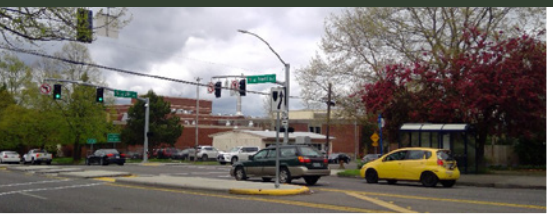
INNER POWELL BOULEVARD

SE 9th to I-205 State of Good Repair Study



Final Report | December 2019

Oregon Department of Transportation

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Nếu quý vị muốn thông tin về dự án này được dịch sang tiếng Việt, xin gọi 503-731-4128.

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INNER POWELL BOULEVARD

SE 9th to I-205 State of Good Repair Study

Oregon Department of Transportation
Region 1
December 2019

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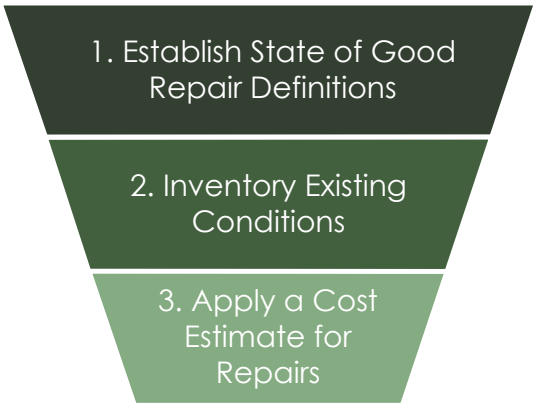
Oregon's population continues to grow, especially in urban areas, which puts more demands on the existing transportation system. What once were simple two-lane highways have grown into some of the most densely developed corridors in the state – in many cases still under the responsibility of ODOT. While all routes are important to the traveling public and to the economy of Oregon, investments in transportation facilities of regional and statewide significance are prioritized higher than those routes that serve a more local need. The result is a disinvestment in the assets of those highways that serve a more local need.

US26 from the Willamette River going east through the City of Portland is one of these routes – known as Powell Boulevard. The highway does not fulfill the statewide need that it was originally constructed for – as the urban areas has built-up around it, the users of the highway are different, and with different needs. Funding for improvements are always in high demand and the 2017 Oregon Legislature recognized the need to address this section of Powell Boulevard and ultimately transfer it to the City of Portland.

House Bill 2017 Section 27e requires the Oregon Transportation Commission (OTC) to study the costs to upgrade and transfer the portion of SE Powell Boulevard from the intersection with SE 9th Avenue to the I-205 interchange in Portland, Oregon. This segment of SE Powell Boulevard is referred to as Inner Powell. The OTC directed ODOT to prepare the Inner Powell: SE 9th to I-205 State of Good Repair Study. The study establishes a state of good repair threshold for various roadway elements to help ODOT determine the cost to upgrade existing assets and to inform continuing efforts to transfer ownership of Inner Powell from ODOT to the City of Portland. The OTC is required to report the study's findings to the Oregon Legislature's Joint Committee on Transportation by January 1, 2020

The study team followed three steps to complete the study:

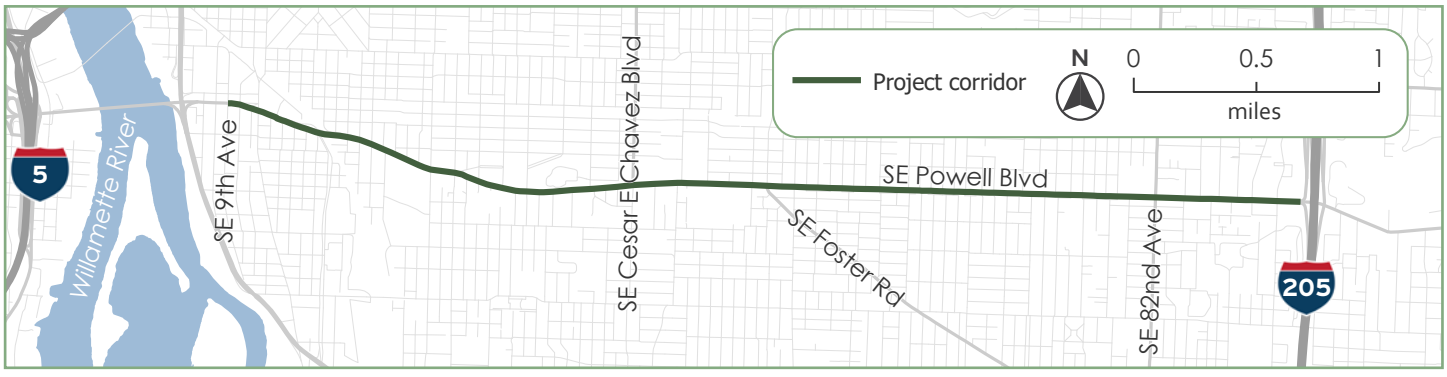


1. Establish state of good repair definitions

The study team established a state of good repair (SOGR) definition for specific corridor elements under ODOT ownership along Inner Powell, including the following (Section 2; Attachment A):

- Drainage & utilities
- Sidewalks
- Pavement
- Signals
- Lighting
- Signing
- Striping

State of good repair is a condition in which existing assets for an element are performing their intended purpose. The definitions identify what is needed to bring each element up to a functional level. Americans with Disabilities Act (ADA) elements (i.e., curb ramps and push buttons) were also considered in this study.



The study area is SE Powell Boulevard from the intersection with SE 9th Ave to the I-205 interchange in Portland. The segment is approximately 4.5 miles long and correlates roughly to mileposts 1.2 to 5.7. ODOT owns curb-to-curb for most of the corridor.

2. Inventory existing conditions and recommend repairs

The study team evaluated each corridor element and provided a rating of "good," "fair," or "poor" consistent with established state of good repair definitions. For those corridor elements that were identified as "fair" or "poor", the study team identified repairs needed (Section 3; Attachments B and C).

ADA ramp and pushbutton upgrades are required to meet current ODOT standards. The study team identified the deficient intersections and applied a cost estimate for ADA improvements.

3. Apply a cost estimate for repairs

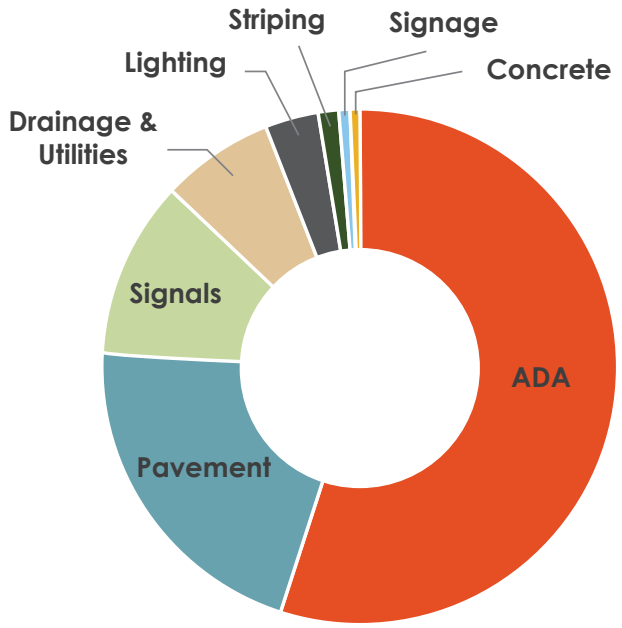
The study team generated a cost estimate for the identified repairs (Section 4; Attachment C). Cost methodology used the best data available and was based on research of programmed work, owner maintenance and asset management input, and a field inventory of existing conditions. Costs for repairs currently programmed in the 2018-2021 Statewide Transportation Improvement Program (STIP) were excluded from the cost estimate (Attachment D).

Cost Estimate

The cost to upgrade Inner Powell to a state of good repair would be about $31 million. This cost is subject to change depending on construction year. The breakdown of costs is shown to the right.

Looking west on SE Powell Blvd at SE Milwaukie.

Category	Cost Estimate (2019 Dollars)
State of Good Repair	
Drainage & Utilities	$833,000
Concrete (sidewalks & median curbs)	$72,000
Pavement	$2,390,000
Signals	$1,233,000
Lighting	$401,000
Signing	$86,000
Striping	$129,000
SOGR subtotal	$5,144,000
ADA	$6,782,000
Total Base Cost	**$11,926,000**
Mobilization (10%)	$1,193,000
Maintenance of Traffic (12%)	$1,431,000
Contingency (35%)	$5,092,000
Total Construction Cost	**$19,642,000**
Anticipated Items (4%)	$786,000
PE/Util/Row (33%)	$6,482,000
Construction Engineering (20%)	$3,928,000
Grand Total	**$30,838,000**



Breakdown of estimated costs by corridor element. ADA costs are approximately 57% of the total base cost estimate.

ABBREVIATIONS AND ACRONYMS

ADA	Americans with Disabilities Act
Ave	Avenue
Blvd	Boulevard
City	City of Portland
HAWK	high intensity crosswalk beacon
I-205	Interstate 205
ITS	intelligent transportation system
ODOT	Oregon Department of Transportation
OHP	Oregon Highway Plan
OTC	Oregon Transportation Commission
ROW	right of way
RRFB	rectangular rapid flashing beacon
SE	southeast
SOGR	state of good repair
STIP	Statewide Transportation Improvement Program
study	Inner Powell: SE 9th Avenue to I-205 State of Good Repair Study

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1.1 Purpose of Study

House Bill 2017 Section 27e requires the Oregon Transportation Commission (OTC) to study the costs to upgrade and transfer the portion of Southeast (SE) Powell Boulevard from the intersection with SE 9th Avenue to the I-205 interchange in Portland, Oregon. This segment of SE Powell Boulevard is referred to as Inner Powell. The OTC directed the Oregon Department of Transportation (ODOT) to prepare the Inner Powell: SE 9th to I-205 State of Good Repair Study. The study establishes a state of good repair (SOGR) threshold for various roadway elements to help ODOT determine the cost to upgrade existing assets and to inform continuing efforts to transfer ownership of Inner Powell from ODOT to the City of Portland. The OTC is required to report the study's findings to the Oregon Legislature's Joint Committee on Transportation by January 1, 2020.

The study team followed a three-step process to complete the study:

1. Establish State of Good Repair definitions
2. Inventory existing conditions
3. Apply a cost estimate for repairs

To achieve those steps, this study includes the following sections and attachments:

1. Introduction and Purpose of Study
2. Establish State of Good Repair Definitions
3. Inventory Existing Conditions and Recommend Repairs
4. Cost Estimate

Attachment A: State of Good Repair and Assessment Methods (March 2019)

Attachment B: Existing Conditions (June 2019)

Attachment C: Corridor Element Upgrades (September 2019)

Attachment D: Inventory of Planned/Programmed Projects (January 2019)

1.2 Background on Jurisdictional Transfer in Oregon

Jurisdictional transfer is the process of transferring roads from one jurisdiction to another. This process usually supports matching road ownership with road function. Ideally, local jurisdictions own, manage, and maintain roads that serve local functions while the State owns, manages, and maintains roads that serve intrastate or interstate functions.

Jurisdictional transfer can be triggered by a specific highway project (e.g., a highway bypass is constructed, so the former highway becomes a local roadway), or when the State or a local government desires a change. Jurisdictional transfers require approval of the State and any affected local governments. ODOT's handbook on jurisdictional transfers, Transferring Roads (ODOT

Figure 1. Typical conditions along Inner Powell.

2003), lists several reasons why ODOT might want to transfer a highway segment to a local jurisdiction:

- On a District Highway (i.e., largely functioning as county and city arterials or collectors), the vehicle trips are mostly local in nature – for shopping, local business, and recreation – and not as high of a priority route for the regional or statewide system for allocation of limited funding and resources.
- A new state highway bypasses a city, and the route through the city is no longer needed as part of the state system.
- A highway realignment leaves a portion of the old highway useful only for local access purposes.
- Having only one government making land use and access management decisions on a District Highway might result in greater efficiency and community responsiveness.
- The local government wants to make improvements, permit accesses, or maintain the District Highway or local interest road for a different purpose or context to meet their local needs – given that the facility is not of a regional or statewide significance, with regards to the allocation of limited funding and resources.
- The trade will save ODOT money for signal power and maintenance, as well as plowing, sanding, and other maintenance work, and it is more efficient for the local government to provide these services.
- The highway is not needed for statewide or regional system connectivity.

The 1999 Oregon Highway Plan (OHP) in Policy 2C says that the state should consider, in cooperation with local jurisdictions, interjurisdictional transfers that:

- Rationalize and simplify the management responsibilities along a roadway segment or corridor;
- Reflect the appropriate functional classification of a roadway segment or corridor; and/or
- Lead to increased efficiencies in the operation and maintenance of a roadway segment or corridor.

OHP Action 2C.1 lists the types of roads that might be transferred to local jurisdictions. Road types like Inner Powell are urban arterials serving primarily local travel needs.

1.3 Study Area

The study area is SE Powell Boulevard from the intersection with SE 9th Avenue to the I-205 interchange (see Figure 2) in Portland. This segment is approximately 4.5 miles long and correlates roughly to mileposts 1.2 to 5.7. For the purposes of this study, the curb line of Powell Boulevard is set in place; ODOT is primarily responsible for corridor elements from "curb-to-curb" (i.e., the roadway). Certain corridor elements that span the curb line, such as signal structures or sidewalk ramps meeting Americans with Disabilities Act (ADA) standards are also assumed to be included in the study area.

The segment of Powell Boulevard between SE 9th Avenue and SE 86th Avenue is currently a state highway over a city street. ODOT maintains the roadway from curb-to-curb, and the City maintains the landscaped medians and area outside of the curb line, such as sidewalks. The segment from SE 86th Avenue to I-205 is a State Fee Simple right-of-way, which is owned, controlled, and maintained by the State, except certain elements for which there are maintenance agreements between ODOT and the City (refer to Misc. Contracts and Agreement No. 7219 – Construction Finance Agreement Interstate Transfer Project, executed in 1980).

2. ESTABLISH STATE OF GOOD REPAIR DEFINITIONS

The study team defined state of good repair (SOGR) for specific corridor elements under ODOT ownership along Inner Powell, including the following:

- Pavement
- Signals and signal systems
- Pavement markings (striping)
- Signage
- Lighting
- Hazardous materials
- Utilities
- Sidewalks
- Drainage & utilities

ODOT determined that other elements in the corridor (e.g., pedestrian bridge, rail/transit structures, retaining walls, concrete stamped medians, concrete structure lid pads, and curbs) are outside the scope of this study because such elements may have multi-jurisdictional ownership, are owned or maintained by other agencies, or are known or assumed to be in good repair. ADA elements (i.e., curb ramps and push buttons) were also considered in this study.

SOGR is a condition in which existing assets for an element are performing their intended purpose. Table 1 lists each of the corridor elements and definitions to identify what is needed to bring each element up to a functional level. Attachment A has additional detail on the methodology to develop SOGR and geographic limits for each corridor element to establish the parameters that were considered for upgrades along Inner Powell.

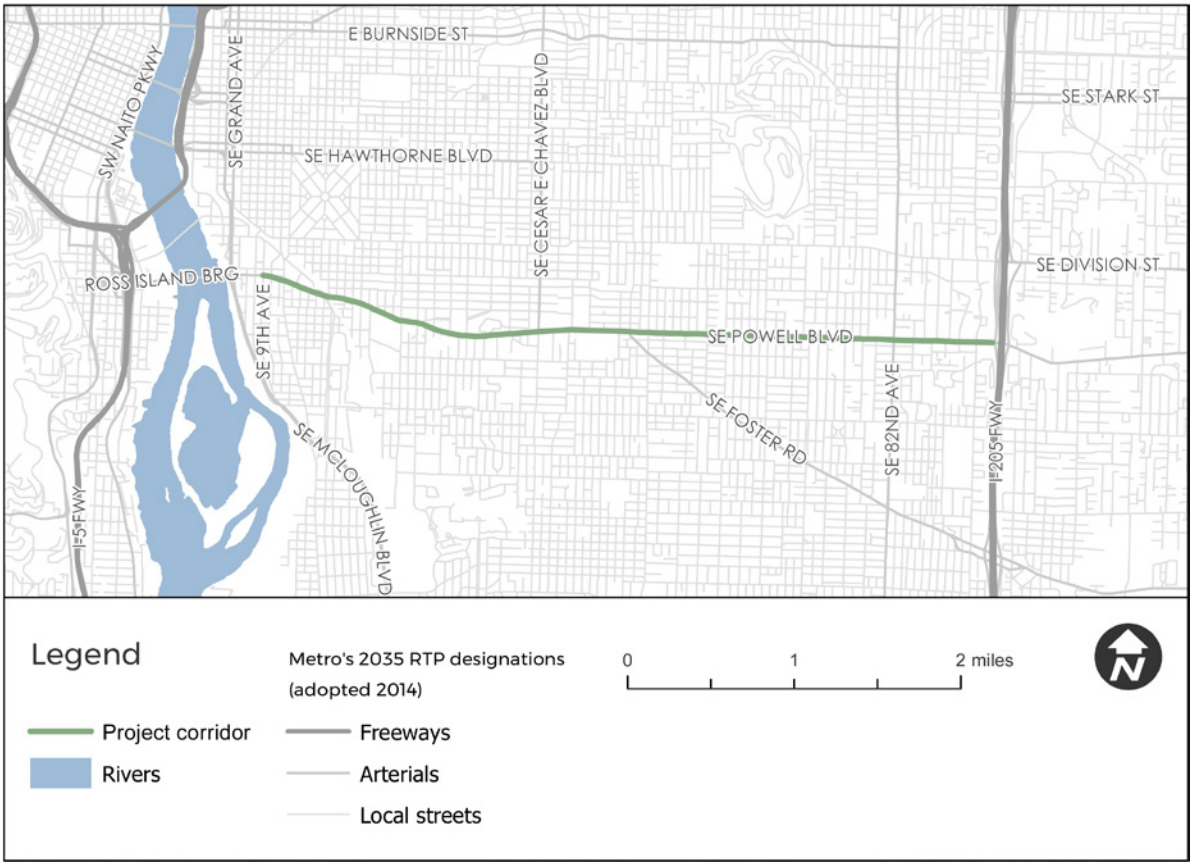


Figure 2. Study area

Table 1. Corridor element descriptions and SOGR definitions

Element	Description	State of good repair definition
Pavement	The hard surface of the roadway that is specifically designed for vehicle traffic.	• Minimal hairline cracking (i.e., hard to detect) • Minor patching and deformation • Pavement rutting[1] is less than 0.5 inch deep • Ride quality is considered very good and not noticeable to road user
Signals and signal systems[2]	The systems that control motor vehicle, bicycle, and pedestrian movements at intersections and crossings. These include vehicle signals, crossing signals, bike signals, and mid-block pedestrian crossing signals such as rectangular rapid flashing beacons (RRFB), pedestrian-activated signals, and high-intensity activated crosswalk (HAWK) signals.	• Signal does not have a "poor" or "very poor" rating in Oregon's Traffic Signal Asset Management rating system • Pedestrian pushbutton functions • Pole and cabinet are in functional condition; hardware is mounted properly; Poles do not have visual structural damage that show significant deformation or cause the pole to lean and functions per their intended purpose • For ITS devices, the device and support structures function properly
Pavement markings (striping)	All markings applied to the roadway surface including, but not limited to, lane pavement markings, turn arrows, bike lane markings and bike lane symbols, pavement bars, pavement text, and other markers applied to the roadway surface and paint for curbs (e.g., loading and emergency zones). Raised pavement markers (reflective and non-reflective) and surface-mounted tubular markers[3] are also included.	• Pavement markings are not worn or missing • Pavement markings are consistent with other pavement markings and signs in the corridor conveying information to road users

[1] Rutting is a depression or groove worn into a road or path by the travel of wheels.

[2] Traffic signal communications and intelligent transportation systems (ITS) include variable message signs, traffic cameras, Bluetooth readers, and traffic signal communications network connectivity devices. ITS devices along the corridor are not evaluated because they are already owned, operated and maintained by PBOT. Exceptions to this are at traffic signal locations that will be fully replaced. At these locations new ITS hardware is assumed.

[3] Surface-mounted tubular markers are flexible plastic lane delineation devices approximately 4 feet tall that can be bonded to asphalt or concrete surfaces.

Element	Description	State of good repair definition
Signage	All regulatory, warning, and guide signs along the roadway used to direct traffic, warn road users of oncoming obstructions, or provide guidance where needed. Includes signs within an approved school zone. Signage includes sign panels, sign supports, and footings.	• Sign supports and footings function properly • Signs are secured properly to a mounting structure • Sign's message is legible and not obstructed by heavy wear, graffiti, or damage; sign face is not faded and has reflective background and legend (when required) • Signs are consistent with pavement markings in directing road users
Lighting	All lighting along corridor to improve visibility and safety.	• Light poles do not have visible structural damage that show significant deformation or cause the pole to lean and function per their intended purpose • Light bulbs function properly
Hazardous materials	Materials used in construction, industrial activities, and biological waste that are within the right-of-way including: • asbestos containing materials • lead, cadmium, and chromium paints • silica dusts from concrete • oils, greases, gasoline, diesel, and other petroleum products • contaminated surface soils	• Assets or facility that typically contain lead, cadmium, or chromium paints are identified and in good condition • Assets that typically contain asbestos are identified and in good condition
Utilities[4]	All supporting elements to a utility, box, or pipe including the mountings, grates, or any additional part of the utility that can impact the pavement, curb, or concrete.	• Condition of surface utility feature, such as manhole covers and valve covers, shows little to no wear and non-slip surfaces are not smooth • Pavement around surface utility feature is smooth with minimal cracks • Frames and slabs show no holes or cracks that affect function • Frame positions are flush to the surface • Metal grates are functional and have minimal damage

[4] In general, utilities are not ODOT-owned assets, but most are located on ODOT right-of-way by permit. Utilities are generally privately or publicly owned by other agencies. Power drops, fiber optic lines, or communications associated with ODOT-owned signals or ITS are not included in this element because they service a definable ODOT asset.

