Multimodal System Inventory for Metropolitan Areas

Statewide Technical Advisory Committee Meeting #3

July 21, 2025

2:00 pm – 4:00 pm

Oregon Department of Transportation

Agenda

1. Welcome: Add your name and role in the chat
2. Project purpose, scope, and recent activities
3. Pilot dataset progress and demo
4. QA / QC process
5. Long-term data management and maintenance
6. Next Steps

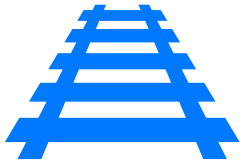
What is the Multimodal Inventory Project?

A collaborative effort to produce a multimodal dataset that supports local planning needs, aligns with the updated TPR and can be maintained over the long-term.

Project Outcomes

Standarized, multimodal datasets to comply with the updated TPR *(Geometry & Attributes)*

Methodologies for Data Collection, Processing, and QA/QC



Long-Term Data Management and Maintenance Framework

Role of STAC

Discuss and provide feedback on topics such as:

- Consistency between jurisdictions
- Maintenance implications
- Data standards and compatibility with existing systems
- How the data can support other uses

Role of STAC

- Discuss the process with your agency and bring feedback to these meetings.
- Help ODOT identify critical voices in your organization:
  - GIS staff
  - Planners
  - Public works / asset managers
- Timeframe for comments – generally two weeks but flexible

Today, we want your thoughts on…

1. QA / QC
   - **Have we identified the correct QA / QC steps?**
   - **What is your jurisdiction's capacity / interest in reviewing data?**
2. Long-term data management and maintenance
   - **Have we identified the correct elements to include in the long-term data management plan?**
   - **What questions do you hope to discuss at future meetings?**

Project Updates

STAC #2 Recap

- TM#2 Agency Coordination
- TM#3 Data Gap Analysis
- TM#5 Data Sources and Collection Methodologies
- Long-Term Data Management & Maintenance Working Group

Project Updates

- **2024 Pilot group updates:**
  - Ashland, Albany, Beaverton, Millersburg, Salem, Keizer
  - Draft data setup complete (without intersection data)
  - QA / QC underway

Project Updates

2025 Cohort:

- Scheduling kick off calls
- Jurisdiction gap analysis
- Processing data

Bend
Clackamas County (Metro)
Coburg
Deschutes County (Bend)
Eagle Point
Forest Grove
Gold Hill
Hillsboro
Jackson County
Jacksonville
Medford
Multnomah County (Metro)
Phoenix
Portland
Sherwood
Springfield
Tualatin
Washington County (Metro)
Wilsonville

Project Updates

- Held **MISC Meeting #3**
- **STAC Breakout Group** convened to identify topics & preliminary recommendations on long-term management
  - Support for ODOT role in hosting data
  - Streamline QA/QC (regional or centralized mediator can help)
  - Discussion needed on agency capacity, maintenance workloads, approach to data integration at local level

Project Updates

Vendor Data

- Batch 2 (2025 – 2026 cohorts) data coming mid-July
- Intersection point data being developed

