situation.

[71] And these MPs were to be representative of over 137 dBAs. (use original cite in written testimony)

III. List of Recommended Site Conditions from Stop B2H Coalition:

Site Certificate Conditions - Recommendation 1:

Prior to approving a site boundary expansion or amendment of the site certificate, the developer must complete all requirements to amend an approved site certificate, using a Type A amendment process for analysis, surveys, and activities required by Oregon EFSC statutes and rules. This includes, but is not limited to meeting the requirements of Chapter 22, 24, and 27, and providing landowners and the public with necessary specificity of maps, surveys, and additional information upon request and in a timely manner to be able to meaningfully participate in the amendment process.

Site Certificate Conditions - Recommendation 2:

If amendments are proposed to the site boundary and/or micrositing corridor using an Amendment Determination Request (ADR process) 345-027-0357, an agreement or letter of concurrence from the landowner or land/property manager, must be included in the application to the Department, under subsection (4)(d); and a public comment period will commence for 60 days.

Site Certificate Conditions - Recommendation 3:

Once there is an agreement and decision about a the new Micrositing Corridor, the remaining land (the .5 mile) will be removed from the "RFA2 Site Boundary," returning the Site Boundary width to the original ASC, the Final Order on B2H, and Final Order on AMD1, that is: a 500'-wide site boundary corridor with a 250'-wide micro-sited corridor.[72] *All maps, property and site descriptions, including legal references, will be updated, provided to the landowner, and filed with the department within 60 days from Council's approval.*

Site Condition Recommendation 4:

All maps and layers that the applicant has developed will be distributed to the department and the public in electronic form and in file formats that are readable by free publicly available software in order for an application to be deemed complete. These layers will include but not be limited to: stations, towers, communication distribution lines, Access, ROW, routes, site boundary, disturbance, wetlands, geology, protected areas, fish and wildlife habitat, scenic areas, cultural, recreational, noise, soils, zoning, waters and wetlands, fish and wildlife habitat, property owners of record.

Site Condition Recommendation 5:

4) *In lieu of a bond, a formal letter of credit must be obtained by Idaho Power by an EFSC approved financial institution(s) and approved by Council before construction begins and maintained throughout the life of the project (per Mandatory Condition). Alternatively, if the "1/16th" method of paying the bond over four-year construction period (Condition 4) is retained by EFSC*

[72] Despite years of documentation, the 250' micro-siting corridor would actually be in violation of OAR 345-001-0010(20), which states the width of a transmission line should not be greater than 100' each side of center.

because Council is authorized to vary the amounts between construction and operation,[73] STOP recommends that the full amount attained by year-four remain in place for the life of the project to ensure compliance.

5) *OPR-RT-01 (Condition 5) d. should be changed to more frequent intervals, no more than every 2-3 years. This will assist the Council in maintaining their fiduciary responsibilities and due diligence.*
6) *Documentation of proper insurance should be included in the required report to the Council, as a bond is not the only assurance instrument available.*

The recommendations above, if adopted, would need to be edited/incorporated into the already lengthy Site Conditions 4 and/or 5.

Site Condition Recommendation 6:

To be edited under NC-01*:*

All new NSRs (per RFA2) and any existing NSR designees, upon request, will be offered site-specific noise monitoring for a two-week period, paid by the developer, to determine the accurate--not representative--ambient noise background level for that NSR. The updated and accurate (site-specific) baseline data will be used for negotiations on the individualized noise mitigation plans.

To be edited under NC-02:

c) If subsequent noise monitoring (following a complaint investigation) would inform or resolve a noise complaint, then the developer will retain and pay for the mutually agreed upon *acoustical engineer to conduct on-site monitoring to inform the complaint resolution. This needs to be in place of the two parties coming up with their own sound measurement data, currently in the complaint process*.

d) A conclusion to the complaint process will be added that mentions an appeal process or guidance: e.g.: referred to the Council (not department), or an alternative court resolution process, or if still no agreement found, a court remedy may be needed for final appeal and resolution.

To be edited under NC-03: *A deliberate mitigation monitoring plan must be added to the Noise Control conditions.* This was partially litigated previously during the contested case, but not in the context of compliance with ORS 469.507. It was mentioned by STOP as a good type of "best practice" considering that new masking technologies may come into existence over the life of the project (50-100 years). However, upon reflection, in the absence of a mitigation monitoring condition, there is NOT compliance with the Oregon statute and this condition needs to remedy the situation.

[73] OAR 345-025-0006(8)

IV. Conclusion

STOP objects to RFA 2 and the massive site boundary expansion because it positions the company in the future to use an ADR or Type C amendment process. These quick style amendment processes should only be used if there is concurrence of the landowners and at a minimum an opportunity for the public and government officials to weigh-in. Without such, completely disadvantages the public and landowners of any due process. This must be stopped.

Once again, if we understand the schema correctly, RFA 2 would give ODOE authority to permit changes to areas within an area 3x's wider than the Council approved site boundary—which might have never been analyzed for EFSC compliance, and which has never been subject to public review or comment regarding mandatory siting standards. Then, once the micro-siting and engineering designs have been decided, the site certificate is supposed to be brought back to the original 500' corridor with a 200' micro-siting corridor.

We understand how this schema *could be helpful* for some landowners negotiating with Idaho Power for micrositing changes that go outside the current approved 500' site boundary. However, that is what the Amendment process is for! STOP contends that the only reason for this broad brush and terminology obfuscation is to contort what is happening on the ground. People are being bullied, contractors are trespassing, and the company is looking to EFSC to resolve their engineering challenges and timeline woes with a short-cut. This should NOT be on the back of the landowners. What is wrong with continuing to work with landowners for micro-siting (inside or outside the site boundary) and when there is agreement, submit an Amendment. Yes, siting a 300-mile transmission project is hard work; but so has been living under the shadow of the B2H--constantly looming in people's lives.

In conclusion, we reiterate our position stated in the Introduction:

STOP urges Council to either deny RFA 2, or remand RFA 2 back to Idaho Power to:

- **complete their landowner negotiations and engineering design changes,**
- **adopt STOP's recommended conditions (herein) which we believe will be more protective of landowners and the public, and**
- **allow Idaho Power to return with more realistic amendment requests that are specific to changes in parcels or the facility that are inside or outside the already approved micro-siting corridor (as was done in RFA1),**
- **while using the Type A amendment process that demonstrates compliance.**

ATTACHMENT 1: Land Calculations-Conversions

Since IPC and the DPO state only the *mileage* changes in the site boundary expansion request and access road expansion requests, but disclose potential micrositing corridors *in acres*, it obscures the real comparisons. Therefore, STOP makes this comparison (calculations below), as best we can, to share with EFSC, all parties and the public.