Element	Description	State of good repair definition
Sidewalks	The hard, smooth surface located along the roadway, separated by a curb and/or a planting strip and swale.	• No trip hazards that are 0.5 inch or greater • No cracks or openings that are 0.5 inch or greater • No chipping or general deterioration that creates a depth 0.5 inch or greater
Drainage	All stormwater collection, conveyance, treatment, and disposal facilities including: • curb and grate inlets • catch basins and manholes • sedimentation manholes • underground injection controls (UICs or sump systems) • water quality facilities such as stormwater planters, rain gardens and swales • storm sewer pipe	• The drainage facility operates properly • Functional amount of sediment accumulation • Functional amount of rust, pitting, or erosion on pipes

The study team conducted a field inventory and evaluated each corridor element to provide a rating of "good," "fair," or "poor" consistent with the SOGR definitions established in Table 1. Attachment B includes a complete set of the collected existing conditions data. For those corridor elements that were identified as "fair" or "poor", the study team identified repairs needed.

3.1 Corridor Element Repairs

The study team divided the study corridor into 11 segments, each approximately 2,000 feet long, for ease of visualization. The 11 pages at the end of Section 4 each show an aerial map of a segment with mileposts. Below the aerial map is a roadway diagram for each corridor element listed below. The recommended upgrades for each element that was rated as "fair" or "poor" in the existing conditions analysis have unique icons that align with the aerial map to represent recommended repairs to bring the element to a state of good repair. If a segment does not have a specific element roadway diagram, it is because there are no upgrades identified for that element along the segment corridor. Attachment C describes the methodology used to identify repairs. The following elements are included on the roadway diagrams:

- Pavement
- Signals
- Striping
- Signage
- Lighting
- ADA pushbuttons
- ADA ramps
- Sidewalks (including concrete median curbs)

The study corridor has experienced consistent traffic conditions over the years that has produced similar wear and tear throughout the corridor. Therefore, the team evaluated utilities and drainage features along two representative corridor segments instead of the entire corridor. Attachment B includes the existing conditions for drainage and utilities and Attachment C includes the recommended repairs.

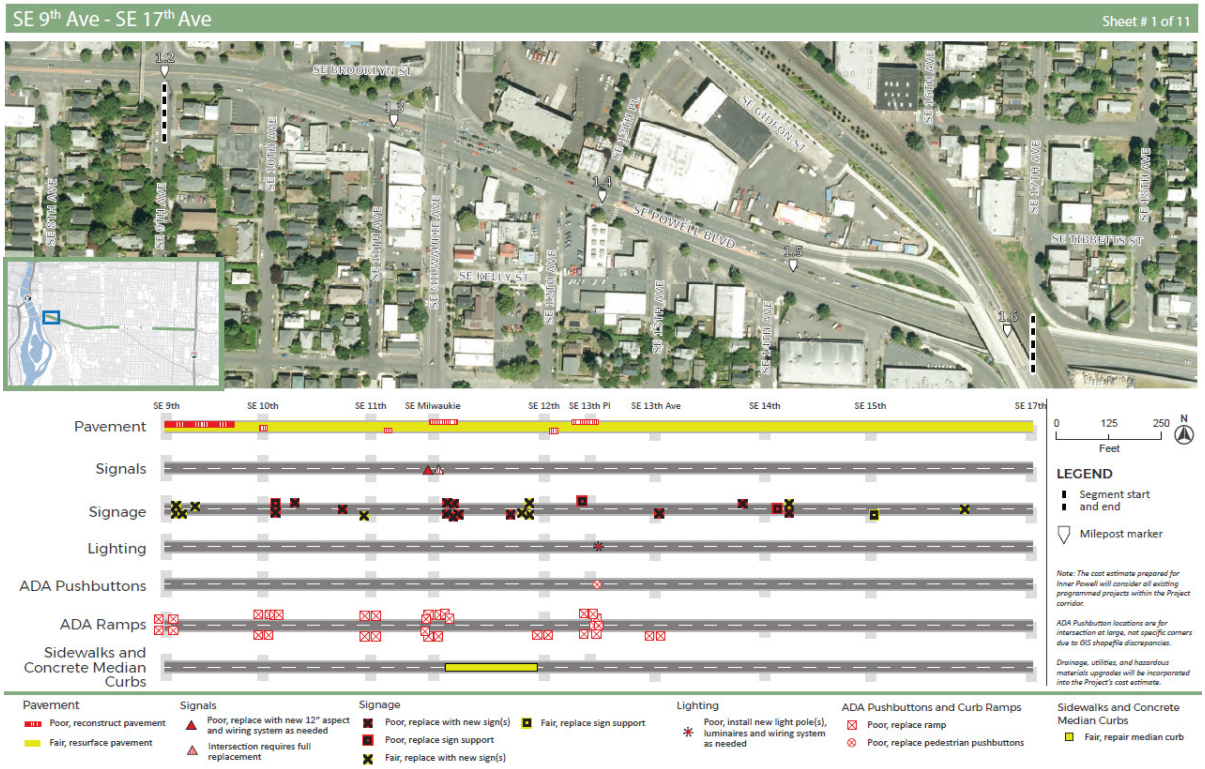


Figure 3. Example roadway diagram

4. COST ESTIMATE

The study team used the corridor element upgrade list to develop cost estimates for repairs to each identified element within the study corridor to bring the corridor to a state of good repair. Cost methodology used the best data available and was based on research of programmed work, owner maintenance and asset management input, and the field inventory of existing conditions. Attachment C includes the complete cost estimate for the identified upgrades and describes the methodology to develop the costs. Costs for repairs currently programmed in the 2018-2021 Statewide Transportation Improvement Program (STIP) were excluded from the cost estimate. Refer to Attachment D for a complete list of those programmed projects.

The estimated total cost to achieve a state of good repair on Inner Powell, including program costs and contingencies, is approximately $30,837,557 (in 2019 dollars). The cost is subject to change depending on construction year. The breakdown of costs is shown in Table 2 and Figure 4. As shown in Table 2 and Figure 4, ADA costs are approximately 57% of the total base cost estimate.

Table 2. Cost estimate to upgrade Inner Powell to a state of good repair

Category	Cost Estimate (2019 Dollars)	Percent of total base cost
State of Good Repair		
Drainage & Utilities	$833,000	7%
Concrete (sidewalks & median curbs)	$72,000	1%
Pavement	$2,390,000	20%
Signals	$1,233,000	10%
Lighting	$401,000	3%
Signing	$86,000	1%
Striping	$129,000	1%
SOGR subtotal	$5,144,000	43%
ADA	$6,782,000	57%
Total Base Cost	**$11,926,000**	
Mobilization (10%)	$1,193,000	
Maintenance of Traffic (12%)	$1,431,000	
Contingency (35%)	$5,092,000	
Total Construction Cost	**$19,642,000**	
Anticipated Items (4%)	$786,000	
PE/Util/Row (33%)	$6,482,000	
Construction Engineering (20%)	$3,928,000	
Grand Total	**$30,838,000**	

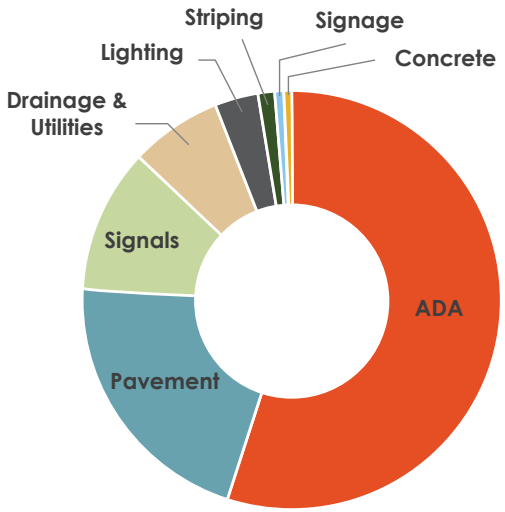
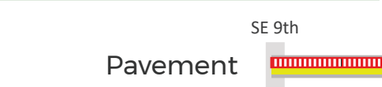


Figure 4. Breakdown of estimated costs by corridor element. ADA costs are approximately 57% of the total base cost estimate.

SE 9th Ave - SE 17th Ave



0 125 250 N

Feet

LEGEND

- Segment start and end
- Milepost marker

Note: The cost estimate prepared for Inner Powell will consider all existing programmed projects within the Project corridor.

ADA Pushbutton locations are for intersection at large, not specific corners due to GIS shapefile discrepancies.

Drainage, utilities, and hazardous materials upgrades will be incorporated into the Project's cost estimate.

Pavement
- Poor, reconstruct pavement
- Fair, resurface pavement

Signals
- Poor, replace with new 12" aspect and wiring system as needed
- Intersection requires full replacement

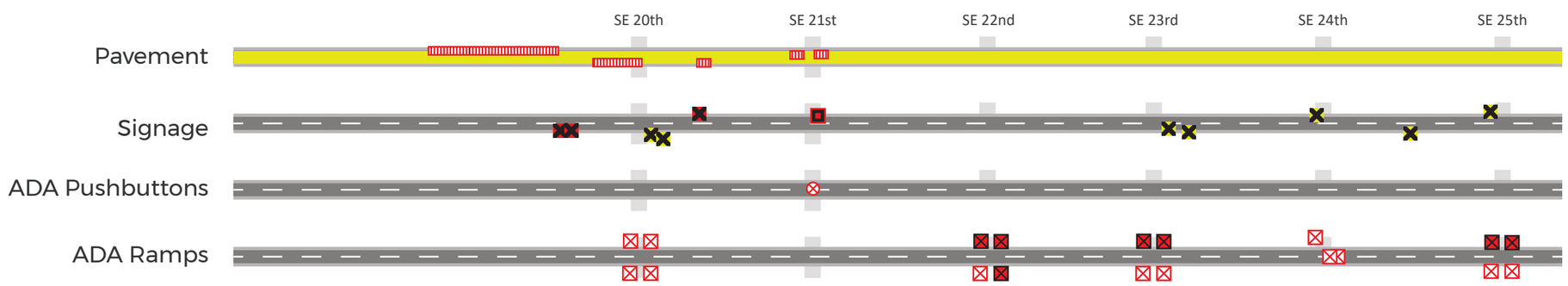
Signage
- Poor, replace with new sign(s)
- Poor, replace sign support
- Fair, replace with new sign(s)
- Fair, replace sign support

Lighting
- Poor, install new light pole(s), luminaires and wiring system as needed

ADA Pushbuttons and Curb Ramps
- Poor, replace ramp
- Poor, replace pedestrian pushbuttons

Sidewalks and Concrete Median Curbs
- Fair, repair median curb

SE 17th Ave - SE 26th Ave



0 125 250 Feet N

LEGEND

- Segment start and end
- Milepost marker

Note: The cost estimate prepared for Inner Powell will consider all existing programmed projects within the Project corridor.

ADA Pushbutton locations are for intersection at large, not specific corners due to GIS shapefile discrepancies.

Drainage, utilities, and hazardous materials upgrades will be incorporated into the Project's cost estimate.

Pavement

- Poor, reconstruct pavement
- Fair, resurface pavement

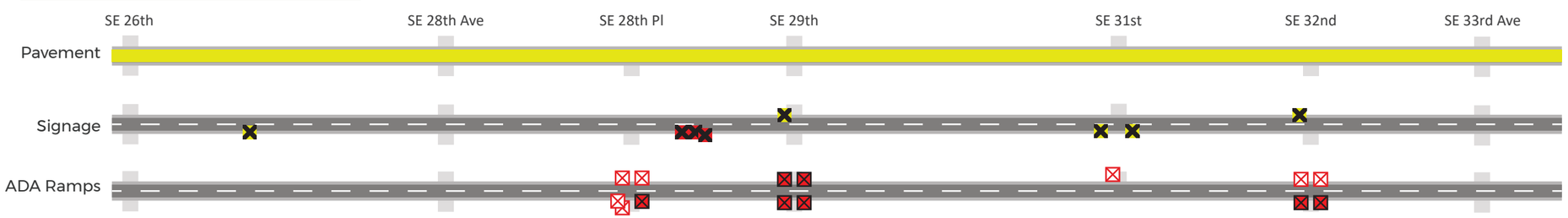
Signage

- Poor, replace with new sign(s)
- Poor, replace sign support
- Fair, replace with new sign(s)

ADA Pushbuttons and Curb Ramps

- Poor, replace ramp
- Poor, replace diagonal ramp with 2 ramps
- Poor, replace pedestrian pushbuttons

SE 26th Ave - SE 33rd Ave



0 125 250 Feet N

LEGEND

- Segment start and end
- Milepost marker

Pavement
- Fair, resurface pavement

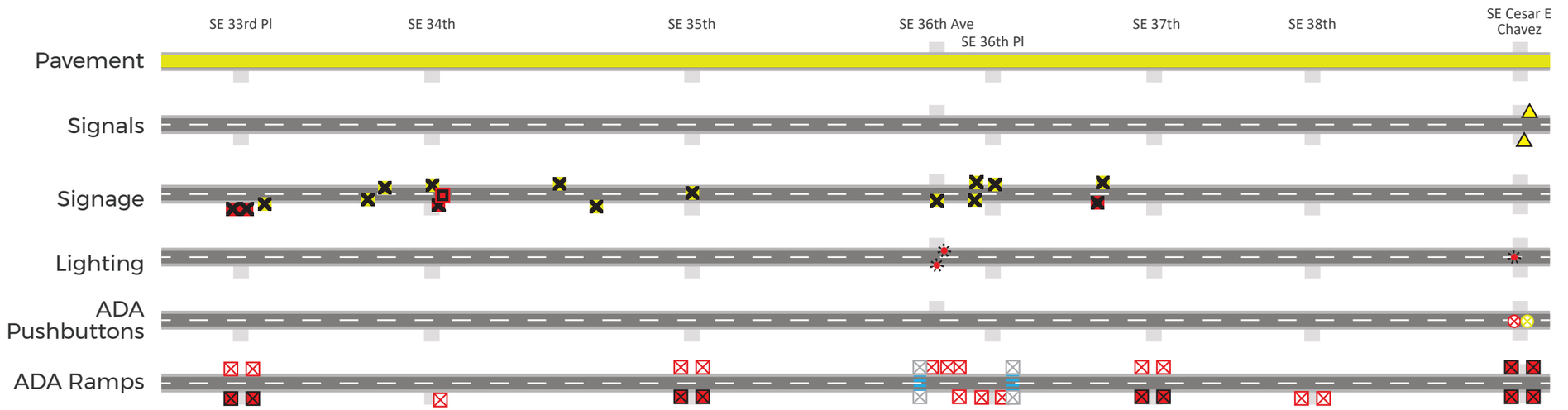
Signage
- Poor, replace with new sign(s)
- Fair, replace with new sign(s)

ADA Pushbuttons and Curb Ramps
- Poor, replace ramp
- Poor, replace diagonal ramp with 2 ramps

Note: The cost estimate prepared for Inner Powell will consider all existing programmed projects within the Project corridor.

Drainage, utilities, and hazardous materials upgrades will be incorporated into the Project's cost estimate.

SE 33rd Ave - SE Cesar E. Chavez Blvd



0 125 250 N

Feet

LEGEND

- Segment start and end
- Milepost marker

Pavement

- Fair, resurface pavement

Signals

- Fair, cleaning or minor maintenance

Signage

- Poor, replace with new sign(s)
- Poor, replace sign support
- Fair, replace with new sign(s)

Lighting

- Poor, install new light pole(s), luminaires and wiring system as needed

ADA Pushbuttons and Curb Ramps

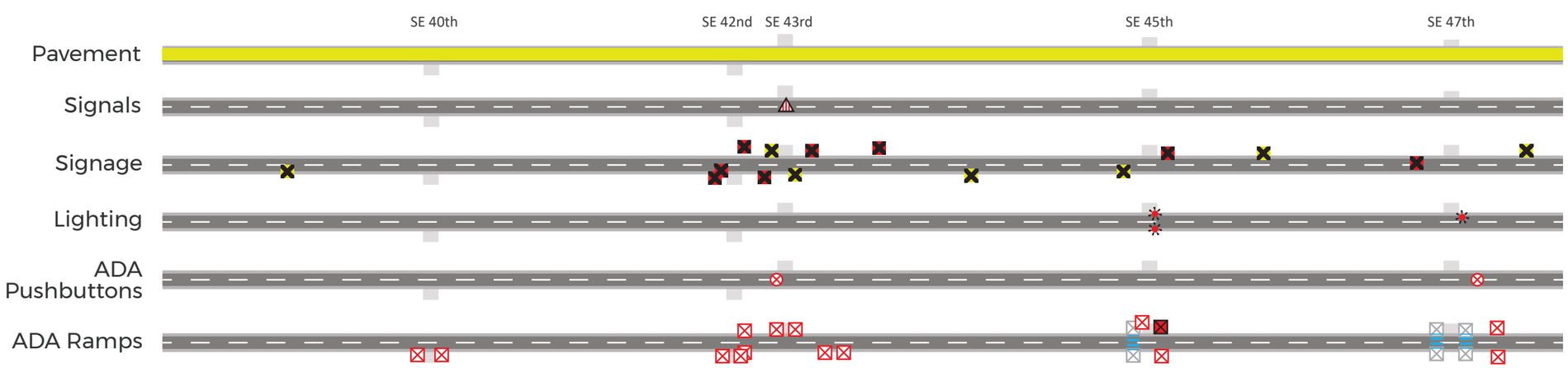
- Poor, replace ramp
- Poor, replace diagonal ramp with 2 ramps
- Poor, replace pedestrian pushbuttons
- Fair, clean, maintain or relocate pushbuttons
- Potential ramp and crossing closure

Note: The Region 1 Bike Ped Crossings Project includes improvements at SE 36th Ave. The cost estimate prepared for Inner Powell will take those improvements and any existing programmed projects within the Project corridor into consideration.

ADA Pushbutton locations are for intersection at large, not specific corners due to GIS shapefile discrepancies.

Drainage, utilities, and hazardous materials upgrades will be incorporated into the Project's cost estimate.

SE Cesar E Chavez Blvd - SE 47th Ave



0 125 250 Feet

N

LEGEND

- Segment start and end
- Milepost marker

Pavement

- Fair, resurface pavement

Signals

- Intersection requires full replacement

Signage

- Poor, replace with new sign(s)
- Fair, replace with new sign(s)

Lighting

- Poor, install new light pole(s), luminaires and wiring system as needed

ADA Pushbuttons and Curb Ramps

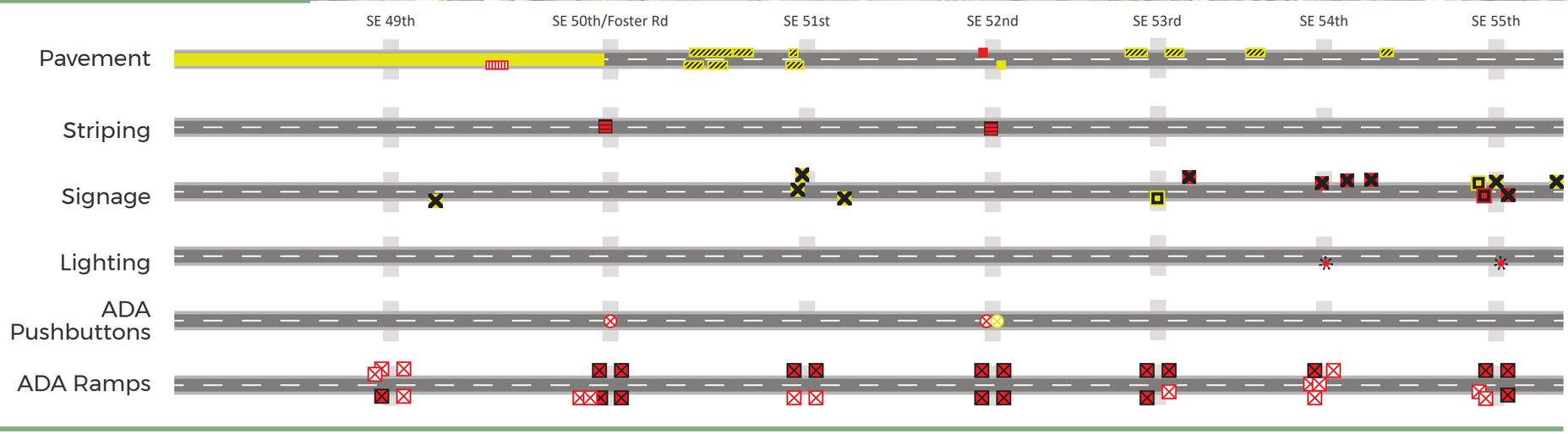
- Poor, replace ramp
- Poor, replace diagonal ramp with 2 ramps
- Poor, replace pedestrian pushbuttons
- Potential ramp and crossing closure

Note: The cost estimate prepared for Inner Powell will consider all existing programmed projects within the Project corridor.

ADA Pushbutton locations are for intersection at large, not specific corners due to GIS shapefile discrepancies.

Drainage, utilities, and hazardous materials upgrades will be incorporated into the Project's cost estimate.

SE 47th Ave - SE 55th Ave



0 125 250 N
Feet

LEGEND

- Segment start and end
- Milepost marker

Pavement
- Poor, reconstruct pavement
- Poor, resurface pavement
- Fair, resurface pavement
- Fair, apply joint sealing

Striping
- Poor, remove existing striping and restripe entirely

Signage
- Poor, replace with new sign(s)
- Poor, replace sign support
- Fair, replace with new sign(s)
- Fair, replace sign support

Lighting
- Poor, install new light pole(s), luminaires and wiring system as needed

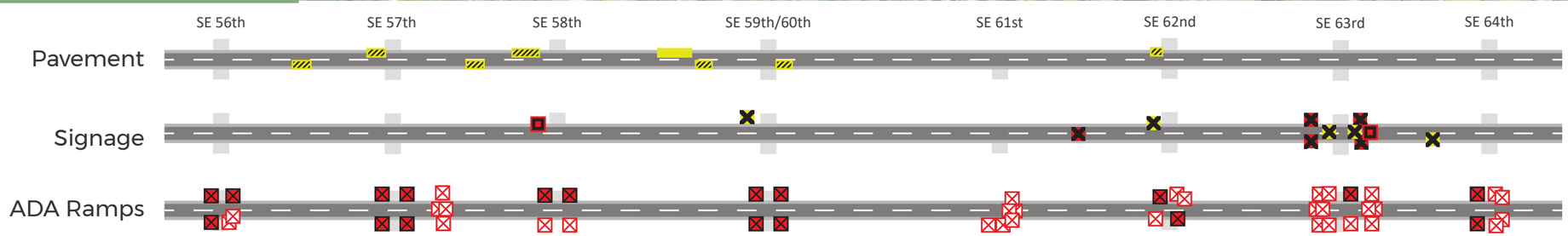
ADA Pushbuttons and Curb Ramps
- Poor, replace ramp
- Poor, replace diagonal ramp with 2 ramps
- Poor, replace pedestrian pushbuttons
- Fair, clean, maintain or relocate pushbuttons

Note: The cost estimate prepared for Inner Powell will consider all existing programmed projects within the Project corridor.