Technical Solutions

- Sidewalk segmentation
- AADT Source
- Crossing Distances

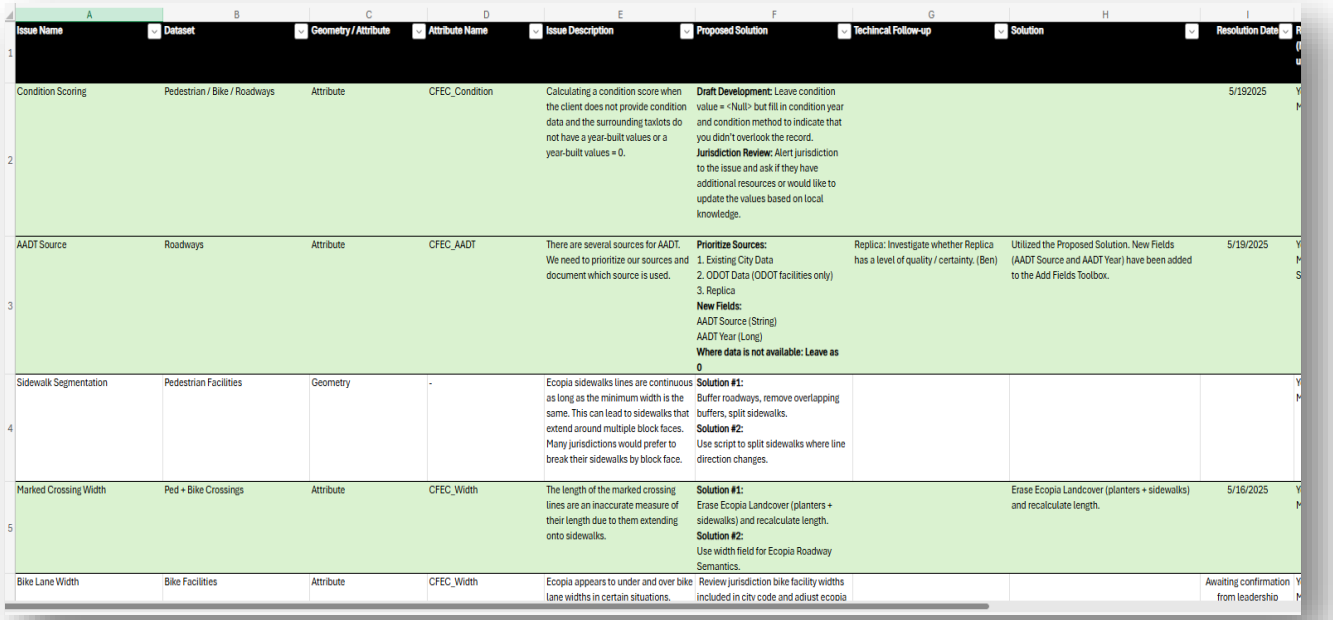
QA / QC

- Process
- Documentation

Pilot Data Demo & Lessons Learned

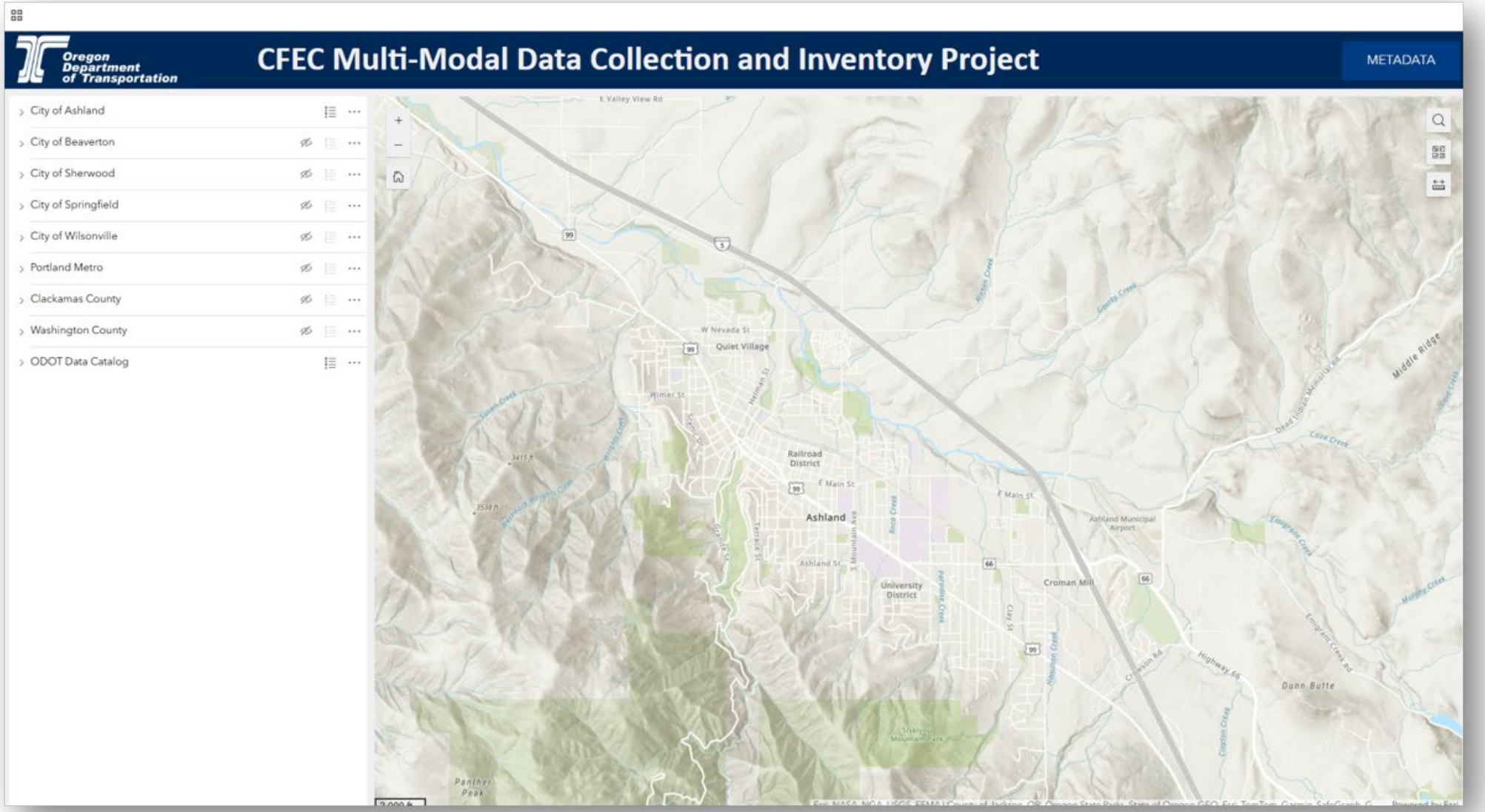
Resolving Issues

- Crossing Distances
- Sidewalk Segmentation
- Condition Scoring
- AADT Source
- # of Lanes
- Splitting Metro Jurisdictions
- ….



Issue Name	Dataset	Geometry / Attribute	Attribute Name	Issue Description	Proposed Solution	Techincal Follow-up	Solution	Resolution Date
Condition Scoring	Pedestrian / Bike / Roadways	Attribute	CFEC_Condition	Calculating a condition score when the client does not provide condition data and the surrounding taxlots do not have a year-built values or a year-built values = 0.	**Draft Development:** Leave condition value = <Null> but fill in condition year and condition method to indicate that you didn't overlook the record. **Jurisdiction Review:** Alert jurisdiction to the issue and ask if they have additional resources or would like to update the values based on local knowledge.			5/192025
AADT Source	Roadways	Attribute	CFEC_AADT	There are several sources for AADT. We need to prioritize our sources and document which source is used.	**Prioritize Sources:** 1. Existing City Data 2. ODOT Data (ODOT facilities only) 3. Replica **New Fields:** AADT Source (String) AADT Year (Long) **Where data is not available: Leave as 0**	Replica: Investigate whether Replica has a level of quality / certainty. (Ben)	Utilized the Proposed Solution. New Fields (AADT Source and AADT Year) have been added to the Add Fields Toolbox.	5/19/2025
