Historic Columbia River Highway Congestion and Transportation Safety Improvement Plan
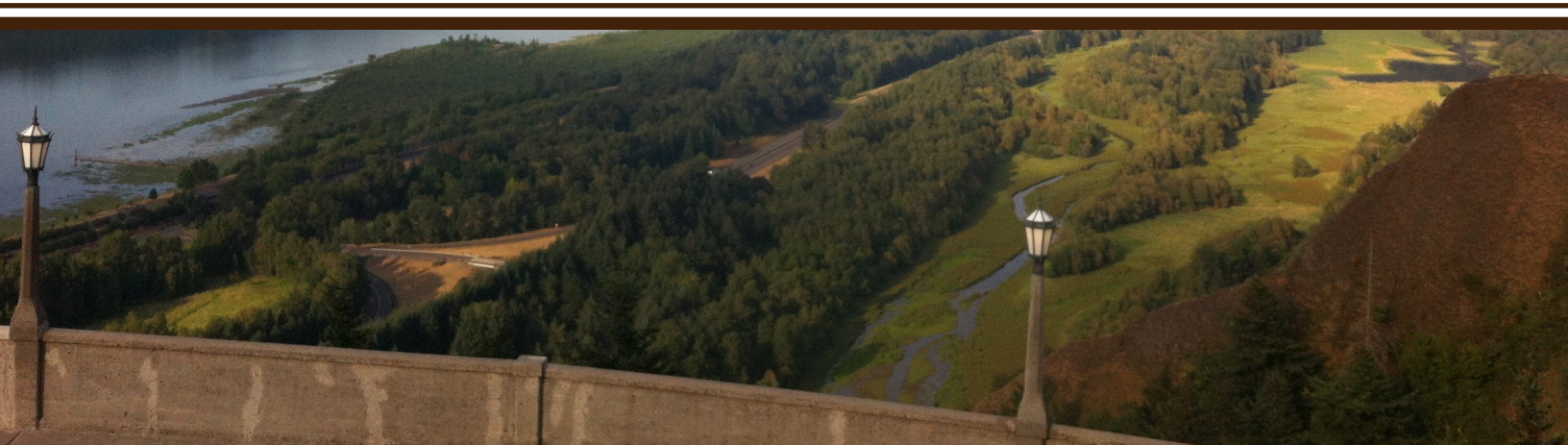
FINAL June 2019

Congestion and Transportation Safety Improvement Plan

The Historic Columbia River Highway Congestion and Transportation Safety Improvement Plan and supporting materials can be found on the project website: https://www.oregon.gov/ODOT/projects/pages/project-details.aspx?project=HHCP

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EXECUTIVE SUMMARY May 2019

Introduction

The Historic Columbia River Highway (Historic Highway) is a National Historic Landmark, National Scenic Byway, and heavily used corridor along the western end of the Columbia River Gorge in Oregon. Built between 1913 and 1922, the Historic Highway is a narrow, winding roadway that provides access to the area's most spectacular sights. It attracts millions of tourists and recreation users each year, while also providing key connections for people who live in the area. The study area for this Plan is Portland Women's Forum at the western end to Exit 35 at the eastern end where the Historic Highway meets I-84 (milepost 8.4 - 21.7).

In recent years, vehicle traffic along the Historic Highway has grown nearly 50 percent, and on peak days, heavy local and recreational vehicle traffic lead to congestion and safety concerns for all users. The narrow roadway space is often constrained due to illegal shoulder parking, large vehicles, and challenging sightlines.

These conditions prompted the Oregon Department of Transportation (ODOT), Oregon Parks and Recreation Department (OPRD), the United States Forest Service (USFS), the Federal Highway Administration (FHWA), and Multnomah County to develop a shared vision for the corridor and an actionable plan for maintaining access to the Gorge, while reducing congestion, improving safety, and fostering a better experience for all users.

Vision

Preserve the historic and scenic integrity of the Historic Highway by reducing roadway congestion and improving safety throughout the corridor by:

- *Creating a plan to improve safety, reduce vehicular congestion, and enhance user experience in the Historic Highway corridor for all transportation modes.*

- *Understanding existing conditions by creating a baseline from which to measure improvements/solutions.*

- *Understanding the policy and regulatory environment and potential implications for congestion mitigation and safety projects.*

- *Developing adaptive management strategies that meet the project objectives.*

- *Enhancing coordination between affected agencies and communities to implement congestion and safety projects.*

- *Recognizing that the Eagle Creek Fire has had a major impact on the area and will likely affect conditions along the Historic Highway for some time.*

Figure ES.1. Study Area
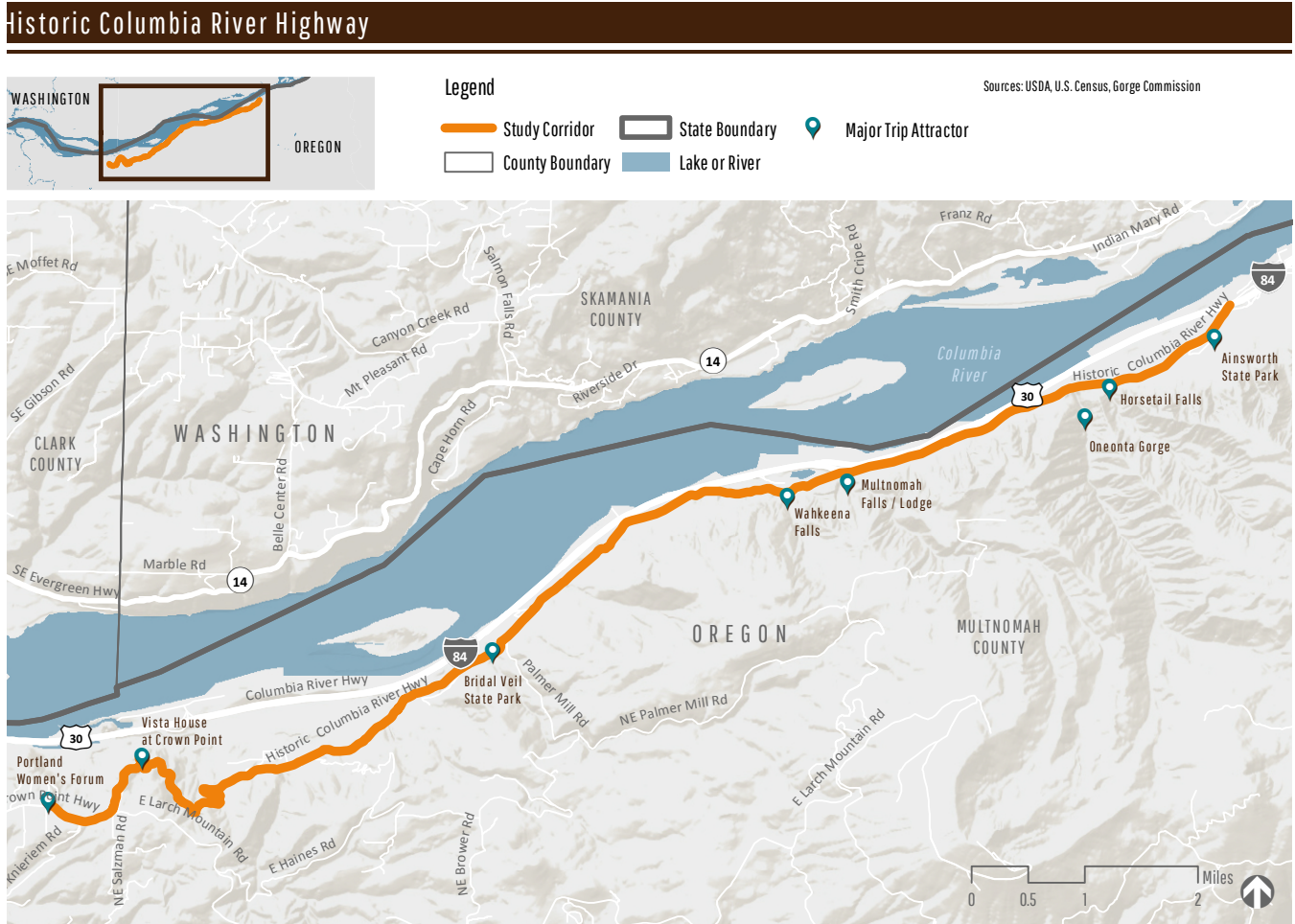
Key Issues

The Historic Columbia River Highway Transportation and Safety Improvement Plan responds to a set of key issues identified through agency, stakeholder, and broad public engagement:

- **Future Growth and Longer High Seasons:** Growing population and interest in the Columbia River Gorge has led to a 50 percent increase in traffic volume in the last 5 years, and this trend will continue.

- **Bicycle Access and Safety:** Bicyclists share an already constrained roadway with vehicles, narrow shoulders, spillover parking, concrete gutters, and idling vehicles.

- **Pedestrians Crossing the Historic Highway Causing Vehicle Delays:** Pedestrian crossings on the Historic Highway at Multnomah Falls are very high, with over 1,000 crossings per hour. Pedestrians cross the roadway at other locations as well.

- **Congestion Back-Ups Related to Parking Behavior:** Parking demand frequently exceeds supply in much of the corridor, leading to traffic back-ups for people waiting or looking for parking. Illegal parking along the Historic Highway delays vehicles on the roadway, and impacts access for people who live in the area.

- **Existing Transit Service Unable to Keep up With Demand:** The Columbia Gorge Express (CGE) pilot program ridership (along I-84) continues to exceed expectations, indicating potential demand for transit service in the corridor.

- **Large Vehicle Safety and Delay Issues:** The narrow roadway is a challenge to large vehicles due to tight curves, limited shoulder space and passing ability, which causes delays and congestion.

- **Impacts on the Environment and Settings:** Improvements to the Historic Highway must protect and enhance scenic, cultural, natural, and recreation resources.

- **Negative User Experience:** A 2015 Travel Oregon survey identified congestion and a lack of parking at popular recreation locations along the highway as a barrier to visiting the Gorge.

Solutions for the Future

The Plan's implementation strategies and actions are listed below. The project team considered the plan goals to develop and evaluate different combinations of safety and congestion mitigation strategies. The evaluation revealed opportunities and tradeoffs (Appendix D). The evaluation findings, supplemented with feedback from the public, the Project Leadership Team (PLT), agency staff, and project stakeholders informed the recommendations. There are three timeframes for project recommendations:

- **Short-term recommendations** are targeted for implementation in 1 to 2 years. These recommendations include strategies that would have immediate impacts with simpler start-up tasks, but that would also set the stage to implement other recommendations.

- **Medium-term recommendations** are targeted for implementation in 3 to 5 years. These recommendations represent more complex strategies that could take longer to implement due to a need for interagency coordination, funding identification, contracting or other start-up tasks.

- **Long-term recommendations** are targeted for implementation in 5 or more years. These recommendations meet Plan goals and could improve congestion and user experience but may be more costly or complex to implement.

Table ES.1. Recommendations Summary

Recommendation	Timeframe	Priority	Agency(s) Responsible
Short-Term Implementation Strategies			
Traffic /parking lot cameras and tube counter on roadway segments	Short	Medium	ODOT, USFS, OPRD
Origin-destination data	Short	Low	ODOT
Traffic (flagger) team at Multnomah Falls	Short	High	To be determined
Establish a forum for agency partners to collaborate on major issues	Short	High	ODOT, USFS, FHWA-WFLHD, OPRD, Multnomah County
Coordination with existing programs	Short	Medium	USFS, ODOT, OPRD, Friends of Gorge/Travel Oregon
Dynamic and variable message signs	Short	High	ODOT
Shoulder or lane delineation	Short	High	ODOT
Parking management	Short	High	ODOT, USFS, OPRD, UPRR

Recommendation	Timeframe	Priority	Agency(s) Responsible
Parking management - enforcement	Short	High	Multnomah County Sheriff's Office, OPRD, USFS
Large Vehicle Restriction	Short	High	ODOT, Multnomah County Sheriff's Office
Reduce Speed Limits	Short	High	ODOT, Multnomah County Sheriff's Office
Satellite Parking for Multnomah Falls at Benson Lake	Short	High	ODOT, OPRD
Develop long-term Columbia Gorge Express (CGE) transit funding and governance strategy	Short	MediumHigh	ODOT; long-term governance/ operating authority to be determined
Medium-Term Implementation Strategies			
Traveler information sharing via connected vehicles	Medium	Medium	ODOT
Historic Highway shuttle service pilot project	Medium	High	To be determined
Signalized crossing at Multnomah Falls crossing	Medium	Medium	ODOT
Install road closure gates	Medium	MediumHigh	ODOT
Expanded park-and-ride facilities and agreements to use satellite lots	Medium	Medium	Local jurisdictions (Corbett, City of Cascade Locks), ODOT, OPRD
Develop strategy for ensuring user safety and traffic flow after Historic Highway Trail is complete	Medium	Medium	ODOT
Long-Term Implementation Strategies			
Vehicle use restrictions - private vehicle restrictions between Bridal Veil Falls and Ainsworth State Park	Long	Medium	To be determined
Visitor information hub outside of corridor	Long	Low	To be determined

The full Historic Columbia River Highway Congestion and Transportation Safety Improvement Plan includes:

- Plan Process
- Needs and Issues
- Implementation and Action Plan
- Outreach Strategy
- Appendices, including intermediate documents that contributed toward Plan development

1. Plan Process

Cutting through the Cascade Mountains and extending from the Portland metropolitan area to just east of The Dalles, the Columbia River Gorge is a spectacular river canyon measuring 85 miles long and 4,000 feet deep. Dividing Oregon and Washington, the Columbia Gorge was created during the Missoula Floods of the last Ice Age. Home to temperate rainforests and dry grasslands, and more than 70 waterfalls, and hundreds of fish, bird, and plant species, the Columbia River Gorge is the largest National Scenic Area (NSA) in the United States, designated in 1986.

The Historic Columbia River Highway winds through the Gorge, providing a scenic route connecting many of the Gorge's most spectacular sights. Owned and maintained by the Oregon Department of Transportation (ODOT), the Historic Highway was designated as a National Historic Landmark in 2000. For more than 100 years, thousands of drivers, cyclists, and hikers have used the Historic Columbia River Highway to access the Gorge's most beautiful and popular destinations.

Built between 1913 and 1922, the Historic Columbia River Highway is a narrow winding roadway. It provides access to rural communities and recreational opportunities for residents, tourists, cyclists, and recreation users. In recent years, however, vehicle traffic along the Historic Highway has grown nearly 50 percent, and on peak days, heavy local and recreational vehicle traffic lead to congestion and safety concerns for both visitors and residents. Vehicles, recreational trailers and campers, cyclists, and pedestrians accessing the area share a congested and narrow roadway space. The Historic Highway's roadway space is further constrained due to illegal parking on its shoulders, leading to difficult sightlines for all users and safety concerns for cyclists on one of the region's popular bike routes. These conditions prompted ODOT and partner agencies, including Oregon Parks and Recreation Department (OPRD), the United State Forest Service (USFS), the Federal Highway Administration, and Multnomah County, to develop a plan for maintaining access to the Gorge, while reducing congestion, improving safety, and fostering a better experience for all residents and visitors.