ADA Pushbutton locations are for intersection at large, not specific corners due to GIS shapefile discrepancies.

Drainage, utilities, and hazardous materials upgrades will be incorporated into the Project's cost estimate.

SE 55th Ave - SE 64th Ave



0 125 250 Feet N

LEGEND

- Segment start and end
- Milepost marker

Pavement

- Fair, resurface pavement
- Fair, apply joint sealing

Signage

- Poor, replace with new sign(s)
- Poor, replace sign support

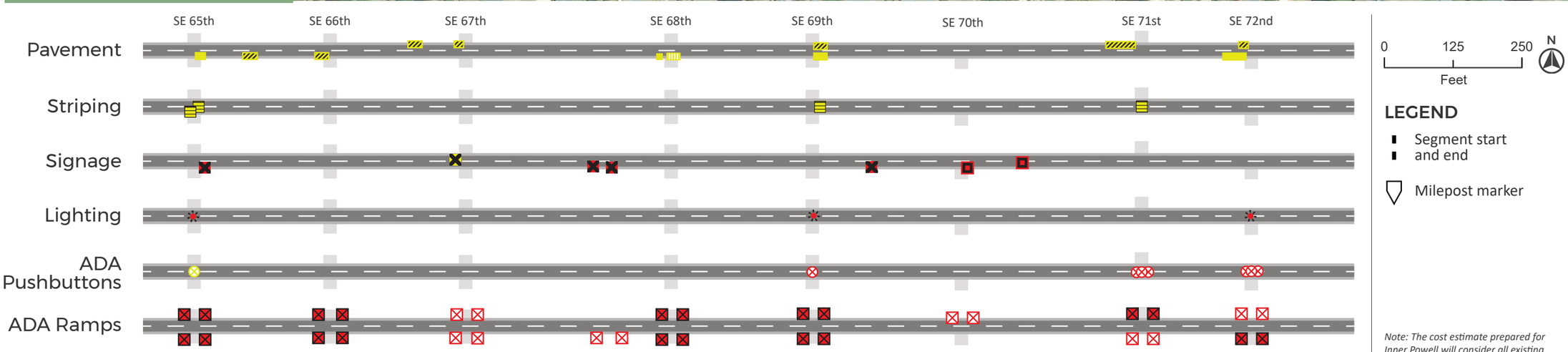
ADA Pushbuttons and Curb Ramps

- Poor, replace ramp
- Poor, replace diagonal ramp with 2 ramps

Note: The cost estimate prepared for Inner Powell will consider all existing programmed projects within the Project corridor.

Drainage, utilities, and hazardous materials upgrades will be incorporated into the Project's cost estimate.

SE 64th Ave - SE 72nd Ave



0 125 250 N
Feet

LEGEND

- Segment start and end
- Milepost marker

Pavement
- Fair, apply joint sealing
- Fair, resurface pavement
- Fair, reconstruct pavement

Striping
- Fair, spot treatment of striping

Signage
- Poor, replace with new sign(s)
- Poor, replace sign support

Lighting
- Poor, install new light pole(s), luminaires and wiring system as needed

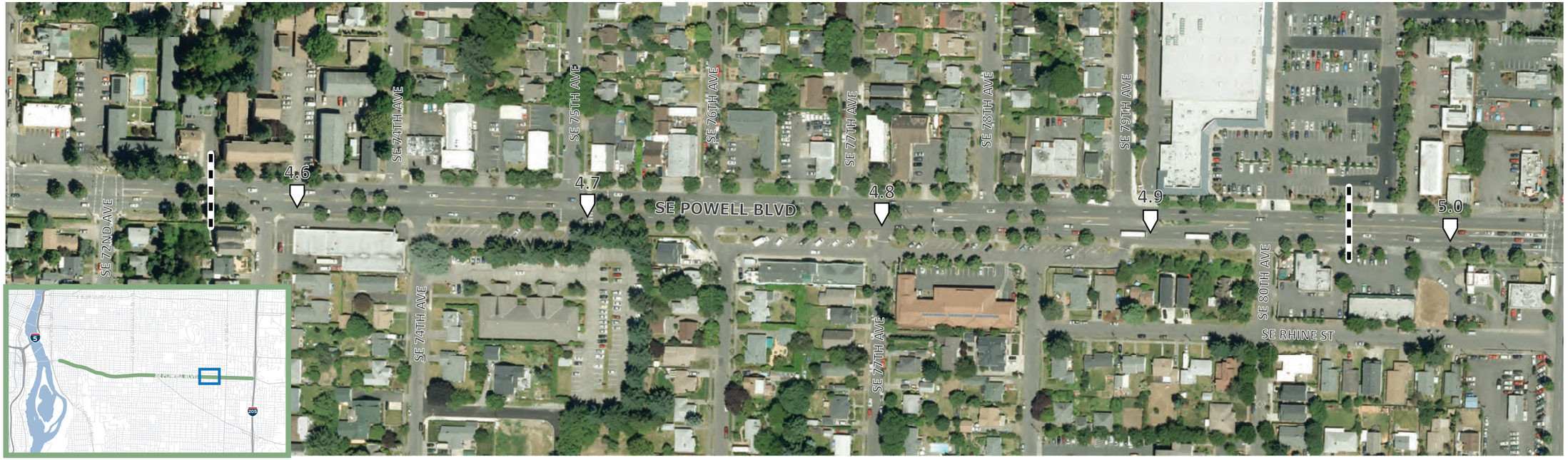
ADA Pushbuttons and Curb Ramps
- Poor, replace ramp
- Poor, replace diagonal ramp with 2 ramps
- Poor, replace pedestrian pushbuttons
- Fair, clean, maintain or relocate pushbuttons

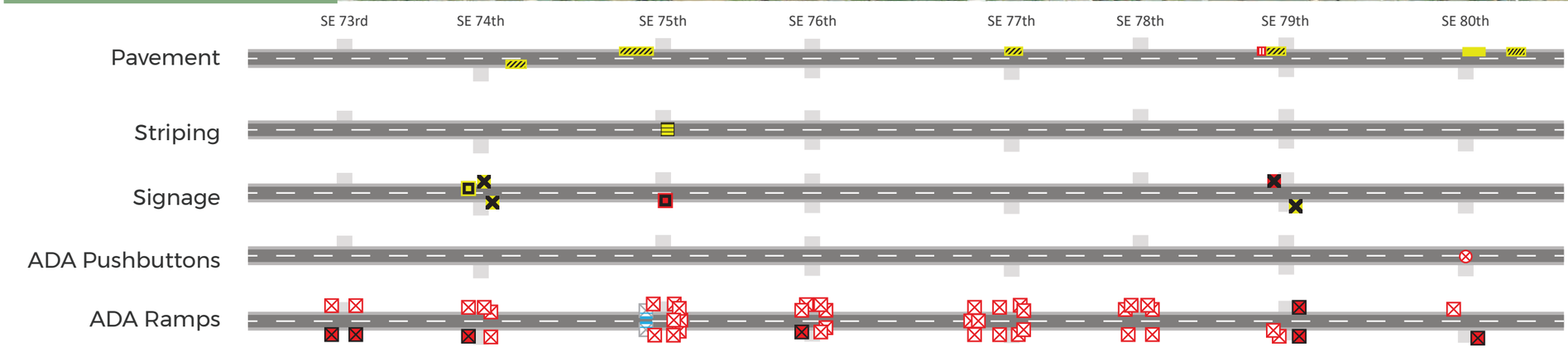
Note: The cost estimate prepared for Inner Powell will consider all existing programmed projects within the Project corridor.

ADA Pushbutton locations are for intersection at large, not specific corners due to GIS shapefile discrepancies.

Drainage, utilities, and hazardous materials upgrades will be incorporated into the Project's cost estimate.

SE 72nd Ave - SE 80th Ave





0 125 250 Feet

N

LEGEND

- Segment start and end
- Milepost marker

Note: The SE Powell Boulevard High Crash Corridor Safety Plan includes improvements at SE 79th Ave. The cost estimate prepared for Inner Powell will take those improvements and any existing programmed projects within the Project corridor into consideration.

ADA Pushbutton locations are for intersection at large, not specific corners due to GIS shapefile discrepancies.

Drainage, utilities, and hazardous materials upgrades will be incorporated into the Project's cost estimate.

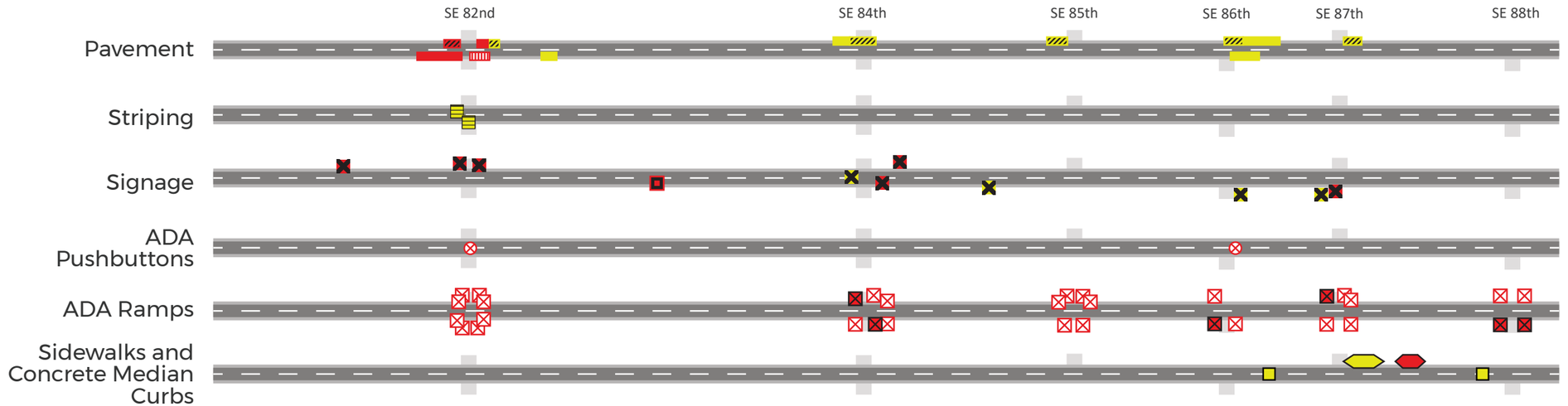
Pavement
- Poor, reconstruct pavement
- Fair, apply joint sealing
- Fair, resurface pavement

Striping
- Fair, spot treatment of striping

Signage
- Poor, replace with new sign(s)
- Poor, replace sign support
- Fair, replace sign support

ADA Pushbuttons and Curb Ramps
- Poor, replace ramp
- Poor, replace diagonal ramp with 2 ramps
- Poor, replace pedestrian pushbuttons
- Potential ramp and crossing closure

SE 80th Ave - SE 88th Ave



0 125 250 Feet

N

LEGEND

- Segment start and end
- Milepost marker

Pavement

- Poor, apply joint sealing
- Poor, resurface pavement
- Poor, reconstruct pavement
- Fair, apply joint sealing
- Fair, resurface pavement

Striping

- Fair, spot treatment of striping

Signage

- Poor, replace with new sign(s)
- Poor, replace sign support

ADA Pushbuttons and Curb Ramps

- Poor, replace ramp
- Poor, replace diagonal ramp with 2 ramps
- Poor, replace pedestrian pushbuttons

Sidewalks and Concrete Median Curbs

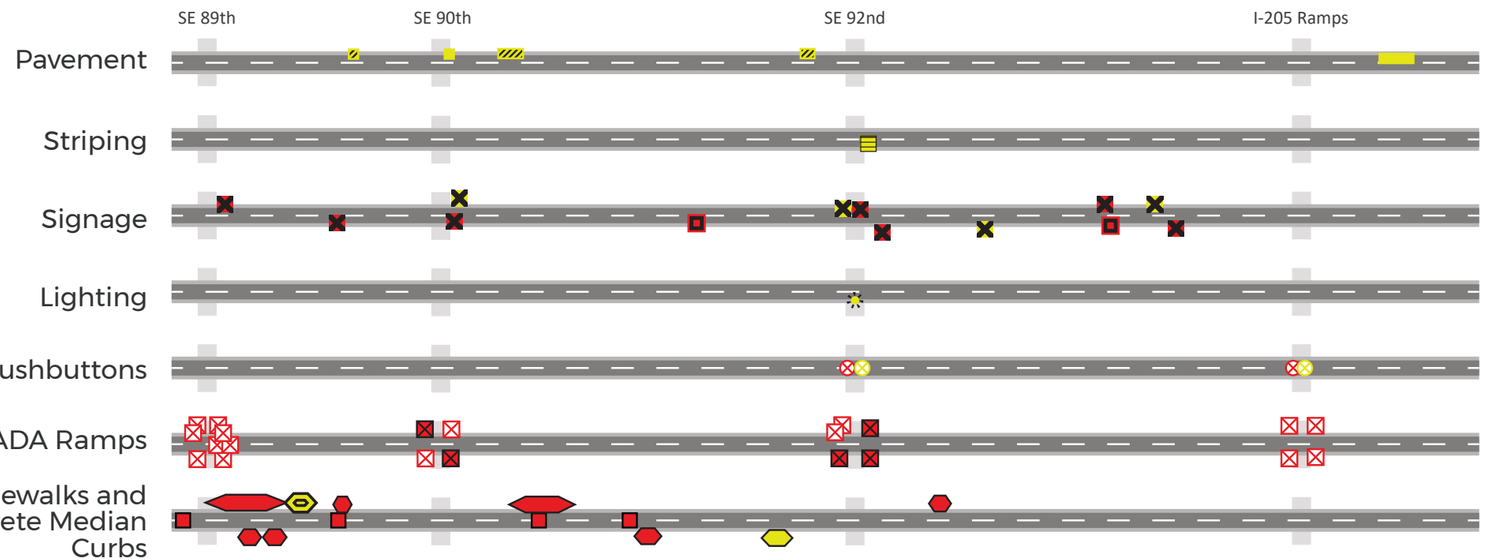
- Poor, replace sidewalk
- Fair, replace sidewalk
- Fair, repair median curb

Note: The cost estimate prepared for Inner Powell will consider all existing programmed projects within the Project corridor.

ADA Pushbutton locations are for intersection at large, not specific corners due to GIS shapefile discrepancies.

Drainage, utilities, and hazardous materials upgrades will be incorporated into the Project's cost estimate.

SE 88th Ave - I-205



0 125 250 Feet

N

LEGEND

- Segment start and end
- Milepost marker

Pavement
- Fair, apply joint sealing
- Fair, resurface pavement

Striping
- Fair, spot treatment of striping

Signage
- Poor, replace with new sign(s)
- Fair, replace with new sign(s)
- Poor, replace sign support

Lighting
- Fair, replace with new LED luminaire

ADA Pushbuttons and Curb Ramps
- Poor, replace ramp
- Poor, replace diagonal ramp with 2 ramps
- Poor, replace pedestrian pushbuttons
- Fair, clean, maintain or relocate pushbuttons

Sidewalks and Concrete Median Curbs
- Poor, replace sidewalk
- Fair, replace sidewalk
- Fair, repair sidewalk
- Poor, replace median curb

Note: There is an existing ADA curb ramp work package that includes improvements at SE 92nd Ave. The cost estimate prepared for Inner Powell will take those improvements and any existing programmed projects within the Project corridor into consideration.

ADA Pushbutton locations are for intersection at large, not specific corners due to GIS shapefile discrepancies.

Drainage, utilities, and hazardous materials upgrades will be incorporated into the Project's cost estimate.

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ATTACHMENT A

State of Good Repair and Assessment Methods (March 2019)

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INNER POWELL

SE 9th to I-205 Upgrade Study and Cost Estimate

State of Good Repair and Assessment Methods

March 2019

1. INTRODUCTION AND PURPOSE OF MEMORANDUM

1.1 Purpose of Study

House Bill 2017 (HB 2017) Section 27e requires the Oregon Transportation Commission (OTC) to study the costs to upgrade and transfer the portion of Southeast (SE) Powell Boulevard from the intersection with SE 9th Avenue to the Interstate 205 (I-205) interchange in Portland, Oregon. This portion of SE Powell Boulevard is referred to as *Inner Powell.* OTC directed the Oregon Department of Transportation (ODOT) to prepare the *Inner Powell: SE 9th to I-205 Upgrade Study and Cost Estimate* (Study). The Study will establish a state of good repair (SOGR) threshold for various roadway elements to help ODOT determine the cost to upgrade existing assets and transfer ownership and maintenance of Inner Powell from ODOT to the City of Portland (City). OTC is required to report the Study's findings to the Oregon Legislature's Joint Committee on Transportation by January 1, 2020.

1.2 Study Area

The Study area is SE Powell Boulevard from the intersection with SE 9th Avenue to the I-205 interchange (see Figure 1) in Portland. This segment is approximately 4.5 miles long and correlates roughly to Mile Points 1.2 to 5.7. For the purposes of this Study, the curb line of Powell Boulevard is set in place; ODOT is primarily responsible for corridor elements from "curb-to-curb" (i.e., the roadway). Certain corridor elements that span the curb line, such as signal structures or sidewalk ramps meeting Americans with Disabilities Act (ADA) standards are also included in the Study area for purposes of this Study.

The segment of Powell Boulevard between SE 9th Avenue and SE 86th Avenue is currently a City public right-of-way, which is controlled by the City. ODOT maintains the roadway from curb-to-curb, and the City maintains the landscaped medians. The segment from SE 86th Avenue to I-205 is a State Fee Simple right-of-way, which is owned, controlled, and maintained by the State, with the exception of certain elements for which there are maintenance agreements between ODOT and the City (refer to Misc. Contracts and Agreement No. 7219 – Construction Finance Agreement Interstate Transfer Project, executed in 1980).

Figure 1: Study Area

1.3 Purpose of the Memorandum

This memorandum sets a baseline for conditions constituting a state of good repair for specific corridor elements along Inner Powell. The project team examined the following corridor elements consistent with the scope of work and subsequent discussion with ODOT:

- Pavement
- Signals and signal systems
- Pavement markings (striping)
- Signage
- Lighting
- Hazardous materials
- Utilities
- Sidewalks
- Drainage

ODOT determined that other elements[1] in the corridor (e.g., pedestrian bridge, rail/transit structures, retaining walls, concrete stamped medians, concrete structure lid pads, and curbs) are outside the scope of this study because such elements may have multi-jurisdictional ownership, are owned or maintained by other agencies, or are assumed to be in good repair.

For purposes of this Study, the project team defined SOGR as a condition in which existing assets for an element are performing their intended purpose. The definitions identify what is needed to bring each element up to a level that is acceptable along Inner Powell exclusively for the purposes of this Study. Once accepted by ODOT, the project team will use the SOGR definitions to help ODOT determine the cost to upgrade the corridor assets to a SOGR with the goal of supporting a jurisdictional transfer of Inner Powell from ODOT to the City. The project team will make this determination through comparison of existing conditions to the SOGR definitions for each corridor element.

This memorandum includes the following sections:

1. Introduction and Purpose of Memorandum
2. Methodology
3. State of Good Repair and Methods for Assessing Existing Conditions
4. Upgrade Parameters
5. Americans with Disabilities Act (ADA) Compliance

2. METHODOLOGY

The project team developed each corridor element's SOGR definition using existing ODOT standards for asset quality, if available. If no standards for asset quality were available, the

[1] Traffic separators and concrete barriers will be evaluated in the field to ensure that they function properly.

project team determined a SOGR definition based on technical expertise in consultation with ODOT staff and technical experts.

3. State of Good Repair and Methods for Assessing Existing Conditions

Table 1 provides a description of each corridor element, the recommended SOGR definition, and the methods for assessing existing conditions. The project team will use the methods of assessment to evaluate the current state of each corridor element, within the parameters described in Section 4.