Sidewalk Segmentation	Pedestrian Facilities	Geometry	-	Ecopia sidewalks lines are continuous as long as the minimum width is the same. This can lead to sidewalks that extend around multiple block faces. Many jurisdictions would prefer to break their sidewalks by block face.	**Solution #1:** Buffer roadways, remove overlapping buffers, split sidewalks. **Solution #2:** Use script to split sidewalks where line direction changes.			
Marked Crossing Width	Ped + Bike Crossings	Attribute	CFEC_Width	The length of the marked crossing lines are an inaccurate measure of their length due to them extending onto sidewalks.	**Solution #1:** Erase Ecopia Landcover (planters + sidewalks) and recalculate length. **Solution #2:** Use width field for Ecopia Roadway Semantics.		Erase Ecopia Landcover (planters + sidewalks) and recalculate length.	5/16/2025
Bike Lane Width	Bike Facilities	Attribute	CFEC_Width	Ecopia appears to under and over bike lane widths in certain situations.	Review jurisdiction bike facility widths included in city code and adjust ecopia			Awaiting confirmation from leadership

Live Demo


Oregon Department of Transportation
CFEC Multi-Modal Data Collection and Inventory Project
METADATA
City of Ashland
City of Beaverton
City of Sherwood
City of Springfield
City of Wilsonville
Portland Metro
Clackamas County
Washington County
ODOT Data Catalog
Ashland
Quiet Village
Railroad District
University District
Croman Mill
Ashland Municipal Airport
Dunn Butte
Middle Ridge
Panther Peak

Live Demo Questions / Discussion

Questions?