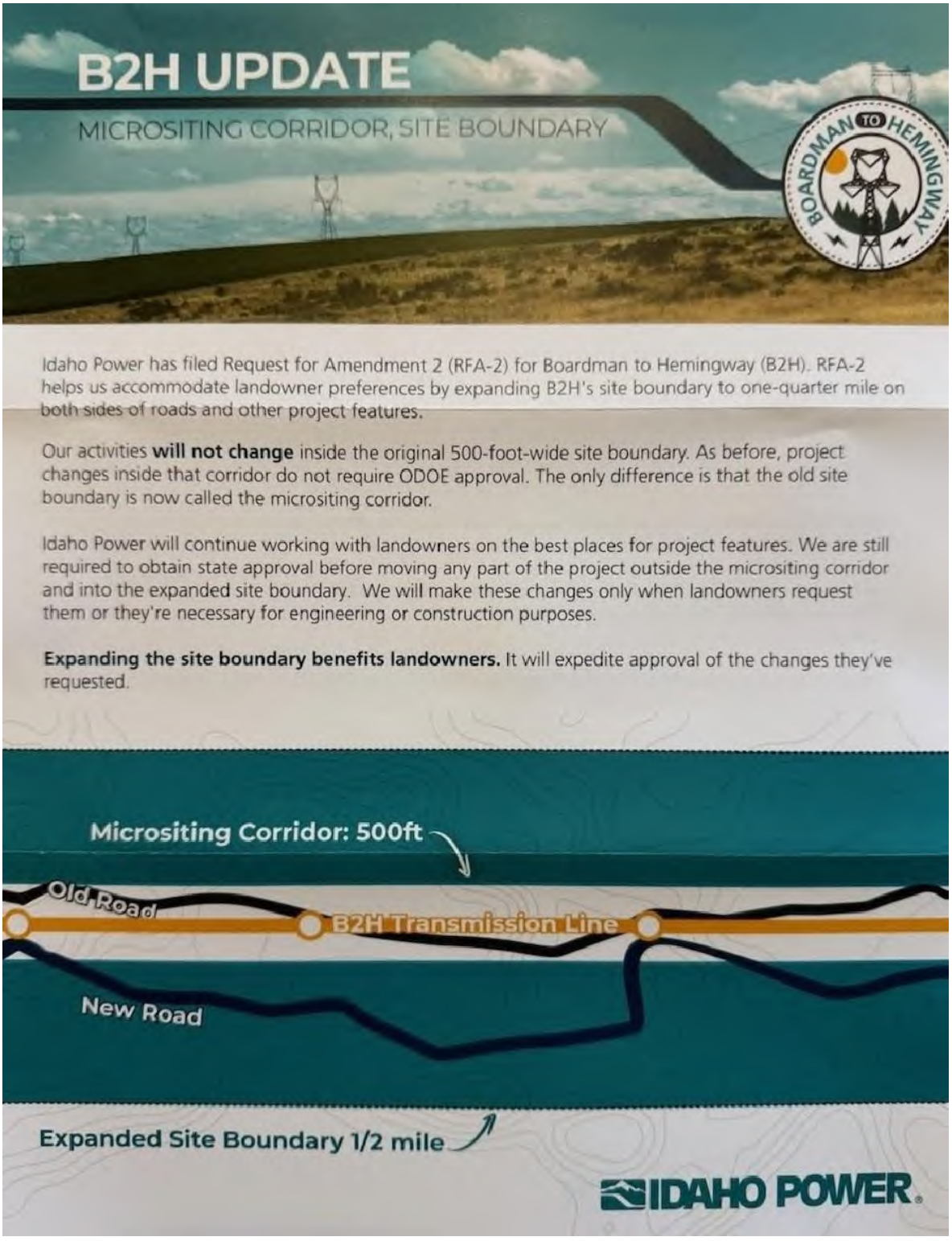
It would be impossible to figure out exactly how many additional acres of disturbance potential exists from RFA2 without much more detail in the maps and the coordinates of parcels. Also, it is hard to know how exactly how many acres we are talking about because access road additions (also at .25 mile each side of center) and transmission line corridor are not combined. Therefore, STOP chose the simpler, more conservative estimate of using IPC's broad brush of: 300-mile corridor with a .5 mile width. We dropped the inclusion of hundreds of miles of access road additions in this calculation--which we know are huge additions. But we wanted to keep this simple for this purpose.

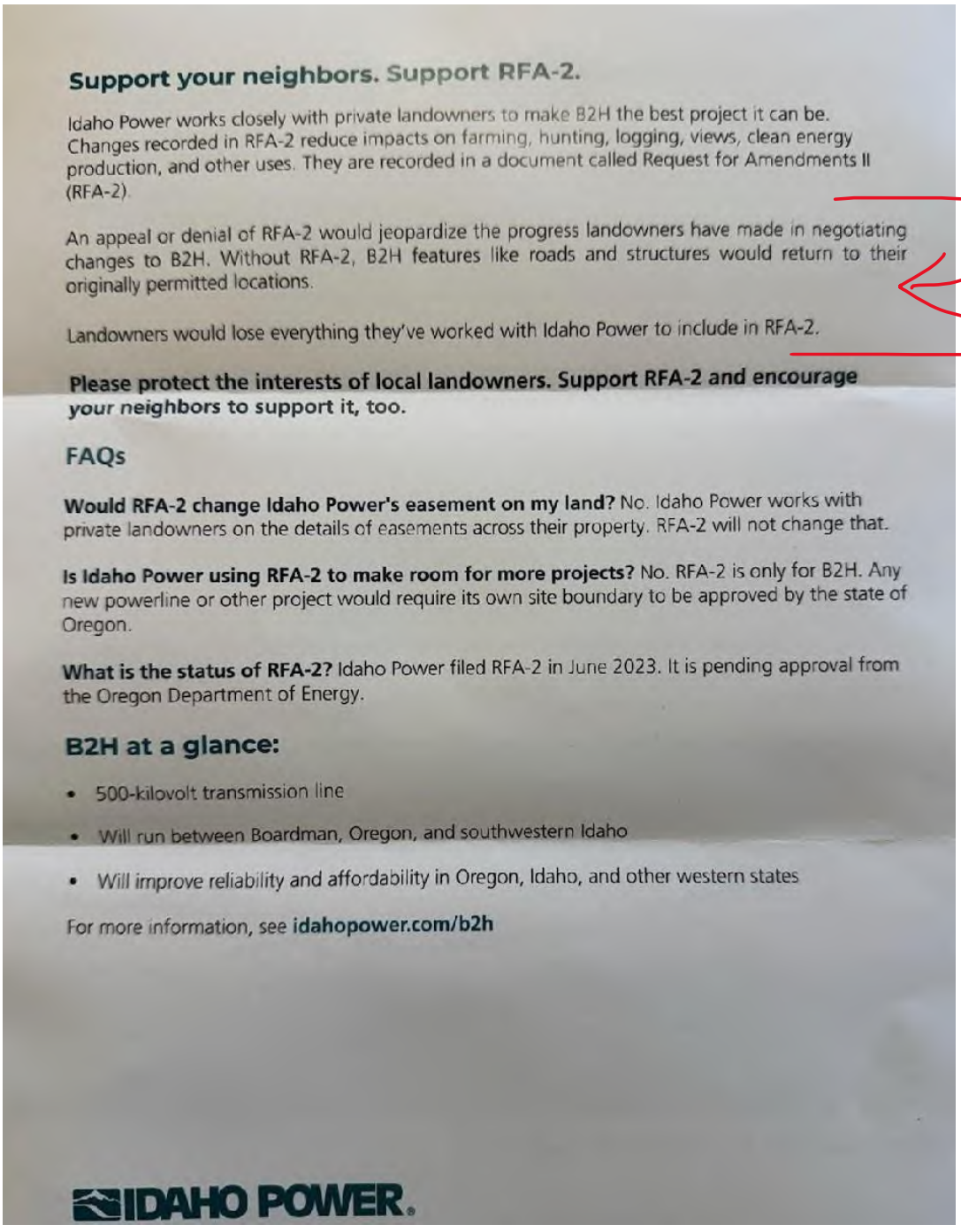
To calculate the acreage for an area with dimensions of **0.5 miles by 300 miles:**

1. First, convert the dimensions to feet:
   1. **0.5 miles** = **2,640 feet** (since 1 mile = 5,280 feet)
   2. **300 miles** = **1,584,000 feet**
2. Calculate the area in square feet:
   1. Area = Length × Width
   2. Area = 1,584,000 feet x 2,640 feet
   3. Area = 4,181,760,000 square feet
3. Now, convert the area to acres:
   1. 1 acre = 43,560 square feet
   2. Acres = Area / 43,560
   3. Acres = 4,181,760,000 / 43,560
   4. **Acres ≈ 96,000 acres**

So, the acreage for an area of 0.5 miles by 300 miles is approximately **96,000 acres**

ATTACHMENT 2: Marketing/lobbying mailer that IPC recently sent to all landowners along the B2H route to influence this proceeding. [Emphasis-red arrow added on p.2 of letter.]





Support your neighbors. Support RFA-2.

Idaho Power works closely with private landowners to make B2H the best project it can be. Changes recorded in RFA-2 reduce impacts on farming, hunting, logging, views, clean energy production, and other uses. They are recorded in a document called Request for Amendments II (RFA-2).

An appeal or denial of RFA-2 would jeopardize the progress landowners have made in negotiating changes to B2H. Without RFA-2, B2H features like roads and structures would return to their originally permitted locations.

Landowners would lose everything they've worked with Idaho Power to include in RFA-2.

Please protect the interests of local landowners. Support RFA-2 and encourage *your neighbors* to support it, too.

FAQs

Would RFA-2 change Idaho Power's easement on my land? No. Idaho Power works with private landowners on the details of easements across their property. RFA-2 will not change that.

Is Idaho Power using RFA-2 to make room for more projects? No. RFA-2 is only for B2H. Any new powerline or other project would require its own site boundary to be approved by the state of Oregon.

What is the status of RFA-2? Idaho Power filed RFA-2 in June 2023. It is pending approval from the Oregon Department of Energy.

B2H at a glance:

- 500-kilovolt transmission line
- Will run between Boardman, Oregon, and southwestern Idaho
- Will improve reliability and affordability in Oregon, Idaho, and other western states

For more information, see **idahopower.com/b2h**

IDAHO POWER.

An example of on the ground realities:

Idaho Power sent this B2H Update to all landowners a few weeks ago that said, "expanding the site boundary benefits landowners and will expedite approval of the changes they've requested."

A landowner in Union County worked with IPC to develop a new route on their property. IPC came out, walked the proposed new route, and GPS'd the coordinates to develop a new route segment. All seemed to be going in the right direction as discussions firmed up the route.