Table 1. Corridor element descriptions, SOGR definitions, and assessment methods – summary table

Element	Description	State of good repair definition	Assessment methods	Additional context
Pavement	The hard surface of the roadway that is specifically designed for vehicle traffic.	▪ Minimal hairline cracking (i.e., hard to detect) ▪ Minor patching and deformation ▪ Pavement rutting2 is less than 0.5 inch deep ▪ Ride quality is considered very good and not noticeable to road user	▪ Collect and review data including major maintenance efforts, pavement condition reports, pavement design features, traffic, and climate conditions, and available performance data ▪ Conduct field survey to verify pavement conditions with attention given to cracking, deformation, rutting, and ride quality	ODOT's *2016 Pavement Report* uses a "good-fair-poor" (GFP) rating system that defines conditions as very good, good, fair, poor, or very poor. ODOT's state of repair conditions and their respective definitions, as outlined in ODOT's *2016 Pavement Report* are detailed in Appendix B Figure 1.
Signals and signal systems[3]	The systems that control motor vehicle, bicycle, and pedestrian movements at intersections and crossings. These include vehicle signals, crossing signals, bike signals, and mid-block pedestrian crossing signals such as rectangular rapid flashing beacons (RRFB), pedestrian-activated signals, and high-intensity activated crosswalk (HAWK) signals.	▪ Signal does not have a "poor" or "very poor" rating in Oregon's Traffic Signal Asset Management rating system ▪ Pedestrian pushbutton functions ▪ Pole and cabinet are in functional condition; hardware is mounted properly; Poles do not have visual structural damage that show significant deformation or cause the pole to lean and functions per their intended purpose ▪ For ITS devices, the device and support structures function properly	▪ Review asset management documentation including ODOT's traffic signal conditions rating system ▪ Conduct field survey to assess conditions of aboveground hardware ▪ Conduct field survey to assess the physical condition of supports and above ground hardware	
Pavement markings (striping)	All markings applied to the roadway surface including, but not limited to, lane pavement markings, turn arrows, bike lane markings and bike lane symbols, pavement bars, pavement text, and other markers applied to the roadway surface and paint for curbs (e.g., loading and emergency zones). Raised pavement markers (reflective and non-reflective) and surface-mounted tubular markers[4] are also included.	▪ Pavement marking are not worn or missing ▪ Pavement markings are consistent with other pavement markings and signs in the corridor conveying information to road users	▪ Conduct field survey of high traffic areas to evaluate wear from traffic and consistency between striping and signs and to develop an overall percentage of pavement marking replacement per section of corridor	Pavement marking conditions are highly influenced by traffic volume, changes in traffic patterns, nearby construction, weather, and the quality with which the pavement marking was applied.
Signage	All regulatory, warning, and guide signs along the roadway used to direct traffic, warn road users of oncoming obstructions, or provide guidance where needed. Includes signs within an approved school zone. Signage includes sign panels, sign supports, and footings.	▪ Sign supports and footings function properly ▪ Signs are secured properly to a mounting structure ▪ Sign's message is legible and not obstructed by heavy wear, graffiti, or damage; sign face is not faded and has reflective background and legend (when required) ▪ Signs are consistent with pavement markings in directing road users	▪ Obtain approved school zone documentation and crosswalk closure documentation ▪ Conduct visual field survey to assess condition of sign panels, post types, and footings and sight distance and obstructions to visibility ▪ Review ODOT's asset management documentation to support field evaluations	Street signs are owned and maintained by Portland Bureau of Transportation (PBOT).

[2] Rutting is a depression or groove worn into a road or path by the travel of wheels.

[3] Traffic signal communications and intelligent transportation systems (ITS) include variable message signs, traffic cameras, Bluetooth readers, and traffic signal communications network connectivity devices. ITS devices along the corridor are not evaluated because they are already owned, operated and maintained by PBOT. Exceptions to this are at traffic signal locations that will be fully replaced. At these locations new ITS hardware is assumed.

[4] Surface-mounted tubular markers are flexible plastic lane delineation devices approximately 4 feet tall that can be bonded to asphalt or concrete surfaces.

Element	Description	State of good repair definition	Assessment methods	Additional context
Lighting	All lighting along corridor to improve visibility and safety.	▪ Light poles do not have visible structural damage that show significant deformation or cause the pole to lean and function per their intended purpose ▪ Light bulbs function properly	▪ Conduct field survey to assess poles/cabinets and light bulbs	Roadway segment lighting, defined as lighting along the roadway between intersections will not be evaluated since it is currently owned, operated, and maintained by PBOT. Lighting at signalized intersections and parks will be evaluated.
Hazardous materials	Materials used in construction, industrial activities, and biological waste that are within the right-of-way including: ▪ asbestos containing materials ▪ lead, cadmium, and chromium paints ▪ silica dusts from concrete ▪ oils, greases, gasoline, diesel, and other petroleum products ▪ contaminated surface soils	▪ Assets or facility that typically contain lead, cadmium, or chromium paints are identified and in good condition ▪ Assets that typically contain asbestos are identified and in good condition	▪ Conduct field survey to determine the likelihood of hazardous materials along the corridor	Encountering and subsequent management of hazardous materials is generally the result of other activities conducted by ODOT such as operation and maintenance of an asset or new construction. Roadways are likely to have roadside contamination.
Utilities[5]	All supporting elements to a utility, box, or pipe including the mountings, grates, or any additional part of the utility that can impact the pavement, curb, or concrete.	▪ Condition of surface utility feature, such as manhole covers and valve covers, shows little to no wear and non-slip surfaces are not smooth ▪ Pavement around surface utility feature is smooth with minimal cracks ▪ Frames and slabs show no holes or cracks that affect function ▪ Frame positions are flush to the surface ▪ Metal grates are functional and have minimal damage	▪ Conduct field survey to inspect existing utilities ○ Select two continuous 4-block sections from each of two segments as a representative sample: SE 11th Ave to SE 52nd Ave and SE 52nd Ave to I-205 ○ Visually inspect each section for existing utilities	
Sidewalks	The hard, smooth surface located along the roadway, separated by a curb and/or a planting strip and swale.	▪ No trip hazards that are 0.5 inch or greater ▪ No cracks or openings that are 0.5 inch or greater ▪ No chipping or general deterioration that creates a depth 0.5 inch or greater	▪ Review ODOT Region 1 Active Transportation Needs Inventory report for locations with substandard sidewalks ▪ Conduct field survey to assess substandard sidewalks	ODOT owns the sidewalks from SE 86th Avenue to I-205. All other sidewalks are owned by the City and therefore do not need to be assessed as a part of this Study.
Drainage	All stormwater collection, conveyance, treatment, and disposal facilities including: ▪ curb and grate inlets ▪ catch basins and manholes ▪ sedimentation manholes ▪ underground injection controls (UICs or sump systems) ▪ water quality facilities such as stormwater planters, rain gardens and swales ▪ storm sewer pipe	▪ The drainage facility operates properly ▪ Functional amount of sediment accumulation ▪ Functional amount of rust, pitting, or erosion on pipes	▪ Review ODOT Maintenance log of identified stormwater runoff locations ▪ Conduct field survey to inspect existing drainage o Select two continuous 4-block sections from each of two segments as a representative sample: SE 11th Ave to SE 52nd Ave and SE 52nd Ave to I-205 o Visually inspect each section for existing drainage facilities	

[5] In general, utilities are not ODOT-owned assets, but most are located on ODOT right-of-way by permit. Utilities are generally privately or publicly owned by other agencies. Power drops, fiber optic lines, or communications associated with ODOT-owned signals or ITS are not included in this element because they service a definable ODOT asset.

4. Upgrade Parameters

Table 2 sets the geographic limits for each corridor element and establishes the parameters that will be considered for upgrades along Inner Powell.

Table 2. Upgrade parameters for corridor elements

Element	Parameters
Pavement	Entire corridor, curb-to-curb, at end of curb return at side streets. ODOT owns and maintains all the pavement in corridor.
Signals and signal systems	Entire corridor, right-of-way. ODOT owns all traffic signals within the corridor and operates and maintains traffic signals from SE 86th Ave to the I-205 ramps (there are no signals between SE 82nd Ave and SE 86th Ave). PBOT operates and maintains traffic signals from SE 9th Ave to SE 82nd Ave.
Pavement Markings	Entire corridor, curb-to-curb. ODOT owns and maintains all pavement markings in corridor and at end of curb return at side streets.
Signage	Entire corridor, right-of-way. ODOT owns and maintains all signs and supports except all round pipe post supports, which are owned by PBOT.
Lighting	Lighting systems at signalized intersections along the corridor and adjacent to parks along the corridor. All other lighting systems are owned, operated, and maintained by PBOT.
Hazardous materials	Entire corridor for elements owned and maintained by ODOT.
Utilities	Curb-to-curb from 9th Ave to 86th Ave and full right-of-way from 86th Ave to I-205. ODOT owns no utilities along the corridor, but maintains surface features associated with utilities.
Sidewalks	SE 86th Ave to I-205, right-of-way. ODOT owns sidewalks from SE 86th Ave to I-205. PBOT owns the sidewalks for the remainder of the corridor.
Drainage	Curb-to-curb from 9th Ave to 86th Ave and full right-of-way from 86th Ave to I-205. ODOT maintains the drainage system at the SE 17th Ave undercrossing. The City of Portland maintains all other drainage systems within the corridor.

5. Americans with Disabilities Act (ADA) Compliance

ODOT has committed to bring all existing pedestrian facilities on ODOT facilities statewide up to ADA standards by 2032. Sidewalk curb ramps and pedestrian pushbuttons for the length of the Study corridor that do not meet the following ADA standards will be included in Technical Memorandum #4 – Corridor Element Upgrades. The team will develop a separate cost estimate

for these ADA upgrades. Other roadway elements (e.g., hydrants, poles, cabinets, sidewalks, etc.) that need to be moved and/or replaced as a result of the ramp upgrades will be included.

5.1 Sidewalk curb ramps

- Complies with ODOT's ADA Curb Ramp Design Checklist
- Sidewalk ramp is at least 48 inches wide and has a maximum running slope of 1:12 (see Appendix B Figure 2)
- Exist at intersection corners if there is a level change greater than 0.5 inches
- A 24-inch minimum length detectable warning device (truncated domes[6]) sits at the base of the ramp before entering road right-of-way and is not cracked or otherwise damaged (Appendix B Figure 3)

5.2 Pedestrian pushbuttons

- Pushbutton is unobstructed and adjacent to a level all-weather surface to provide wheelchair access
- There is a clear route running from the pushbutton landing area to the ramp
- Pushbutton is no more than 15 feet from crosswalk line
- Pushbutton is between 1.5 and 6 feet from the edge of the curb, shoulder, or pavement
- The face of the pushbutton is parallel to the crosswalk
- Pushbutton is approximately 3.5 feet high and no more than 4 feet above sidewalk

[6] A truncated dome is a type of tactile paving or textured ground surface to assist pedestrians who are visually impaired. It is frequently a set of (often yellow) raised bumps on a pathway or platform.

6. REFERENCES

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Personal communications

Basil, C., ODOT Region 1 Bicycle and Pedestrian Coordinator. January 10, 2019. Personal communication with Geoff Gibson, WSP.

Estes, J., ODOT Region 1 Utility Specialist. January 16, 2019. Personal communication with Shannon Williams, WSP.

Guenin, H., ODOT Region 1 Active Transportation Liaison. January 14, 2019. Personal communication with Geoff Gibson, WSP.

Hayes, J., ODOT Region 1 Project Delivery Traffic Engineer. January 15, 2019; January 28, 2019. Personal communication with Dana Beckwith, GTE.

Jackson, D., ODOT Region 1 Striping Coordinator. January 21, 2019. Personal communication with Dana Beckwith, GTE.

McDonald, D., ODOT Region 1 Sr. Hydraulic Engineer & Culverts Program Coordinator. January 18, 2019. Personal communication with Shannon Williams, WSP.

Nowicki, T., ODOT Region 1 Hazmat Coordinator. January 16, 2019. Personal communication with Shannon Williams, WSP.

Smith, D., ODOT Region 1 Sign Crew Supervisor. January 23, 2019. Personal communication with Dana Beckwith, GTE.

Stubblefield, S., ODOT District 2B Maintenance. January 9, 2019. Personal communication with Ben Hosley, WSP.

ABBREVIATIONS AND ACRONYMS

ADA	Americans with Disabilities Act
Ave	Avenue
City	City of Portland
GFP	good-fair-poor
HAWK	high intensity crosswalk beacon
HB	House Bill
I-205	Interstate 205
ITS	intelligent transportation system
ODOT	Oregon Department of Transportation
OTC	Oregon Transportation Commission
PBOT	Portland Bureau of Transportation
RRFB	rectangular rapid flashing beacon
SE	southeast
SOGR	state of good repair
Study	Inner Powell: SE 9th Avenue to I-205 Upgrade Study and Cost Estimate
UIC	underground injection controls

Pavement

Figure 1: GFP rating descriptions for asphalt concrete pavement

	GFP Score	Stability	Structural Weakness	Fatigue	Transverse/Block	Patching	Ride Qualities	Deformation and Rutting	Comment
Very Good	100 99 98 97 96	Stable	None	None	None	None	Excellent	Rut depth less than 1/4"	Nothing would improve this road
Good	95 90 85 80	Stable	None evident	Generally hariline and hard to detect	Minor amounts may be present	Minor amounts may be present	Very good	Deformation minor, rut less than 1/2"	May have dry or light colored appearance
Fair	75 70 65 60 55 50	Generally stable	Minor areas evident	Easier to detect but low severity	May have widespread low and/or intermittent moderate severity	May be patched, but not excessively (i.e. less than 100%)	Good to acceptable	Deformation more easily noticed, rut less then 3/4"	Typ. treatment need: Low vol.: chip seal High vol.: 2" resurface
Poor	45 40 35 30 25	Areas of instability	Marked evidence of structural deficiency	Large crack patterns (alligatoring) present	May have widespread moderate and/or intermittent high severity	Heavy and numerous	Acceptable to poor	Deformation very noticeable, rut 3/4" or greater if present	Typ. treatment need: Low vol.: 2" resurface High vol.: >2" resurface
Very Poor	20 15 10 5	Numerous areas of instability	Majority showing structural deficiency	Intermittent to extensive high severity	Extensive high severity	Intermittent to extensive high severity	Unacceptable, should slow down		Typ. treatment need: Low vol.: >2" resurface High vol.: heavy rehab or reconstruction

Sidewalk ramps (ADA)

Figure 2: ADA curb ramp diagram

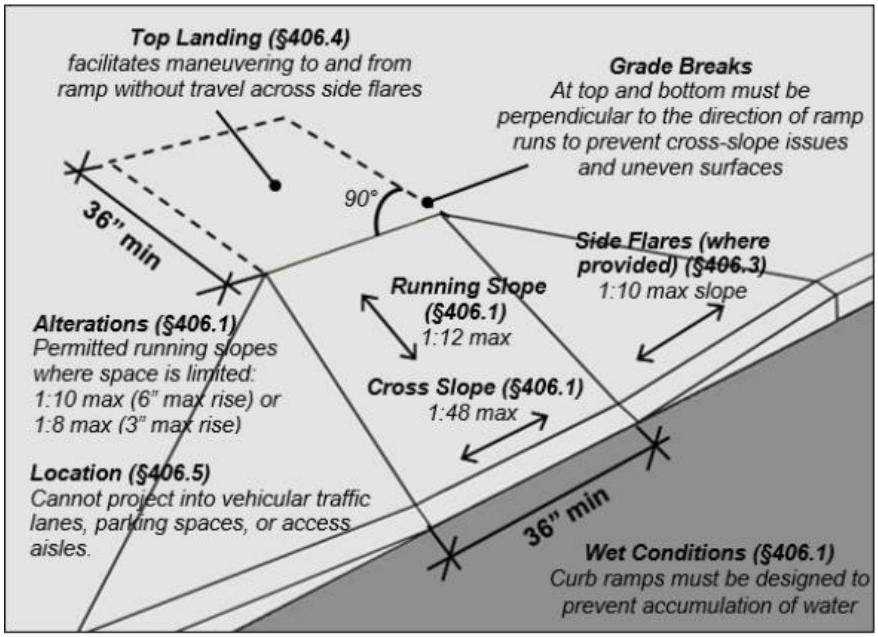
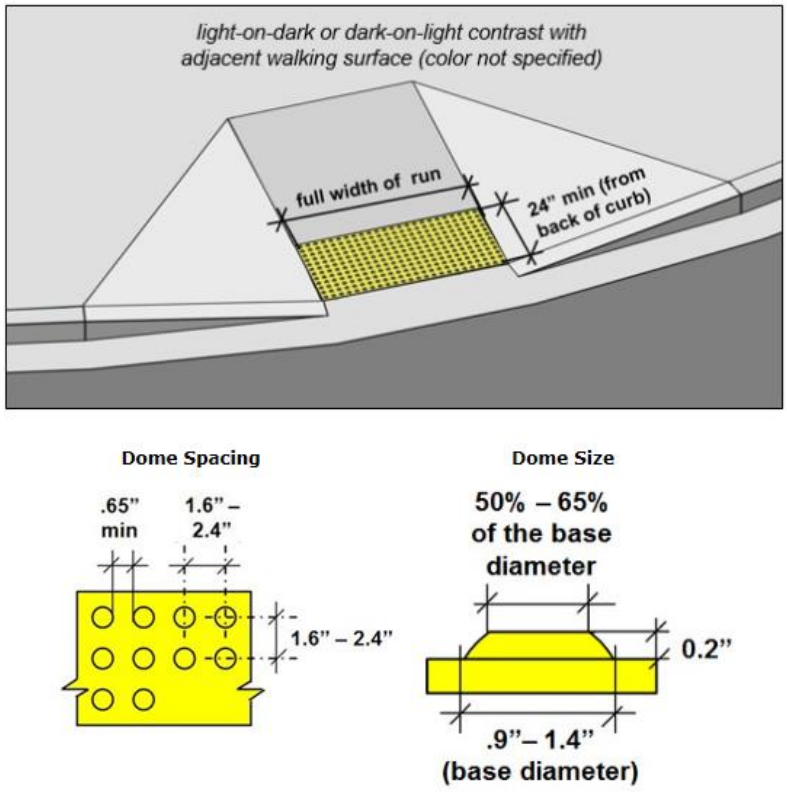


Figure 3: Detectable warning device (truncated domes)



ATTACHMENT B
Existing Conditions

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INNER POWELL

SE 9th to I-205 Upgrade Study and Cost Estimate

Existing Conditions

June 2019

1. INTRODUCTION AND PURPOSE OF MEMORANDUM

1.1 Purpose of Study

House Bill 2017 (HB 2017) Section 27e requires the Oregon Transportation Commission (OTC) to study the costs to upgrade and transfer the portion of Southeast (SE) Powell Boulevard from the intersection with SE 9th Avenue to the Interstate 205 (I-205) interchange in Portland, Oregon. This segment of SE Powell Boulevard is referred to as *Inner Powell.* OTC directed the Oregon Department of Transportation (ODOT) to prepare the *Inner Powell: SE 9th to I-205 Upgrade Study and Cost Estimate* (Study). The Study will establish a state of good repair (SOGR) threshold for various roadway elements to help ODOT determine the cost to upgrade existing assets and transfer ownership and maintenance of Inner Powell from ODOT to the City of Portland (City). OTC is required to report the Study's findings to the Oregon Legislature's Joint Committee on Transportation by January 1, 2020.

1.2 Study Area

The Study area is SE Powell Boulevard from the intersection with SE 9th Avenue to the I-205 interchange (see Figure 1) in Portland. This segment is approximately 4.5 miles long and correlates roughly to Mile Points 1.2 to 5.7. For the purposes of this Study, the curb line of Powell Boulevard is set in place; ODOT is primarily responsible for corridor elements from "curb-to-curb" (i.e., the roadway). Certain corridor elements that span the curb line, such as signal structures or sidewalk ramps meeting Americans with Disabilities Act (ADA) standards are also assumed to be included in the Study area.

The segment of Powell Boulevard between SE 9th Avenue and SE 86th Avenue is currently a City public right-of-way, which is controlled by the City. ODOT maintains the roadway from curb-to-curb, and the City maintains the landscaped medians and area outside of the curb line, such as sidewalks. The segment from SE 86th Avenue to I-205 is a State Fee Simple right-of-way, which is owned, controlled, and maintained by the State, except certain elements for which there are maintenance agreements between ODOT and the City (refer to *Misc. Contracts and Agreement No. 7219 – Construction Finance Agreement Interstate Transfer Project*, executed in 1980).

Figure 1: Study Area

1.3 Purpose of the Memorandum

This memorandum documents existing conditions within the project area for specific corridor elements along Inner Powell. The Project team inventoried the existing condition of the following elements:

- Pavement
- Signals and signal systems
- Pavement markings (striping)
- Signage
- Lighting
- Hazardous materials
- Utilities
- Sidewalks
- Drainage

The project team evaluated each corridor element and provided a rating of "good," "fair," or "poor" consistent with the state of good repair (SOGR) definitions established in Technical Memorandum #2 (February 2019). Appendix B includes a complete set (in MS Excel) of all the existing conditions data that was collected.

This memorandum includes the following sections:

1. Introduction and Purpose of Memorandum
2. Methodology
3. Existing Conditions
4. Next Steps

2. METHODOLOGY

Two teams of two civil engineers on the Project team conducted site visits to assess the existing condition of specified elements along the Project corridor. The first team conducted two site visits on April 15, 2019 and April 18, 2019. The second team conducted two site visits on April 17, 2019 and April 21, 2019. In total, the teams conducted four site visits along the Project corridor.

The first team walked the full Project corridor on both the north and south sides of the roadway and inventoried and assessed the existing condition of pavement, utilities, drainage, and sidewalks using the SOGR definitions and parameters established in Technical Memorandum #2 (February 2019) to the extent possible. This team identified and stopped at locations where they determined the condition of an element was fair or poor to record data points. The team placed emphasis on identifying fair or poor data points for pavement, while also recording good data points to ensure accurate and comparative assessment of the pavement and sidewalk conditions. This team stopped at each intersection to assess the condition of roadway elements in or near each intersection and periodically take photographs to capture examples of corridor element conditions.

The second team walked the north and south sides of the corridor from SE 9th Avenue to SE César E Chávez Blvd the first day and from SE César E Chávez Blvd to the I-205 overpass on the second day. This team inventoried and assessed the existing conditions of traffic signals, pedestrian crossings and striping, lighting, and signage using the SOGR definitions and parameters established in Technical Memorandum #2 (February 2019). This team assessed traffic signals at each approach of a signalized intersection, pedestrian crossings at each crossing location, striping at each block and intersection, lighting at each intersection, pedestrian crossing and park frontage area, and signage at each sign with an ODOT sign decal.

To collect data, the teams used the *Collector for ArcGIS* application.[1] The application uses GPS which allowed the teams to select their location on the map and record the necessary data. The pre-programmed application allowed the team to select an element, sub-element and condition rating consistent with the SOGR definitions at each location. The application also allowed the team to add notes and photos to each data point to support the existing condition assessment for each location. *Collector for ArcGIS* data is in Appendix B.

Once the team collected all data points for the north and south side of the corridor, the team imported information from the *Collector for ArcGIS* application into ArcGIS Desktop. Team members reviewed data points to ensure that the field assessment was consistent with the SOGR definitions previously established. The team completed this consistency check by reviewing the photos taken at each data point and confirming the existing condition assessment provided during field observation. The team then categorized and symbolized data points by corridor element and rating and applied the data points to the roadway diagrams described in Section 3.