1.1 Study Area

The study area (Figure 1) for this Congestion and Transportation Safety Improvement Plan is the Historic Highway from the Portland Women's Forum at the western end to Exit 35 at the eastern end, where the Historic Highway connects to Interstate 84. This section of the Gorge is known as the Waterfall Zone due to the high number of waterfalls spilling from basalt cliffs along the historic route. Several visitor attractions are located along this Historic Highway corridor, including the following (from west to east):

- Portland Women's Forum
- Vista House at Crown Point
- Bridal Veil Falls State Scenic Viewpoint
- Wahkeena Falls
- Multnomah Falls Lodge
- Horsetail Falls
- Oneonta Gorge
- Ainsworth State Park

Vista House was the first built attraction on the Historic Highway, opening in 1918 as a memorial to the Oregon Pioneers

Figure 1. Study Area
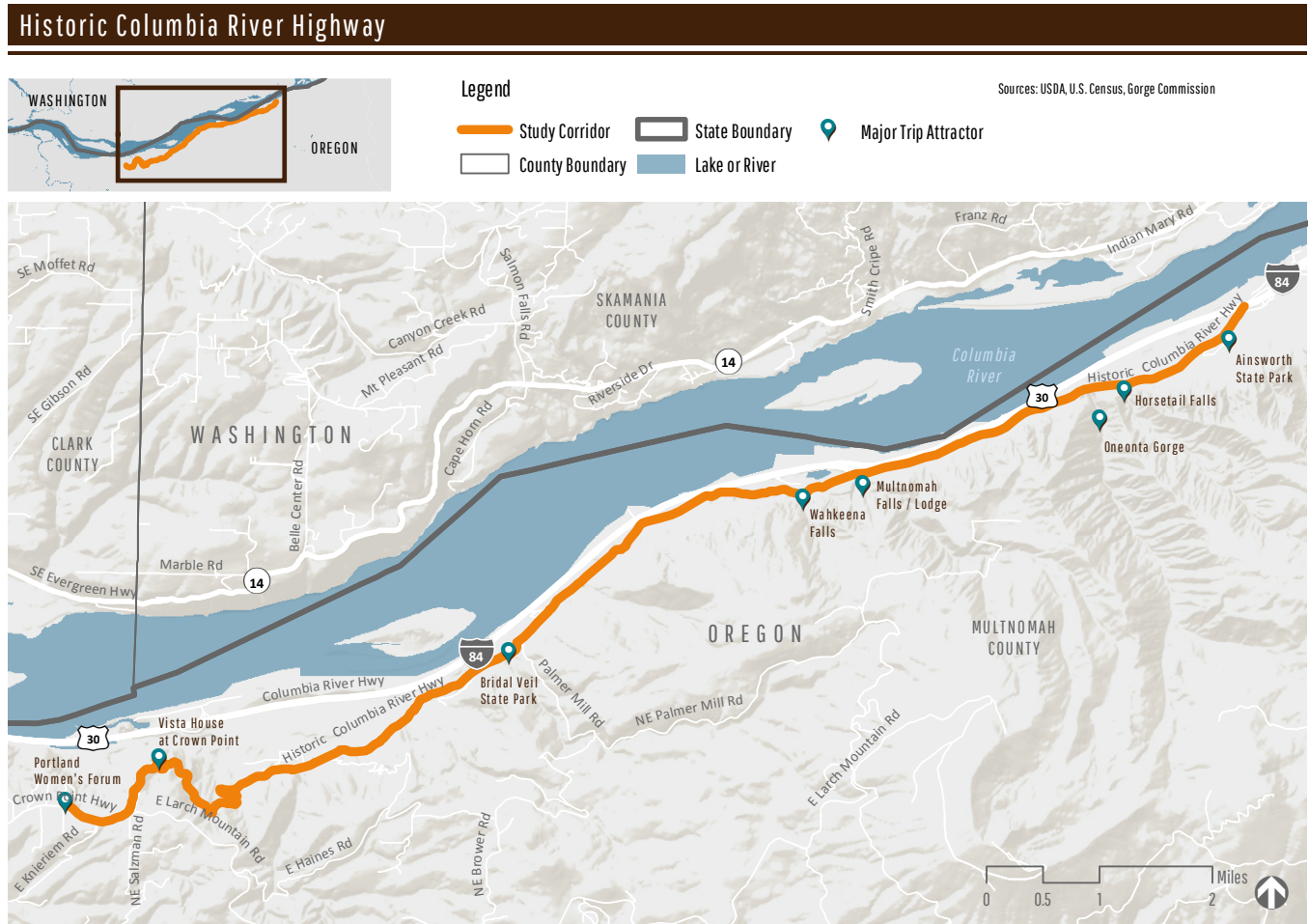
1.2 Plan Goals

Recognizing a need for new congestion mitigation and transportation safety measures, ODOT, U.S. Forest Service, OPRD and Multnomah County, in partnership with Federal Highways Administration Western Federal Lands, Highway Division, came together to develop a plan for improving the user experience throughout the Historic Highway corridor. The Plan aims to preserve the historic and scenic integrity of the Historic Highway, while improving the safety and experience for all people living, accessing, and visiting the area by achieving nine goals:

1. Protecting the scenic, natural, cultural, and recreational features within the Historic Highway corridor.

2. Reducing conflicts between Historic Highway users and reducing excessive delay.

3. Reducing congestion, illegally parked cars, and delayed emergency response and rescue due to parked vehicles and vehicles accessing parking areas.

4. Identifying sustainable funding sources.

5. Enhancing safe and convenient biking and public transportation opportunities that reduce congestion, increase public safety, and enhance user experience.

6. Providing access for legal recreational and scenic enjoyment of natural and cultural resources adjacent to the Historic Highway corridor.

7. Reducing impacts from congestion and parking on the scenic, natural, cultural, and recreational resources.

8. Considering and addressing safety, parking, and congestion impacts on Multnomah County-owned facilities.

9. Developing solutions and scenarios that complement Eagle Creek Fire-related rehabilitation and planning efforts.

1.3 Project Partners and Decision-Making Process

The project partners (Figure 2) worked closely with local stakeholders and the broader public to develop clear and actionable strategies that can reduce congestion and improve vehicle traffic flow and safety for both visitors and residents. A Project Leadership Team (PLT) provided overall project direction and leadership, supported by the Project Management Team (PMT) and Stakeholder Working Groups (SWG), as described below.

The Project Leadership Team included decision-makers from entities with implementation authority in the study area. The PLT was the decision-making body for critical elements of this Plan. The PLT included the following agencies:

- ODOT
- OPRD
- Multnomah County
- USFS

The Project Management Team provided technical and strategic guidance to the consultant team, while also receiving direction from the PLT. The PMT included representatives from the following organizations:

- ODOT
- OPRD
- Multnomah County
- USFS
- Federal Highway Administration Western Federal Lands Highway Division (WFLHD)

Figure 2. Project Decision Structure
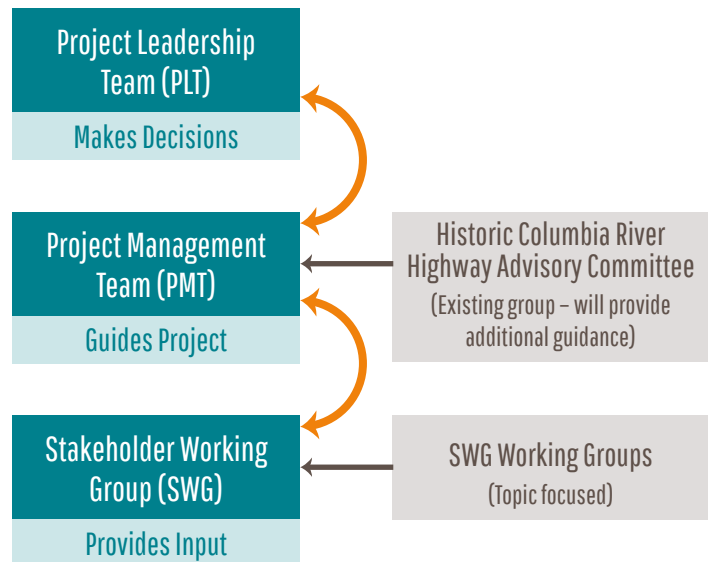
The Stakeholder Working Group was comprised of key Gorge stakeholders that provided on-the-ground input and project guidance for consultant team deliverables to the PMT. The SWG was instrumental in providing insight and guidance to the PMT, who then refined issues to bring to the PLT.

The Historic Columbia River Highway Advisory Committee was involved in the Project by providing guidance to the team on policy matters pertaining to the preservation and restoration of the Historic Highway. The Advisory Committee is an existing group created by the Oregon State Legislature.

1.4 Key Issues and Plan Development

Agency partners first crafted a vision and purpose for the Plan. The vision represented the discussions and agreements between ODOT, Multnomah County, USFS, WFLHD, and OPRD, and reflected public input. Previous public engagement helped shape the Plan vision, which informed Plan goals (Appendix A).

Following the initial vision and goal setting phase, early information gathering for the Plan examined existing conditions by reviewing the policy and regulatory context, recreational trends, vehicle, bicycle, and pedestrian data, transit and parking utilization, and other conditions for the study area. This information was summarized into Technical Memorandum 2 – Existing Conditions (Jacobs, 2018a) and verified by project stakeholders and community members, who also supplemented the findings during outreach events and through online surveys. A major fire occurred in the Gorge in fall 2017, substantially impacting residents, visitors, the Historic Highway, and recreational facilities throughout the study area. The project team worked to integrate implications of the fire and recovery into the planning process.

Community outreach and engagement were critical aspects of this Plan. Ensuring that strategies and actions not only met Plan goals but fit within the area's historic and scenic context required robust public and stakeholder feedback. The project team developed a project website, conducted interviews, hosted two community workshops, held two online open houses, conducted two online surveys, and engaged existing community groups and networks through online formats. The project team used this feedback, in addition to that of the project partners, to define key issues in the Historic Highway corridor, develop a toolkit for addressing those needs, evaluate alternatives, and create a final set of strategies and actions. The following reviews the major steps in the plan process.

1.5 Solution Toolkit

The project team developed a toolkit with potential tools and strategies to address congestion and safety and improve the user experience. The toolkit drew upon national best practices, technical expertise, and examples from other recreational or scenic areas across the country. The project team shared the toolkit with members of the public, agency representatives, and decision-makers for feedback about the feasibility and desirability of proposed solutions. A stakeholder workshop and online and in-person open houses provided feedback on the toolkit and ensured the evaluation criteria reflected the public's priorities.

Figure 3. Plan Process

Congestion Mitigation and Safety Toolkit

Advance tools appropriate to Scenic Area

Scenarios for evaluation

Draft recommendation

Refine Recommendations

Develop Implementation Strategies

Draft and Finalize Action Plan
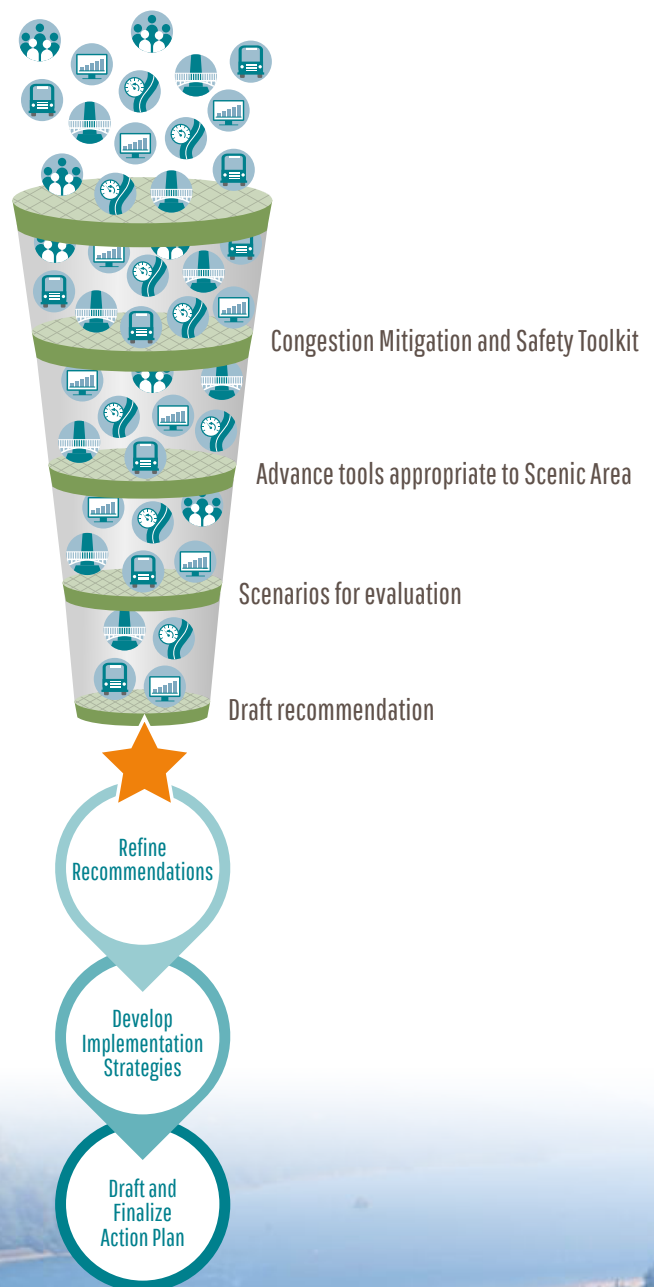
1.6 Criteria and Alternatives Evaluation

1.6.1 Criteria

After identifying the critical issues, the project team developed evaluation criteria to assess how well programs and strategies would achieve Plan goals. The criteria included questions that evaluated the goals, such as "To what extent does the scenario reduce conflicts among roadway users, including vehicles, bicyclists, and pedestrians accessing key areas?" or "To what extent does the scenario expand alternatives to illegal parking when existing lot capacity is fully utilized?" The team developed measures to accompany the criteria. Appendix A provides more detail on the evaluation criteria.

1.6.2 Alternatives Evaluation

Building on consultant expertise and existing guidance documents, the project team extensively reviewed congestion and safety management tools as a first step in developing project alternatives – the "tools," to be included in project scenarios. The consultant team, with input from the project management team, partnering agencies, and participants at the stakeholder workshop, narrowed the set of tools to include in the evaluation of potential alternatives. The project team chose tools most appropriate in addressing key issues for inclusion in the scenario evaluation process.

The team created three scenarios to represent packages of potential solutions with a unique mix of projects, strategies, and programs in each. The scenarios represented different management approaches and were created to evaluate and compare solutions. The criteria include measures that assess the ability of each tool to meet related Plan goals. The evaluation results informed which tools and strategies the project team recommended for implementation. The three scenarios included:

1.6.2.1 Scenario 1 – Continue Present Programs and Policies

Scenario 1 maintained the current programming approach and assumed that all activities and programs that agency partners administer today would continue to operate in the future. These activities and programs include Columbia Gorge Express transit service, I-84/Exit 31 Multnomah Falls control gate access, real-time roadway information, travel information, volunteer parking assistance and information, and multimodal access.

1.6.2.2 Scenario 2 – Focus on Parking Strategies

Scenario 2 focused on addressing safety, congestion, and user frustration generated by delay at parking lots and delays along the roadway from pedestrians crossing the Historic Highway at Multnomah Falls and other high-traffic areas. Scenario 2 considered programs that included traffic control at Multnomah Falls and priced parking for all parking lots within the study area.