QA / QC Procedures

Project Dataset Accuracy

Intended Purposes

- **Support Transportation System Planning**
- Support other planning practices

Spatial Accuracy

- Spatially complete to the best of our knowledge / resources
- Resource grade accuracy (not survey grade)

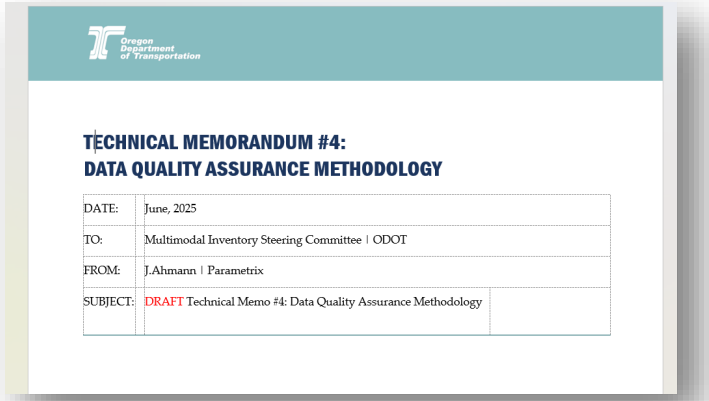
Attribute Accuracy

- Attribute accuracy varies by source
- Documentation will identify attributes with lower levels of accuracy

QA / QC Overview & Requirements

Develop QA / QC Measures for Geometry, Attributes, and Metadata

Complete jurisdiction review meetings


Oregon Department of Transportation

TECHNICAL MEMORANDUM #4:
DATA QUALITY ASSURANCE METHODOLOGY

DATE:	June, 2025
TO:	Multimodal Inventory Steering Committee | ODOT
FROM:	J.Ahmann | Parametrix
SUBJECT:	DRAFT Technical Memo #4: Data Quality Assurance Methodology

QA / QC Memo #4

Verify 1-5% of AI-developed records for spatial and attribute accuracy *(only applies to data added to project datasets)*

Develop and populate QA / QC forms

Quality Assurance Measures

IDENTIFY REQUIREMENTS

ATTACHMENT A: DATA ATTRIBUTES LIST

DATE: November 22, 2024

TO: Project Record

FROM: Multimodal Inventory Consultant Team

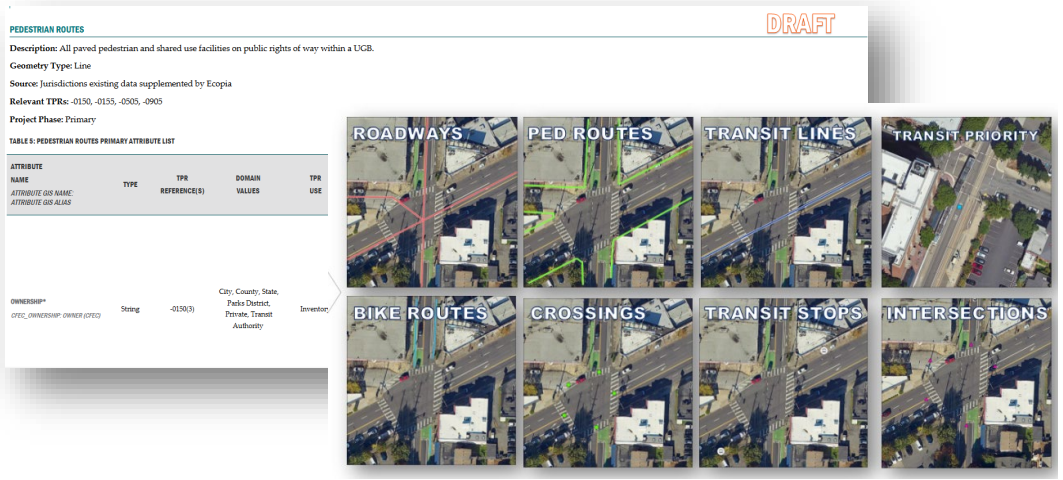
SUBJECT: ODOT Multimodal Inventory – Data Attribute List