3. Existing Conditions

3.1 Corridor Elements

The team divided the project corridor into 11 segments, each approximately 2,000 feet long. The following 11 sheets show an aerial map of each segment with mileposts. Below each aerial map is a roadway diagram for each corridor element listed below. The condition of each roadway element, indicated with a green (good), yellow (fair), or red (poor) icon, aligns with the aerial map above. The roadway diagrams include existing conditions photographs representative of corridor conditions. The following elements are included on the roadway diagrams:

- Pavement
- Signals
- Striping
- Signage
- Lighting

[1] The first team used an iPad and the second team used a Surface Go.

- ADA Pushbuttons[2]
- ADA Ramps[3]
- Sidewalks

3.2 Utilities and Drainage

The team evaluated utilities and drainage features along two separate corridor segments instead of the entire corridor. The drainage and utility surface features were installed on a longitudinal corridor basis. The Project corridor has experienced consistent traffic conditions over the years that has produced similar wear and tear throughout the corridor. Given that the age and service life of each element is similar throughout the corridor, and to minimize field time to inventory every feature for these elements, an approach was implemented to establish a typical condition of each element to be applied across the Project corridor. The two exemplary segments along Powell Boulevard are SE 50th Avenue to SE 52nd Avenue and SE 82nd Avenue to SE 87th Avenue. Table 1 summarizes the number of elements in good, fair, or poor condition as documented during the site visit. In addition, photographs representing commonly occurring corridor conditions are shown below.

Table 1. Drainage and utility conditions within corridor segments evaluated

Element	Good	Fair	Poor
Drainage	1	9	3
Utilities	0	14	8

Pavement around drainage inlet is uneven (fair)

Concrete around utility cover is broken (poor)

3.3 Hazardous Materials

Hazardous materials are commonly used in several corridor elements as mentioned below. The team did not perform a separate hazardous material inventory along the corridor, but any lighting, traffic signal cabinets, or pavement markings in poor condition could potentially contain

[2] ODOT's Traffic & Roadway Section provided ADA pushbutton and ADA ramps data (2018). The project team did not conduct an inventory of these elements.
[3] Ibid.

hazardous materials. In addition, replacement of certain corridor elements may also impact hazardous materials including ADA ramps, pavement repair, and sidewalk repair. As an example, any construction activity that requires excavation has a potential to encounter contaminated soils.

3.4 Concrete Features

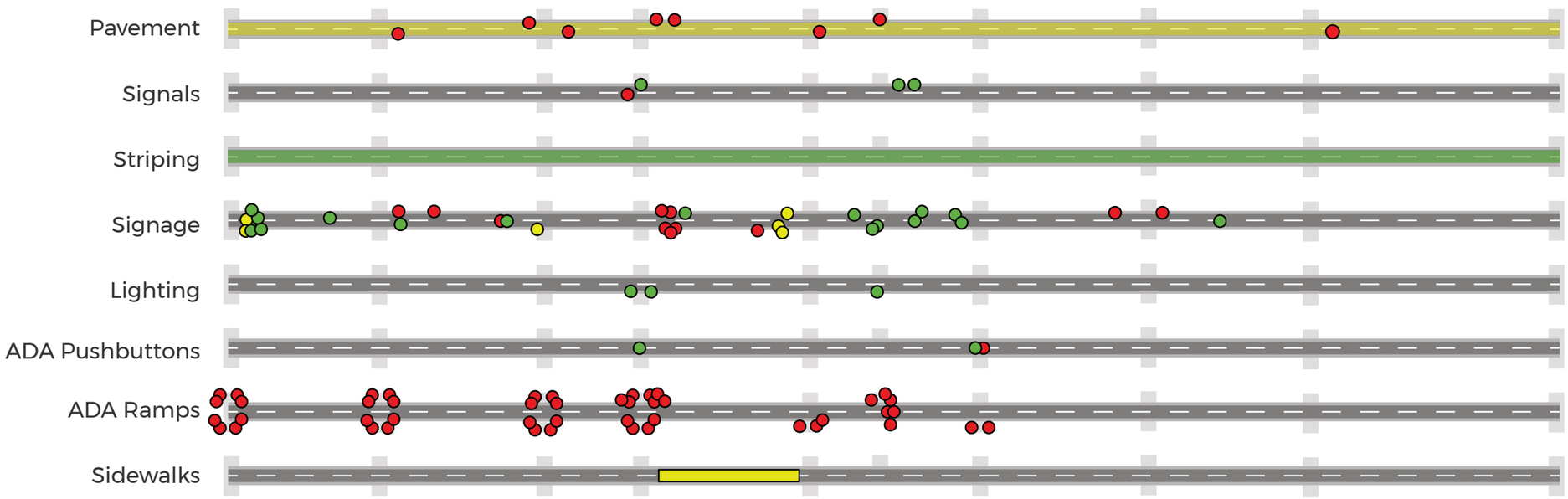
The team evaluated concrete features along the Project corridor in areas that ODOT is obligated to maintain. These features included concrete traffic separator and concrete median curb. Conditions for these features were determined on a functional basis.

Concrete barrier

4. Next Steps

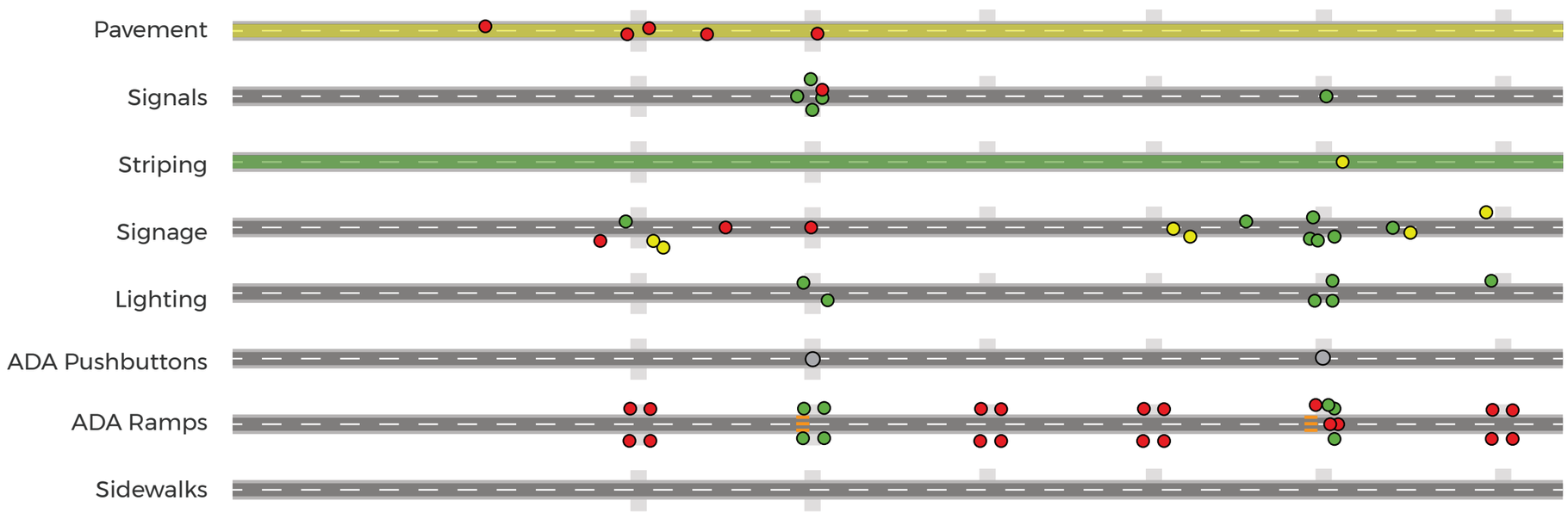
Once accepted by ODOT, the project team will use this existing conditions inventory and the Inventory of Planned/Programmed Projects (Technical Memorandum #1, January 2019) to develop a list of proposed upgrades to corridor elements to bring Inner Powell to a state of good repair. The team will then use the upgrade list to develop a cost estimate to bring the corridor to a state of good repair.

SE 9th Ave - SE 17th Ave



ODOT does not have jurisdiction over sidewalks in this segment. No inventory was completed. Rectangular icons indicate existing median curb condition.

SE 17th Ave - SE 26th Ave



ODOT does not have jurisdiction over sidewalks in this segment. No inventory was completed.

0 125 250 Feet N

LEGEND

- Segment start and end
- Good
- Fair
- Poor
- No Data or N/A
- Median curb condition
- Permitted crosswalk closure
- Milepost marker

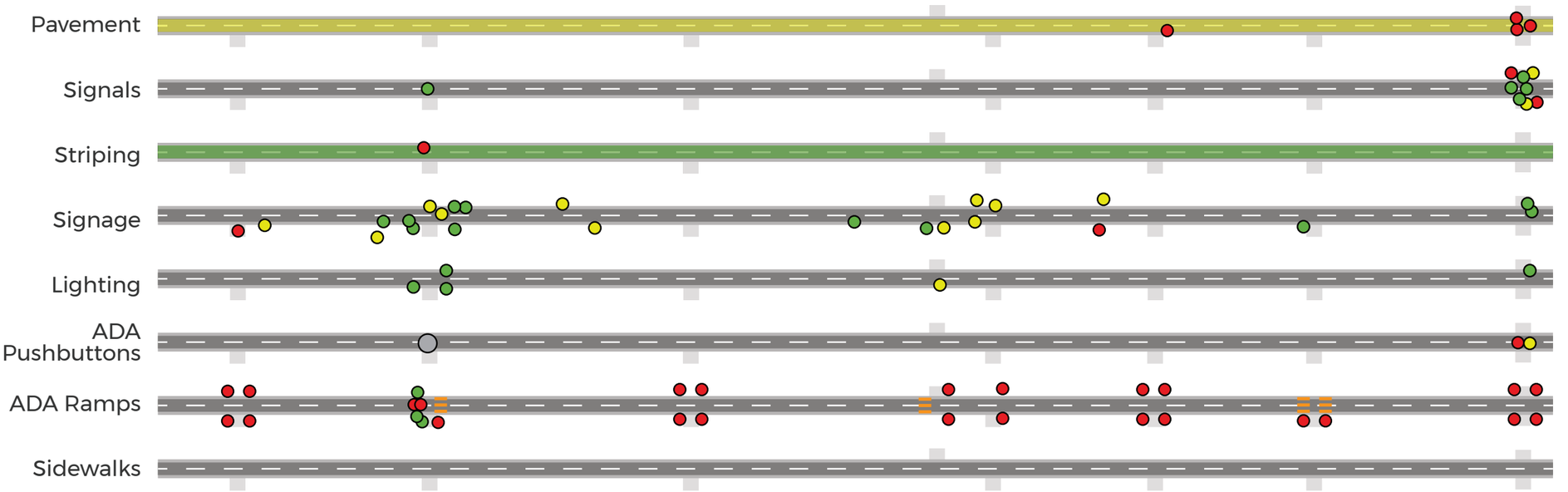
ODOT does not have jurisdiction over sidewalks in this segment. No inventory was completed.

0 125 250 N
Feet

LEGEND

- Segment start and end
- Good
- Fair
- Poor
- No Data or N/A
- Median curb condition
- Permitted crosswalk closure
- Milepost marker

SE 33rd Ave - SE Cesar E. Chavez Blvd



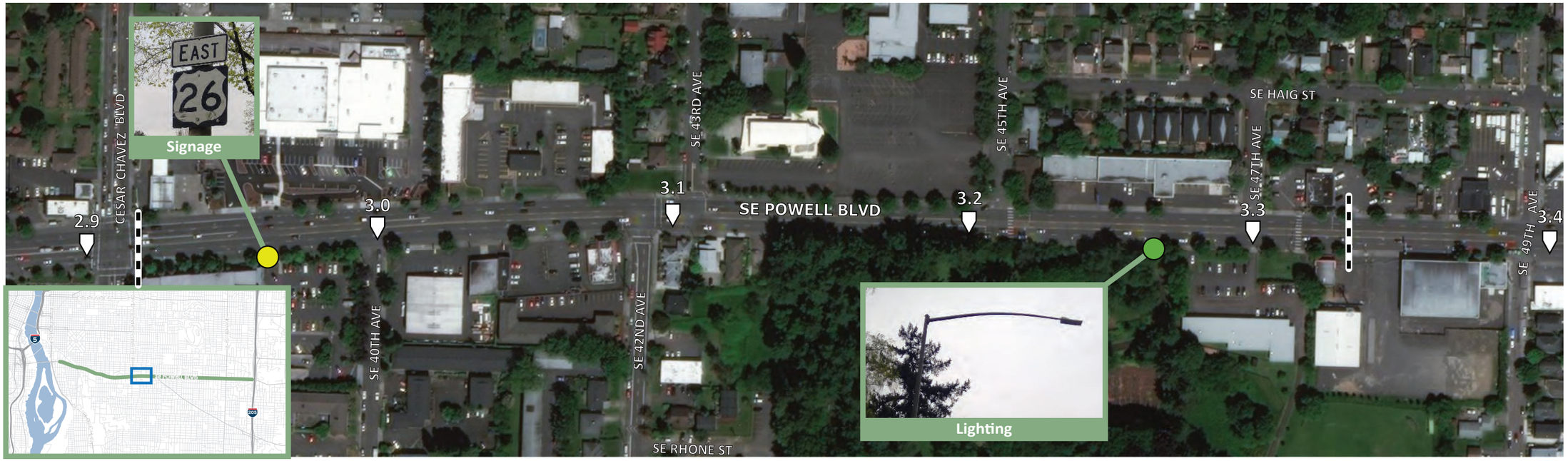
ODOT does not have jurisdiction over sidewalks in this segment. No inventory was completed.

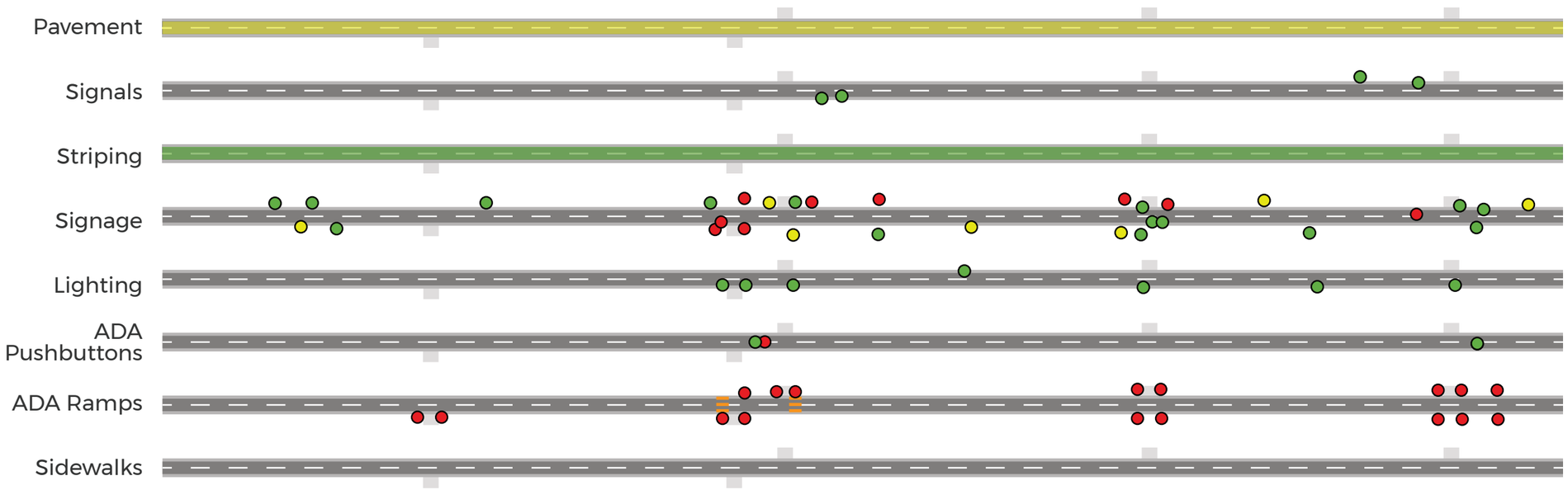
0 125 250 Feet N

LEGEND

- Segment start and end
- Good
- Fair
- Poor
- No Data or N/A
- Median curb condition
- Permitted crosswalk closure
- Milepost marker

SE Cesar E Chavez Blvd - SE 47th Ave





ODOT does not have jurisdiction over sidewalks in this segment. No inventory was completed.

0 125 250 Feet N

LEGEND

- Segment start and end
- Good
- Fair
- Poor
- No Data or N/A
- Median curb condition
- Permitted crosswalk closure
- Milepost marker

SE 47th Ave - SE 55th Ave

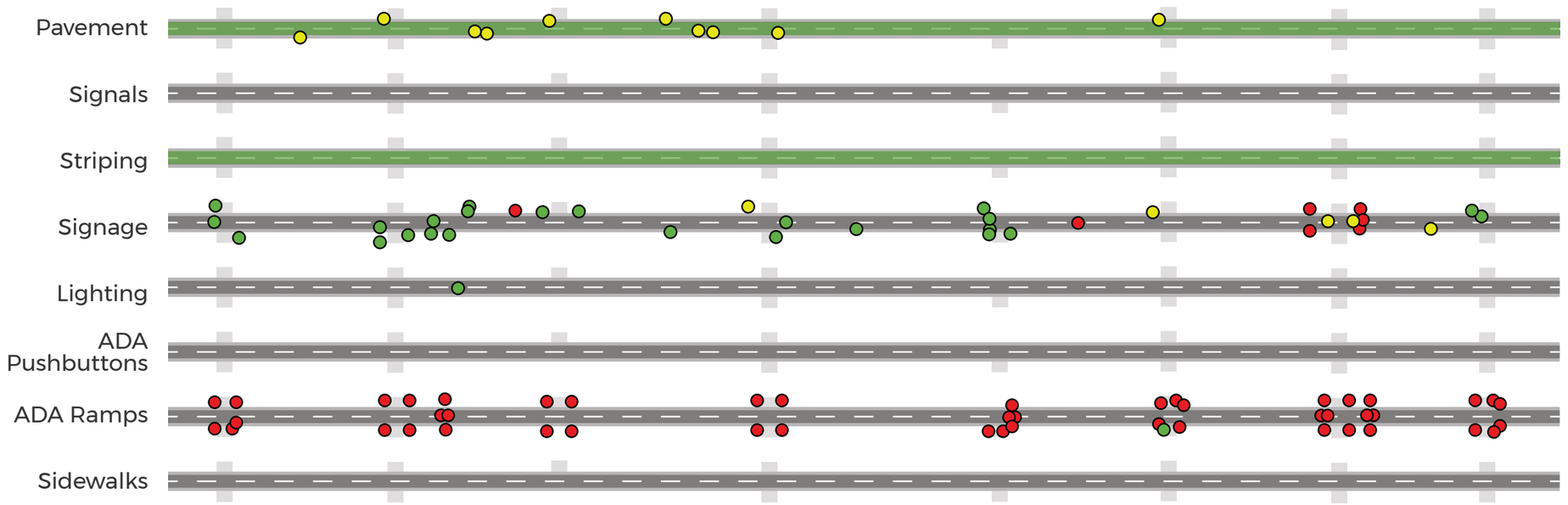
ODOT does not have jurisdiction over sidewalks in this segment. No inventory was completed.

0 125 250 N
Feet

LEGEND

- Segment start and end
- Good
- Fair
- Poor
- No Data or N/A
- Median curb condition
- Permitted crosswalk closure
- Milepost marker

SE 55th Ave - SE 64th Ave



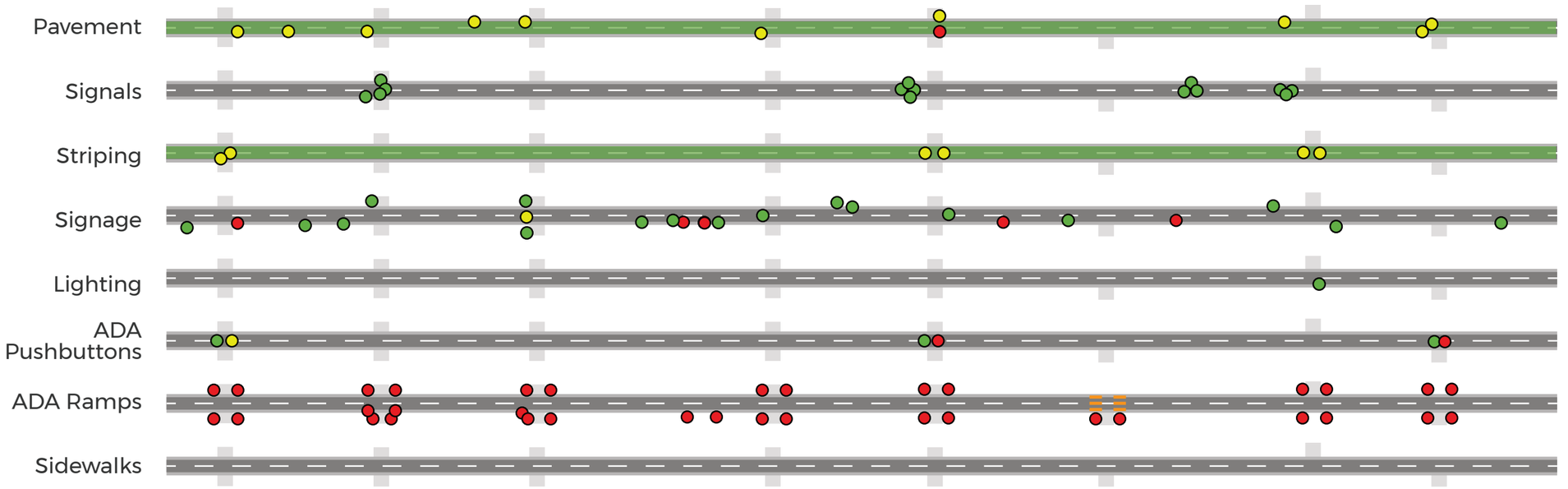
0 125 250 Feet N

LEGEND

- Segment start and end
- Good
- Fair
- Poor
- No Data or N/A
- Median curb condition
- Permitted crosswalk closure
- Milepost marker

ODOT does not have jurisdiction over sidewalks in this segment. No inventory was completed.