Last Thursday, 5/23/24, David Standish, IPC's in-house attorney, called the landowner's attorney. He made an offer that to move the route, the landowner had to get back to him by 5pm the next day with an offer. The offer needed to include a monetary discount to be subtracted from the easement settlement when negotiated in the future. No monetary offer had been discussed at all up to this point. Therefore, the landowner had to guess at a price for the easement, with no assessment data to help set a monetary value for their land. Then offer a discount based on a guess to show their motivation and gratitude to the company for going out of their way to help them.

This is the real Idaho Power. Blackmailing a landowner to reduce their compensation, by paying Idaho Power via the discount, to move the line on their property. This payment would come from the proceeds the landowner would have gotten in granting an easement.

The idea of "helping landowners" by Idaho Power is a cover-up to allow Idaho Power to blackmail landowners in return for the favor of re-routing the line on their property. STOP does not believe that ODOE/EFSC wants to be an accomplice to blackmail. If yes, approve RFA 2 without doing due diligence. If EFSC wants to take the high road and send a message to utilities that it will not tolerate applicants' bullying, taking advantage of, and extorting money from landowners, then deny this amendment and have IPC submit geographically grouped amendments with the landowners as suggested elsewhere in these comments.

Attachment 3: IPC Letter to NSR's – with complaint process. Link:

https://drive.google.com/file/d/1mOTnWjq0zkZaxTcze9T3HLbTQzLr_3lO/view?usp=drive_link



CUNNINGHAM SHEEP & LAND COMPANY
PENDLETON RANCHES, INC.
MUD SPRINGS RANCHES
HOKE RANCHES
NOLIN FARMING CO.

CUNNINGHAM SHEEP COMPANY

303 S.E. 3RD STREET • P.O. BOX 1186
PENDLETON, OREGON 97801
541-276-6391 • CSHEEPCO@GMAIL.COM

May 30, 2024

Energy Facility Siting Council

Oregon Department of Energy

Re: B2H Transmission Line – Idaho Power
Route Amendments, including RFA2

Council Members and Staff:

I write on behalf of our landowning companies in Union, Umatilla, and Morrow counties. We have worked with Idaho Power to make adjustments to the route to better suit our farming, logging, views, clean energy production, and other important land uses. We have spent several years of painstaking collaboration and negotiation with Idaho Power to reduce the impact of B2H on our landowners and their families.

The RFAs benefit landowners including us. Opposing/appealing RFA2 jeopardizes these benefits. The landowners could lose the line adjustments they've negotiated with Idaho Power if the Oregon Supreme Court upholds any appeals. One danger is that the line may need to go back to the originally approved line to meet time schedules, something that would cause us and other landowners substantially more damage.

Idaho Power has obtained most of the permits it needs for B2H. Appeals only delay the project and raise the cost of electricity for farms, homes, and businesses across Oregon and southern Idaho.

Thank you for allowing us to comment.

Sincerely yours,

Steven H. Corey

Steven H. Corey, Pendleton Ranches Secretary

TARDAEWETHER Kellen * ODOE

From: Susan Geer <susanmgeer@gmail.com>
Sent: Thursday, May 30, 2024 7:14 PM
To: TARDAEWETHER Kellen * ODOE
Subject: Re: Geer comment RFA2
Attachments: Geer RFA 2 comment 5.30.24.docx

Hi Kellen,

I accidentally sent the wrong version! Can you please use the one attached now? Thanks
Susan

On Thu, May 30, 2024 at 6:50 PM TARDAEWETHER Kellen * ODOE <Kellen.TARDAEWETHER@energy.oregon.gov> wrote:

> Received, thanks Susan
>
> **Kellen Tardaewether**
> Senior Siting Analyst
> 550 Capitol St. NE Salem, OR 97301
>
> C: 503-586-6551
> P (In Oregon): 800-221-8035
> Stay connected!
>
> **From:** Susan Geer <susanmgeer@gmail.com>
> **Sent:** Thursday, May 30, 2024 6:33 PM
> **To:** TARDAEWETHER Kellen * ODOE <Kellen.TARDAEWETHER@energy.oregon.gov>
> **Subject:** Geer comment RFA2
>
> Please find attached RFA2 comment

Geer Comment on RFA2

May 30, 2024

To: Energy Facility Siting Council

Re: Comments on the RFA2, DPO, and DPO Attachments including the amended site certificate and revised conditions, Boardman to Hemingway Transmission Line

Approval of the Morgan Lake alternative signaled a tragedy for State Protected Areas, City Parks, and Conservation Easements, establishing a precedent of ignoring their status, downgrading their ecological integrity, and putting special status species further at risk. Morgan Lake alternative has the most forested acres of any route considered, contains unique wetlands and mesic grasslands, plant community types that are protected nowhere else in Oregon, and is home to several rare plant and animal species, as documented in my contested cases with EFSC and OPUC.

RFA2 proposed changes would introduce invasive plant species and impact the hydrology of Winn Meadows, an important wetland in Glass Hill SNA, protected under OAR 345-022-0040, thereby causing significant adverse impact.

Proposed route changes in RFA2 would cut across the head of Winn Meadows. Refer to Figure 4-1, map 37 in "2024-04-11-FIG-4-1-RFA2-Micrositing-Additions-and-Expanded-Site-Boundary-MAPBOOKMajor disturbance and impacts were introduced under RFA1, and RFA2 exposes even more of the perimeter of Glass Hill SNA to disturbance and impacts of the construction and ongoing maintenance of the B2H. The cumulative impacts of the RFA 2 added to the disturbance permitted under the ASC and RFA 1 are profound. The wetland extends beyond the area mapped in National Wetland Inventory. Introductions of invasives and alteration of hydrology at the immediate boundary of the Protected area definitely negatively affect the quality of the wetland, the integrity of the natural area, the special wetland plant community, and the livelihood of *Trifolium douglasii*, a Candidate for listing with Oregon's rare plant program and Federal Species of Concern. Under OAR 345-022-0040 the Council must find: (a) The proposed facility will not be located within the boundaries of a protected area designated on or before the date the application for site certificate or request for amendment was determined to be complete under OAR 345-015-0190 or 345-027-0363;and (b) The design, construction and operation of the facility, taking into account mitigation, are not likely to result in significant adverse impact to a protected area designated on or before the date the application for site certificate or request for amendment was determined to be complete under OAR 345-015-0190 or 345-027-0363.

The Council should find that RFA2 would result in significant adverse impact. The Council should also recognize that RFA1 and the Morgan Lake Alternative as approved, also result in significant adverse impact to Glass Hill SNA. The Council should call for an Amended Route between the Baldy Alternative and Hilgard State Park.

Map 30 of Figure 8-1 2024-04-11-FIG-8-1-RFA2-RFA1-ASC-Expanded-Site-Boundary-Changes-MAPBOOK and Map 38 of 2024-04-11-FIG-4-1-RFA2-Micrositing-Additions-and-Expanded-Site-Boundary-MAPBOOK shows the proposed site boundary cutting through Glass Hill SNA in several places, fatally damaging the integrity of the natural area. Confusing additional access roads were added in RFA1. In the Winn Meadow area, "existing roads" are should on a map, yet those roads no longer exist on the ground and have not been driven in over 40 years. This should never have been allowed under the EFSCs rules for Protected Areas.

***Pyrrocoma scaberula* (rough goldenweed), an extremely rare plant, is now listed as Endangered under OAR 603-073-0070. The approved route should be shifted to avoid the Morgan Lake/Twin Lake area where it grows.**

The largest known occurrence of the species is known from within the RFA2 expanded Site boundary in and near Morgan Lake Park. Herbarium specimens have been submitted to OSU and WSU and siting forms are on their way to Oregon Biological Information Center. It grows only in unique mesic grasslands. It is likely that it occurs in the Morgan Lake Alternative original site boundary/micro siting area. Surveys are needed to document the extent. As of May 3, 2024, this species is listed as Endangered by the State of Oregon rare plant program. Under the EFSC standard

345-022-0070
Threatened and Endangered Species

To issue a site certificate, the Council, after consultation with appropriate state agencies, must find that:

(1) For plant species that the Oregon Department of Agriculture has listed as threatened or endangered under ORS 564.105(2), the design, construction, and operation of the proposed facility, taking into account mitigation:

(a) Are consistent with the protection and conservation program, if any, that the Oregon Department of Agriculture has adopted under ORS 564.105(3); or

(b) If the Oregon Department of Agriculture has not adopted a protection and conservation program, are not likely to cause a significant reduction in the likelihood of survival or recovery of the species.

The species was declared Endangered after the ASC was issued, but before final Amendments or construction. The species had been a Candidate for several years, in fact this is the first time ODA has updated the rare plant list since the start of the program in 1987. ODA rare plant program is slowly working its way through the Candidate species since the program finally got funded in 2020. Listing was not unexpected. ODA funding problems prevented the required Periodic Review of State List 345-022-0070 from being done regularly but and it has finally been listed. *Trifolium douglasii* (Douglas clover) is another rare Candidate for State listing that grows in mesic grasslands in and around Morgan Lake Park and occurrences are found along the monocline from the park south to Winn Meadow, part of Glass Hill State Natural Area. The EFSC should be pro-active in recognizing Candidate species and doing all they can to protect them.