INTRODUCTION

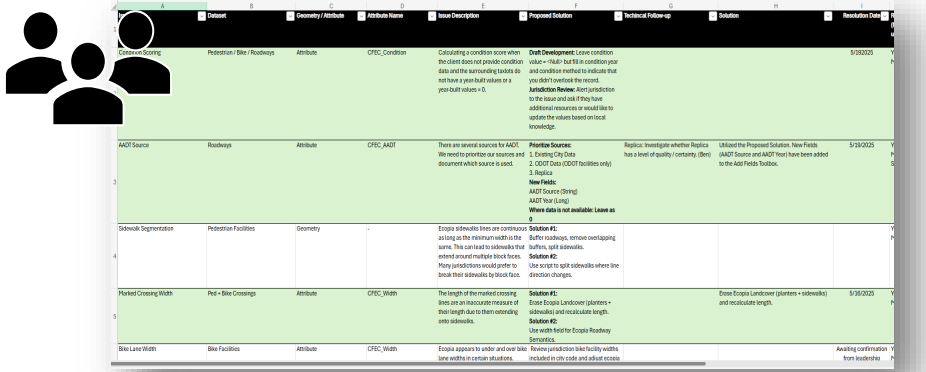
This memo describes the proposed GIS-based data layers and associated attributes for the Oregon Department of Transportation (ODOT) Multimodal Inventory project. The remainder of this memo is divided by map layer. Within each subsection the layer is defined along with the associated attributes required to comply with the *Climate-Friendly and Equitable Communities* (CFEC) analysis effort.

GEODATABASE & TOOL DEVELOPMENT

DEVELOP STANDARDS



TRAINING & COLLABORATION



Quality Control Process

REVIEW PLATFORM

Desktop

Web Map

STEP	QA #1	QA #2	QA #3 Jurisdiction Review Call
PLATFORM			
RESPONSIBLE PARTY	*Consultant Team / ODOT*	*Jurisdiction*	*Consultant Team / Jurisdiction*

Project Team
QA / QC Geometry & Attribute Measures

Develop QA / QC Measures for Geometry, Attributes, and Metadata

Verify 1-5% of AI-developed records for spatial and attribute accuracy *(only applies to data added to project datasets)*

Stage 1: During Development

- *Review data as it is added to each dataset*
- *Review each attribute as it is calculated*

Stage 2: Following Completion of Draft Dataset

- *Final visual review (emphasis on new data)*
- *Final review for accuracy and completeness*

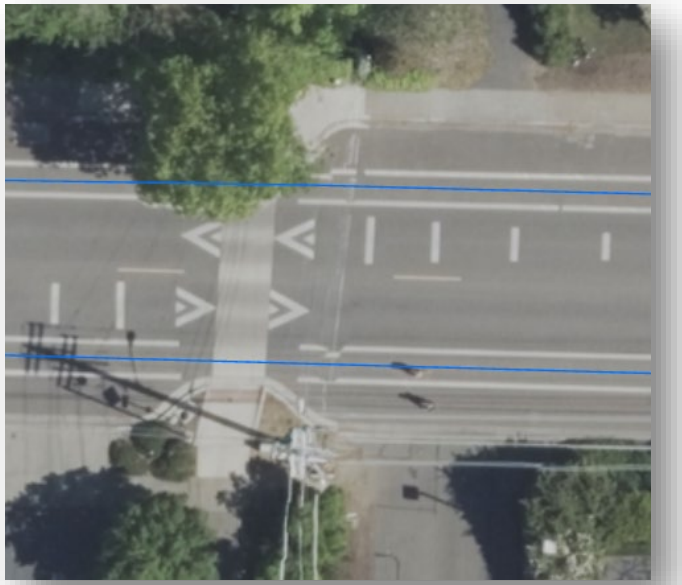
Project Team
QA / QC Geometry

Omissions

due to canopy or obstructions

Location

Relative to the facility



Coverage

Relative to the City Limits / UGB

Project Team
QA / QC Attributes

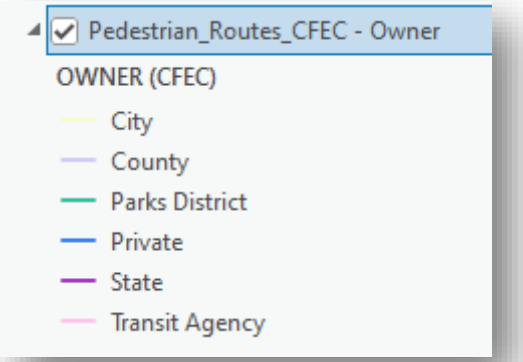
Values

Do the values comply with standards?

OWNERSHIP* *CFEC_OWNERSHIP: OWNER (CFEC)*	String	-0150(3)	City, County, State, Parks District, Private, Transit Authority

Accuracy

Are the values accurate?