1.6.2.3 Scenario 3 – Focus on Transit Strategies

Scenario 3 focused on addressing congestion and safety issues by making operational changes to the roadway, reallocating space within the existing right-of-way, investing in transit improvements, and introducing a circulator shuttle. Strategies that Scenario 3 considered included one-way traffic operations within the Waterfall Zone and a circulator shuttle to transport users between parking areas, trailheads, and other scenic destinations.

1.7 Implementation Strategies and Action Plan

The project team advanced tools and strategies that addressed key issues and that were consistent with project goals and aligned with stakeholder and community preferences into implementation strategies and actions. The strategies and actions went through multiple rounds of review with the project partners and the public before inclusion in this Plan (see Figure 3 and Section 4).

Key near-term recommendations established by the PMT are:

- ST3: Traffic (flagger) team at Multnomah Falls
- ST4: Establish a forum for agency partners to collaborate on major issues
- ST10: Large Vehicle Restriction
- ST11: Reduce Speed Limits
- ST12: Satellite Parking for Multnomah Falls at Benson Lake
- ST13: Develop long-term Columbia Gorge Express (CGE) transit funding and governance strategy
- MT3: Signalized Crossing at Multnomah Falls crossing
- MT4: Install road closure gates

The team also identified specific public engagement efforts to ensure that the implementation strategies and tools the project team chose are properly executed when partners begin the planning and delivery phases. Key engagement tactics include:

- Sharing information: informing interested, impacted, or concerned community members and stakeholders;
- Gather feedback: consult and involve community members and stakeholders to gather feedback to help decision-making;
- Bring people together: gather community members and stakeholders together to work through issues, needs, concerns, opportunities, and ideas to help discuss and develop strategies to respond to and consider a range of views.

2 Needs and Issues

This section provides context and discusses the key issues that emerged during Plan development. The project team evaluated existing and future conditions to both understand Historic Highway corridor issues and provide data and information to support the Plan's implementation strategies and actions.

2.1 The Historic Highway

2.1.1 Roadway Characteristics

The Historic Highway is maintained by ODOT and is classified as a District Highway, with a 60-foot right-of-way that comprises two lanes that are roughly 12 feet wide, including shoulders. Where shoulders exist, their widths vary, with portions measuring just 3 feet in some areas in the study area (Figure 4 illustrates a typical existing cross-section of the Historic Highway). Cyclists share the road with vehicles throughout the Historic Highway, but access is often restricted due to illegal vehicle parking on shoulders, traffic spillover, and concrete drainage gutters. Pedestrians accessing trailheads also share the roadway. While recreational attractions are the primary trip generators along the narrow and winding road, residents living in communities along the Historic Highway use this corridor to meet their daily travel needs.

Figure 4. Typical Historic Highway Cross-Section

shoulder	travel lane	travel lane	shoulder
0-3'	9-12'	9-12'	0-5'
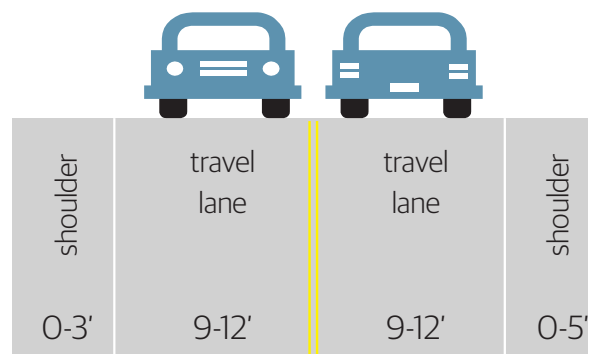
2.1.2 Recreational Context

Millions of people visit the Gorge each year. Recreation and tourism are expected to continue growing as nearby metropolitan area populations expand and the area's popularity increases. National trends also indicate that participating in outdoor recreation activities is growing across most age groups.

In the Pacific Northwest, participation in outdoor activities is higher than in other parts of the country. About half of Oregon and Washington residents participate in outdoor recreation such as walking, picnicking, sightseeing, visiting historic sites, ocean beach activities, day hiking, and observing nature and wildlife. The primary recreation activities in the Gorge are hiking, park day-use, sightseeing at historic sites, and overnight camping.

Though data is lacking, it is possible that the number of visitors to NSA attractions may be exceeding the visitor thresholds for specific Recreational Intensity Classes (Figure 5) as defined in the *Columbia River Gorge National Scenic Area Management Plan* (Columbia River Gorge Commission and USFS, 2011). The USFS and partner agencies are updating the management plan and may clarify or update management expectations for visitor thresholds.

Figure 5. Recreational Intensity Class Designation
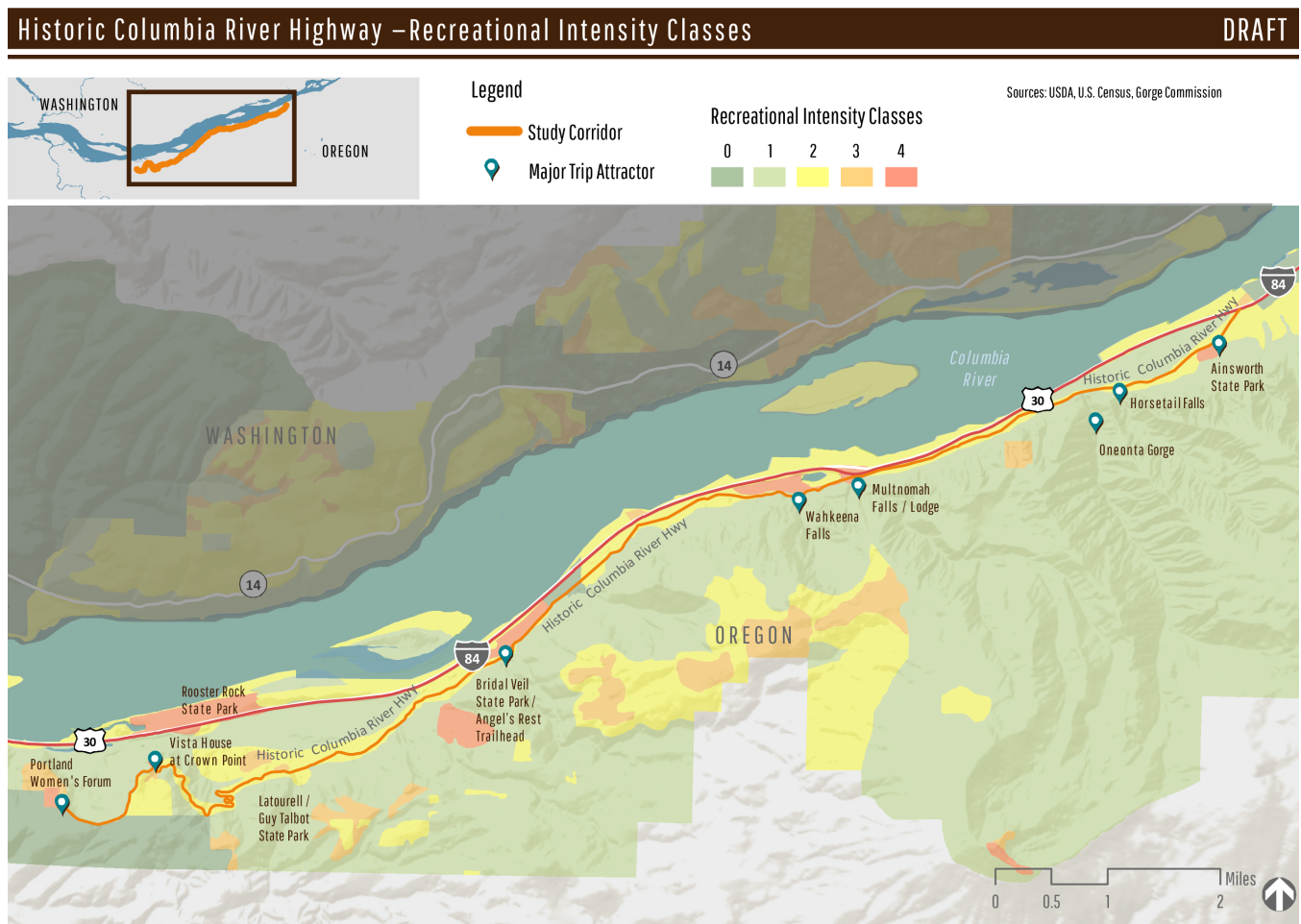
2.1.3 Land Use

Land uses along the Historic Highway corridor are rural in character and minimally developed. Public parks, small-scale residential development, open space, and forested lands are the predominant uses in the area. Adjacent lands located along the study area are primarily owned by the USFS and OPRD, with limited areas owned by private parties in Bridal Veil, Latourell, and other small communities. Figure 6 shows land ownership near the study area.

Figure 6. Study Area Land Ownership
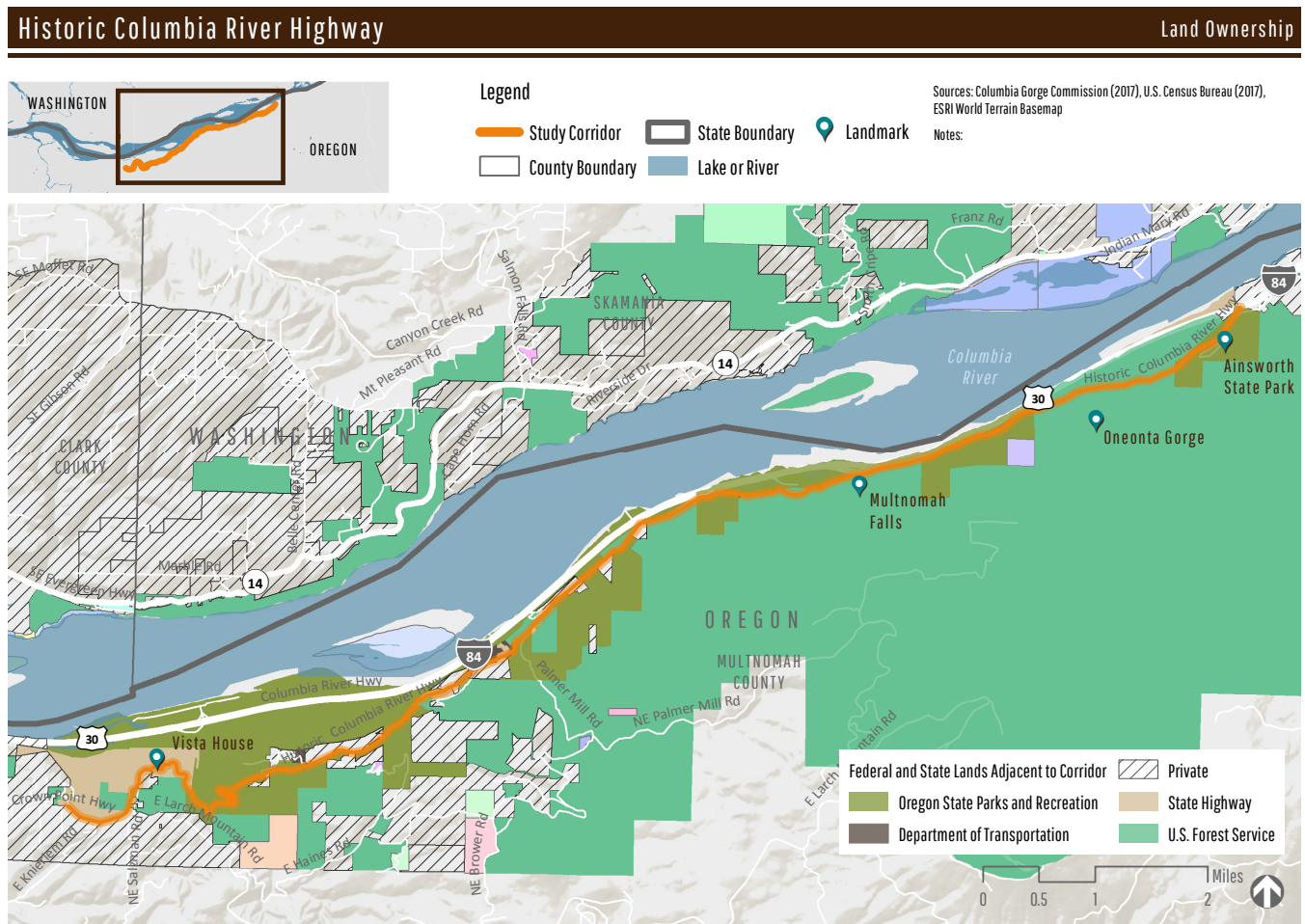
2.2 Key Issues

The existing and future conditions work, along with public and stakeholder feedback, helped define the key issues reviewed in the following sections.

2.2.1 Future Growth and Longer High Seasons

The Portland/Vancouver metropolitan region and Hood River County, at the west and east ends of the Columbia River Gorge NSA, respectively, are forecast to grow substantially by 2040 (Table 1). The Portland/Vancouver metropolitan region (Clark, Multnomah, Washington, and Clackamas Counties) population is estimated to grow by one-third, or 600,000 people.

Table 1. Population Trends in the Study Area

	2015 Population	2040 Population Estimate	Population Change, 2015-2040
Tri-County (Multnomah, Washington, Clackamas)	1,763,300	2,358,000	+33 percent
Multnomah County	790,300	1,069,000	+35 percent
Hood River County	23,700	33,530	+41 percent
Clark County, Washington	459,495	562,207 (2035)	+ 22 percent

Vehicle traffic has grown steadily on I-84 and on the Historic Highway within the Columbia River Gorge NSA. The project team measured traffic trends as follows by automatic traffic recorders located on both facilities:

- Traffic volumes between 2006 and 2010 remained steady, with slight declines in 2011, 2012, and 2013 likely due to the national economic recession.

- Since 2013, traffic on I-84 increased by approximately 6,000 additional vehicles per day west of Multnomah Falls.

- Between 2013 and 2015, traffic on the Historic Highway increased by approximately 250 additional vehicles per day on the Historic Highway (see Figure 7).

Historic vehicle counts show a clear peak in travel demand along the Historic Highway during summer months, with daily traffic volumes three-to-four times higher than winter months, and around twice as high as spring and fall months. For example, in 2015, average daily traffic reached as high as nearly 1,800 vehicles per day during the summer, while winter months had volumes as low as 400 vehicles per day – around a 75 percent decline.