Mitigation called for in RFA 2 - Attachment 4 "Draft T and E Plant Mitigation Plan" is NOT a substitute for occurrences of rare plants and their unique undisturbed habitat.

This plan is all about seed banking and making plans for re-introduction. In fact it is over half a million dollars in seed banking. As Dr. Karen Antell demonstrated in her EFSC contested case, few if any cases

of successful conversion of habitat exist. Instead of spending this money on seed banking, Idaho Power should spend this money re-routing B2H away from rare plants.

EFSC erred in approving the Morgan Lake Alternative to go through Glass Hill SNA, and then in allowing additional access roads within Glass Hill SNA under RFA 1. The EFSC Protected Areas rule 345-022-040 before recent revision (December 2022) provided a list of Protected Areas as of 2007 (when the rule was written). The ALJ in the contested case process at the time, erred in ruling that only areas on that list would be protected, even though it was obvious that areas in certain categories which were designated after 2007 but before the new rule took effect in 2022, should be included and protected. It does not make any sense that Areas designated after 2007 would not be recognized until December 2022. I have suggested changes in the route to Joe Stippel, Site Manager of Idaho Power, but have no response. Therefore, I will be proposing an Amendment soon.

Glass Hill SNA contains plant communities not protected elsewhere in Oregon's natural areas program: In addition, the more time we have spent in the area, the more we realize how many ephemeral stream and unmapped wetlands there are. We plan to suggest new plant community categories to the Natural Areas program. The program currently does not recognize these wetland types representing the southern end of the Palouse prairie and open pine stands with inclusions of wet meadow unique to the region and found nowhere else in Oregon. The Zumwalt is more closely associated with the canyon grasslands. The Glass Hill and Morgan Lake area smaller remnant grasslands more closely aligned with the Palouse and a series of wet meadows due to the geology.

The Draft Proposed Order for RFA2 continues to mischaracterize the management of Glass Hill State Natural Area (SNA), a Protected Area under OAR 345-022-0040, and the managers of the Natural Area were not notified of RFA2.

RFA 1 Draft Proposed Order mischaracterized the management of Glass Hill SNA as I wrote in Comments dated September 23, 2023 (Geer Comments on RFA1). RFA 2 makes no corrections. Preliminary Request for Amendment #2 Idaho Power Company for the Boardman to Hemingway Transmission Line, Attachment 7-2, page 37 lists Blue Mountain Land Trust as the manager. RFA 1 listed it as Blue Mountain Conservancy. Neither of these organizations is the manager, nor have they ever been. Owner Joel Rice and myself manage the land, with advice and assistance from Noell Bachellor of ORPD Natural Areas Program, and specialists from ODF, NRCS, and ODFW. I was not notified of either RFA 1 or RFA 2, even after submitting comments on RFA 1. Dr. Rice says that he was not notified either. Drafts of the 2022 Protected Areas rulemaking called for managers of Protected Areas to be notified, yet this wording was inexplicably omitted from the final version.

General Conditions under the Protected Areas Standard 345-022-0040 should apply to Glass Hill State Natural Area.

Attachment 6-1 Second Amended Site Certificate dated Sept. 22, 2023; page 32 should apply to Glass Hill SNA as well as Ladd Marsh Wildlife Area as follows:

STANDARD: PROTECTED AREA (PA) [OAR 345-022-0040]

GEN-PA-01
During design and construction of the facility, the certificate holder must:
a. Coordinate construction activities in Ladd Marsh Wildlife Area and Glass Hill SNA (Areas) with the Area managers.
b. Provide evidence to ODFW of a determination of eligibility and findings of effect pursuant to Section 106 NRHP compliance for the facility and the final HPMP for the portion of the facility that would cross the Areas subject to confidential material submission materials.
[Protected Areas Condition 1; Final Order on ASC]
GEN-PA-02
During design and construction of the facility, if the Morgan Lake alternative route is selected, the certificate holder shall ensure that facility components are not sited within the boundary of the Areas. The certificate holder shall provide to the Department a final design map for Union County demonstrating that the site boundary micrositing area and facility components are located outside of the protected area boundary.
[Protected Areas Condition 2; Final Order on ASC]

RFA2 Proposes changes to General Conditions (Attachment 6-1 Second Amended Site Certificate dated Sept. 22, 2023, page 61-62) under the Threatened and Endangered Species Standard OAR 345-022-0070 which are unacceptable and should be rejected by the Council.

CON-TE-02 a. adds the words "where practical" leaving the interpretation wide open.
CON-TE-02 b. is a new addition which allows IPC to destroy T and E plant species as long as there is "mitigation". No "mitigation" is a replacement for T and E plants.

The Council should reject Site boundary expansion and ask Idaho Power to apply for further Amendments instead, if they are needed. Alternatively, expansion should be subject to landowner approval and this should be a condition of the Site Certificate.

RFA2 proposes expanding the site boundary to be ½ mile wide along the B2H transmission line and would add 101,600 additional acres not subject to survey. The expansion along the B2H line does not include expansions such as roads and facilities. If the site boundary is expanded as proposed, Idaho Power would have free-reign to micro-site within that half mile –rather than within the 500' which was approved.

Morgan Lake Park and Protected Areas should not be subject to site boundary expansion

An Amended route should be found which stays at least ¼ mile from Morgan Lake Park and Glass Hill SNA as well as other Protected Areas. Furthermore, these areas should not be subject to expansion.

Idaho Power touts the expanded site boundary idea as giving more flexibility for landowner agreements. What they do not say is our rights may be weakened further in the future.

Presumably if they want to change something again, they will NOT be required to go through the more rigorous Type A Amendment process but instead, they will only need to file an Amendment Determination Request. The Council should not allow this.

Allowing an expanded site boundary without surveys would be in violation of OAR 345-027-0375(2)(a). The Council should not allow it.

The proposed expanded site boundary in Union County especially on the area (monocline) between Winn Meadow and Morgan Lake contains many wetlands, both mapped and unmapped. There is no doubt that sandhill cranes and bald eagles' nest at Twin Lake and Columbia spotted frogs are found there within the potential expanded site boundary. Additional rare plants would include *Pyrrocoma scaberula* and *Trifolium douglasii* which grow in unique mesic grasslands, but there may be others as well. It has never been surveyed because it was outside of the site boundary in the past. This would be in violation of OAR 345-027-0375(2)(a), which states: "For a request for amendment proposing to add new area to the site boundary, the portion of the facility within the area added to the site by the amendment complies with all laws and Council standards applicable to an original site certificate application;" Since the wetland has never been surveyed, compliance with the Fish and Wildlife Habitat Standard (OAR 345-022-0060) cannot be determined, nor Threatened and Endangered Species (OAR 34-022-0070).

Respectfully submitted,

Susan Geer, Botanist/Ecologist

Representing Glass Hill State Natural Area

TARDAEWETHER Kellen * ODOE

From: Susan Geer <susanmgeer@gmail.com>
Sent: Friday, May 31, 2024 4:47 PM
To: TARDAEWETHER Kellen * ODOE
Subject: Revised Comment on RFA2
Attachments: Geer RFA 2 comment 5.31.24.docx

Please find attached another revision for my Comments on RFA2.
Thank you

Susan

May 31, 2024

To: Energy Facility Siting Council

Comments on the RFA2, DPO, and DPO Attachments including the amended site certificate and revised conditions, Boardman to Hemingway Transmission Line

I am a professional botanist and plant community ecologist working in Northeast Oregon for most of the past 30 years. I specialize in rare plants, rangeland monitoring, and grassland ecosystems, and I have done wetland mapping while working for Idaho Conservation Data Center and many years of riparian monitoring while working for USFS.

Approval of the Morgan Lake alternative signaled a tragedy for State Protected Areas, City Parks, and Conservation Easements, establishing a precedent of ignoring their status, downgrading their ecological integrity, and putting special status species further at risk. Morgan Lake alternative has the most forested acres of any route considered, contains more wetlands including unique wetlands and mesic grasslands, and plant community types in a Natural Area that are protected nowhere else in Oregon, and is home to several rare plant and animal species, as documented in my contested cases with EFSC and OPUC.

RFA2 proposed changes would introduce invasive plant species and impact the hydrology of Winn Meadows, an important wetland in Glass Hill SNA, protected under OAR 345-022-0040, thereby causing significant adverse impact.