Completeness

Null values

OWNER (CFEC)	MAINTAINER (CFEC)	PRIMARY USE (CFEC)
City	City	Local
City	City	Local
City	City	Local
City	City	Local
City	City	Local
City	City	Local
City	City	Local
City	City	Local
City	City	Local
City	City	Local

Jurisdiction
QA / QC – Review Goals*

Spatial Accuracy and Completeness

- Locations of new projects in 2024 and 2025
- Locations of known spatial obstructions including tree canopy or buildings
- Locations with complex geometries or unique facilities

Attribute Accuracy and Completeness

- Spot check attributes
- Focus on attributes developed by the project team

Integration with Existing Data

- Identify potential issues with system integration

*** The amount of review time is up to the jurisdiction.**

Jurisdiction
QA / QC – Schedule

Begin Coordination

Data Inventory and Gap Analysis

Data Processing

Complete Jurisdiction Review

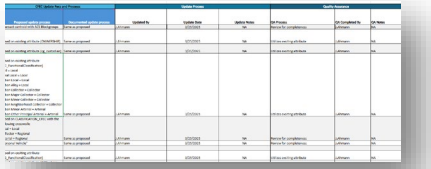
Coordinate Schedule

Coordinate Level of Effort

Jurisdiction Review Call

Receive
Jurisdiction Review Package

DRAFT DATA (GDB)*



JURISDICTION SUMMARY SPREADSHEET (EXCEL)

DATASET REVIEW FORM (EXCEL)

*** Web Map link can be provided if reviewer does not have desktop GIS**

Jurisdiction
QA / QC – Reporting

DATASET REVIEW FORM (EXCEL)

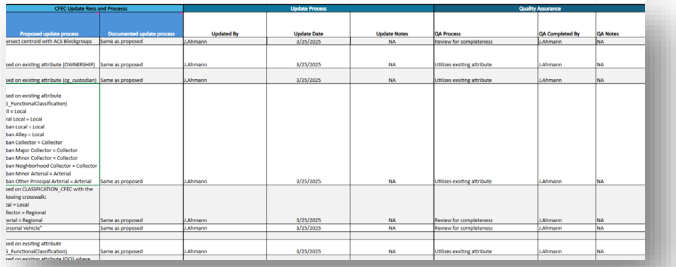
JURISDICTION INFORMATION	
Jurisdiction / Transit Agency Name	Jurisdiction Name
Review Start Date	1/1/2025
Reivew Completion Date	1/1/2025
Review Meeting Date	1/1/2025

Issue #	Reviewer Name	Subject Dataset	Geometry or Attribut	Subject Attribute	Scale	Description	Proposed Solution
1	*Example*	*Roadways*	*Attribute*	*CFEC_OWNER*	*Limited to X facility*	*The ownership for X facility is incorrect.*	*Change ownership to City*

- Document issues by dataset
- Include both geometry and attribute issues
- Embed screenshots or provide a document with screenshot

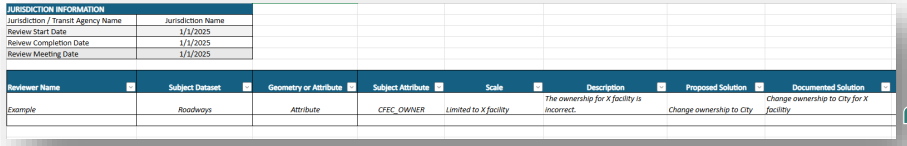
QA / QC Final Documentation

Project Team



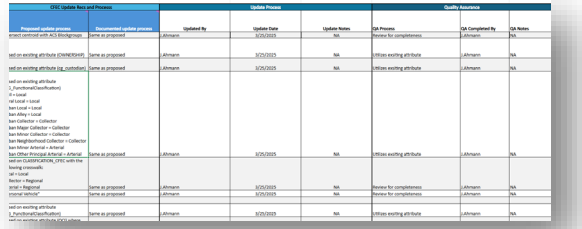
Catalog in Jurisdiction Summary Spreadsheet for each layer and attribute

Jurisdictions



Catalog using the Dataset Review Form and discuss corrections in Data Review Calls

Metadata Deliverable



Cover Letter

We want your thoughts …

- Have we identified the correct QA / QC steps?

- What information or tools will help you be better prepared for your portion of the QA/QC process?

Let’s take a break.

See you in 5.