Figure 7. Change in Average Daily Traffic on the Historic Highway (2006-2015)
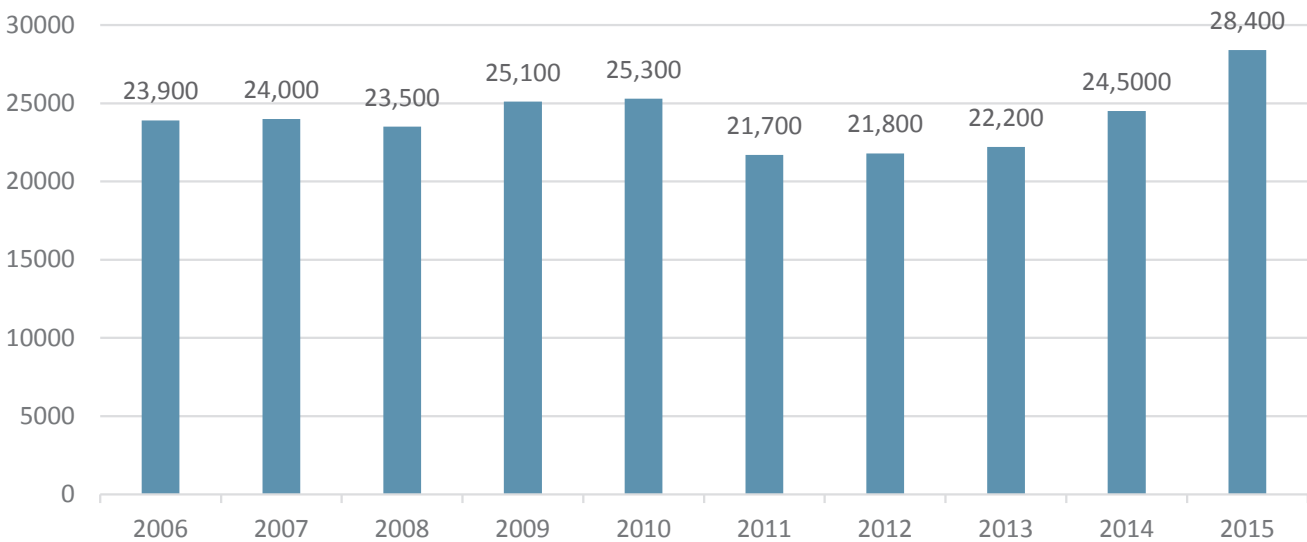
2.2.2 Bicycle Access and Safety

The Historic Highway is a popular route for bicyclists to access Larch Mountain, Cascade Locks, and other tourist destinations. Bicyclists use shoulders where available, but the shoulders are narrow and are often used for spillover or illegal parking. Concrete drainage gutters parallel the road, further restricting shoulder use for people cycling. Pedestrians walking between vehicles and trailheads also share shoulders and roadway where space is limited. In addition, tight curves limit sight distance.

The western portion of the study area corridor, near the Portland Women's Forum, is particularly popular with cyclists riding the Historic Highway, which connects to the Historic Columbia River Highway State Trail. Narrow and disappearing shoulders create conditions where cyclists must share the road with vehicles. During peak congestion, cyclists may have to squeeze by idling cars and navigate around pedestrians also sharing the travel lane to reach their vehicles or trailheads. The Historic Highway State Trail, under construction as of this writing, is likely to increase bike-through traffic in the corridor when complete.

2.2.3 Pedestrians Crossing the Historic Highway Causing Vehicle Delays

Pedestrian crossings of the Historic Highway at Multnomah Falls are very high. Over 1.2 million people are estimated to visit the Falls each year. The following describes activities on a typical summer weekend day, as observed in August 2017:

- Crossing volumes at Multnomah Falls averaged 250 to 400 people per 15 minutes (1,000 to 1,600 per hour).
- Pedestrian volumes along the Multnomah Falls Lodge frontage were around 100 to 150 per hour.
- Large numbers of pedestrians use travel lanes to traverse from vehicles to trailheads, leading to vehicular delays on the roadway and a perception of unsafe conditions for all road users.

The Multnomah Falls site and addressing the interaction between pedestrians and drivers are a particular focus of this Plan. The USFS has also engaged in an effort to understand and address pedestrian circulation issues at the Lodge with a final plan anticipated summer 2019.

2.2.4 Congestion Back-Ups Related to Parking Behavior

In 2016, ODOT conducted a trailhead parking utilization study at popular destinations along the Historic Highway, and in 2017, the ODOT team collected parking data on capacity and utilization at five trailheads and/or visitor destinations along the Waterfall Zone corridor (Figure 8). For both studies, ODOT followed similar data collection methods. The 2017 data reinforced the following findings from the 2016 effort:

- Demand for parking lot spaces regularly exceeds capacity early in the day and lots stay at capacity until late afternoon or early evening with spillover parking highly used during peak periods of the day.
- Weekday parking utilization was lower than on weekends.
- Portland Women's Forum was the only destination that did not regularly exceed parking lot capacity. The site has adequate parking and a shorter average length of stay, which allows for greater parking turnover. As of 2018, OPRD is working to reconfigure parking at this location and may also add a restroom.

Horsetail Falls serves as a prime example of corridor-wide challenges with parking. Like many trailhead lots along the highway during the summer, parking demand at Horsetail Falls regularly exceeds supply. Due to the lot's size and long pull-through area, vehicles regularly wait in the aisle way for a parking space to become available. Occupancies regularly exceed capacity during peak periods. The informal parking spillover area for Horsetail is extensive, extending four-tenths of a mile (or alternately, 0.4 miles) up to Oneonta tunnel on the west and

a quarter mile to the east toward Ainsworth State Park on both sides of the Historic Highway. On weekends, during the peak summer months Horsetail Falls Trailhead parking lot (26 spaces) regularly reaches capacity by approximately 8:30 a.m. The lot maintains or exceeds operating capacity until 6 p.m. (beyond the studies' data collection period). Spillover parking in this area is particularly dangerous, because the highway shoulders are especially narrow and force users to walk in the roadway to the trailhead. Visitors will sometimes illegally park over the fog line to get a parking space.

Figure 8. Vehicle Parking at Popular Attractions

	Portland Women's Forum	Vista House	Parking Lot Spaces/ Spillover Parking Spaces	Latourell Falls	Bridal Veil Falls	Angel's Rest
Parking Lot Spaces/ Spillover Parking Spaces	36/ Undetermined Number of Spaces	63/4		30/65	22/20	19/120
Busiest Time of Day	1 p.m.	2:30 p.m.		1:15 p.m.	12:45 p.m.	12:30 p.m.
Amount of Parking Lot Spaces In Use	47 percent	100 percent		100 percent	100 percent	100 percent
Average Length of Stay for Parked Car	37 min	40 min		48 min	47 min	2 hr 30 min

Due to limited capacity, illegal parking (for example, double parking, stacking) is an issue throughout the Historic Highway corridor. Vehicles often park on shoulders near trailheads, delaying vehicles on the roadway and forcing pedestrians and bicyclists into the travel lane. Residents living along the Historic Highway are affected by congestion and illegal parking, particularly during peak summer months.

2.2.5 Existing Transit Service Unable to Keep up with Demand

Before the Columbia Gorge Express (CGE) was introduced in 2016, no public transit operations served the study area corridor. ODOT introduced the CGE to the corridor due to increasing congestion along the Historic Highway and limited parking capacity at Multnomah Falls. ODOT and project partners conducted the Columbia River Gorge Transit Study between 2015 and 2016 to consider new opportunities to meet regional transportation needs.

The Transit Study's goals were improving transit access to recreational sites, enhancing mobility and safety, addressing congestion and limited parking capacity, and protecting natural and cultural resources through the reduction of illegal parking. The study recommended transit service opportunities for two distinct time frames; (1) a 2-year pilot service program operating during periods of peak annual travel from May through September; and (2) near-term service expansions serving a broader market and additional travel needs during 2018 through 2020. The CGE began operating in 2016 based on the study's findings and is the sole public transit operator serving the recreational sites in the study area. As of 2018, 22 private tour bus operators also operate in the study area corridor.

Cars waiting for a parking spot along the Historic Highway

Photo credit: ODOT

Ridership on CGE exceeded expectations, with approximately 30,000 estimated trips on the service during both the 2016 and 2017 season. Service in 2017 ended early because the Eagle Creek Fire forced the cancellation of the final three service weekends. While on track to exceed the 2016 season, the loss of three weekends of service ultimately led to slightly lower seasonal ridership. There were 90,000 boardings in 2018, when CGE service expanded to 7-days a week, expanded service to Hood River and Cascade Locks and with expanded weekend shuttle runs between Rooster Rock State Park and Multnomah Falls. The success of the CGE service indicates demand for transit services in the study area corridor.

2.2.6 Large-Vehicle Safety and Delay Issues

The Historic Highway is a two-lane typical cross-section with a 60-foot right-of-way and a paved width that varies between 18 and 30 feet. For a large portion of the highway's corridor, the roadway is narrow, winding, and constrained. The shoulder width varies, with shoulder widths less than 3 feet in some areas. At some locations on Historic Highway viaducts, 9 foot travel lanes are further constrained by hard barriers on either side, sometimes forcing vehicles to back up due to the inability of two large vehicles to pass simultaneously. A rock overhang near Shepperd's Dell causes large vehicles to drive into the oncoming lane to avoid striking the overhang, posing safety concerns.

Current highway conditions pose a challenge to large-vehicles traveling through the area due to tight curves limiting sight distance, limited shoulder space, and limited passing ability causing delays and congestion.

2.2.7 Impacts on the Environment and Settings

The Columbia River Gorge National Scenic Area Management Plan—commonly called the Management Plan— provides overarching policy and guidelines for managing and developing the NSA. The Management Plan is a bi-state agreement actively managed by the Columbia River Gorge Commission that regulates NSA development.

The role of the NSA is to protect and provide for enhancing the scenic, natural, cultural, and recreation resources of the Columbia River Gorge. Sites of visual significance are identified as key viewing areas and scenic corridors are protected by scenic regulations. The Management Plan defines key viewing areas as portions of important public roads, parks, or other vantage points where the public views scenic landscapes. Land use approvals in the NSA include a detailed process and must meet regulations for scenic, natural, cultural, and recreation resources. Scenic resource regulations require built structures to preserve key viewing areas. Any improvements to the Historic Highway must protect the most significant and sensitive scenic, cultural, natural, and recreation resources and attempt to enhance them where appropriate.

2.2.8 Negative User Experiences

Each year, a multitude of visitors and residents come to the Columbia Gorge to experience the scenic beauty and recreational activities. A 2015 Travel Oregon survey asked respondents for their motivating factors to visiting the Columbia River Gorge, as well as their satisfaction with their experiences. The most popular activities and reasons for visiting the Gorge include hiking, eating at restaurants or breweries, attending festivals or events, and viewing wildlife. Most visitors take day trips to the Gorge, usually spending less than $100 per day. The most common barriers to visiting the Gorge included a lack of free time (35 percent), weather (34 percent), and crowding (19 percent) (Figure 9). For those that had not visited in the past year, the distance to the Gorge was also a commonly cited barrier (30 percent). Congestion and lack of parking at popular recreation locations along the highway are also visitor deterrents.

Figure 9. Cited Barriers to Visiting the Gorge
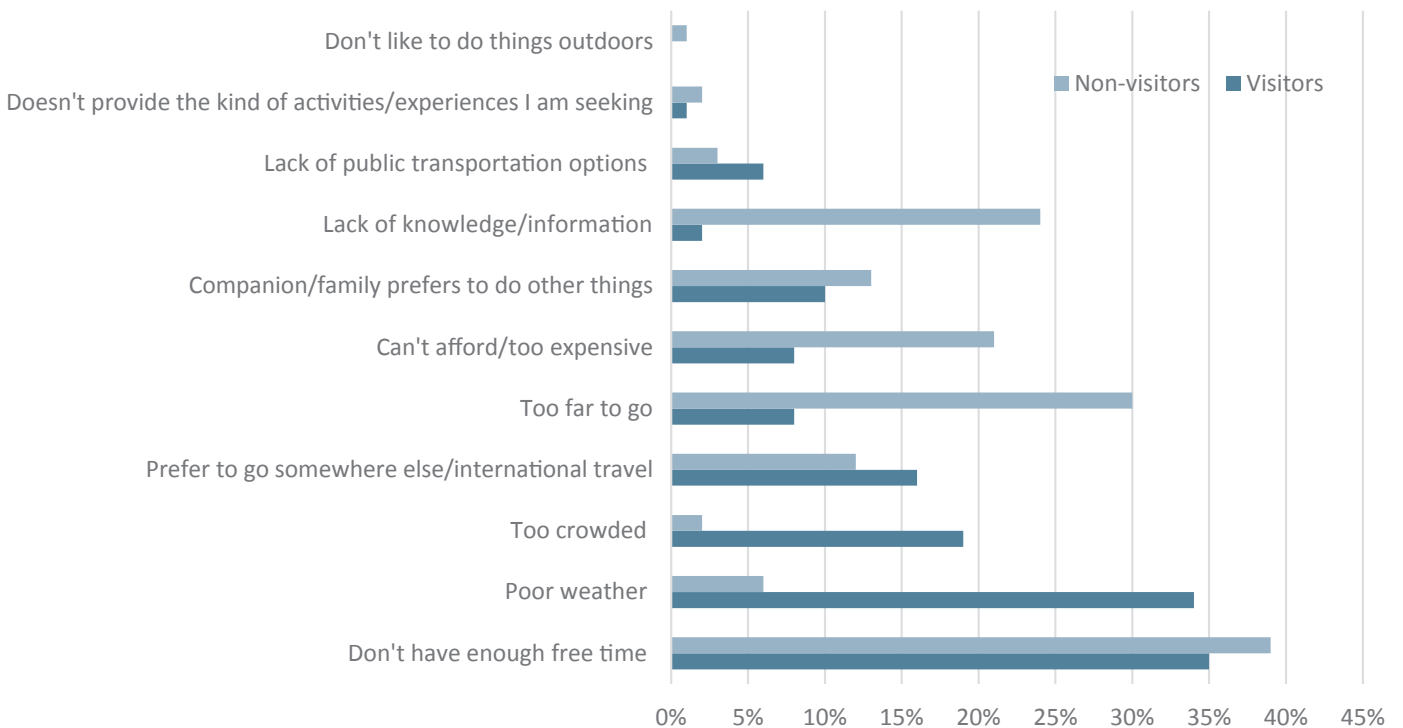
3 Implementation Action Plan

The Implementation Action Plan includes tools and implementation strategies appropriate for the scenic and regulatory context of the Historic Columbia River Highway. Implementation recommendations address one or more of the key safety, congestion, and user experience issues identified in the study area.

3.1 Recommendations Development

The project team considered each plan goal and criterion when evaluating different combinations of safety and congestion mitigation tools. The evaluation revealed opportunities and tradeoffs (Appendix D). The evaluation findings, supplemented with feedback from the public, the PLT, agency staff, and project stakeholders informed the recommendations.

The project team recommended a set of tools, investments, and programs, including data collection and monitoring, coordination and user experience improvements, parking management, transit and shuttle investment, and roadway operation changes. The recommendations vary in scale, cost, phasing, and complexity. While some recommendations are simple and can be implemented independently, others are more complex, costly, and may be contingent on other recommendations. Figures 11, 12, and 13 visually show and Table 2 details the recommendations.

Recommendations are not intended to create a net increase in visitation beyond that prescribed by the Recreation Intensity Class assigned to sites in the Gorge. For example, Multnomah County Code allows for a maximum design capacity at RIC 4 sites of 1,000 people at one time on a given site. In some instances, it is possible that visitation may exceed the RIC at some sites. However, existing sites are "grandfathered" in, and visitation is not subject to these same limits. Reconstructed and new sites are subject to these rules.

3.2 Phasing of Recommendations

The project team grouped recommendations into the following phases:

- **Short-term recommendations** are targeted for implementation in 1 to 2 years. These recommendations include critical path strategies to support other recommendations, such as installing traffic cameras to collect data on parking utilization or vehicle patterns. They also include strategies that would have immediate impacts with simpler start-up tasks (for example, traffic staff at the Multnomah Falls lot on the Historic Highway).

- **Medium-term recommendations** are targeted for implementation in 3 to 5 years. These recommendations represent more complex strategies that could take longer to implement due to a need for interagency coordination, funding identification, contracting, or other start-up tasks.

- **Long-term recommendations** are targeted for implementation in 5 or more years. These recommendations meet Plan goals and could improve congestion and user experience, but they may be more costly or complex to implement.