Proposed route changes in RFA2 (Baldy Alternative) would cut across the head of Winn Meadows (Appendix Figure 1), adding micrositing areas to this prisitine wet meadow in a roadless area. Major disturbance and impacts were introduced under RFA1; Appendix Figure 2 shows the transmission line and access roads in Sections 5 and 32 erroneously approved to go through Glass Hill SNA. RFA1 called these roads "existing roads". I was confused about the location of these "existing" roads when I read RFA 1, and now realize these are old logging roads which have not been used for 40 or more years. RFA 2 would expose even more of the perimeter of Glass Hill SNA to disturbance from construction and ongoing maintenance of the B2H. The cumulative impacts of the RFA 2 added to the disturbance permitted under the ASC and RFA 1 are profound.

In the Glass Hill SNA, we are finding that the wetland and riparian mapping as depicted in the GIS layer used by Idaho Power is not accurate or up to date. Most ephemeral streams were missed, and wetlands were missed or mis-categorized. At Winn Meadow, the wetland as determined by the NWI method, extends beyond the area mapped in the GIS. The inaccurate NWI layer was used by Idaho Power in the OPUC Contested case (Sur-rebuttal Testimony of Michael Ottenlips; Sur-rebuttal Testimony of Mitch Colburn, April 7, 2023) as justification for placing the transmission line and access roads within mere feet of wetland as mapped, and rare plants. Introductions of invasives and alteration of hydrology at the immediate boundary of the Protected area negatively affect the quality of the wetland, the integrity of the natural area, the special wetland plant community, and the livelihood of *Trifolium douglasii*, a Candidate for listing with Oregon's rare plant program and Federal Species of Concern (Appendix Figure 3), as well as Columbia spotted frogs living there. Under OAR 345-022-0040 the Council must find: (a) The proposed facility will not be located within the boundaries of a protected area designated on or before

the date the application for site certificate or request for amendment was determined to be complete under OAR 345-015-0190 or 345-027-0363;and (b) The design, construction and operation of the facility, taking into account mitigation, are not likely to result in significant adverse impact to a protected area designated on or before the date the application for site certificate or request for amendment was determined to be complete under OAR 345-015-0190 or 345-027-0363.

The Council should find that RFA2 would result in significant adverse impact. The Council should also recognize that RFA1 and the Morgan Lake Alternative as approved, also result in significant adverse impact to Glass Hill SNA. The Council should call for an Amended Route between the Baldy Alternative and Hilgard State Park.

Map 30 of Figure 8-1 2024-04-11-FIG-8-1-RFA2-RFA1-ASC-Expanded-Site-Boundary-Changes-MAPBOOK and Map 38 of 2024-04-11-FIG-4-1-RFA2-Micrositing-Additions-and-Expanded-Site-Boundary-MAPBOOK shows the proposed site boundary cutting through Glass Hill SNA in several places, fatally damaging the integrity of the natural area. Confusing additional access roads were added in RFA1. In the Winn Meadow area, "existing roads" are should on a map, yet those roads no longer exist on the ground and have not been driven in over 40 years. This should never have been allowed under the EFSCs rules for Protected Areas.

***Pyrrocoma scaberula* (rough goldenweed), an extremely rare plant, is now listed as Endangered under OAR 603-073-0070. The approved route should be shifted to avoid the Morgan Lake/Twin Lake area where it grows.**

The largest known occurrence of the species is known from within the RFA2 expanded Site boundary in and near Morgan Lake Park (Appendix Figure 4). I submitted herbarium specimens to WSU and OSU (identity confirmed by Dr. James Mickley, Herbarium curator; it is most likely a new variety or a subspecies). Siting forms are on their way to Oregon Biological Information Center, yet much more survey is needed. It grows only in unique mesic grasslands. There were never many of this type of grassland, and fewer remain today after agriculture and development. It is likely that rough goldenweed occurs in the Morgan Lake Alternative original site boundary/micro siting area. Surveys are needed to document the extent. As of May 3, 2024, this species is listed as Endangered by the State of Oregon rare plant program. Under the EFSC standard

345-022-0070
Threatened and Endangered Species

To issue a site certificate, the Council, after consultation with appropriate state agencies, must find that:

(1) For plant species that the Oregon Department of Agriculture has listed as threatened or endangered under ORS 564.105(2), the design, construction, and operation of the proposed facility, taking into account mitigation:

(a) Are consistent with the protection and conservation program, if any, that the Oregon Department of Agriculture has adopted under ORS 564.105(3); or

(b) If the Oregon Department of Agriculture has not adopted a protection and conservation program, are not likely to cause a significant reduction in the likelihood of survival or recovery of the species.

The species was declared Endangered after the ASC was issued, but before final Amendments or construction. The species had been a Candidate for several years, in fact this is the first time ODA has updated the rare plant list since the start of the program in 1987. ODA rare plant program is slowly working its way through the Candidate species since the program finally got funded in 2020. Listing was not unexpected. ODA funding problems prevented the required Periodic Review of State List 345-022-0070 from being done regularly but and it has finally been listed. *Trifolium douglasii* (Douglas clover) is another rare Candidate for State listing that grows in mesic grasslands in and around Morgan Lake Park and occurrences are found along the monocline from the park south to Winn Meadow, part of Glass Hill State Natural Area. The EFSC should be pro-active in recognizing Candidate species and doing all they can to protect them.

Mitigation called for in RFA 2 - Attachment 4 "Draft T and E Plant Mitigation Plan" is NOT a substitute for occurrences of rare plants and their unique undisturbed habitat.

This plan is all about seed banking and making plans for re-introduction. In fact it is over half a million dollars in seed banking. As Dr. Karen Antell demonstrated in her EFSC contested case, few if any cases of successful conversion of habitat exist. Instead of spending this money on seed banking, Idaho Power should spend this money re-routing B2H away from rare plants.

EFSC erred in approving the Morgan Lake Alternative to go through Glass Hill SNA, and then in allowing additional access roads within Glass Hill SNA under RFA 1. The EFSC Protected Areas rule 345-022-040 before recent revision (December 2022) provided a list of Protected Areas as of 2007 (when the rule was written). The ALJ in the contested case process at the time, erred in ruling that only areas on that list would be protected, even though it was obvious that areas in certain categories which were designated after 2007 but before the new rule took effect in 2022, should be included and protected. It does not make any sense that Areas designated after 2007 would not be recognized until December 2022. I have suggested changes in the route to Joe Stippel, Site Manager of Idaho Power, but have no response. Therefore, I will be proposing an Amendment soon.

Glass Hill SNA contains plant communities not protected elsewhere in Oregon's natural areas program: In addition, the more time we have spent in the area, the more we realize how many ephemeral stream and unmapped wetlands there are. We plan to suggest new plant community categories to the Natural Areas program. The program currently does not recognize these wetland types representing the southern end of the Palouse prairie and open pine stands with inclusions of wet meadow unique to the region and found nowhere else in Oregon. The Zumwalt is more closely associated with the canyon grasslands. The Glass Hill and Morgan Lake area smaller remnant grasslands more closely aligned with the Palouse and a series of wet meadows due to the geology.

The Draft Proposed Order for RFA2 continues to mischaracterize the management of Glass Hill State Natural Area (SNA), a Protected Area under OAR 345-022-0040, and the managers of the Natural Area were not notified of RFA2.

RFA 1 Draft Proposed Order mischaracterized the management of Glass Hill SNA as I wrote in Comments dated September 23, 2023 (Geer Comments on RFA1). RFA 2 makes no corrections. Preliminary Request for Amendment #2 Idaho Power Company for the Boardman to Hemingway Transmission Line, Attachment 7-2, page 37 lists Blue Mountain Land Trust as the manager. RFA 1 listed it as Blue Mountain Conservancy. Neither of these organizations is the manager, nor have they ever been. Owner Joel Rice and myself manage the land, with advice and assistance from Noell Bachellor of ORPD Natural Areas Program, and specialists from ODF, NRCS, and ODFW. I was not notified of either RFA 1 or RFA 2, even after submitting comments on RFA 1. Dr. Rice says that he was not notified either. Drafts of the 2022 Protected Areas rulemaking called for managers of Protected Areas to be notified, yet this wording was inexplicably omitted from the final version.

General Conditions under the Protected Areas Standard 345-022-0040 should apply to Glass Hill State Natural Area.

Attachment 6-1 Second Amended Site Certificate dated Sept. 22, 2023; page 32 should apply to Glass Hill SNA as well as Ladd Marsh Wildlife Area as follows:

STANDARD: PROTECTED AREA (PA) [OAR 345-022-0040]
GEN-PA-01
During design and construction of the facility, the certificate holder must:
a. Coordinate construction activities in Ladd Marsh Wildlife Area and Glass Hill SNA (Areas) with the Area managers.
b. Provide evidence to ODFW of a determination of eligibility and findings of effect pursuant to Section 106 NRHP compliance for the facility and the final HPMP for the portion of the facility that would cross the Areas subject to confidential material submission materials.
[Protected Areas Condition 1; Final Order on ASC]
GEN-PA-02
During design and construction of the facility, if the Morgan Lake alternative route is selected, the certificate holder shall ensure that facility components are not sited within the boundary of the Areas. The certificate holder shall provide to the Department a final design map for Union County demonstrating that the site boundary micrositing area and facility components are located outside of the protected area boundary.
[Protected Areas Condition 2; Final Order on ASC]

RFA2 Proposes changes to General Conditions (Attachment 6-1 Second Amended Site Certificate dated Sept. 22, 2023, page 61-62) under the Threatened and Endangered Species Standard OAR 345-022-0070 which are unacceptable and should be rejected by the Council.