Long-Term Data Management

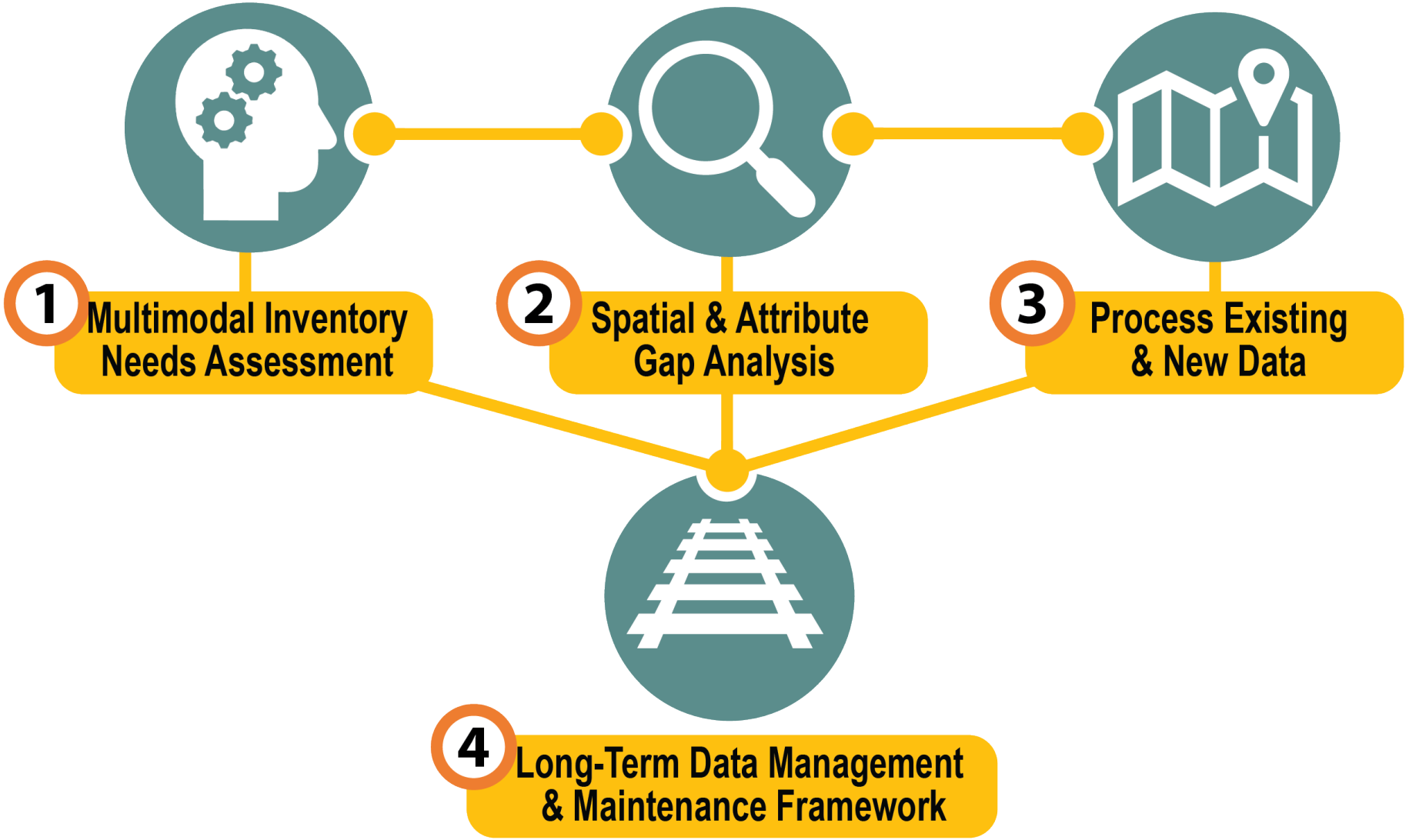
Today, we want your thoughts on…

1. Long-term data management and maintenance
   - **Have we identified the correct elements for the long-term data management plan?**
   - **What is your jurisdiction's capacity to maintain data layers long term?**

Key Questions

- Who owns and maintains project datasets?
- How do we keep the project datasets up-to-date?
- How frequently should project datasets be updated?
- What steps can the project take to support long term data maintenance?
- What roles do ODOT and agency partners fill?