Within each recommendation phase, the project team also prioritized each recommendation as high, medium, or low. High-priority recommendations represent those that are recommended for completing first, while those prioritized as low should be considered after high- and medium priority recommendations have been considered within each phase.

3.2.1 Post-implementation recommendations

The PMT recommended developing a one-stop online web/mobile app for information about travel options and current travel conditions in the study area. This recommendation is not part of the core Plan recommendations, but instead something to consider further during or after the core recommendations have been implemented.

The app should allow users to learn about parking, transit schedules, and discover best times to visit popular attractions prior to arriving in the Historic Highway corridor. The web/mobile app could draw real-time traveler information from the existing TripCheck service ODOT provides and make use of GTFS data to provide real-time transit or shuttle information to travelers, as coordinated with ODOT headquarters. It could also coordinate or be integrated with the USFS "OnCell" app. The web/mobile app would ideally be available in multiple languages.

3.3 Adaptive Management and Thresholds

Where applicable, the project team outlined operational thresholds that may affect implementation and/or related strategies. Thresholds were incorporated as a form of adaptive management, which refers to a process where an approach changes by modifying tools, strategies, or technology once a certain performance threshold is met to ensure that the solutions produce the desired results (Figure 10). Some recommendations, such as priced parking, will depend on adaptive management to find the right pricing structure to meet industry best practices of 85-percent parking lot occupancy. In other cases, recommendations will integrate adaptive management to increase the intervention level to address an issue.

3.4 Success Measures

Success measures are recommended for each strategy in Table 2. Success measures describe how progress on each strategy can be measured. When possible, success measures are quantitative and rely on data that are easily collected or already collected by implementing agencies.

3.5 Costs and Revenue

For high-priority recommendations, the project team developed planning-level cost estimates. These estimates represent order-of-magnitude estimates or other high-level estimates of the capital and operations costs associated with a given strategy. Notably, planning-level cost estimates are subject to further refinement during project or program development. Additionally, some recommendations will create revenue; high-level estimates of revenue are provided where feasible.
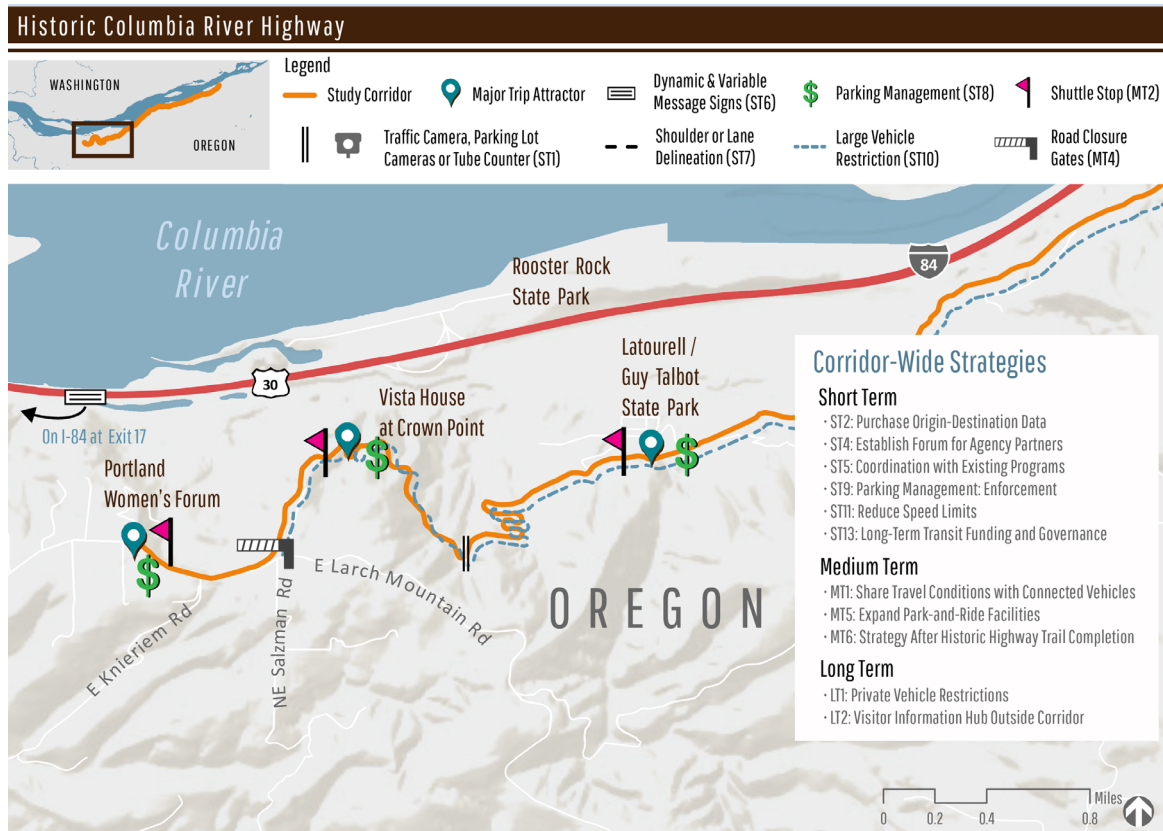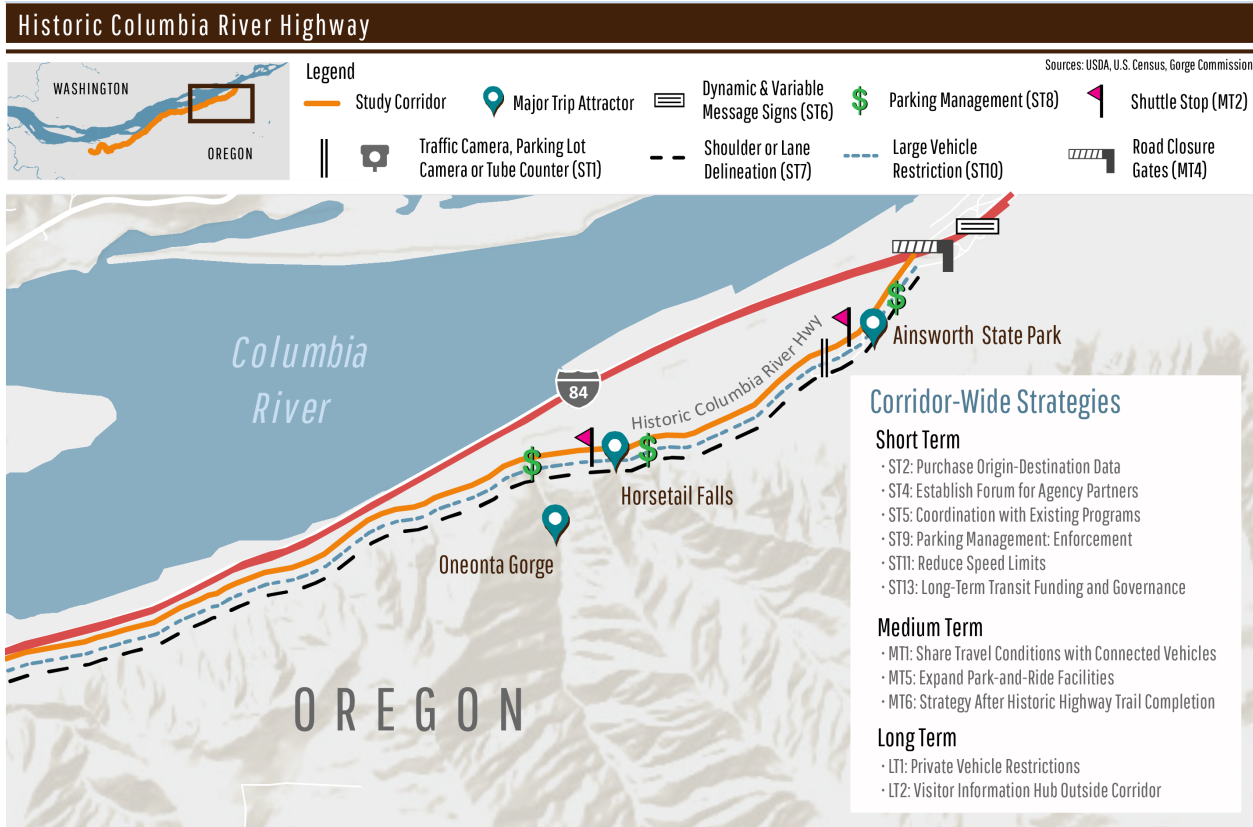
Figure 10. Implementation Strategies – West Study Area

Figure 11. Implementation Strategies – Central Study Area

Figure 12. Implementation Strategies – East Study Area

Historic Columbia River Highway

Legend
Sources: USDA, U.S. Census, Gorge Commission

Study Corridor

Major Trip Attractor

Dynamic & Variable Message Signs (ST6)

Parking Management (ST8)

Shuttle Stop (MT2)

Traffic Camera, Parking Lot Camera or Tube Counter (ST1)

Shoulder or Lane Delineation (ST7)

Large Vehicle Restriction (ST10)

Road Closure Gates (MT4)

Columbia River

Ainsworth State Park

Horsetail Falls

Oneonta Gorge

OREGON

Corridor-Wide Strategies

Short Term
· ST2: Purchase Origin-Destination Data
· ST4: Establish Forum for Agency Partners
· ST5: Coordination with Existing Programs
· ST9: Parking Management: Enforcement
· ST11: Reduce Speed Limits
· ST13: Long-Term Transit Funding and Governance

Medium Term
· MT1: Share Travel Conditions with Connected Vehicles
· MT5: Expand Park-and-Ride Facilities
· MT6: Strategy After Historic Highway Trail Completion

Long Term
· LT1: Private Vehicle Restrictions
· LT2: Visitor Information Hub Outside Corridor

Table 2. Implementation Strategies by Time Frame: Short-Term

Strategies	Related Toolkit Strategy and Eval. Criteria	Costs and Revenue	Description and Location	Related Strategies	Priority Level	Agency(s) Responsible	Implementation Actions	Success Measures
ST1 Traffic /parking lot cameras and tube counter on roadway segments	**Toolkit:** A-22 **Criteria:** 3, 4, 6, 9	$90,000+ for roadway hardware installation at all locations and $3,000 to $6,000 for software and data processing at all locations. $30,000+ for hardware installation at all locations and $1,200 to $3,000 for software and data processing per location per year. Capital costs will be higher if power, communication lines are not readily available.	Install traffic cameras at key locations to monitor pinch points, vehicle flow on Historic Highway segments, and parking utilization. Use data to inform recommendations for vehicle operations and pedestrian crossings, as well as parking management strategies. Key locations include the Multnomah Falls Historic Highway parking lot and the Wahkeena Falls parking lot. The primary purpose of cameras and tube counters is data collection to inform other strategies. However, cameras could be used for other purposes (e.g., monitoring parking lot security).		Medium	ODOT, USFS, OPRD	• **ST1.1** Purchase equipment following funding procurement • **ST1.2** Explore vendor options and coordinate with ODOT regarding compatibility of data with VMS and other traveler information options • **ST1.3** Purchase and install equipment based on lot and jurisdiction	• Data produced from the cameras are actionable and reliable and help inform public of travel conditions in real time through VMS and mobile applications • Number of agencies able to use data • Cameras (and loops at I-84 Multnomah Falls lot) provide a real-time parking occupancy data that informs parking pricing strategy • Data produced from the cameras/tubes are accurate and useful, within 10 percent occupancy of periodic manual counts
ST2 Origin-destination data	**Toolkit:** A-13 **Criteria:** 3, 4, 6, 9	$5,000 minimum for initial purchase. Ongoing subscription costs.	Purchase origin-destination data from a "big data" vendor to provide more detail on how people use the Historic Highway. A large, longitudinal data set can provide information on travel patterns and behavior.		Low	ODOT	• **ST2.1** Consider how a larger O-D data purchase can support multiple projects within Region 1 and leverage state and regional funding sources • **ST2.2** Purchase data following procurement of funding	• Data provide insight on how corridor is used and help inform parking pricing strategies, such as more detailed information on whether visitors park multiple times along the corridor
ST3 Traffic (flagger) team at Multnomah Falls	**Toolkit:** A-11 **Criteria:** 2, 6	Less than $1,000 for materials. Ongoing costs for three to four licensed and trained staff during summers and on-call staff outside of the summer season	Implement traffic (flagger) teams at high-use times at Multnomah Falls on the Historic Highway to help maintain the flow of vehicle traffic through this congested pinch point, moderate pedestrian crossing, and increase safety for all road users. Between Memorial Day and Labor Day, traffic teams could be deployed at the Historic Highway pedestrian crossing at Multnomah Falls between 9 a.m. to 5 p.m. on both weekdays and weekends to manage pedestrians and vehicle movements. Outside of this timeframe, on-call traffic teams could be considered for days with nice weather. The threshold for a signalized crossing is currently met (400 persons per hour). See Strategy MT3 for more details. The traffic team is recommended as a short-term, low capital cost strategy that would eventually be supplanted by a signalized crossing, which is recommended in the medium term. A temporary signal is a possible solution that may be explored by ODOT.	MT3	High	To be determined	• **ST3.1** Establish pedestrian crossing baseline (number of people crossing per hour and vehicle traffic per hour) • **ST3.2** Establish a traffic team program to provide staff at the crossing from Memorial Day to Labor Day each summer, and potentially on-call on other high-volume visitor days outside of the summer season • **ST3.3** Monitor implementation, including vehicle throughput on the Historic Highway and change in number of pedestrian 'close calls' reported	• Vehicles per hour on the Historic Highway at Multnomah Falls after implementing traffic teams, as compared with vehicles per hour prior to implementation • Reduction in vehicle/pedestrian queuing

Toolkit strategies and evaluation criteria can be found in Appendix D. The evaluation criteria listed for each strategy are those most directly supported by each strategy.