CON-TE-02 a. adds the words “where practical” leaving the interpretation wide open.
CON-TE-02 b. is a new addition which allows IPC to destroy T and E plant species as long as there is “mitigation”. No “mitigation” is a replacement for T and E plants.

The Council should reject Site boundary expansion and ask Idaho Power to apply for further Amendments instead, if they are needed. Alternatively, expansion should be subject to landowner approval and this should be a condition of the Site Certificate.

RFA2 proposes expanding the site boundary to be ½ mile wide along the B2H transmission line and would add 101,600 additional acres not subject to survey. The expansion along the B2H line does not include expansions such as roads and facilities. If the site boundary is expanded as proposed, Idaho Power would have free-reign to micro-site within that half mile –rather than within the 500' which was approved.

Morgan Lake Park and Protected Areas should not be subject to site boundary expansion

An Amended route should be found which stays at least ¼ mile from Morgan Lake Park and Glass Hill SNA as well as other Protected Areas. Furthermore, these areas should not be subject to expansion.

Idaho Power touts the expanded site boundary idea as giving more flexibility for landowner agreements. What they do not say is our rights may be weakened further in the future.

Presumably if they want to change something again, they will NOT be required to go through the more rigorous Type A Amendment process but instead, they will only need to file an Amendment Determination Request. The Council should not allow this.

Allowing an expanded site boundary without surveys would be in violation of OAR 345-027-0375(2)(a). The Council should not allow it.

The proposed expanded site boundary in Union County especially on the area (monocline) between Winn Meadow and Morgan Lake contains many wetlands, both mapped and unmapped. There is no doubt that sandhill cranes and bald eagles' nest at Twin Lake and Columbia spotted frogs are found there within the potential expanded site boundary. Additional rare plants would include *Pyrrocoma scaberula* and *Trifolium douglasii* which grow in unique mesic grasslands, but there may be others as well. It has never been surveyed because it was outside of the site boundary in the past. This would be in violation of OAR 345-027-0375(2)(a), which states: "For a request for amendment proposing to add new area to the site boundary, the portion of the facility within the area added to the site by the amendment complies with all laws and Council standards applicable to an original site certificate application;" Since the wetland has never been surveyed, compliance with the Fish and Wildlife Habitat Standard (OAR 345-022-0060) cannot be determined, nor Threatened and Endangered Species (OAR 34-022-0070).

Respectfully submitted,

Susan Geer, Botanist/Ecologist
Representing Glass Hill State Natural Area
susanmgeer@gmail.com, 541-519-5815
906 Penn Ave.
La Grande OR 97850

Appendix: Figures 1-4

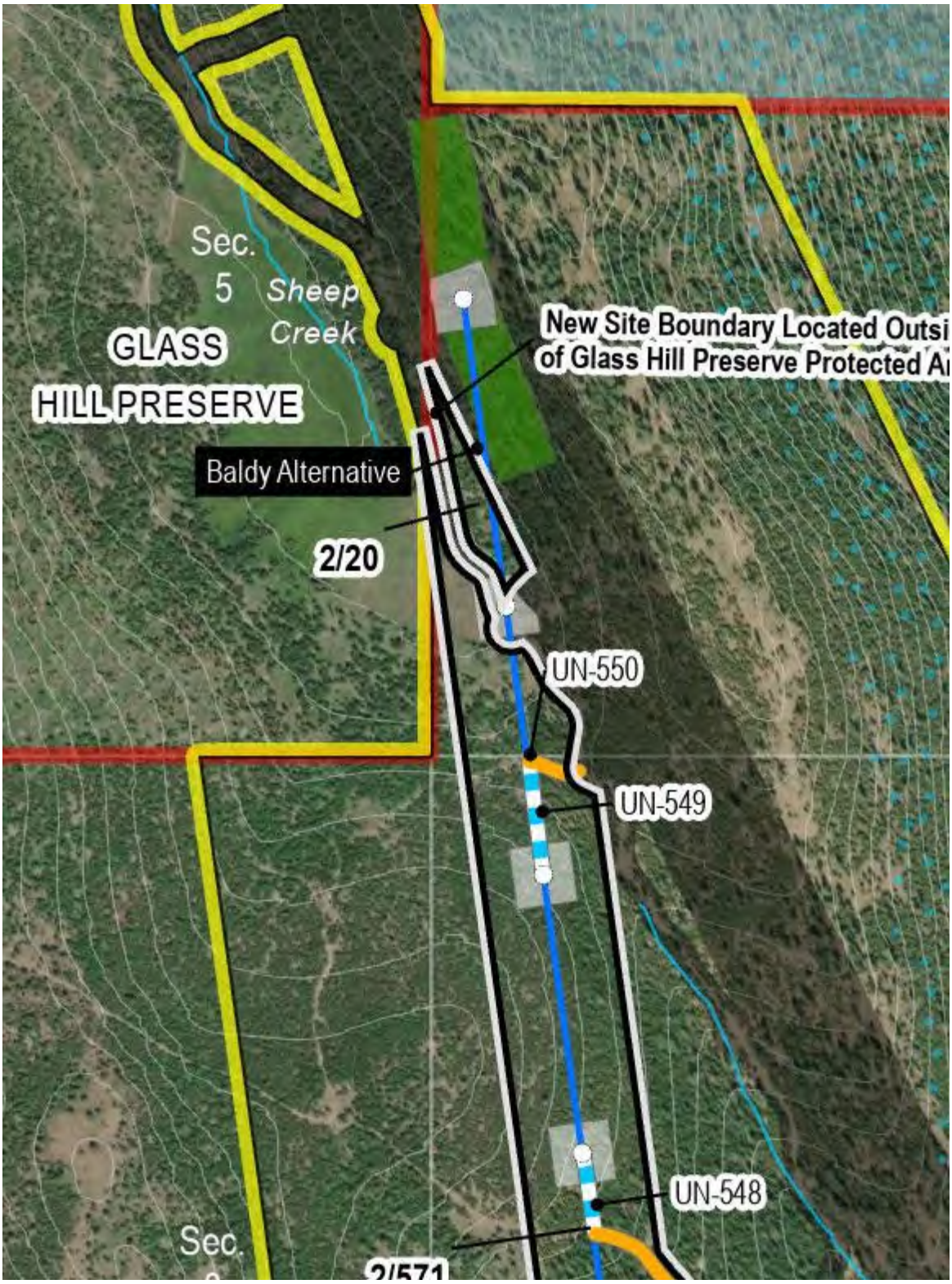


Figure 1: Close up on Map 38 from 2024-04-11-FIG-4-1-RFA2-Micrositing-Additions-and-Expanded-Site-Boundary-MAPBOOK