Project Phases



Project Datasets and Sources

VEHICULAR + FREIGHT FACILITIES

- **Roadways**
- **Freight Routes****
- **Freight Terminals****

BICYCLE + PEDESTRIAN FACILITIES

- *Bicycle Routes*
- *Pedestrian Routes*
- *Pedestrian and Bicycle Crossings*

TRANSIT FACILITIES

- Transit Lines**
- Transit Supportive Facilities (Stops)**
- Transit Priority Infrastructure**

OTHER RELEVANT DATA

- Key Destinations*
- Crashes**
- *Intersection Points*

Bold = Update existing jurisdiction data
Italic = Develop using AI
* = Jurisdictions to populate during TSP
** = Processed by Project Team

Long-term maintenance - Considerations

- **Update frequency**

  How often are datasets updated?

- **Redundancy**

  We want to avoid having redundant datasts.

- **Level of Effort**

  How much effort will it require to keep datasets updated compared to now?

- **Additional Uses**

  How will ownership and maintenance affect other uses of the data beyond TSPs / CFEC?

Long-term maintenance – Role / Outline

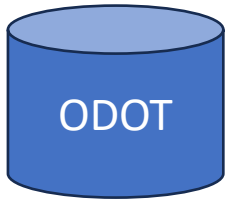
1. Describe the long-term plan development process
2. Data ownership, management, and distribution responsibilities
3. Data update schedule, processes, and resources
4. Post-project support

Dataset Ownership, Management, and Distribution

1. Who owns and maintains datasets?
2. How is data conflated at the statewide level?
3. How are datasets distributed to jurisdictions, ODOT, and the public?

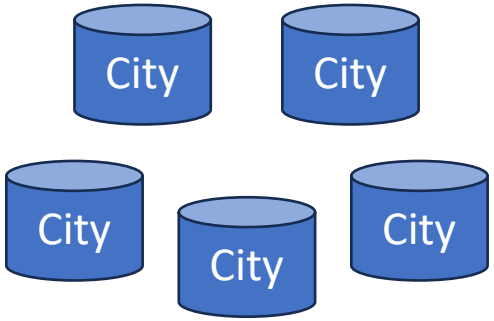
Dataset Ownership, Management, and Distribution

Who owns, maintains, and distributes data layers?



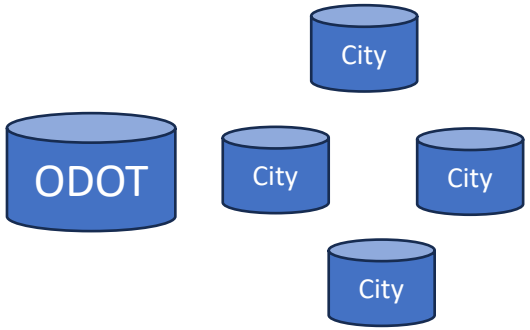
Centralized

Data is owned and maintained by ODOT.



Distributed (Decentralized)

Data is owned and maintained by jurisdictions / counties / MPOs / COGs



Hybrid

Ownership and maintenance are split between ODOT and jurisdictions based on update frequency and local usage.

Long-term maintenance – Ownership, Mangement, and Distribution

Status quo scenario:

JURISDICTIONS

- Roadways
- Pedestrian Facilities
- Bike Facilities
- Pedestrian & Bike Crossings
- Key Destinations
- Intersection Points

ODOT

- Freight Routes
- Freight Terminals
- Transit Lines
- Transit Stops
- Transit Priority Infrastructure
- Crashes

BENEFITS

- Local ownership of frequenty used datasets
- Reduces redundant datasts
- Enables local owners to use authoritative data for other purposes
- Distributes the level of effort
- Maintains the ability to create “point in time” statewide datasets

Data Update Schedule, Processes, and Resources

1. How will updates occur? What level of effort is expected?
2. How often should data layers be updated?
3. How will ODOT receive data updates?
4. What resources will be provided to support updates?

Post Project Support

1. How will jurisdictions be supported once the project is complete? (technical and planning)
2. Who will lead the charge following completion of the project?

Long Term Maintenance Plan – Draft Outline

1. Summarize the long-term plan development process
2. Define data ownership, management, and distribution responsibilities
3. Establish desired data update schedule, processes, and resources
4. Recommend supportive actions needed for long-term success

Are these the correct elements? Are we missing any key topics?

Next Steps

Project Schedule:

- Virtual Briefing #2: Thursday, July 24th, 1-2 pm
- 2024 Cohort Data Delivery: Mid-Summer (targeting end of July / early August)
- 2025 Cohort: Currently processing data, expect data delivery late 2025
- Tech Memo #4 on QA/QC: Will provide for review after the meeting (2 week window for comments)