Strategies	Related Toolkit Strategy and Eval. Criteria	Costs and Revenue	Description and Location	Related Strategies	Priority Level	Agency(s) Responsible	Implementation Actions	Success Measures
ST4 **Establish a forum for agency partners to collaborate on major issues**	**Toolkit:** A-35 **Criteria:** 2, 3, 4, 5, 6, 7, 8, 9	Agency partner staff time to attend meetings, track decisions, and document outcomes.	Establish an agency forum for moving key implementation strategies forward. The forum would serve as an on-going opportunity for agency discussion and problem-solving related to Historic Highway congestion and safety issues, including: • Authority, jurisdiction, and governance • Parking management and enforcement • Creative solutions • Funding • Satellite parking lots/park and rides In order to be effective, the forum should consider the following: • Must meet regularly – at least quarterly, and for sufficient duration to allow robust discussion (~3 hours) • Staff coordinator from at least one agency partner is needed to set agendas, send meeting invites, determine meeting venues, and record forum minutes and outcomes • A chair or forum lead should be established to help set agendas and run meetings • Decision-making rules should be established, i.e., deciding whether consensus is required to move forward on a given action • Accountability is essential. Each meeting should result in specific actions assigned to individuals or agencies and a timeline for their completion This forum is separate and different from the Gorge Commission and is intended to focus specifically on congestion and safety issues related to the Historic Highway.	ST3; ST5; ST8; ST9; MT2; MT5; LT2	High	ODOT, USFS, FHWA-WFLHD, OPRD, Multnomah County	• **ST4.1** Identify forum participants and develop forum charter. Establish an agency staff person as the "staff" for the forum and identify key staff who will represent each partner • **ST4.2** Set regular meetings to discuss issues and ensure concrete actions are identified with appropriate timelines at each meeting	• Forum established and meeting regularly

Strategies	Related Toolkit Strategy and Eval. Criteria	Costs and Revenue	Description and Location	Related Strategies	Priority Level	Agency(s) Responsible	Implementation Actions	Success Measures
ST5 **Coordination with existing programs**	**Toolkit:** A-9; A-26; A-27; A-29; A-31 **Criteria:** 2, 3, 4, 5, 6, 7, 8, 9	$5,000 to 7,500 in staff time per year	Continue coordination with Ready, Set, GOrge! Campaign and CGE service to improve visitor experience in the National Scenic Area, including support for visitors who speak languages other than English. Agency partners should coordinate with the Ready, Set, GOrge! campaign to: • Continue to promote attractions, recommend off-peak visitation, and highlight transportation options • Promote expanded CGE service and future shuttle service • Coordinate with the agency partner staff for engagement in marketing and promotion of transportation options • Partner with Portland and Gorge-area hotels and accommodation-providers on outreach • Feature information on a mobile-friendly web application In addition, agency partners should continue coordination with CGE transit service. The CGE expanded to a seven day per week operation, in addition to new stops, in June 2018. Coordination with ODOT ITS will be needed to obtain ODOT data.	ST6	Medium	USFS, ODOT, OPRD, Friends of Gorge/ Travel Oregon	• **ST5.1** (Friends of the Gorge/ Travel Oregon) Continue coordination of Ready, Set, GOrge program, coordinate with ODOT on integration of real-time travel information • **ST5.2** Continue coordination with Ready, Set, GOrge; develop working plan strategy to integrate Ready, Set, GOrge with mobile-friendly web platform and real-time travel information • **ST5.3** (OPRD) Continue coordination with Ready, Set, GOrge • **ST5.4** (USFS) Continue coordination with Ready, Set, GOrge; provide updated information about the reopening of the Historic Highway and access to scenic and recreational destinations • **ST5.5** (ODOT) Continue CGE Service; coordinate with other agency partners and transit providers; strategic marketing to alleviate congestion in conjunction with reopening of the Historic Highway; create CGE work plan that includes staff time and resources to devote to coordination • **ST5.6** (OPRD) Continue promotion of CGE; coordinate with ODOT on utilization of Rooster Rock as a Park & Ride location for Gorge Express service to Multnomah Falls • **ST5.7** (USFS) Continue promotion of CGE; coordinate with ODOT on circulation and congestion management for Gorge Express service to Multnomah Falls	• Percentage of web/mobile app users that heard about service through the Ready, Set, GOrge! web or marketing materials • Customer awareness of CGE services through online or intercept surveys

Strategies	Related Toolkit Strategy and Eval. Criteria	Costs and Revenue	Description and Location	Related Strategies	Priority Level	Agency(s) Responsible	Implementation Actions	Success Measures
ST6 Dynamic and variable message signs	**Toolkit:** A-7 **Criteria:** 3, 4, 5, 6, 7	Approximately $150,000 per sign and $2,000 to $5,000 annually for O&M	Deploy variable message signs on I-84 to warn travelers about lane closures, heavy congestion or full parking areas. Signs are recommended west of Exit 17 on eastbound I-84 near Troutdale and at Ainsworth State Park/Bridal Veil Road westbound. Would require an NSA permit, consideration of NSA scenic impacts related to the signs, as well as power and telecommunications hardware to sign locations.	ST5	High	ODOT	• **ST6.1** Procure and implement variable message signs and desired locations • **ST6.2** Develop a concept of operations regarding data needs, staffing, and thresholds at which traffic or parking advisories are provided, and what kind of information is shared (pricing, parking availability, travel times)	• Change in park-and-ride utilization or CGE ridership on days where messages are deployed
ST7 Shoulder or lane delineation	**Toolkit:** A-17 **Criteria:** 1, 2, 6, 7, 8	$200,000 for striping	Improve shoulder and lane delineation along Historic Highway west of Bridal Veil State Park to provide clear signals for where to park and where shoulder or right-of-way is vehicle-free. Clear, bold striping may help prevent parked vehicles from infringing on the travel lane which can slow through-movements for vehicles, reduce shoulder space for people walking or bicycling, and reduce safety. Consider physical barriers at Oneonta Gorge. Resolve issues around enforcement capacity.	ST9	High	ODOT	• **ST7.1** Initiate design of new striping and delineation that meet ODOT design standards • **ST7.2** Coordinate updated delineation with the one-way road operation scenario, and coordinate with Multnomah County as needed for intersecting roadways	• Fewer instances of parked vehicles protruding onto travel lanes of the Historic Highway • Increase number of and comfort for people walking and biking
ST8 Parking management	**Toolkit:** A-19; A-28 **Criteria** 3, 4, 7, 8, 9	Parking management strategies are varied and have a wide range of potential capital and operations costs. For priced parking specifically, capital costs range from $275,000 to $600,000 for up to 11 identified trailhead and visitors sites. High-level assessment of fee revenue within the project study area indicates potential revenue range of $4.8 million to $14.5 million per year. These estimates assume a fee of $5 and $15 per vehicle, respectively, representing the average assumed daily revenue per parking vehicle (assuming 11 locations).	Industry best practices state that when demand consistently exceeds 85 percent of parking capacity, more aggressive parking management is warranted. Parking management is a complex subject and introduces authority, process, and jurisdictional issues that must be resolved through the forum described in ST4. Parking management strategies appropriate for the Gorge could include: • Removing parking • Permit system • Priced parking • Parking reallocation • Flagger/active management • Time limits • Reservations Parking management strategies should be paired with other implementation strategies in this Plan that increase transportation options for visitors and reduce the need for parking personal vehicles. Key first steps are establishing the desired outcomes from parking management, followed by developing a detailed parking management plan and approach.	ST4; ST9	High	ODOT, USFS, OPRD, UPRR	• **ST8.1** Working in the forum established in ST4, develop a set of desired outcomes from parking management with agency partners • **ST8.2** Determine preferred parking management tactics with agency partners • **ST8.3** Procure consultant to develop a parking management plan based on agency partner direction • **ST8.4** Work to resolve jurisdictional and authority issues related to the parking management plan within the agency forum; establish individual agency responsibilities • **ST8.5** Identify funding and implement parking management strategies	• Efficiency of on- and off-site parking lot circulation and turnover; reduction in queues • Number of unique vehicles using Historic Highway destinations • Implementation of equity-impacts mitigation measures

Strategies	Related Toolkit Strategy and Eval. Criteria	Costs and Revenue	Description and Location	Related Strategies	Priority Level	Agency(s) Responsible	Implementation Actions	Success Measures
ST9 Parking management - enforcement	**Toolkit:** A-15; A-19 **Criteria:** 3, 4, 7, 8, 9	Staffing costs could range from $25,000 and $60,000 per year, depending on seasonal enforcement and fully loaded benefit costs. The goal of enforcement should not be for revenue generating purposes, but to maintain compliance with existing parking rules and regulations and for future parking management strategies.	Parking enforcement is key to deterring informal parking. Signage, education, and physical barriers (where applicable) can help deter informal parking, in addition to enforcement. Outreach materials in other languages is important to ensuring compliance and avoiding disproportionate impacts to those who do not speak English. If other parking management strategies are implemented, enforcement will be critical. For example, parking enforcement is critical to successful implementation of paid parking. Enforcement can take the form of a third-party attendees handing out warning/tickets. License Plate Recognize software may be an option to cover a large area using vehicles and camera. Key to this transition will be signage and clear communication for visitors to be aware of the new rules and potential consequences.	ST4; ST8;	High	Multnomah County Sheriff's Office, OPRD, USFS	• **ST9.1** Discuss current enforcement needs at the forum established in ST4 • **ST9.2** When parking management strategies are developed in ST8, determine enforcement needs and determine who will be the controlling agency to hire an enforcement employee or third-party contractor; Resolve issues around enforcement capacity. • **ST9.3** Determine violation fees for various offenses: time limit violation, expired meter time, illegal parking, etc. • **ST9.4** Initiate enforcement related to new parking management strategies • **ST9.5** Identify informal parking locations and add signage or physical barriers as appropriate. Approval of barriers will require ODOT review and approval.	• High level of compliance with existing parking regulations • High level of compliance with parking management strategies when implemented
ST10 Large Vehicle Restriction	**Criteria:** 2, 6	Costs include installation of vehicle restriction signs and provision of a vehicle turn around (a turnaround already exists at the Bridal Veil Falls location). Ongoing operations costs are dependent on the type of infrastructure chosen, but are likely minimal.	Restrict larger vehicles, such as oversized recreational vehicles and trailers, from using the Historic Highway because of the narrow, winding nature of the roadway and the need to share constrained right-of-way with other modes. Large vehicle restriction would begin at the junction between the Historic Highway and E Larch Mountain Rd and continue along the Waterfall Zone through Ainsworth State Park. Truck and large vehicle access to the Multnomah Falls Lodge would need to be maintained or specially permitted.		High	ODOT, Multnomah County Sheriff's Office	• **ST10.1** Identify the target vehicle length/size that would reduce incidences of vehicles needing to encroach into the opposing lane around curves/ in limited width areas. Obtain appropriate approvals to implement • **ST10.2** Identify location for vehicle turnarounds near restriction points • **ST10.3** Coordinate location of access control for large vehicles • **ST10.4** Conduct information sharing campaign to notify users and visitors of restrictions	• A safer, more comfortable environment along the corridor through reduced crashes and property damage reports • Reduced percentage of vehicles leaving the travel lane

Strategies	Related Toolkit Strategy and Eval. Criteria	Costs and Revenue	Description and Location	Related Strategies	Priority Level	Agency(s) Responsible	Implementation Actions	Success Measures
ST11 **Reduce Speed Limits**	**Criteria:** 2, 6	Costs include traffic engineering analysis, installation of revised speed limit signs, potential costs associated with increased enforcement.	Reduce vehicle speed limits to be consistent with the historic and multi-modal nature of the roadway. Some segments of the Historic Highway are currently posted with speeds up to 55 mph. Implementation is important for a future one-way configuration where cyclists or pedestrians would share the roadway with vehicles. An ODOT speed study will be required prior to implementation.		High	ODOT, Multnomah County Sheriff's Office	• **ST11.1** Conduct speed study, revise speed limits along the Historic Highway to support speed reduction. Obtain concurrence/approval from Region and State Traffic Engineer, or approval from the speed zone approval board • **ST11.2** Install revised speed limit signs • **ST11.3** Create an enforcement strategy and monitor speeds	• Reduced vehicle travel speeds along the Historic Highway as compared to before implementation of lowered speed limits • Safety and comfort for non-motorized users
ST12 **Satellite Parking for Multnomah Falls at Benson Lake**	**Toolkit:** A-12 **Criteria:** 4	TBD	Use Benson Lake area as additional parking for Multnomah Falls and formalize the path between Benson Lake and Multnomah Falls south of I-84. Implementation of this strategy should consider agency partners' "lessons learned" from the experience of Columbia Gorge Express serving Rooster Rock State Park, and understand that unintended consequences may have impacts on visitor experience, safety, and park operations.	ST4; ST9	High	ODOT, OPRD	• **ST12.1** Develop coordinated messaging around the use of Benson Lake as new parking for Multnomah Falls visitors • **ST12.2** Assess necessary access improvements to connect Benson Lake satellite parking to Multnomah Falls • **ST12.3** Formalize path connection between Benson Lake and Multnomah Falls and install wayfinding signage as necessary for cyclists and pedestrians	• Establishment of trail between Benson Lake and Multnomah Falls • Utilization of Benson Lake parking by Multnomah Falls visitors

Strategies	Related Toolkit Strategy and Eval. Criteria	Costs and Revenue	Description and Location	Related Strategies	Priority Level	Agency(s) Responsible	Implementation Actions	Success Measures
ST13 **Develop long-term Columbia Gorge Express (CGE) transit funding and governance strategy**	**Toolkit:** A-9; A-10 **Criteria:** 3, 5, 7	Near-term service cost for 2020 is estimated to be $725,000 for approximately 180 service days. ODOT has set a goal of 30 percent farebox recovery ratio by 2020.	Establish a sustainable funding source and identify a governance structure beyond October 2020 to fund and operate the CGE at near-term operation levels of service to accomplish the following: 1) offer a car-free travel option in the Gorge between Portland and Hood River, enhancing access to key recreation destinations and serving as a part of the solution to traffic congestion and 2) relieve parking and traffic congestion at Multnomah and other major trip attractors served by Historic Columbia Highway shuttle service. The organization that ultimately operates the service should work with ODOT District and Traffic staff on a transition plan for administering long-term transit service in the Gorge between Portland and Hood River, including service operating on the Historic Highway. The future CGE administrator should be a transit agency or other entity that can apply for STIF funds to allow for Gorge partner agencies to pool their resources to support transit service, independently collect parking revenue to subsidize transit operations, and pursue additional funding sources. It should also consider developing a formal agreement with an existing transit district in order to qualify for STIF and FTA formula grants. The Columbia Gorge Transit Study (ODOT, 2016) identified Columbia Area Transit as a potential near-term service operator and described FTA grant programs that could be utilized to fund transit service in the Gorge.	ST4; MT2	Medium	ODOT; long-term governance/ operating authority to be determined	• **ST13.1** Develop transition plan for management and oversight of CGE operations from ODOT to partner transit agency • **ST13.2** Develop and implement long-term service plan reflecting varying revenue generating scenarios, utilization of parking revenue sources • **ST13.3** Determine partnership and service optimization opportunities within the Gorge transit shed • **ST13.4** Pursue federal and state grant opportunities	• Service continuity beyond five-year pilot • Diversified utilization of fund sources • Publish short- and long-term service plans by January 2020