SE 64th Ave - SE 72nd Ave



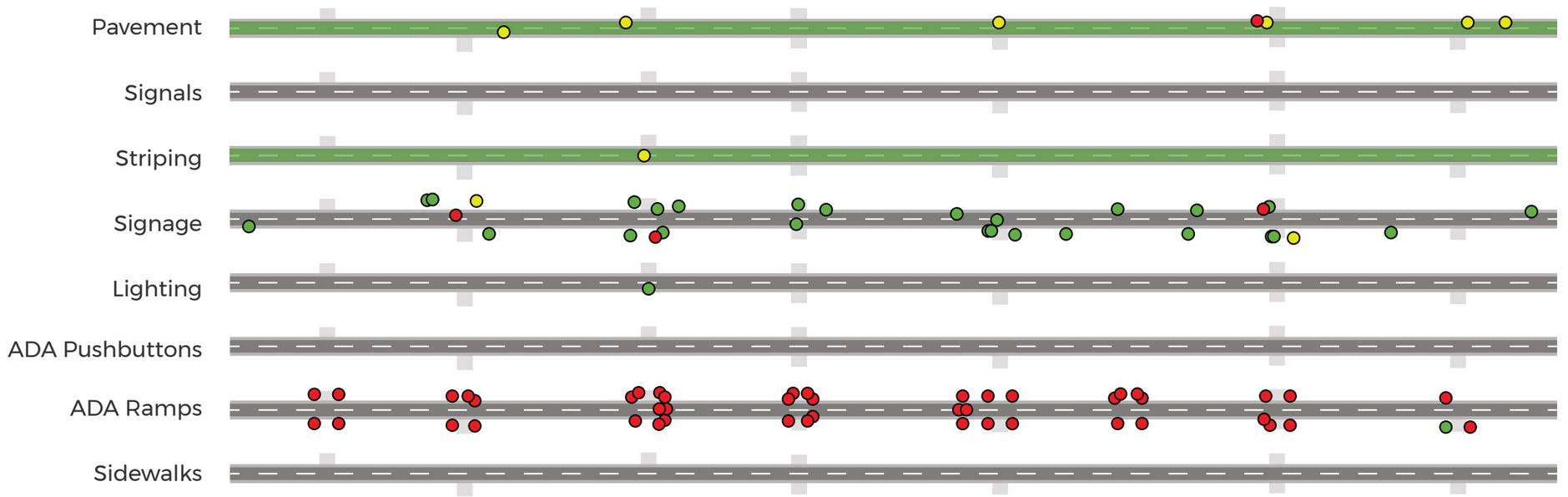
ODOT does not have jurisdiction over sidewalks in this segment. No inventory was completed.

0 125 250 N
Feet

LEGEND

- Segment start and end
- Good
- Fair
- Poor
- No Data or N/A
- Median curb condition
- Permitted crosswalk closure
- Milepost marker

SE 72nd Ave - SE 80th Ave



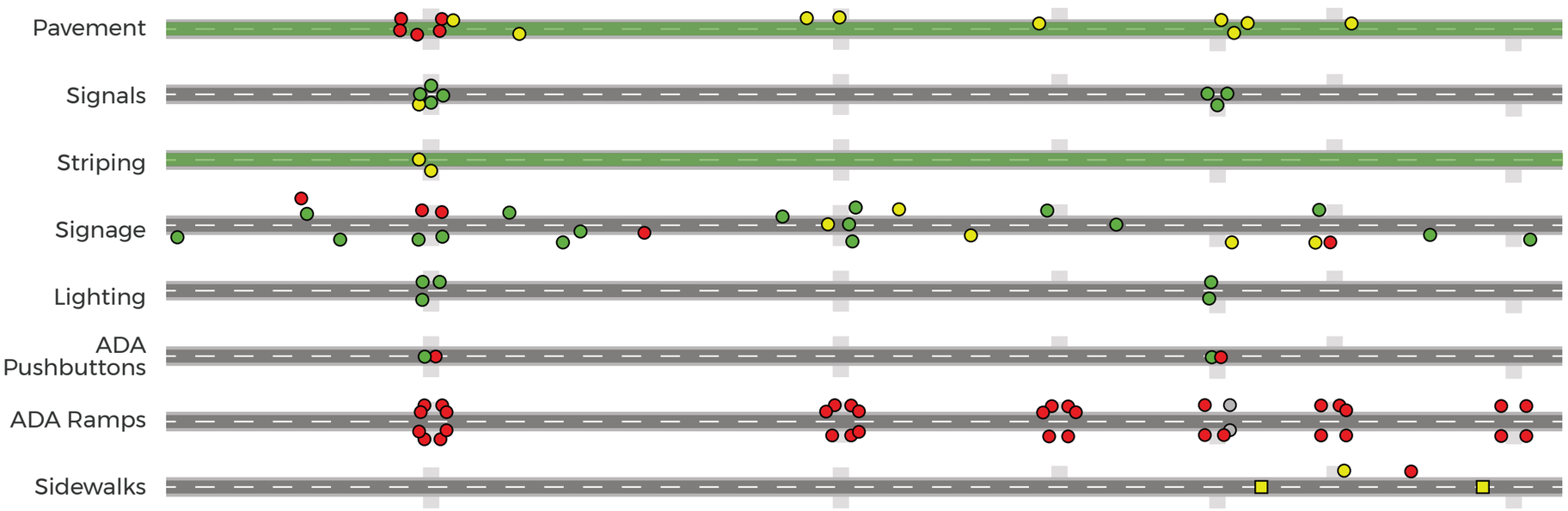
0 125 250 Feet N

LEGEND

- Segment start and end
- Good
- Fair
- Poor
- No Data or N/A
- Median curb condition
- Permitted crosswalk closure
- Milepost marker

ODOT does not have jurisdiction over sidewalks in this segment. No inventory was completed.

SE 80th Ave - SE 88th Ave



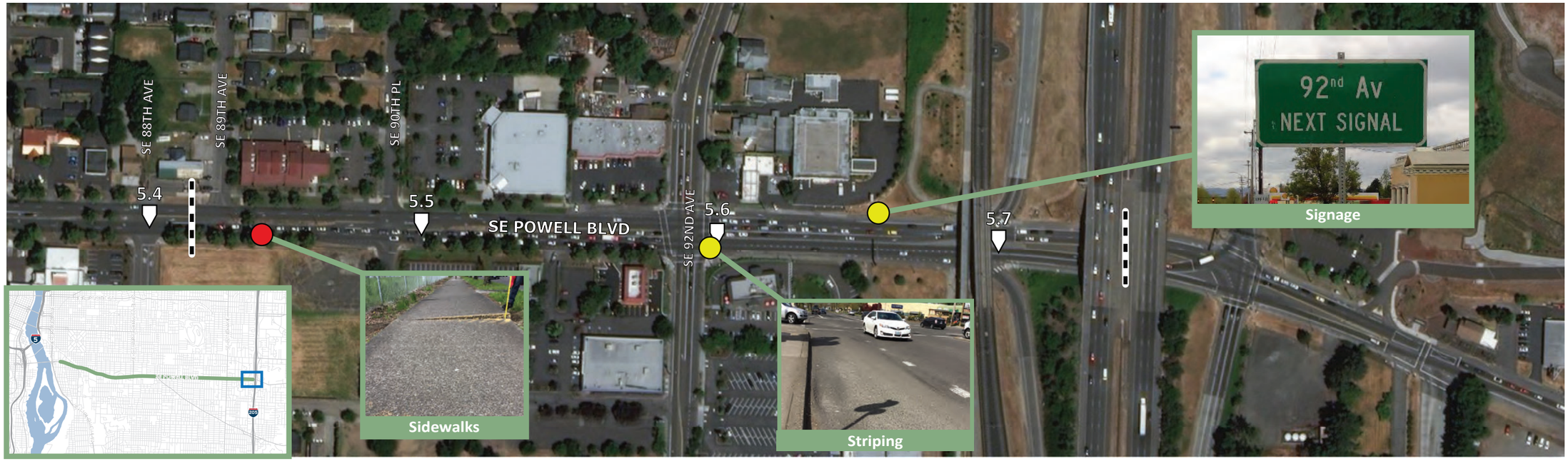
ODOT does not have jurisdiction over sidewalks west of SE 86th Ave. Inventory was completed for sidewalks from SE 86th Ave to I-205. Rectangular icons indicate existing median curb condition.

0 125 250 Feet N

LEGEND

- Segment start and end
- Good
- Fair
- Poor
- No Data or N/A
- Median curb condition
- Permitted crosswalk closure
- Milepost marker

SE 88th Ave - I-205



Rectangular icons indicate existing median curb condition.

0 125 250 N
Feet

LEGEND

- Segment start and end
- Good
- Fair
- Poor
- No Data or N/A
- Median curb condition
- Permitted crosswalk closure
- Milepost marker

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ABBREVIATIONS AND ACRONYMS

ADA	Americans with Disabilities Act
Ave	Avenue
City	City of Portland
GIS	geographic information system
GPS	global positioning system
HB	House Bill
I-205	Interstate 205
ODOT	Oregon Department of Transportation
OTC	Oregon Transportation Commission
PBOT	Portland Bureau of Transportation
SE	southeast
SOGR	state of good repair
Study	Inner Powell: SE 9th Avenue to I-205 Upgrade Study and Cost Estimate

EXISTING CONDITIONS DATA

WSP_ID	Milepost	Element	Sub-element	Condition	Notes
12	1.21	Sidewalks	Other trip hazards	Poor	7'x15'
11	1.23	Sidewalks	Cracks or openings	Poor	7'x20'
15	1.23	Sidewalks	Other trip hazards	Poor	10'x10'
10	1.24	Pavement	Cracked	Fair	Drainage
16	1.25	Pavement	Cracked	Fair	150'x12'
9	1.26	Pavement	Cracked	Poor	30'x6'
17	1.28	Sidewalks	Other trip hazards	Poor	3.5' through zone
18	1.28	Sidewalks	Other trip hazards	Poor	
8	1.29	Sidewalks	Other trip hazards	Poor	8'x15'
19	1.29	Sidewalks	Other trip hazards	Poor	3.5' clear zone
20	1.29	Pavement	Patched/deformed	Fair	Pavement bulging at curb line. Drainage
5	1.3	Pavement	Rutted	Poor	Rutting approaching bus pad. 12'x10'
22	1.32	Pavement	Rutted	Poor	12'x40'
4	1.33	Pavement	Cracked	Fair	12'x100' through intersection
23	1.33	Pavement	Cracked	Poor	20'x60'
3	1.37	Sidewalks	Other trip hazards	Poor	
24	1.37	Sidewalks	Other trip hazards	Poor	10'x10'
2	1.38	Pavement	Cracked	Poor	20x12 area
25	1.39	Pavement	Patched/deformed	Poor	6'x60'
119	1.41	Sidewalks	Other trip hazards	Poor	
118	1.44	Pavement	Cracked	Fair	30'x3'
117	1.51	Sidewalks	Other trip hazards	Poor	20x10'
116	1.55	Pavement	Cracked	Poor	250'x24'
115	1.56	Sidewalks	Other trip hazards	Poor	
29	1.65	Sidewalks	Other trip hazards	Poor	Tripping hazard 12 x 8 slab
27	1.71	Pavement	Cracked	Poor	200x20
30	1.72	Sidewalks	Other trip hazards	Poor	
112	1.76	Pavement	Cracked	Poor	20 x 75
31	1.77	Pavement	Cracked	Poor	30 x 6ft
32	1.78	Sidewalks	Other trip hazards	Poor	
111	1.78	Sidewalks	Other trip hazards	Fair	3'10" clearance
110	1.79	Sidewalks	Other trip hazards	Poor	3' 4" clearance and tripping hazards
113	1.79	Pavement	Patched/deformed	Poor	12 x 25'
33	1.8	Sidewalks	Other trip hazards	Poor	
108	1.8	Sidewalks	Other trip hazards	Poor	
109	1.8	Sidewalks	Other trip hazards	Poor	15' of trip hazards
34	1.81	Pavement	Cracked	Good	E, s, w
35	1.81	Pavement	Cracked	Fair	200 x 12
107	1.81	Pavement	Cracked	Poor	
106	1.83	Sidewalks	Other trip hazards	Poor	
105	1.85	Pavement	Cracked	Fair	12x200'
36	1.95	Sidewalks	Other trip hazards	Poor	
37	2.01	Sidewalks	Other trip hazards	Poor	
102	2.05	Sidewalks	Other trip hazards	Fair	Slanted walkway
103	2.05	Sidewalks	Other trip hazards	Fair	
101	2.07	Pavement	Cracked	Fair	
100	2.08	Pavement	Patched/deformed	Fair	
99	2.09	Sidewalks	Other trip hazards	Fair	3'3' clearance
98	2.1	Sidewalks	Other trip hazards	Poor	
97	2.11	Sidewalks	Other trip hazards	Poor	3'10" poor clearance and trip hazard
39	2.14	Sidewalks	Other trip hazards	Poor	
40	2.14	Pavement	Cracked	Fair	Long 100+ ft crack at joint
41	2.18	Pavement	Rutted	Fair	
96	2.18	Pavement	Cracked	Poor	6x20'
42	2.19	Sidewalks	Other trip hazards	Poor	
95	2.2	Sidewalks	Other trip hazards	Poor	3'7" clearance , tripping hazards, 25x5 total area
94	2.22	Pavement	Cracked	Fair	12x100'
92	2.26	Pavement	Cracked	Fair	12 x 80
90	2.29	Sidewalks	Other trip hazards	Poor	
91	2.29	Sidewalks	Other trip hazards	Poor	

WSP_ID	Milepost	Element	Sub-element	Condition	Notes
89	2.36	Pavement	Cracked	Fair	12x 25′
88	2.4	Pavement	Cracked	Fair	12x40
43	2.42	Sidewalks	Other trip hazards	Poor	
44	2.44	Sidewalks	Other trip hazards	Poor	5x20
87	2.44	Sidewalks	Other trip hazards	Poor	
86	2.46	Pavement	Patched/deformed	Poor	Sinking manhole effects ride quality
46	2.48	Pavement	Cracked	Poor	Pothole
85	2.48	Pavement	Cracked	Fair	
83	2.51	Sidewalks	Other trip hazards	Poor	Poor clearance
82	2.52	Pavement	Cracked	Fair	24x30′
81	2.66	Sidewalks	Other trip hazards	Poor	Raised lip at grade break
47	2.71	Sidewalks	Other trip hazards	Poor	2.5′ clear zone
80	2.73	Pavement	Cracked	Fair	24x 35′
78	2.8	Pavement	Cracked	Poor	24x50
49	2.81	Sidewalks	Other trip hazards	Poor	Cracking and tripping hazard 15x10
77	2.85	Pavement	Cracked	Fair	100x 12′
76	2.89	Sidewalks	Other trip hazards	Poor	
74	2.9	Pavement	Cracked	Poor	Outside jurisdiction...
73	2.91	Pavement	Cracked	Poor	12x30′
75	2.91	Pavement	Patched/deformed	Poor	3x3
72	3	Pavement	Cracked	Poor	
50	3.02	Utilies	Frame or top slab	Poor	Missing lid
71	3.05	Sidewalks	Other trip hazards	Fair	Poor clearance, 3′ 10″
69	3.08	Sidewalks	Other trip hazards	Fair	Poor clearance, 3′ 11″
70	3.08	Pavement	Patched/deformed	Fair	Missing utility lid
68	3.09	Pavement	Cracked	Fair	15x120′
51	3.1	Sidewalks	Good	Poor	Through zone 3.75′
54	3.29	Pavement	Cracked	Fair	12x50 cracks under wheel paths
66	3.31	Pavement	Patched/deformed	Fair	
65	3.32	Sidewalks	Other trip hazards	Fair	3 ` 11″ in travel ways
55	3.34	Sidewalks	Other trip hazards	Poor	5x5x1
64	3.35	Pavement	Cracked	Fair	80 x 12 ft
56	3.39	Sidewalks	Other trip hazards	Poor	Lip at bottom of ramp
120	3.39	Utilies	Surface mounted feature	Fair	
57	3.4	Sidewalks	Other trip hazards	Poor	Lip at bottom of ramp
63	3.43	Pavement	Cracked	Poor	12x25′
58	3.45	Pavement	Cracked	Poor	12′x12′
61	3.45	Pavement	Cracked	Fair	150′x3′
59	3.47	Pavement	Cracked	Fair	
60	3.47	Sidewalks	Other trip hazards	Poor	Through zone 3′2″
121	3.47	Sidewalks	Chipping or general deterioration	Poor	Chunk out of curb
122	3.47	Drainage	Frame or top slab	Poor	
272	3.47	Pavement	Cracked	Fair	24x30
273	3.47	Drainage	Frame or top slab	Fair	Cracked frame
274	3.47	Pavement	Patched/deformed	Fair	Pot holes
123	3.49	Pavement	Cracked	Good	3x1
270	3.49	Pavement	Cracked	Fair	24x3
271	3.49	Pavement	Cracked	Fair	24x5
124	3.5	Drainage	Frame or top slab	Poor	6x10
125	3.5	Pavement	Cracked	Fair	24x5
268	3.5	Utilies	Frame or top slab	Fair	Starting to smooth. Uneven lid.
269	3.5	Pavement	Cracked	Fair	24x5
126	3.51	Utilies	Surface mounted feature	Fair	
266	3.51	Pavement	Cracked	Fair	24x1
267	3.51	Drainage	Surface mounted feature	Good	Planter in good condition minimal weeds/trash
265	3.52	Pavement	Cracked	Fair	25x1
264	3.54	Utilies	Pavement around surface mounted feature	Fair	2x5
127	3.56	Pavement	Patched/deformed	Poor	6x4
128	3.56	Utilies	Surface mounted feature	Fair	Smooth lid. Sinking slightly

WSP_ID	Milepost	Element	Sub-element	Condition	Notes
129	3.57	Utilies	Pavement around surface mounted feature	Poor	5x5
130	3.57	Drainage	Frame or top slab	Fair	Uneven frame/pavement
263	3.58	Pavement	Cracked	Fair	4x4
131	3.6	Pavement	Cracked	Fair	30x4
132	3.62	Pavement	Cracked	Fair	20x10
134	3.64	Pavement	Cracked	Fair	24x3
135	3.68	Pavement	Cracked	Fair	18x4
136	3.7	Sidewalks	Other trip hazards	Poor	5x7
137	3.73	Sidewalks	Other trip hazards	Fair	10x10
261	3.78	Pavement	Cracked	Fair	24x2
138	3.8	Pavement	Cracked	Fair	24x3
260	3.83	Pavement	Cracked	Fair	24x3
259	3.84	Pavement	Cracked	Fair	18x2
139	3.85	Pavement	Cracked	Fair	40x24
140	3.87	Sidewalks	Other trip hazards	Poor	2’10” through zone
141	3.87	Sidewalks	Other trip hazards	Poor	3’6” through zone
142	3.89	Pavement	Patched/deformed	Fair	50x8
143	3.89	Sidewalks	Other trip hazards	Poor	8x8
257	3.9	Pavement	Cracked	Fair	18x3
258	3.9	Pavement	Cracked	Fair	24x3
256	3.92	Pavement	Cracked	Fair	24x8
144	3.96	Sidewalks	Other trip hazards	Poor	30 x 6
145	3.98	Pavement	Cracked	Good	Median cracked and deformed
255	3.98	Sidewalks	Other trip hazards	Poor	6x4
254	4.02	Sidewalks	Cracks or openings	Poor	7x10
146	4.03	Pavement	Cracked	Fair	10x10
147	4.06	Sidewalks	Other trip hazards	Poor	8’
253	4.1	Sidewalks	Other trip hazards	Poor	15x7
252	4.12	Sidewalks	Other trip hazards	Poor	4x7
251	4.17	Pavement	Patched/deformed	Fair	4x10
148	4.18	Sidewalks	Other trip hazards	Poor	2 panels 20 x 8
250	4.19	Pavement	Cracked	Fair	24x5
249	4.21	Pavement	Cracked	Fair	24x4
149	4.24	Pavement	Cracked	Fair	24 x 5’
150	4.26	Pavement	Cracked	Fair	10x5
151	4.32	Pavement	Good	Fair	se , s, sw
246	4.33	Pavement	Cracked	Fair	
247	4.33	Sidewalks	Other trip hazards	Poor	7x5
152	4.38	Pavement	Cracked	Fair	12x20
245	4.39	Pavement	Cracked	Fair	24x4
243	4.42	Sidewalks	Other trip hazards	Fair	7x15
242	4.43	Sidewalks	Other trip hazards	Poor	7x10
153	4.47	Sidewalks	Other trip hazards	Poor	8 x 10
154	4.49	Pavement	Cracked	Fair	12x50
155	4.51	Sidewalks	Other trip hazards	Poor	3’6” through zone
156	4.53	Pavement	Cracked	Fair	15x12
241	4.53	Pavement	Rutted	Fair	24x40 rutt
157	4.56	Sidewalks	Other trip hazards	Poor	12x6
240	4.65	Pavement	Cracked	Fair	24x5’
159	4.68	Pavement	Cracked	Fair	6x50
160	4.7	Sidewalks	Other trip hazards	Poor	8x8
238	4.76	Sidewalks	Other trip hazards	Fair	3.5 clearance
237	4.78	Sidewalks	Other trip hazards	Poor	7x0
161	4.8	Pavement	Cracked	Fair	24x4
162	4.85	Pavement	Cracked	Good	5x5 Pavement around MH
163	4.88	Pavement	Patched/deformed	Poor	6x4
164	4.88	Pavement	Cracked	Fair	24x24
236	4.93	Sidewalks	Cracks or openings	Fair	
165	4.95	Pavement	Cracked	Fair	30x3
166	4.95	Pavement	Cracked	Good	5x5 concrete around MH