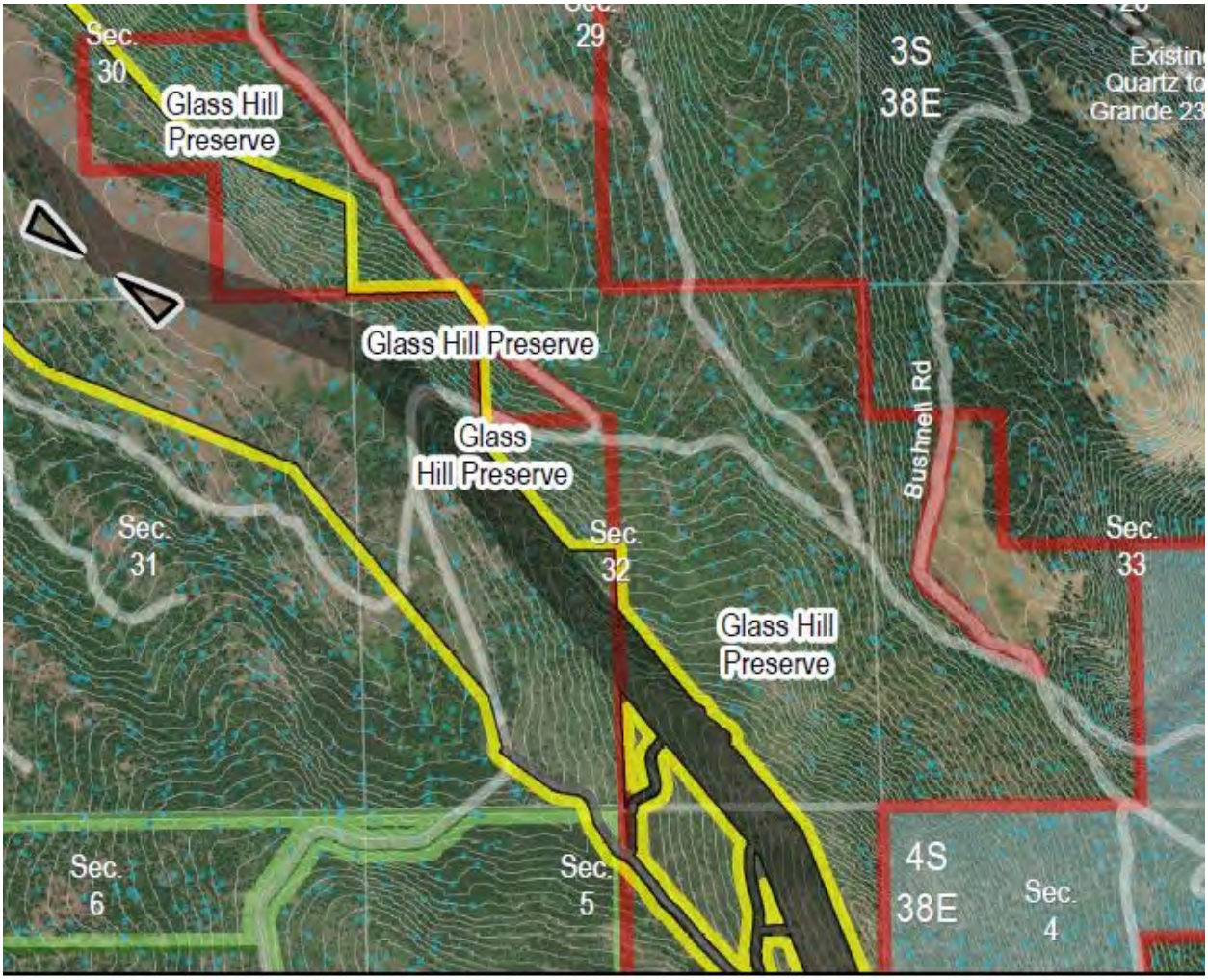


Figure 2: Close up from Figure 8-1 Map 30 of 2024-04-11-FIG-8-1-RFA2-RFA1-ASC-Expanded-Site-Boundary-Changes-MAPBOOK



Figure 3: Douglas clover at Winn Meadow

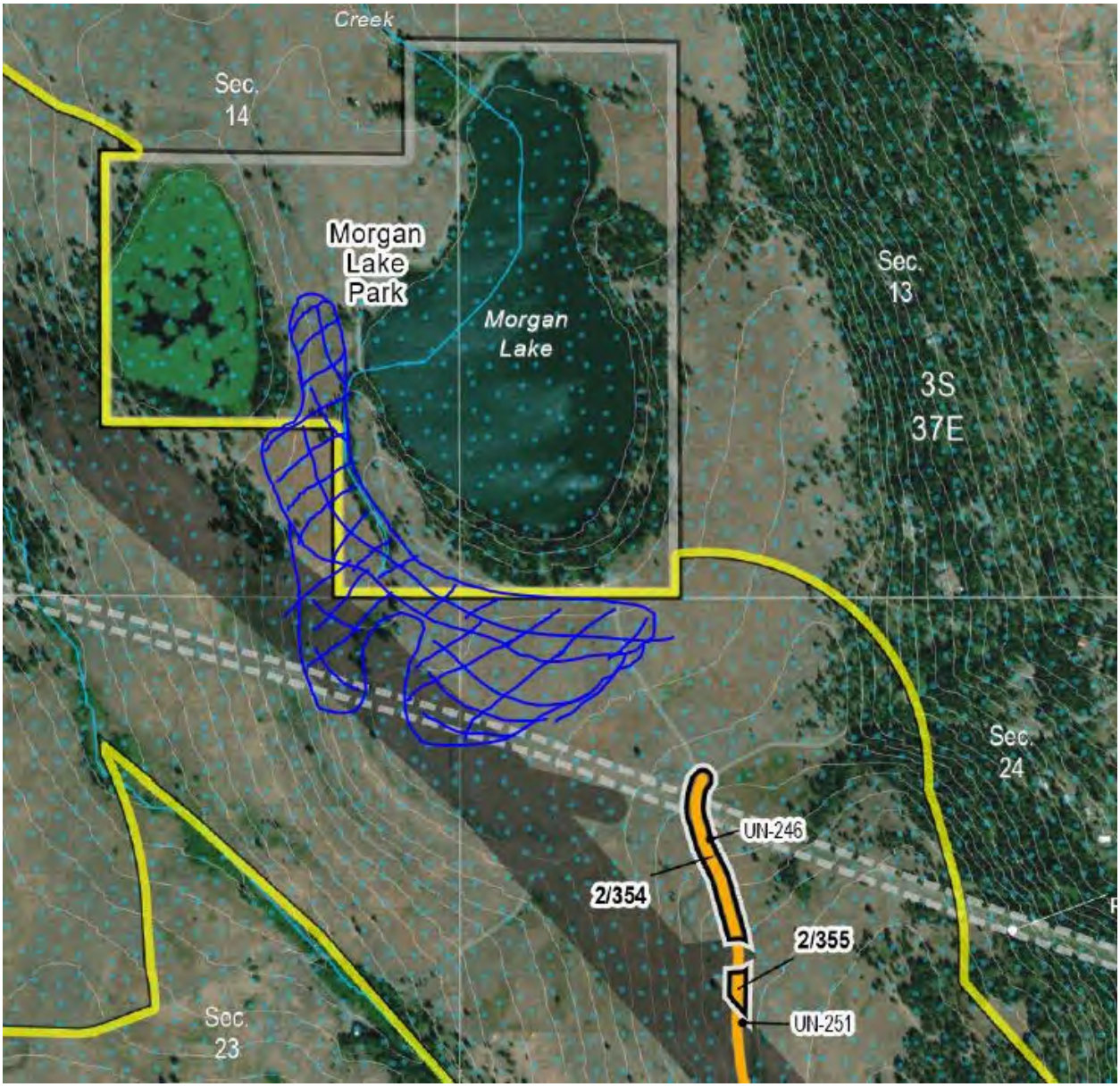


Figure 4: Blue hatched polygon is approximate area where *Pyrrocoma scaberula* is known to occur near Morgan Lake. Surveys are needed.

TARDAEWETHER Kellen * ODOE

From: ODOE ITService * ODOE
Sent: Thursday, May 30, 2024 5:23 PM
To: TARDAEWETHER Kellen * ODOE
Subject: New Public Comment submitted for project : B2H Transmission Line Amendment 2 DPO

Organization: Oregon DOT
Submitted by: SUSAN ORTIZ
Email: susan.c.ortiz@odot.oregon.gov
Zip Code: 97302

Siting Project Phase: *DPO*

Comment Summary:
The following comments identify sites where the project conflicts with Oregon Department of Transportation's (ODOT) planned and current use of existing quarries. ODOT holds mineral rights at quarries for the construction and maintenance of public infrastructure. The proposed action is not compatible with the existing designated asset.

Please Click on the following link to view the full Comment Details

Oregon
Tina Kotek, Governor

Department of Transportation
Delivery and Operations
Geotechnical Engineering, Engineering Geology, & Hazardous Materials Section
4040 Fairview Industrial Drive SE, MS 6
Salem, OR, 97302
Phone: (503) 428-1344

Date: May 29, 2024

To: Oregon Department of Energy

From: Susan C. Ortiz, P.E., G.E.
Susan C. Ortiz, P.E., G.E.
State Geotechnical Engineer

Subject: **ODOE Boardman to Hemingway (B2H) Transmission Line, Amendment 2 for Site Certificate**

This letter is in response to the Oregon Department of Energy's (ODOE) April 16, 2024 notice requesting comments with the proposed expanded boundary for the project. The following comments identify sites where the project conflicts with Oregon Department of Transportation's (ODOT) planned and current use of existing quarries. ODOT holds mineral rights at quarries for the construction and maintenance of public infrastructure.