Table 3. Implementation Strategies by Time Frame: Medium-Term

Strategies	Related Toolkit Strategy and Eval. Criteria	Costs and Revenue	Description and Location	Related Strategies	Priority Level	Agency(s) Responsible	Implementation Actions	Success Measures
MT1 Traveler information sharing via connected vehicles	**Toolkit:** A-31; A-3 **Criteria:** 3, 6	Costs associated with concept of operations study and dedicated short range communications infrastructure within the project area. Operations costs would be minimal.	Share information on travel and parking conditions, parking availability, and travel options with connected vehicles via wireless connected cloud computing with the public through applications.	ST1	Medium	ODOT	• **MT1.1** Monitor the readiness of connected vehicles to receive travel and parking advisories • **MT1.2** Develop a concept of operations for infrastructure-to-vehicle communications at locations along the Historic Highway and I-84	• Data collection and sharing processes are accurate and efficient, serving target percentages of private vehicles traveling through the Historic Highway/I-84 corridor
MT2 Historic Highway shuttle service pilot project	**Toolkit:** A-9 **Criteria:** 3, 4, 6, 7	Pilot project service cost could range from $200,000 to $500,000 for a single year pilot, depending on frequency of service, level of capital investment for transit amenities, etc. O&M cost depends on factors including shuttle operator costs, fuel costs, service frequency, administrative costs, and marketing and outreach, as well as service frequency, operating hours, and service days. Similar shuttle services have had a 15 percent fare recovery ratio in trial periods and 20 to 30 percent in early service periods, meaning additional funding would be needed to fully fund operations.	Implement a pilot shuttle service along the Historic Columbia River Highway to transport visitors to scenic attractions and trailheads along the Waterfall Zone. Shuttle vehicles will accommodate approximately 20 to 30 passengers at a time. The pilot shuttle service along the Historic Highway would serve destinations not currently served by the CGE (see Figures 2, 3, and 4). The shuttle would also serve CGE stops to facilitate transfers between the two services. The level of congestion present on the Historic Highway should be considered before implementing the pilot; excessive congestion would hinder reliability and schedule adherence, limiting the utility of a shuttle service. The shuttle's effectiveness would require monitoring over time, including pairing with other strategies such as vehicle restrictions to ensure success. Shuttle stops should serve major trip attractions along the Historic Columbia River Highway from the Portland Women's Forum to Ainsworth State Park. Recommended shuttle stops from west to east are Portland Women's Forum, Vista House, Bridal Veil State Park, Wahkeena Falls, Multnomah Falls, Horsetail Falls, and Ainsworth State Park. Future park-and-ride locations should be located in Corbett and/or Cascade Locks, Bridal Veil Mills Site and the Ainsworth Interchange, providing an off-site connection to the Historic Highway corridor. Equity must be considered in implementation as well. Access to transit stops, shuttle fares, and connections with neighboring transit (like TriMet) are all important considerations, as are access for those with disabilities and Limited English Proficiency (LEP) populations. The Federal Lands Access Program (FLAP) could be a potential funding source for the pilot shuttle.	ST4, ST7, ST8, ST9, MT5, LT1	High	To be determined. Could be a private operator	• **MT2.1** Scope responsibility for funding, administering, and operating the pilot shuttle service along the Historic Columbia Highway Corridor, similar to the CGE. Determine thresholds at which shuttle service should be implemented (e.g., in coordination with priced parking) • **MT2.2** Develop pilot shuttle service plan, or release RFP for consultant services to create Shuttle service plan • **MT2.3** Identify any necessary improvements to the existing right-of-way to serve shuttle service on the Historic Highway corridor, and define responsibility for access points for boarding and alighting areas. Coordinate with ODOT technical staff on stop locations and other roadway details • **MT2.4** Identify any permits necessary for shuttle infrastructure in nearby communities outside the National Scenic Area	• Ridership and number of passengers served (boardings and alightings) • Customer satisfaction (for example, value, ease of service, comfort, accessible info) • Reduction in queuing • Reduction in vehicle and bicycle conflicts

Strategies	Related Toolkit Strategy and Eval. Criteria	Costs and Revenue	Description and Location	Related Strategies	Priority Level	Agency(s) Responsible	Implementation Actions	Success Measures
MT3 **Signalized crossing at Multnomah Falls crossing**	**Toolkit:** A-11 **Criteria:** 2, 6	Range from $100,000 for a pedestrian hybrid beacon to $1,000,000 for full signal for a two-lane highway.	Add a stop-controlled crossing at the marked crosswalk in front of the Multnomah Falls Lodge. Specific traffic control would be determined by the state traffic engineer and could include a signalized crossing. The threshold for installing a signalized crossing is currently met. The crossing must also meet Columbia River Gorge NSA visual and Historic Columbia River Highway National Landmark guidelines; a full engineering study and State Engineer approval would be required as well.	ST3	Medium	ODOT	• **MT3.1** Determine funding source • **MT3.2** Determine the specific type of controller required and possible given the electrical and communications restrictions in the gorge • **MT3.3** Procure funding for designated equipment and install signal	• Qualitative assessment of pedestrian and vehicle compliance with signalized crossing • Reductions in queuing
MT4 **Install road closure gates**	**Toolkit:** A-4 **Criteria:** 2, 6, 8, 10	To be determined	Add permanent gates at six locations along the Historic Highway: at the Historic Highway junction with Larch Mountain Road, three at the Bridal Veil intersection with the I-84 on/off ramp, east of Multnomah Falls, and at Ainsworth State Park. Adding permanent gates that could be closed in the event of an emergency or necessary road closure would help facilitate maintenance activities, emergency road closures and could complement potential future temporary, seasonal or permanent vehicle restrictions along the Historic Highway. Gates must be consistent with historical, cultural, and visual guidelines in the NSA.	ST6	Medium	ODOT	• **MT4.1** Identify funding source • **MT4.2** Coordinate with ODOT technical staff on details for installation • **MT4.3** Coordinate with VMS and other signage to provide information on when/where gates are closed	• Maintenance can close segments of the Historic Highway to vehicle traffic with fewer staff

Strategies	Related Toolkit Strategy and Eval. Criteria	Costs and Revenue	Description and Location	Related Strategies	Priority Level	Agency(s) Responsible	Implementation Actions	Success Measures
MT5 **Expanded park-and-ride facilities and agreements to use satellite lots**	**Toolkit:** A-12 **Criteria:** 3, 4, 8	Property lease for the park and ride lot(s); needed onsite improvements (if required) such as paving, lighting, striping, and signage; purchase of pay stations (if a paid park-and-ride lot is desired). Capital costs may be minimal (signage only) if shared parking arrangements are pursued with local schools.	Identify locations for and develop park and ride satellite lots (outside the NSA) that could transport visitors to key destinations along the Historic Highway corridor through frequent and short fixed-route shuttle service. Communities such as Corbett, Cascade Locks, and Hood River have elementary and middle schools with large parking lots that are underutilized on weekends and during the summer – typical peak periods for NSA visits. Another more proximate location to the corridor exists such as the Ainsworth interchange (I-84 Exit 35), but would require significantly higher setup costs; also, the number of parking spaces for this site is unknown. Similarly, the Bridal Veil Mill Site and an ODOT-owned property along Jordan Road (off Exit 17) are potential park and ride sites that could require higher costs to transition to a suitable facility. The Bridal Veil Mill Site may be more difficult to develop due to railroad ownership. Low-cost locations at schools as noted above should be pursued first before pursuing more costly alternatives. NSA guidelines will be addressed in the design of the park and ride facilities.	MT2, LT1	Medium	Local jurisdictions such as Corbett, City of Cascade Locks, ODOT, OPRD	• **MT5.1** Discuss potential for shared parking arrangements with schools • **MT5.2** Work with stakeholders in Corbett and the City of Cascade Locks, ODOT, and OPRD to determine if there are available and viable park and ride locations that could be considered • **MT5.3** Obtain necessary approvals and make needed site improvements to park and ride locations • **MT5.4** Procure and install pay stations at each park and ride location • **MT5.5** Develop shuttle routes that connect park and ride sites to Historic Highway destinations • **MT5.6** Market park and ride sites to tourist agencies and recreational organizations to maximize exposure and usage	• Monitor occupancy levels of park-and-ride lots to determine whether lots are well utilized • Monthly occupancy counts of satellite lots to provide additional data points system needs

Strategies	Related Toolkit Strategy and Eval. Criteria	Costs and Revenue	Description and Location	Related Strategies	Priority Level	Agency(s) Responsible	Implementation Actions	Success Measures
MT6 **Develop strategy for ensuring user safety and traffic flow after Historic Highway Trail is complete**	**Criteria:** 2, 3, 6, and 7	Staff time to develop strategy. Implementation costs are dependent on strategy approach.	The Historic Highway Trail is under construction as of this writing, with several trail segments complete. The current schedule is for the entire trail to be complete by approximately 2025. ODOT will develop a strategy for addressing safety and traffic flow concerns that may emerge when the trail is complete, and more people are biking and walking on the Historic Highway and the Trail. This strategy could also include consideration of "motor vehicle free" days along the Historic Highway. Crater Lake (National Park Service) and McKenzie Pass (ODOT) each have motor vehicle free weekends or seasons where bicycles and pedestrians use the highways with no motor vehicles, for example, prior to re-opening to vehicles after snow season. This strategy will be difficult to implement if ODOT continues to own the Historic Highway due to overarching goals and mission of the agency. Shuttle service or other accommodations must be in place to allow access for those with disabilities that may be otherwise precluded from access by vehicle use restrictions. This would require significant coordination and resources.		Medium	ODOT	• **MT6.1** Identify likely safety and traffic flow issues that may emerge upon trail completion • **MT6.2** Create a strategy or plan for mitigating concerns • **MT6.3** Apply for ODOT permits to close route to motor vehicle traffic • **MT6.4** Create marketing materials and events to celebrate the vehicle free weekends. Promote bicycle and shuttle alternatives to reaching Historic Highway attractions	• Strategy is developed. • Increased numbers of travelers on foot, bicycle, and transit during temporary restricted times
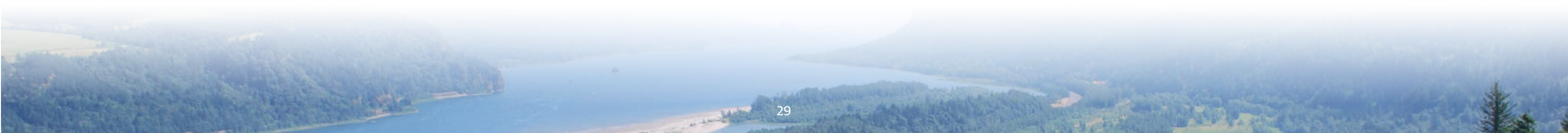
Table 4. Implementation Strategies by Time Frame: Long-Term

Strategies	Related Toolkit Strategy and Eval. Criteria	Costs and Revenue	Description and Location	Related Strategies	Priority Level	Agency(s) Responsible	Implementation Actions	Success Measures
LT1 **Vehicle use restrictions - private vehicle restrictions between Bridal Veil Falls and Ainsworth State Park**	**Toolkit:** A-24 **Criteria:** 2, 3, 4, 6, 7, 8	Costs include installation of vehicle restriction signs, infrastructure at the approach(es) to the restriction, including access control gates and vehicle turn-around. Ongoing operations costs are dependent on the type of infrastructure chosen.	Restrict private vehicles on portions of the Historic Highway to eliminate congestion, enhance visitor experience, and protect resources as a temporary pilot project or long-term vision for the corridor. Vehicle restriction compliance may require enforcement or access control at the restricted Historic Highway sections; residents would need permits or permission to maintain access to homes. This strategy will be difficult to implement if ODOT continues to own the Historic Highway due to overarching goals and mission of the agency; it would require jurisdictional transfer of the roadway. The threshold to move to a peak or full season private vehicle restriction is after introduction of a corridor shuttle, and if the shuttle experiences significant schedule delay due to continuing congestion on the Historic Highway. Congestion would significantly reduce the utility of the shuttle and should be addressed prior to shuttle implementation.	MT2	Medium	To be determined	• **LT1.1** Monitor vehicle and shuttle travel times and schedule adherence • **LT1.2** Identify location for vehicle turnarounds near access points • **LT1.3** Coordinate location of access control for private vehicles • **LT1.4** Conduct information sharing campaign to notify users and visitors of restrictions	• Improved travel times and schedule adherence for shuttles serving the corridor • A safer, more comfortable environment along the corridor through reduced crashes and property damage reports
LT2 **Visitor information hub outside of corridor**	**Toolkit:** A-26; A-29; A-31 **Criteria:** 3, 4, 6, 7	Purchase or lease of a facility with parking facilities. Upkeep of the facility, updating and replenishment of information, and staffing of up to 1.5 full-time equivalent.	Open a visitor information hub in a community near the Historic Highway to act as a gathering place to share information about the Historic Highway, parking, and transportation options. This location could double as a shuttle hub. The Visitor Center could provide information on all the history and attractions within the Columbia Gorge National Scenic Area. The hub would complement existing visitor centers at Multnomah Falls, Vista House, and Bonneville Dam with more robust information about travel options and tourist information.	ST4	Low	To be determined	• **LT2.1** Identify potential locations for Visitor Center • **LT2.2** Enter into purchase or lease for Visitor Center • **LT2.3** Design information and programs for the Visitor Center • **LT2.4** Create an outreach and communications plan to spread awareness about the Visitor Center	• Increasing numbers of customers to the hub • High customer satisfaction with information and travel options as captured in surveys

ADA American with Disabilities Act

CGE Columbia Gorge Express

FTA Federal Transit Administration

GTFS General Transit Feed Specification

I-84 Interstate 84

O&M operations and maintenance

ODOT Oregon Department of Transportation

SOV single-occupant vehicle

STIF Statewide Transportation Improvement Fund

TMA transportation management association

USFS U.S. Forest Service

VMS variable message sign

4 Outreach Strategy

The outreach strategy was developed to help guide the detailed planning and delivery efforts for the various programs and tools identified in the Plan. As a guideline, it will assist in notification and outreach efforts with stakeholders throughout the Plan area and beyond, including those who use, travel through, access, and represent various agency interests associated with the Historic Columbia River Highway. In the planning and delivery of the Plan's actions, individual outreach will be needed to respond to complex and changing needs of stakeholders, decision-making agencies, and projects.

To successfully deliver the recommended implementation strategies and actions, an ongoing partnership will continue among ODOT, USFS, OPRD, FHWA WFLHD, and Multnomah County. Oversight and policy direction from these agencies are essential to address and respond to the policy needs, land-use context, land ownership and range of agency interests in the study area.

4.1 Key Messages for Communications

The following key messages provide consistent communications themes for information and materials:

- **Problem—**Existing congestion will continue to get worse and influence safety without action.
  - Each day thousands of residents and tourists access the narrow and winding Historic Columbia River Highway to view tremendous vistas and recreate in the Columbia River Gorge National Scenic Area.
  - Over the past 10 years, traffic along the Historic Highway grew nearly 50 percent, as millions of tourists and recreation users visited the Gorge. The number of visitors will continue to grow due to the Gorge's easy access from the Portland metropolitan area.
  - Congestion impacts everyone using the Historic Highway by reducing traffic flow, creating safety issues, and increasing the risk of collisions.
- **Responsible partners—**Local, state, and federal entities who have responsibility and authority over public safety, traffic flow and natural resource management have partnered to develop and implement solutions.
  - The *Congestion and Transportation Safety Improvement Plan* was developed in partnership with the ODOT, USFS, OPRD, Multnomah County and the Federal Highway Administration.
  - Community and stakeholder feedback informed the development of the recommended Implementation Strategies and Action Plan.
- **Solutions—**Key solutions will ensure residents and visitors have safe and sustainable options to access the Gorge while protecting its beauty.
  - Immediate strategies include improved signage, parking enforcement at popular sites, traffic flaggers and reduced speed limits to manage congestion.
  - Longer term strategies include shuttle services, park and ride lots and visitor information resources.
- **Phased path forward—**Incremental solutions implemented over time will build on successes and public input.
  - The *Congestion and Transportation Safety Improvement Plan* addresses congestion and safety issues in the most congested area of the Historic Highway, between Portland Women's Forum State Scenic Viewpoint and Ainsworth State Park.
  - The Action Plan builds off several past efforts and successes to manage congestion and safety in the Gorge, including the work of the Historic Columbia River Highway Collaborative, the Columbia Gorge Express pilot bus service, and the "Ready, Set, GOrge!" initiative.

- Implementation strategies will continue the essential collaboration between ODOT, USFS, OPRD, Multnomah County and FHWA - Western Federal Lands Highway Division to identify and achieve solutions for the Gorge.

- **Continued collaboration—**ODOT and its partners will work with stakeholders during implementation.

  - Ongoing community and stakeholder feedback will help shape the detailed planning and delivery of the implementation strategies and Plan to help ensure the solutions reflect shared aspirations for the area.