WSP_ID	Milepost	Element	Sub-element	Condition	Notes
167	4.97	Pavement	Cracked	Fair	24x3
235	4.99	Sidewalks	Cracks or openings	Poor	
168	5.02	Drainage	Frame or top slab	Fair	Uneven surface around water meter lid
169	5.03	Pavement	Cracked	Poor	20x4
170	5.03	Utilies	Pavement around surface mounted feature	Poor	4x4
172	5.03	Utilies	Surface mounted feature	Fair	Sinking slightly, smooth surface
233	5.03	Pavement	Patched/deformed	Poor	24x20
234	5.03	Pavement	Rutted	Poor	50x24
232	5.04	Pavement	Patched/deformed	Poor	24x20
173	5.05	Pavement	Patched/deformed	Poor	12x12
174	5.05	Utilies	Frame or top slab	Fair	
175	5.05	Pavement	Cracked	Fair	12x5
229	5.12	Drainage	Condition of pavement around surface mounted feature	Fair	
230	5.12	Pavement	Patched/deformed	Fair	6x20
176	5.13	Utilies	Pavement around surface mounted feature	Fair	
177	5.15	Utilies	Frame or top slab	Poor	
228	5.16	Utilies	Frame or top slab	Fair	Smooth lid, pavement starting to be uneven
227	5.19	Utilies	Pavement around surface mounted feature	Fair	Uneven at pavement cuts
178	5.2	Pavement	Cracked	Fair	12x20
179	5.2	Utilies	Frame or top slab	Poor	
226	5.2	Sidewalks	Other trip hazards	Poor	7x10
180	5.21	Utilies	Frame or top slab	Fair	
181	5.21	Pavement	Cracked	Fair	40x12
224	5.21	Drainage	Condition of pavement around surface mounted feature	Poor	Planter: minimal plants growing, weeds, trash
225	5.21	Drainage	Condition of pavement around surface mounted feature	Fair	Uneven pavement
182	5.23	Utilies	Frame position	Poor	Frame completely detached
183	5.24	Utilies	Pavement around surface mounted feature	Fair	Uneven pavement
184	5.24	Drainage	Condition of pavement around surface mounted feature	Fair	
185	5.26	Pavement	Cracked	Fair	12x30
186	5.26	Utilies	Pavement around surface mounted feature	Poor	
222	5.27	Utilies	Frame or top slab	Fair	Smooth lids
223	5.27	Sidewalks	Other trip hazards	Poor	7x6
187	5.28	Sidewalks	Other trip hazards	Poor	75x8
221	5.28	Sidewalks	Other trip hazards	Poor	7x8
189	5.32	Pavement	Cracked	Fair	24x12
190	5.32	Drainage	Condition of pavement around surface mounted feature	Fair	
191	5.33	Pavement	Cracked	Fair	60x14
217	5.33	Pavement	Patched/deformed	Fair	12x50
218	5.33	Drainage	Frame or top slab	Fair	
219	5.33	Utilies	Frame or top slab	Fair	Concrete around lid uneven
192	5.34	Utilies	Pavement around surface mounted feature	Poor	
193	5.35	Pavement	Cracked	Fair	24x10
194	5.35	Utilies	Frame or top slab	Fair	In landscape area
195	5.36	Sidewalks	Other trip hazards	Fair	Uneven sidewalk
216	5.36	Drainage	Frame or top slab	Fair	Uneven around inlet

WSP_ID	Milepost	Element	Sub-element	Condition	Notes
196	5.38	Sidewalks	Cracks or openings	Poor	Uneven & cracks
197	5.43	Pavement	Patched/deformed	Good	Loose aggregate
198	5.44	Sidewalks	Other trip hazards	Poor	Two 7 x 12 slabs
215	5.44	Sidewalks	Other trip hazards	Poor	7'x120'
214	5.45	Sidewalks	Cracks or openings	Poor	
199	5.46	Sidewalks	Cracks or openings	Fair	12 x 7 slab
200	5.47	Sidewalks	Chipping or general deterioration	Poor	4x7 section
201	5.47	Pavement	Cracked	Fair	5 x 6
202	5.49	Pavement	Cracked	Fair	5x5'
203	5.51	Sidewalks	Chipping or general deterioration	Poor	30' x 7'
213	5.53	Sidewalks	Chipping or general deterioration	Poor	
204	5.55	Pavement	Cracked	Fair	24 x 5
212	5.56	Sidewalks	Cracks or openings	Fair	
206	5.58	Pavement	Cracked	Fair	12 x 6
207	5.58	Sidewalks	Cracks or openings	Poor	7 x 7 slab
208	5.61	Pavement	Good	Good	Se,s,sw
209	5.7	Pavement	Good	Good	Nw, n, nw
210	5.73	Pavement	Rutted	Fair	

GTE_ID	Milepost	Element	Sub-element	Sub-sub-element	Condition	Notes
498	1.2	Signage	Panel	Condition	Good	Ne corner
499	1.2	Signage	Panel	Condition	Good	SE corner stop sign is good, right only sign poor
5	1.21	Signage	Support	Condition	Good	
6	1.21	Signage	Footing	Condition	Good	
7	1.21	Signage	Panel	Condition	Fair	
8	1.21	Signage	Panel	Legibility	Good	
9	1.21	Signage	Panel	Message	Good	
89	1.21	Pavement Markings	Vehicle pavement markings	Condition	Good	9th to Milwaukee
163	1.21	Signage	Panel	Condition	Fair	All other elements good
164	1.21	Signage	Panel	Condition	Good	
521	1.21	Signage	Panel	Condition	Fair	All other elements are good. Photo retaken.
525	1.22	Signage	Panel	Condition	Fair	All other elements are good. Photo retaken.
162	1.23	Signage	Panel	Condition	Good	All other elements good
523	1.23	Signage	Panel	Condition	Good	All other elements are good. Photo retaken.
10	1.25	Signage	Panel	Condition	Good	Median sign
161	1.25	Signage	Support	Condition	Poor	ENTIRE SIGN ASSEMBLY POOR (MAY BE PBOT)
522	1.25	Signage	Panel	Condition	Good	All other elements are good. Photo retaken.
524	1.25	Signage	Panel	Condition	Good	All other elements are good. Photo retaken.
529	1.25	Signage	Panel	Condition	Poor	Graffiti on Right turn only sign. MP:1.25
160	1.26	Signage	Panel	Condition	Poor	All other elements good
11	1.28	Signage	Panel	Condition	Poor	
12	1.28	Signage	Support	Condition	Good	
13	1.3	Signage	Panel	Condition	Fair	
14	1.32	Signal System	Signal indication	Aspects	Poor	North leg at Powell&Milwaukee
15	1.32	Signal System		0	0	0 East leg intersection -Good
16	1.32	Signal System		0	0	0 West leg intersection -good
87	1.32	Signage	Panel	Condition	Poor	Sign on northeast corner. All other elements are good
88	1.32	Signage	Panel	Condition	Poor	Sign on northeast corner. All other elements are good
90	1.32	Signal System	Support structure	Condition	Good	Sw corner
91	1.32	Signal System	Signal indication	Ped Heads	Good	Sw corner
92	1.32	Signal System	Signal indication	Pushbuttons	Good	Sw corner
93	1.32	Signal System		0	0	0 Good south leg
94	1.32	Pavement Markings	Vehicle pavement markings		0 Good	Eastbound good Milwaukee to fire signal
442	1.32	Lighting	Support structure		0 Good	Luminaire and pole good
86	1.33	Signage	Panel	Condition	Good	All other elements are good
443	1.33	Lighting	Support structure		0 Good	Lumi sure and support good
17	1.34	Signage	Panel	Condition	Poor	
18	1.34	Signage	Panel	Condition	Poor	
19	1.34	Signage	Panel	Condition	Poor	
20	1.36	Signage	Panel	Condition	Poor	
159	1.36	Pavement Markings	Vehicle pavement markings		0 Good	MILWAUKEE
21	1.37	Signage	Support	Condition	Fair	Bended
22	1.37	Signage	Panel	Condition	Fair	Graffiti on ahead sign
158	1.37	Signage	Panel	Condition	Fair	All other elements good
527	1.37	Signage	Panel	Condition	Good	All other elements are good. Photo retaken
157	1.39	Signage	Panel	Condition	Good	All other elements good
526	1.39	Signage	Support	Condition	Poor	retaken.
23	1.4	Signage	Panel	Condition	Good	
24	1.4	Signage	Panel	Condition	Good	
96	1.4	Signal System		0	0 Good	Signal system good
444	1.4	Lighting	Support structure		0 Good	Luminaire and support good
445	1.4	Lighting	Support structure		0	0 No luminaire (should upgrade)
83	1.41	Signage	Panel	Condition	Good	All other elements are good
84	1.41	Signage	Panel	Condition	Good	All other elements are good
85	1.41	Signage	Panel	Condition	Good	Sign on median. All other elements are good
95	1.41	Signal System		0	0 Good	Signal system Good
156	1.42	Signage	Support	Condition	Good	VMS
528	1.42	Signage	Panel	Condition	Good	All other elements are good. Photo retaken.
97	1.43	Pavement Markings	Vehicle pavement markings		0 Good	Eastbound fire signal to RR overpass
500	1.44	Signage	Panel	Condition	Poor	Support is good sop sign is poor, right only sign is poorl

GTE_ID	Milepost	Element	Sub-element	Sub-sub-element	Condition	Notes
82	1.47	Signage	Panel	Condition	Poor	Graffiti on emergency signal ahead. All other elements are good
501	1.5	Signage	Panel	Condition	Fair	Support is good, stop sign is fair, right only sign is fair
80	1.51	Signage	Panel	Condition	Good	All other elements are good
81	1.51	Signage	Panel	Condition	Poor	All other elements are good
532	1.55	Signage	Support	Condition	Fair	are good. MP: 1.54
531	1.59	Signage	Panel	Condition	Fair	Graffiti on both signs. All other elements are good.
530	1.6	Signage	Panel	Condition	Good	All other elements are good. MP: 1.66
502	1.65	Signage	Panel	Condition	Good	fair, right only sign fair
503	1.71	Signage	Panel	Condition	Good	sign is poor.
155	1.72	Pavement Markings	Vehicle pavement markings	Condition	Good	21ST TO RR BRIDGE
505	1.74	Signage	Panel	Condition	Poor	sign poor
25	1.75	Signage	Panel	Condition	Poor	
79	1.75	Signage	Panel	Condition	Good	All other elements are good
504	1.75	Signage	Panel	Condition	Good	MP 1.77, support is good, stop signs good, right only sign is good
98	1.76	Pavement Markings	Vehicle pavement markings	0	Good	EB striping rr overpass to 20th
99	1.76	Pavement Markings	Vehicle pavement markings	0	0	20th to 21st good
26	1.77	Signage	Panel	Condition	Fair	
27	1.77	Signage	Panel	Condition	Fair	Sign on median
154	1.78	Signage	Panel	Condition	Poor	Panel severely bent All other elements good
446	1.8	Lighting	Support structure	0	Good	Luminaire and support goog
78	1.81	Signage	Support	Condition	Poor	The pole got hit and is tilt. All other elements are good
100	1.81	Signal System	0	0	Good	North leg
101	1.81	Signal System	0	0	Good	East leg
102	1.81	Signal System	0	0	Good	West leg
104	1.81	Signal System	0	0	Good	South leg
153	1.81	Signal System	Pedestrian crossing hardware	Pushbuttons	Poor	NE CORNER BUTTON ACCESS
447	1.81	Lighting	Support structure	0	Good	Luminaire and support good
103	1.85	Pavement Markings	Vehicle pavement markings	0	0	EB 21st to 22nd good
538	1.85	Signage	Panel	Condition	Good	All other elements are good. MP: 1.85
105	1.87	Pavement Markings	Vehicle pavement markings	0	Good	22nd to 26th good
533	1.87	Signage	Panel	Condition	Good	All other elements are good. MP: 1.87
534	1.9	Signage	Panel	Condition	Good	All other elements are good. MP: 1.90
28	1.92	Signage	Panel	Condition	Fair	
29	1.93	Signage	Panel	Condition	Fair	Graffiti on ahead sign
152	1.94	Signage	Panel	Condition	Good	All other elements good
77	1.96	Signage	Panel	Condition	Good	All other elements are good
535	1.96	Signage	Panel	Condition	Fair	Graffiti on sign. All other elements are good. MP:1.95
30	1.97	Signage	Panel	Condition	Good	
31	1.97	Signage	Panel	Condition	Good	Rrfb signs are good
32	1.97	Signage	Panel	Condition	Good	
33	1.97	Lighting	Luminaire	0	Good	All good eastbound light is on far side
106	1.97	Signal System	Pedestrian crossing hardware	0	Good	24th street
107	1.97	Pavement Markings	Bike/ped related markings	Condition	Fair	Crossing bars
151	1.97	Pavement Markings	Vehicle pavement markings	0	Good	24TH TO 21ST
448	1.97	Lighting	Support structure	0	Good	Luminaire and structure good
449	1.97	Lighting	Support structure	0	Good	Luminaire and structure good
76	1.99	Signage	Panel	Condition	Fair	Sign on median All other elements are good
150	1.99	Signage	Panel	Condition	Good	All other elements good
536	1.99	Signage	Panel	Condition	Good	All other elements are good. Photo retaken
75	2.01	Signage	Panel	Condition	Fair	Graffiti on ahead sign. All other elements are good
450	2.01	Lighting	Support structure	0	Good	25th ave
537	2.01	Signage	Panel	Condition	Good	All other elements are good. MP: 2.01
34	2.06	Lighting	Luminaire	0	Good	Lights at the park are all good
108	2.07	Signal System	0	0	Good	East Leg
109	2.07	Pavement Markings	Bike/ped related markings	0	Fair	West leg crossing
110	2.07	Pavement Markings	Bike/ped related markings	0	Fair	South leg crossing
111	2.07	Signal System	0	0	Good	North leg
112	2.07	Pavement Markings	Bike/ped related markings	0	Fair	East leg
113	2.07	Signal System	0	0	Good	West leg
114	2.07	Pavement Markings	Bike/ped related markings	0	Fair	North leg
115	2.07	Signal System	0	0	Good	South leg
451	2.07	Lighting	Support structure	0	Good	Lum and structure good

GTE_ID	Milepost	Element	Sub-element	Sub-sub-element	Condition	Notes
452	2.07	Lighting	Support structure	0	Good	Lum and structure good
453	2.07	Lighting	Support structure	0	Good	Lum and structure good
454	2.07	Lighting	Support structure	0	Good	Luminaire and structure good
116	2.08	Pavement Markings	Vehicle pavement markings	0	Good	26th to 28th
35	2.11	Signage	Panel	Condition	Fair	Other elements are good
36	2.14	Signage	Panel	Condition	Good	Sign on median. All good
74	2.16	Signage	Panel	Condition	Good	All other elements are good
148	2.16	Pavement Markings	Vehicle pavement markings	0	Good	28TH TO 24TH
149	2.16	Signage	Panel	Condition	Good	All other elements good
117	2.17	Signal System	0	0	Good	North leg
118	2.17	Signal System	0	0	Good	East leg
119	2.17	Signal System	0	0	Good	South leg
120	2.17	Signal System	0	0	Good	West leg
455	2.17	Lighting	Support structure	0	Good	Luminaire and structure good
456	2.17	Lighting	Support structure	0	Good	Luminaire and structure good
37	2.18	Signage	Panel	Condition	Good	Sign on median all good
73	2.18	Signage	Panel	Condition	Good	Sign on median All other elements are good
121	2.18	Pavement Markings	Vehicle pavement markings	0	Good	28th to McDonalds
508	2.22	Signage	Panel	Condition	Good	good.
38	2.24	Signage	Panel	Condition	Poor	Other elements are good
39	2.25	Signage	Panel	Condition	Poor	
40	2.25	Signage	Panel	Condition	Poor	Other elements are good
507	2.26	Signage	Panel	Condition	Fair	good.
122	2.27	Pavement Markings	0	0	Good	29th to 32nd
509	2.28	Signage	Panel	Condition	Good	MP 2.26. Support is good. Stop sign good.
41	2.36	Signage	Panel	Condition	Fair	All other elements are good
147	2.36	Pavement Markings	Vehicle pavement markings	0	Good	33rd to 28th
123	2.37	Signal System	Pedestrian crossing hardware	0	Good	
124	2.37	Pavement Markings	Bike/ped related markings	0	0	Crossing bars
458	2.37	Lighting	Service cabinet	1	Good	
506	2.37	Signage	Panel	Condition	Good	MP 2.37 support good. Stop sign good.
42	2.38	Signage	Panel	Condition	Fair	All other elements are good
43	2.38	Signage	Panel	Condition	Good	All other elements are good
44	2.38	Signage	Panel	Condition	Good	Sign on median .All other elements are good
45	2.38	Lighting	Luminaire	0	Good	Lighting on crossing. All other elements are good
457	2.38	Lighting	Support structure	0	Good	Luminaire and support good
72	2.43	Signage	Panel	Condition	Fair	Graffiti on ahead sign. All other elements are good
463	2.43	Lighting	Support structure	0	Good	Lighting good in front of Cleveland Field
510	2.43	Signage	Panel	Condition	Good	MP 2.44. Support good. Stop sign good
125	2.47	Signal System	0	0	Good	East leg
126	2.47	Signal System	0	0	Good	North leg
128	2.47	Signal System	0	0	Good	South leg
129	2.47	Signal System	0	0	Good	West leg
130	2.47	Pavement Markings	0	0	Poor	North leg
459	2.47	Lighting	Support structure	0	Good	Luminaire and structure good
462	2.47	Lighting	Support structure	0	Good	Luminaire and structure good
131	2.48	Pavement Markings	Bike/ped related markings	0	Fair	East leg
132	2.48	Pavement Markings	Vehicle pavement markings	0	Good	33rd to 36th
460	2.48	Lighting	Support structure	0	Good	Luminaire and structure good
461	2.48	Lighting	Support structure	0	Good	Luminaire and structure good
46	2.53	Signage	Panel	Condition	Poor	All other elements are good
47	2.53	Signage	Panel	Condition	Fair	Graffiti on ahead sign. All other elements are good
539	2.53	Signage	Support	Condition	Poor	2.54.
127	2.54	Pavement Markings	Bike/ped related markings	0	Fair	West leg
546	2.55	Signage	Panel	Condition	Fair	Graffiti. All other elements are good. Photo retaken
48	2.56	Signage	Panel	Condition	Fair	All other elements are good
49	2.56	Signage	Panel	Condition	Good	Sign on median. All other elements are good
50	2.57	Signage	Panel	Condition	Good	All other elements are good
51	2.57	Signage	Panel	Condition	Good	Sign on median. All other elements are good
52	2.57	Lighting	Luminaire	0	Good	Lighting on ped crossing is good
53	2.58	Signage	Panel	Condition	Good	All other elements are good
54	2.58	Signage	Support	Condition	Fair	good
71	2.58	Signage	Panel	Condition	Good	All other elements are good
133	2.58	Signal System	Pedestrian crossing hardware	0	Good	
134	2.58	Pavement Markings	Bike/ped related markings	0	Poor	Crossing

GTE_ID	Milepost	Element	Sub-element	Sub-sub-element	Condition	Notes
146	2.58	Signage	Panel	Condition	Fair	All other elements good
464	2.58	Lighting	Service cabinet	0	Good	
465	2.58	Lighting	Support structure	0	Good	Luminaire and support good
540	2.58	Signage	Panel	Condition	Poor	Damaged panel. All other elements are good. MP: 2.59
70	2.59	Signage	Panel	Condition	Good	All other elements are good
135	2.59	Pavement Markings	Vehicle pavement markings	0	Good	34th to 36th
69	2.61	Signage	Panel	Condition	Fair	All other elements are good
55	2.62	Signage	Panel	Condition	Fair	All other elements are good
541	2.66	Signage	Panel	Condition	Good	All other elements are good. MP: 2.67
56	2.7	Signage	Panel	0	Good	All other elements are good
57	2.73	Signage	Panel	Condition	Good	All other elements are good
58	2.73	Signage	Panel	Condition	Fair	Sign on median. Faded. All other elements are good
59	2.73	Lighting	Luminaire	0	Fair	Lighting on ped crossing. Miss the westbound lighting.
145	2.73	Pavement Markings	Vehicle pavement markings	0	Good	36th to 34th
466	2.73	Lighting	Support structure	0	Poor	Needs illumination
545	2.73	Signage	Panel	Condition	Good	All other elements are good. MP: 2.72
60	2.74	Signage	Panel	Condition	Fair	Sign on median. Graffiti.All other elements are good
67	2.74	Signage	Panel	Condition	Fair	All other elements are good
68	2.74	Signage	Panel	Condition	Fair	Graffiti on ahead sign. All other elements are good
136	2.74	Pavement Markings	Vehicle pavement markings	0	Good	36th to 39th
542	2.74	Signage	Panel	Condition	Good	All other elements are good. MP: 2.76
61	2.77	Signage	Panel	Condition	Poor	Non reflective. All other elements are good
66	2.77	Signage	Panel	Condition	Fair	Graffiti on ahead sign
543	2.8	Signage	Panel	Condition	Good	All other elements are good. MP: 2.81
62	2.84	Signage	Panel	Condition	Good	All other elements are good
544	2.85	Signage	Panel	Condition	Good	All other elements are good. MP: 2.85
144	2.9	Pavement Markings	Vehicle pavement markings	0	0	39th to 36th
63	2.91	Signal System	Pedestrian crossing hardware	Pushbuttons	Poor	crossing
64	2.91	Signal System	Pedestrian crossing hardware	Pushbuttons	Fair	south crossing
65	2.91	Signal System	Pedestrian crossing hardware	Pushbuttons	Fair	crossing
137	2.91	Signal System	0	0	Good	North leg
138	2.91	Signal System	0	0	Good	East leg
139	2.91	Signal System	0	0	Good	South leg
140	2.91	Signal System	0	0	Good	West leg
141	2.91	Signal System	Pedestrian crossing hardware	Pushbuttons	0	NE corner reach and grades
142	2.91	Signal System	Pedestrian crossing hardware	Pushbuttons	Poor	NW corner reach and grade
143	2.91	Signal System	Pedestrian crossing hardware	Pushbuttons	0	SE corner reach and grade
440	2.91	Signage	Panel	Condition	Good	All other elements are good.
441	2.91	Signage	Panel	Condition	Good	All other elements are good.
467	2.91	Lighting	Support structure	0	Good	Luminaire and structure good
468	2.91	Lighting	Support structure	0	Poor	Intersection needs illumination
300	2.95	Signage	Panel	Condition	Fair	sign
299	2.96	Signage	Panel	Condition	Good	All other elements good
298	2.97	Signage	Panel	Condition	Good	All other elements good
301	2.97	Signage	Panel	Condition	Good	All other elements are good
165	2.99	Pavement Markings	Vehicle pavement markings	Condition	Good	39TH TO 42ND
297	3.02	Signage	Panel	Condition	Good	All other elements good
166	3.08	Signal System	0	0	Good	42nd
167	3.08	Signal System	0	0	0	42nd
302	3.08	Signage	Panel	Condition	Poor	All other elements are good .
303	3.08	Signage	Panel	Condition	Poor	All other elements are good
439	3.08	Signage	Panel	Condition	Good	sign is PBOT's.
438	3.09	Signage	Panel	Condition	Poor	Bleached. All other elements are good.
469	3.09	Lighting	Luminaire	0	Good	
470	3.09	Lighting	Support structure	0	Good	Luminaire and structure good
169	3.1	Signal System	0	0	Good	42nd
304	3.1	Signage	Panel	Condition	Poor	All other elements are good . Ped sign is faded.
437	3.1	Signage	Panel	Condition	Fair	All other elements are good.
168	3.11	Signal System	0	0	0	42nd
295	3.11	Signage	Panel	Condition	Poor	
296	3.11	Signage	Panel	Condition	Good	All other elements good
305	3.11	Signage	Panel	Condition	Fair	All other elements are good. Ped sign is faded.
471	3.11	Lighting	Support structure	0	Good	Luminaire and structure good
294	3.13	Signage	Panel	Condition	Poor	
306	3.13	Signage	Panel	Condition	Good	All other elements are good
479	3.15	Lighting	Support structure	0	Good	St Ignatius Lighting good