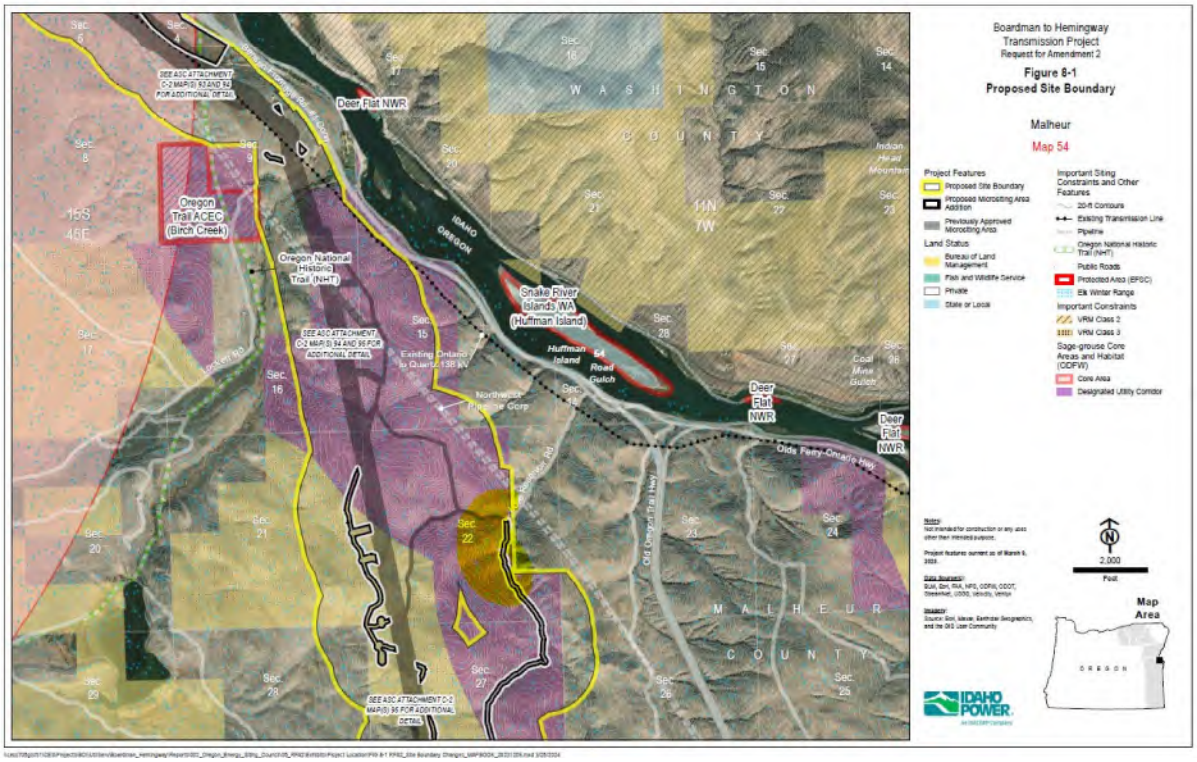
ODOT depends on these quarries to provide aggregate for the construction and maintenance of Oregon's highway system for products such as sanding rock used for winter maintenance, asphalt, embankments, and riprap for use such as protecting our bridges from scour, and unstable slope mitigation. The quarries impacted by B2H are located in aggregate challenged locations, meaning there are few sources, and the haul to a project site can be quite lengthy. A lengthy haul results in an adverse effect or increase to ODOT's overall carbon footprint and a significant cost increase to the agency. These sites are hard rock sites which require blasting to extract rock, followed by crushing to produce the required material. Thus, constructing foundations to support large transmission towers on and in the quarry likely creates a non-compatible use of ODOT's resources in an already scarce aggregate environment.

The ODOT Statewide Material Source Program manages a network of quarries across the state and by highway corridor to provide aggregate resources for construction and

maintenance activities. Furthermore, this network of quarries ensures bidding competition on our projects thus preventing monopolies and balances market prices of aggregate. The ODOT Materials Source Program exemplifies stewardship for providing a long-term product for the exclusive use of public infrastructure and management of an irreplaceable natural resource. As such we have identified sites which are proposed to be impacted by the B2H project amendment, and are listed below:

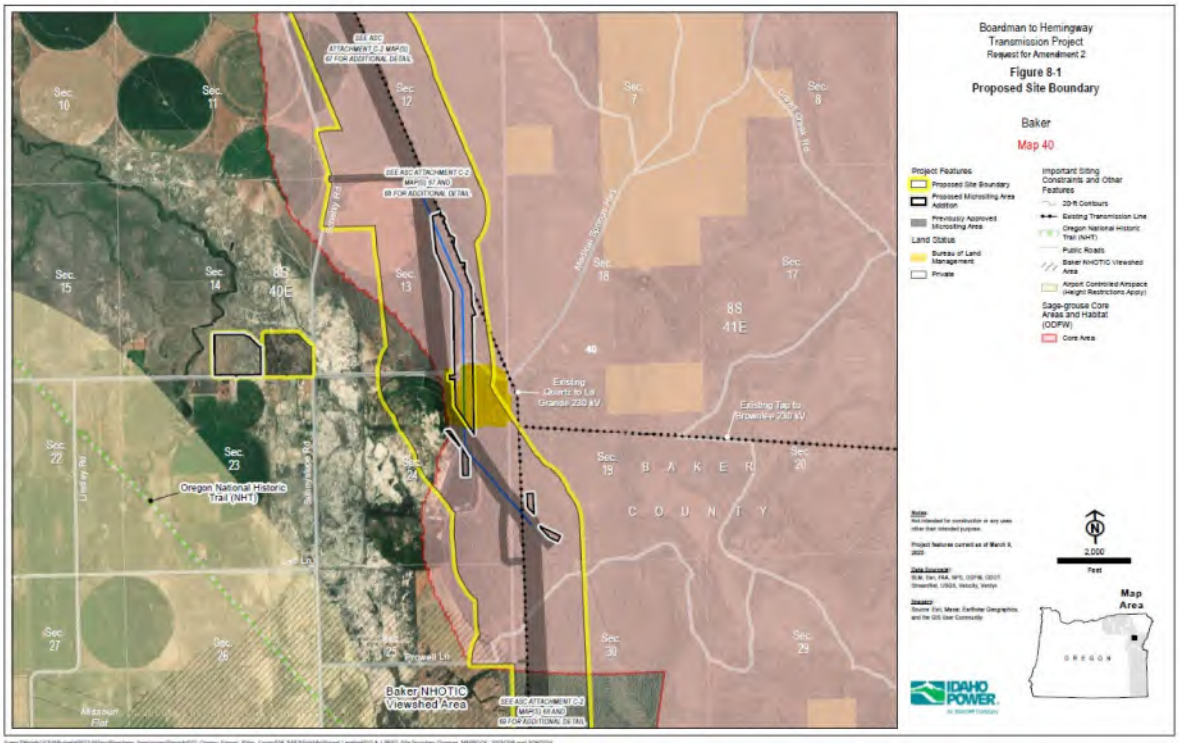
Love Reservoir Quarry;

- Location: T15S R45E, E ½ S22, Baker County
- Document where the overlap occurs: MAP 54 included below
- Owned by: BLM & ODOT
- ODOT Controlled through Deed of Mineral ROW #031973
- Affected area: 70 Acres
- Coincident access: 50’ haul road easement (3 Acres) to I84
- Provides aggregate for construction and maintenance for I84



Baldock Slough East Quarry:

- Location: T8S R40E NE1/4 NE ¼ S24 (Tax Lot 200), Baker County
- Document where the overlap occurs: MAP 40
- Owned by: ODOT
- Affected area: 41 Acres
- Currently funded for use
- Shows a full take of the entire quarry parcel
- Coincident access: the only source on OR203 with access to I84
- Provides aggregate for construction and maintenance for I84 and OR203





Amendment 2 is also proposing to expand the site boundary very close to the following ODOT material source.

South Adrian Quarry:

- Location: T21S R46E NW ¼ NE ¼ S27 and
  T21S R46E SW ¼ SE ¼ S22
- Owned by: ODOT
- Affected area: 60 Acres
- Provides aggregate for construction and maintenance for OR201
- This is an active, permitted quarry by Department of Geology and Mineral Industries (DOGAMI)
- Potential impacts to development through utility coordination process.

These impacts are in addition to the permanent impacts of the original siting order and amendment 1. Permanent impacts to the Pine Tree Creek Ridge and Durbin Creek quarries are being actively discussed with Idaho Power and the BLM.

ODOT appreciates the opportunity to comment on the proposed amendment 2 actions. We look forward to building on our strong partnership with ODOE, BLM, and Idaho Power to seek mutually beneficial solutions for the citizens of Oregon.

Facts -

- The B2H line is illegal. By law it needs to be built in the energy corridor. Both Idaho Power and O.D.O.E. know this and continue anyway.
- Idaho Power has no need or fire prevention plan in place. This can not continue,
- This additional land grab can not go forward.
- I was kicked out early of the ODOE contested case and my concerns were never heard.
- I ask Greg Smith to please look into this fiasco.
- EFSC should not approve Amendment 2.
- No one from Idaho Power has talked to me. I have not seen a map.

John H. Luciani

John H. Luciani
Luciani Ranch
27633 Butter Creek Road
Echo, Or. 97826
541-379-4220