  - The Implementation Strategies and Action Plan will continue to consider, adapt to, complement, and support the rehabilitation and planning efforts related to the 2017 Eagle Creek fire and other changes to the natural environment.

  - Additional information is available on ODOT's website.

4.2 Stakeholder Analysis

4.2.1 Demographic Information and Recommended Outreach Considerations

Demographic data from areas adjacent to the Historic Highway informed development of the outreach strategy.

Tables 5, 6, and 7 compare the study area in Figure 5 with the surrounding area, including Hood River and Multnomah Counties, to help identify specific outreach considerations and needs. The data indicate the percent of that population or demographic characteristic within the identified location.

Table 5. Ethnicity and Race

Ethnicity and/or Race	Study Area (percent)	Hood River County (percent)	Multnomah County (percent)	Oregon (percent)
African American	2	1	6	2
Asian American	1	2	7	4
American Indian/Alaska Native	4	1	1	1
Caucasian	89	88	78	85
Hispanic/Latino	11	31	11	12
Native Hawaiian/Pacific Islander	0	0	0	0
Multi-racial	4	3	5	4

Source: American Community Survey Estimates for 2011 through 2015

Table 6. Language Spoken at Home

Language Spoken at Home	Study Area (percent)	Hood River County (percent)	Multnomah County (percent)	Oregon (percent)
Speak only English at home	97	72	80	85
Speak a language other than English at home	3	28	20	15
Speak Spanish at home	2	27	8	9
Speak a language other than English and Spanish	1	2	12	6

Source: American Community Survey Estimates for 2012 through 2016

Table 7. Poverty

Economically Disadvantaged	Study Area (percent)	Hood River County (percent)	Multnomah County (percent)	Oregon (percent)
Poverty (individuals)	13.4	14.3	18.1	16.5

Source: American Community Survey Estimates for 2012 through 2016

As defined by the FHWA, environmental justice means identifying and addressing disproportionately high and adverse effects of the agency's programs, policies, and activities on minority populations and low-income populations to achieve an equitable distribution of benefits and burdens. This considers ODOT Guidelines for Addressing Title VI and Environmental Justice in Transportation Planning guidance (ODOT, 2015). These requirements include identifying Title VI and Environmental Justice audiences, tailoring outreach to underrepresented groups, and translating outreach materials to reach limited-English proficient populations. The only resident group in the study area with limited English proficiency (according to the American Community Survey) is Spanish speakers, who speak English less than "very well." Appendix F includes detailed demographic information maps.

Assessment and recommendations for full and fair participation by all potentially affected communities in the transportation decision-making process and inclusive outreach for diverse communities include:

• A government-to-government approach for specific outreach and communications efforts to engage a significantly higher population of American Indian/Alaska Native populations present in the study area compared to Oregon.

  – Lands within the NSA were ceded by the Confederated Tribes of the Warm Springs and Yakama Tribes. Warm Springs, Yakama Nation, Nez Perce Tribe, and the Confederated Tribes of Umatilla Indian Reservation have interests in the broader NSA and strong fishing and cultural ties to the Columbia River.

  – Information about American Indian history and its relationship to the study area may be acknowledged and appreciated in projects that provide visitor education and community education opportunities.

- Government-to-government outreach to tribes to build productive working relationships with leaders representing interests in the study area should be undertaken in the design and implementation of major enhancement projects (e.g. introduction of a new shuttle service) or public education and communications projects (for example, design of a visitor information hub) to provide opportunities for American Indian populations to meaningfully contribute to the design and implementation of projects.

- All materials to include contact details for ODOT's accessibility services.

  - Hood River County includes significantly higher percentages of Hispanic/Latino populations compared to Oregon as a whole. Wherever possible, communication materials pertaining to impacts or improvements to transport or transit services through the study area to Hood River County should be translated into Spanish.

  - All materials published online should be Americans With Disabilities Act accessible and compatible with screen readers.

  - Work in partnership with tourism organizations to help engage visiting populations who may speak languages other than English.

4.2.2 Stakeholder Groups and Audiences

Identified stakeholders and audiences can be broadly grouped into the following groups:

- Gorge residents

- Visitors from outside the Gorge (from within Oregon and outside Oregon)

- Groups and organizations

- Partners and agencies who have a role in implementation

- Elected officials

- Media

The stakeholder tables in Appendix F present potential key concerns, level of interest or impacts by stakeholder group. This information highlights the likely involvement and the perceived or real impacts associated with the proposed solutions or implementation activities, i.e., construction impacts. The project team identified a range of recommended methods to share information, gather feedback and bring people together.

4.3 Overview of Outreach Methods

To recommend suitable outreach methods for community and stakeholders, the team identified the following approaches in Table 8.

Table 8. Outreach Approaches

Share Information	• Distribution of information to inform interested, impacted, or concerned community members and stakeholders that provides clear and accurate information to detail the what, why, where, when, how and any decisions that have been made. • These methods should also detail where further information can be found and who may be contacted to assist community members and stakeholders in their understanding of the information being shared. • Example tools/tactics: Direct mail, email, website, news releases, social media, fact sheets.
Gather Feedback	• In addition to the distribution of information to help inform, these methods aim to consult and sometimes involve community and stakeholders to gather feedback to help improve future decisions being made. • Plans, proposals, and strategies are distributed as drafts, with intention for the feedback gathered to be used to improve the final decision. • If there is no opportunity for community and stakeholders to change, improve or influence, methods to share information are more appropriate. • Example tools/tactics: Interviews, surveys, open houses, comment forms.
Bring People Together	• In addition to the provision of information to help develop well informed and educated community members and stakeholders, these methods aim to involve, collaborate with, and also possibly provide opportunities for community and stakeholders to be empowered in some areas of decision-making. • Bringing people together provides an opportunity to work through issues, needs, concerns, opportunities, and ideas to help discuss and develop strategies to respond to and consider a range of views. • Bringing people together to consider the gathered feedback helps develop future decisions being made. • Example tools/tactics: Workshops, advisory committees, focus groups, conferences.

Source: Adapted from International Association for Public Participation (2014)

4.4 Short-term Implementation Strategies and Actions

Table 8 lists the recommended short-term (within the first 2 years) congestion management and transportation safety improvement strategies and actions along with key considerations and recommended outreach and engagement methods. These short-term strategies are recommended based on public input in 2018, best practices and past public engagement successes in the Gorge. Partners should re-assess implementation strategies initiated after 2020 given the conditions at that time.

Table 9. Short-Term Outreach Guide, Considerations, Methods, and Leads

Implementation Strategy or Action	Guide	Outreach Considerations and Methods	Outreach Lead
ST1: Traffic/parking camera and tube counter on roadway segments **ST2:** Origin-destination data **ST7:** Shoulder/lane delineation	Not applicable	• These implementation strategies are necessary to help improve success of other mobility and safety strategies. • Use existing external and internal agency communications and coordination, with no significant outreach effort. • Provide onsite information to notify users and visitors of where cameras are in use and privacy concerns may be raised. • Use one-on-one communication where shoulder or lane delineation adjoins access to individual residential properties.	ODOT
ST5: Coordination with existing programs	Not applicable	• Partner organizations can help distribute information related to implementation of the Congestion and Transportation Safety Improvement Plan. • Maintain existing coordination with Ready, Set, GOrge! and CGE communications; separate outreach effort not needed.	ODOT
ST3: Traffic (flagger) team at Multnomah Falls **ST6:** Dynamic and variable message signs		• Support for these efforts is high among stakeholders. • Traffic team actions should be undertaken in partnership with the Multnomah County Sheriff's office. Methods: • Inform Historic Highway Advisory Committee. • Email/web notification to alert residents and frequent visitors of methods in place to improve mobility.	ODOT; Supported by USFS, OPRD, and MCSO
ST10: Large vehicle restrictions **ST11:** Reduce speed limits		• Large vehicle restrictions will require behavioral changes from users and visitors to the study area, and feedback should be gathered to explore ways to ensure successful introduction of these strategies with key agencies, and that a range of needs and concerns are considered. • Reduced speed for all vehicles is a change to existing use of the corridor back to historic use. Outreach is required in the planning and delivery of this action. Methods: • Involve Multnomah Falls lodge on delivery needs and process to ensure continued business operations. • Consult with Historic Highway Advisory Committee. • Emails to freight haulers, RV owners via advocacy groups about pending change. • Online survey of larger vehicle drivers and residents about pending changes. • Web notification and signage once restrictions are in place to reach users.	ODOT with support from MCSO

Implementation Strategy or Action	Guide	Outreach Considerations and Methods	Outreach Lead
ST12: Satellite parking for Multnomah Falls at Benson Lake		• A new parking lot and formalized pathway provides similar, but different access than currently exists. Changes in current parking habits will be needed. Methods: • Coordinate with Multnomah Falls lodge on the change. • Consult with Historic Highway Advisory Committee. • Web/email notification to frequent visitors, media, residents; solicit open ended input to design bike/ped connections.	ODOT and OPRD
ST8: Parking management **ST9:** Parking management – enforcement		• While paid parking received significant support by residents during the 2018 public engagement, parking management will require behavioral changes from users and visitors to the study area. Gather feedback to successfully introduce new strategies (which could include paid parking) with key agencies, and consider a range of needs and concerns. • Feedback should be gathered from Title VI and Environmental Justice communities to ensure the introduction of pricing strategies considers the equity impact of these strategies on these populations and maintains the ability to access key destinations in the study area. Methods: • Engage in regular partner coordination. • Use in person workshops with visitor and resident advocates to gain input/feedback on goals, operations, and risk mitigation. • Hold focus groups with Title VI/Environmental Justice advocates to gain input on draft plans. • Utilize online open house to gain feedback on draft strategy from a wide range of visitors and Gorge residents. • Ensure public notification of engagement opportunities and pricing implementation via Historic Highway Advisory Committee, news release, email, social media, partner networks.	ODOT; Support from OPRD, USFS, Multnomah County Sheriff's office, and UPRR
ST15: Develop long-term Columbia Gorge Express (CGE) transit funding and governance strategy		• Significant support exists for the CGE service and ridership is growing. Long-term transit funding and governance presents opportunities for inter-agency partnership arrangement and significant coordinated efforts. • If funding and governance alternatives create demonstrable changes to service, implementors should undertake a more public-focused engagement strategy. Methods: • Regular discussions and engagement with existing and new partners, including other public and private transit providers in the Gorge. • Inform Historic Highway Advisory Committee of progress.	ODOT

Implementation Strategy or Action	Guide	Outreach Considerations and Methods	Outreach Lead
ST4: Establish a forum for agency partners to collaborate on major issues.		• Creation of the Congestion and Transportation Safety Improvement Plan highlighted the need for continued ongoing collaboration and problem-solving related to the highway and implementation of the plan. • Discussion topics could include: − Governance, authorities and jurisdictions − Parking lots, management and enforcement − Creating congestion management solutions − Funding Methods: • Inform Historic Highway Advisory Committee of progress. • Public notification via website and project email of forum locations, dates and actions.	ODOT, USFS, FHWA-WFLHD, OPRD, Multnomah County

4.5 Medium-Term Implementation Strategies and Actions

Medium-term strategies are targeted for implementation in 3 - 5 years. The lead agency, and accompanying considerations and methods are described in Table 10.

Table 10. Medium-Term Outreach Guide, Considerations, Methods, and Leads

Implementation Strategy or Action	Guide	Outreach Considerations	Outreach Lead
MT1: Traveler information sharing via connected vehicles		• Share information to inform prospective users.	ODOT
MT4: Install road closure gates		• These implementation strategies are necessary to help improve success of other mobility and safety strategies. • Use existing external and internal agency communications and coordination, with no significant outreach effort. • Use one-on-one communication where shoulder or lane delineation adjoins access to individual residential properties.	ODOT
MT2: Historic Highway shuttle service pilot project **MT3:** Signalized crossing at Multnomah Falls		• These strategies and actions will require a range of methods to share information, gather feedback and bring people together to systematically identify and address operational challenges. • A shuttle service provides opportunities for public-private partnerships, with a range of potential impacts in the study area to be considered including stop locations and amenity concerns. • Design and installation of a pedestrian crossing at Multnomah Falls requires working in partnership with partners to proactively manage construction and amenity impacts; opportunities exist to do the work at the same time as the East Viaduct project.	ODOT

Implementation Strategy or Action	Guide	Outreach Considerations	Outreach Lead
MT5: Expanded park-and-ride facilities and agreements to use satellite lots		• Location dependent park and ride satellite lots will require collaboration with transit providers, land owners, agencies and offer public-private partnership opportunities.	Local jurisdictions, ODOT, OPRD
MT6: Develop strategy for ensuring user safety and traffic flow after Historic Highway Trail is complete		• Significant excitement and support exists for completion of the trail and the opportunities it presents for tourism. • Pedestrian and bicycle traffic on the connections to the trail will increase. • A strategy could include a "motor-free" weekend to travel to the trail portion on the highway portion.	ODOT

4.6 Long-term Implementation Strategies and Actions

Long-term strategies are targeted for implementation in 5 years or beyond. Long-term strategies are particularly complex and often have a higher cost. The lead agency, and accompanying considerations and methods are described in Table 11.

Table 11. Long-Term Outreach Guide, Considerations, Methods, and Leads

Implementation Strategy or Action	Guide	Outreach Considerations	Outreach Lead
LT1: Vehicle use restrictions - private vehicle restrictions between Bridal Veil Falls and Ainsworth State Park **LT2:** Visitor information hub outside of corridor		• These actions will require significant inter-agency coordination and community and stakeholder participation. • Private vehicle restrictions are a significant change to existing use of the corridor. Significant outreach effort is required in the planning and delivery of this action which will present major changes to the way community members and stakeholders access the study area. • Visitor information hubs offer opportunities to work in partnership with the USFS and volunteer groups. • The establishment of a visitor Information hub outside the corridor provides economic opportunities for nearby cities and will have associated positive and negative impacts on nearby areas.	ODOT, Other lead(s) to be determined

5 Works Referenced

Jacobs Engineering Group (Jacobs). 2017. *Technical Memorandum 1 -- Vision, Goals, and Evaluation Criteria*. Prepared for Oregon Department of Transportation. December.

Jacobs Engineering Group (Jacobs). 2018a. *Technical Memorandum 2 – Existing Conditions*. Prepared for Oregon Department of Transportation. March.

Jacobs Engineering Group (Jacobs). 2018b. *Technical Memorandum 3 – Congestion Toolkit*. Prepared for Oregon Department of Transportation. May.

Jacobs Engineering Group (Jacobs). 2018c. *Technical Memorandum 4 – Alternatives Evaluation*. Prepared for Oregon Department of Transportation. June.

Jacobs Engineering Group (Jacobs). 2018d. *Technical Memorandum 5-6 – Implementation Strategies and Action Plan*. Prepared for Oregon Department of Transportation. November.

Jacobs Engineering Group (Jacobs). 2018e. *Technical Memorandum 7 – Public Outreach Strategy*. Prepared for Oregon Department of Transportation. September.

Columbia River Gorge Commission and U.S. Forest Service. 2011. *Columbia River Gorge National Scenic Area Management Plan*. Available at http://www.gorgecommission.org/management-plan/plan.

Travel Oregon. 2015. *Columbia River Gorge Visitor Opportunities Survey*. Available at http://industry.traveloregon.com/content/uploads/2015/08/Travel-Oregon-Survey-Report-1-19-2015-1.pdf.