GTE_ID	Milepost	Element	Sub-element	Sub-sub-element	Condition	Notes
307	3.16	Signage	Panel	Condition	Fair	All other elements are good.
170	3.19	Pavement Markings	Vehicle pavement markings	0	Good	42nd TO 49TH
308	3.2	Signage	Panel	Condition	Fair	All other elements are good
436	3.2	Signage	Panel	Condition	Poor	All other elements are good.
472	3.2	Lighting	Support structure	0	Good	Creston Pool frontage lighting good
293	3.21	Signage	Panel	Condition	Good	All other elements good
309	3.21	Signage	Panel	Condition	Good	All other elements are good
310	3.21	Signage	Panel	Condition	Good	All other elements are good . Sign on median.
311	3.21	Lighting	Luminaire	0	Poor	other elements are good
312	3.22	Signage	Panel	Condition	Good	All other elements are good . Sign on median
435	3.22	Signage	Panel	Condition	Poor	All other elements are good.
473	3.22	Lighting	Support structure	0	Poor	Needs North side light
292	3.25	Signage	Panel	Condition	Fair	All other elements good
313	3.26	Signage	Panel	Condition	Good	All other elements are good
314	3.26	Lighting	Luminaire	0	Good	Lights on park are good.
171	3.29	Signal System	Pedestrian crossing hardware	0	Good	47TH
291	3.29	Signage	Panel	Condition	Poor	All other elements good
290	3.3	Signage	Panel	Condition	Good	All other elements good
475	3.3	Lighting	Support structure	0	Good	Luminaire and support good
315	3.31	Signage	Panel	Condition	Good	All other elements are good
434	3.31	Signage	Panel	Condition	Good	All other elements are good.
474	3.31	Lighting	Support structure	0	Poor	Needs North side light
172	3.32	Signal System	Pedestrian crossing hardware	0	Good	47TH
433	3.33	Signage	Panel	Condition	Fair	All other elements are good.
316	3.35	Signage	Panel	Condition	Good	VMS looks good. All other elements are good
289	3.38	Signage	Panel	Condition	Good	All other elements good
432	3.39	Signage	Panel	Condition	Good	All other elements are good.
511	3.39	Signage	Panel	Condition	Good	MP 3.39. Support good. Sign good
173	3.41	Pavement Markings	Vehicle pavement markings	0	Good	FOSTER
317	3.41	Signage	Panel	Condition	Fair	All other elements are good
547	3.41	Signage	Panel	Condition	Good	All other elements are good. Photo retaken
174	3.44	Signal System	0	0	Good	FOSTER
176	3.45	Pavement Markings	Bike/ped related markings	0	Poor	WESTLEG
175	3.46	Signal System	0	0	Good	FOSTER
431	3.46	Signage	Panel	Condition	Good	Sign on median. All other elements are good.
476	3.46	Lighting	Support structure	0	Good	Luminaire and structure good
477	3.46	Lighting	Luminaire	0	Good	
178	3.47	Signal System	0	0	Good	FOSTER
319	3.47	Signage	Panel	Condition	Good	All other elements are good
478	3.47	Lighting	Support structure	0	Good	Luminaire and structure good
430	3.51	Signage	Panel	Condition	Fair	visible damage.
288	3.52	Signage	Panel	Condition	Fair	All other elements good sw corner
318	3.53	Signage	Panel	Condition	Fair	All other elements are good . Visible damage.
287	3.54	Signage	Panel	Condition	Good	Support solid but tilted west
180	3.56	Signal System	0	0	Good	52ND
429	3.56	Signage	Panel	Condition	Good	All other elements are good.
179	3.57	Signal System	0	0	Good	52ND
181	3.57	Signal System	0	Pushbuttons	Poor	SW CORNER UNIT IS LOOSE
182	3.57	Signal System	0	Condition	Good	52ND
183	3.57	Signal System	0	0	Good	52ND
184	3.57	Pavement Markings	Bike/ped related markings	0	Poor	SOUTH LEG
320	3.57	Signage	Panel	Condition	Good	All other elements are good
480	3.57	Lighting	Support structure	0	Good	Luminaire and structure good
481	3.57	Lighting	Luminaire	0	Good	
185	3.59	Pavement Markings	Vehicle pavement markings	0	Good	52ND TO56TH
321	3.6	Signage	Panel	Condition	Good	All other elements are good
286	3.61	Signage	Panel	Condition	Good	All other elements good
322	3.62	Signage	Footing	Condition	Fair	All other elements are good. Footing is not stable.
428	3.63	Signage	Panel	Condition	Poor	All other elements are good.
285	3.64	Signage	Panel	Condition	Good	All other elements good
177	3.65	Signal System	0	0	Good	FOSTER
284	3.65	Signage	Panel	Condition	Good	All other elements good
323	3.65	Signage	Panel	Condition	Good	All other elements are good
324	3.65	Signage	Panel	Condition	Good	All other elements are good

GTE_ID	Milepost	Element	Sub-element	Sub-sub-element	Condition	Notes
325	3.66	Signage	Panel	Condition	Good	All other elements are good . Sign on median
326	3.66	Signage	Panel	Condition	Good	All other elements are good. Sign on median
427	3.66	Signage	Panel	Condition	Poor	good.
483	3.66	Lighting	Support structure	0	Poor	Needs illumination
512	3.66	Signage	Panel	Condition	Poor	MP 3.66 support good. Stop sign poor. Right only poor.
283	3.67	Signage	Panel	Condition	Poor	All other elements good
426	3.67	Signage	Panel	Condition	Poor	All other elements are good.
282	3.7	Signage	Panel	Condition	Good	All other elements good
482	3.7	Lighting	0	0	Poor	Needs illumination
327	3.71	Signage	Panel	Condition	Good	All other elements are good
328	3.71	Signage	Support	Condition	Fair	All other elements are good. Pole tilts
329	3.71	Signage	Panel	Condition	Poor	One way sign has visible damage
330	3.71	Signage	Support	Condition	Poor	good
331	3.71	Signage	Panel	Condition	Good	All other elements are good
548	3.71	Signage	Panel	Condition	Fair	All other elements are good. MP: 3.71
281	3.73	Signage	Panel	Condition	Fair	All other elements good
186	3.74	Pavement Markings	Vehicle pavement markings	0	Good	56TH TO 60TH
332	3.76	Signage	Panel	Condition	Good	Sign on median. All other elements are good
333	3.76	Signage	Panel	Condition	Good	All other elements are good
425	3.76	Signage	Panel	Condition	Good	All other elements are good.
334	3.81	Signage	Panel	Condition	Good	All other elements are good
335	3.81	Signage	Panel	Condition	Good	All other elements are good
336	3.81	Signage	Panel	Condition	Good	All other elements are good. All signs are good.
337	3.82	Signage	Panel	Condition	Good	All other elements are good
279	3.83	Signage	Panel	Condition	Good	All other elements good
280	3.83	Signage	Panel	Condition	Good	All other elements good
338	3.83	Signage	Panel	Condition	Good	All other elements are good . All signs are good.
339	3.83	Signage	Panel	Condition	Good	Sign on median. All other elements are good
340	3.83	Signage	Panel	Condition	Good	All other elements are good. Sign on median.
484	3.83	Lighting	Support structure	0	Good	Luminaire and structure good
424	3.85	Signage	Support	Condition	Poor	Wood pole. All other elements are good.
278	3.86	Signage	Panel	Condition	Good	All other elements good
423	3.87	Signage	Panel	Condition	Good	All other elements are good.
341	3.89	Signage	Panel	Condition	Good	All other elements are good
277	3.91	Signage	Panel	Condition	Fair	All other elements good
276	3.92	Signage	Panel	Condition	Good	All other elements good
342	3.92	Signage	Panel	Condition	Good	All other elements are good
343	3.94	Signage	Panel	Condition	Good	All other elements are good
275	3.98	Signage	Panel	Condition	Good	All other elements good
344	3.98	Signage	Panel	Condition	Good	All other elements are good. All signs are good.
345	3.98	Signage	Panel	Condition	Good	All other elements are good . Sign for side street.
346	3.99	Signage	Panel	Condition	Good	All other elements are good. All signs are good.
347	3.99	Signage	Panel	Condition	Good	Sign on median. All other elements are good
187	4	Pavement Markings	Vehicle pavement markings	0	Good	62ND TO 66TH
274	4.01	Signage	Panel	Condition	Poor	All other elements good
273	4.03	Signage	Panel	Condition	Fair	All other elements good
513	4.04	Signage	Panel	Condition	Good	MP 4.06. Support good. Stop sign good.
349	4.07	Signage	Panel	Condition	Poor	Miss Ped crossing sign.
350	4.07	Signage	Panel	Condition	Poor	Miss Ped crossing sign.
348	4.08	Signage	Panel	0	Fair	Graffiti. All other elements are good. Sign on median.
514	4.08	Signage	Panel	Condition	Good	good
515	4.09	Signage	Panel	Condition	Good	MP 4.10. Support good. Stop sign good.
351	4.1	Signage	Panel	Condition	Poor	Miss Ped crossing sign.
352	4.1	Signage	Panel	Condition	Poor	Miss Ped crossing sign
353	4.1	Signage	Support	Condition	Poor	Sign on median. Wood support.
354	4.1	Signage	Panel	Condition	Fair	Graffiti.
355	4.11	Signage	Panel	Condition	Fair	Graffiti.
272	4.12	Signage	Panel	Condition	Good	All other elements good
271	4.13	Signage	Panel	Condition	Good	All other elements good
188	4.16	Signal System	0	0	Good	65TH
356	4.16	Signage	Panel	Condition	Good	All other elements are good

GTE_ID	Milepost	Element	Sub-element	Sub-sub-element	Condition	Notes
189	4.17	Signal System		0	0 Good	65TH
190	4.17	Signal System		0	0 Good	65TH
191	4.17	Pavement Markings	Bike/ped related markings		0 Fair	65TH
192	4.17	Signal System		0	0 Good	65TH
193	4.17	Pavement Markings	Bike/ped related markings		0 Fair	WEST LEG
485	4.17	Lighting	Support structure		0 Poor	Intersection needs lighting
357	4.18	Signage	Panel	Condition	Poor	All other elements are good
194	4.19	Pavement Markings	Vehicle pavement markings		0 Good	67TH TO 72ND
358	4.19	Signage	Panel	Condition	Good	All other elements are good
359	4.21	Signage	Panel	Condition	Good	All other elements are good
270	4.22	Signage	Panel	Condition	Good	All other elements good
516	4.22	Signage	Panel	Condition	Good	MP 4.22. Support good. Stop sign good
268	4.27	Signage	Panel	Condition	Fair	All other elements good
269	4.27	Signage	Panel	Condition	Good	All other elements good
360	4.27	Signage	Panel	Condition	Good	All other elements are good. Sign on median.
361	4.3	Signage	Panel	Condition	Good	All other elements are good.
362	4.31	Signage	Panel	Condition	Poor	All other elements are good.
363	4.31	Signage	Panel	Condition	Good	All other elements are good
364	4.31	Signage	Panel	Condition	Good	All other elements are good.
365	4.31	Signage	Panel	Condition	Poor	All other elements are good. Graffiti on one way sign
366	4.31	Signage	Panel	Condition	Good	All other elements are good. Sign on median.
367	4.33	Signage	Panel	Condition	Good	All other elements are good. Sign on median.
553	4.33	Signage	Panel	Condition	Good	All other elements are good. MP: 4.33
517	4.34	Signage	Panel	Condition	Good	MP 4.33. Support good. Stop sign good.
549	4.34	Signage	Panel	Condition	Good	All other elements are good. MP: 4.33
267	4.35	Signage	Panel	Condition	Good	All other elements good
266	4.36	Signage	Panel	Condition	Good	All other elements good
195	4.38	Signal System		0	0 Good	69TH
196	4.38	Signal System		0	0 Good	69TH
197	4.38	Pavement Markings	Bike/ped related markings		0 Fair	EAST AND WEST LEGS
198	4.38	Signal System		0	0 Good	69TH
199	4.38	Signal System		0 Condition	Good	69TH
486	4.38	Lighting	Support structure		0 Poor	Intersection needs lighting
369	4.39	Signage	Panel	Condition	Good	All other elements are good. Sign on median.
368	4.4	Signage	Panel	Condition	Poor	Sign faces wrong way.All other elements are good
370	4.42	Signage	Panel	Condition	Good	All other elements are good
550	4.44	Signage	Support	Condition	Poor	Wood pole.All other elements are good. MP:4.46
371	4.46	Signage	Support	Condition	Poor	median.
265	4.49	Signage	Panel	Condition	Good	All other elements good
200	4.5	Signal System		0 Condition	Good	71st
201	4.5	Signal System		0 Condition	Good	71ST
202	4.5	Pavement Markings	Bike/ped related markings		0 Fair	east and west legs
203	4.5	Signal System		0 Condition	Good	71st
372	4.5	Signage	Panel	Condition	Good	All other elements are good
488	4.5	Lighting	Support structure		0 Good	Luminaire and structure good
204	4.53	Pavement Markings	Vehicle pavement markings	Condition	Good	72nd to 76th
205	4.54	Signal System		0 Condition	Good	72nd
206	4.54	Signal System		0	0 Good	72nd
207	4.54	Signal System		0 Condition	Good	72nd
487	4.54	Lighting	Support structure		0 Poor	Intersection needs illumination
373	4.55	Signage	Panel	Condition	Good	All other elements are good
374	4.58	Signage	Panel	Condition	Good	All other elements are good
551	4.6	Signage	Panel	Condition	Good	All other elements are good.MP:4.59
263	4.63	Signage	Panel	Condition	Good	All other elements good
264	4.63	Signage	Panel	Condition	Good	All other elements good
375	4.63	Signage	Support	Condition	Poor	good
262	4.64	Signage	Panel	Condition	Fair	All other elements good
376	4.64	Signage	Panel	Condition	Good	All other elements are good . All signs are good.
552	4.64	Signage	Support	Condition	Fair	Pole skew. Bleached panel. MP: 4.66
208	4.69	Pavement Markings	Bike/ped related markings		0 Fair	75TH EASTBOUND

GTE_ID	Milepost	Element	Sub-element	Sub-sub-element	Condition	Notes
261	4.69	Signage	Panel	Condition	Good	All other elements good
377	4.69	Signage	Panel	Condition	Good	All other elements are good
379	4.69	Signage	Support	Condition	Poor	Wood pole. All other elements are good
489	4.69	Lighting	Support structure	0	Good	Luminaire and structure good
259	4.7	Signage	Panel	Condition	Good	All other elements good
260	4.7	Signage	Panel	Condition	Good	All other elements good
378	4.7	Signage	Panel	Condition	Good	good
209	4.74	Pavement Markings	Vehicle pavement markings	Condition	Good	76th to 80th
257	4.74	Signage	Panel	Condition	Good	All other elements good
258	4.74	Signage	Panel	Condition	Good	All other elements good
380	4.74	Signage	Panel	Condition	Good	Sign on median. All other elements are good
518	4.75	Signage	Panel	Condition	Good	MP 4.78
256	4.79	Signage	Panel	Condition	Good	All other elements good
381	4.79	Signage	Panel	Condition	Good	All other elements are good
382	4.8	Signage	Panel	Condition	Good	All other elements are good
383	4.8	Signage	Panel	Condition	Good	Sign on median. All other elements are good
384	4.8	Signage	Panel	Condition	Good	All other elements are good. All signs are good.
385	4.82	Signage	Panel	Condition	Good	VMS looks good.
255	4.84	Signage	Panel	Condition	Good	All other elements good
254	4.86	Signage	Panel	0	Good	All other elements good
386	4.86	Signage	Panel	Condition	Good	All other elements are good
519	4.86	Signage	Panel	Condition	Good	good
253	4.88	Signage	Panel	Condition	Poor	All other elements good
252	4.89	Signage	Panel	Condition	Good	All other elements good
387	4.89	Signage	Panel	Condition	Good	All other elements are good
388	4.89	Signage	Panel	Condition	Good	All other elements are good
389	4.89	Signage	Panel	Condition	Fair	Graffiti on one way sign. All other elements are good
390	4.92	Signage	Panel	Condition	Good	All other elements are good
210	4.94	Pavement Markings	Vehicle pavement markings	0	Good	80th to 82nd
554	4.95	Signage	Panel	Condition	Good	All other elements are good. MP: 4.95
251	4.96	Signage	Panel	Condition	Good	All other elements good
391	4.97	Signage	Panel	Condition	Good	All other elements are good. All signs are good.
250	5	Signage	Panel	Condition	Poor	All other elements good
249	5.01	Signage	Panel	Condition	Good	All other elements good
392	5.01	Signage	Panel	Condition	Good	All other elements are good. All signs are good.
393	5.03	Signage	Panel	Condition	Good	All other elements are good.
211	5.04	Signal System		0 Condition	Good	SOUTH LEG
212	5.04	Pavement Markings	Bike/ped related markings	Condition	Fair	WEST LEG
213	5.04	Signal System	Pedestrian crossing hardware	Pushbuttons	Fair	NW CORNER SLOPED LANDING AREA
214	5.04	Signal System		0 Condition	Good	WEST LEG
215	5.04	Signal System		0 Condition	Good	NORTH LEG
216	5.04	Pavement Markings	Bike/ped related markings	0	Fair	SOUTH LEG
217	5.04	Signal System		0 Condition	Good	EAST LEG
247	5.04	Signage	Panel	Condition	Poor	Panel ok mounting hdwr poor
248	5.04	Signage	Panel	Condition	Poor	All other elements good
490	5.04	Lighting	Support structure	0	Good	Luminaire and structure good
491	5.04	Lighting	Support structure	0	Good	Luminaire and structure good
492	5.04	Lighting	Support structure	0	Good	Luminaire and structure good
394	5.05	Signage	Panel	Condition	Good	All other elements are good.
246	5.11	Signage	Panel	Condition	Good	All other elements good
223	5.13	Signage	Panel	Condition	Good	all other elements are good
395	5.13	Signage	Panel	Condition	Good	All other elements are good.
396	5.15	Signage	Support	Condition	Poor	Wood support. All other elements are good.
422	5.19	Signage	Panel	Condition	Good	All other elements are good.
224	5.2	Signage	Panel	Condition	Fair	all other elements are good
245	5.21	Signage	Panel	Condition	Good	All other elements good
397	5.21	Signage	Panel	Condition	Good	All other elements are good.
421	5.21	Signage	Panel	Condition	Good	All other elements are good.
244	5.22	Signage	Panel	Condition	Fair	Both panel and support in poor condition
555	5.22	Signage	Support	Condition	Poor	Photo retaken
398	5.24	Signage	Panel	Condition	Fair	All other elements are good.

GTE_ID	Milepost	Element	Sub-element	Sub-sub-element		Condition	Notes
420	5.27	Signage	Panel	Condition		Good	All other elements are good. All signs are good.
243	5.29	Signage	Panel	Condition		Good	All other elements good
494	5.31	Lighting	Support structure		0	Good	Luminaire and structure good
219	5.32	Signal System		0	Condition	Good	86th North leg
220	5.32	Signal System		0	Condition	Good	86th East leg
221	5.32	Signal System		0	Condition	Good	86th West leg missing tether
399	5.32	Signage	Panel	Condition		Fair	Graffiti. All other elements are good.
493	5.32	Lighting	Support structure		0	Good	Luminaire and structure good
222	5.33	Pavement Markings	Vehicle pavement markings	Condition		Good	86th to 92ND
225	5.34	Signage	Panel	Condition		Fair	all other elements are good
226	5.34	Signage	Panel	Condition		Poor	all other elements are good
419	5.35	Signage	Panel	Condition		Good	All other elements are good. All signs are good.
242	5.38	Signage	Panel		0	Good	All other elements good
400	5.41	Signage	Panel	Condition		Good	All signs are good. All other elements are good.
418	5.42	Signage	Panel	Condition		Good	All other elements are good.
520	5.43	Signage	Panel	Condition		Poor	MP 5.41. Support poor. Stop sign poor.
218	5.46	Pavement Markings	Vehicle pavement markings	Condition		Good	86th to 82nd
227	5.47	Signage	Panel	Condition		Poor	all other elements are good
556	5.47	Signage	Panel	Condition		Good	All other elements are good. Photo retaken
401	5.49	Signage	Panel	Condition		Good	All other elements are good.
402	5.49	Signage	Panel	Condition		Good	All other elements are good.
417	5.49	Signage	Panel	Condition		Good	All other elements are good.
228	5.5	Signage	Panel	Condition		Poor	all other elements are good
241	5.5	Signage	Panel	Condition		Fair	All other elements good
416	5.52	Signage	Panel	Condition		Good	All other elements are good.
415	5.54	Signage	Panel	Condition		Good	All other elements are good.
403	5.55	Signage	Support	Condition		Poor	Wood pole. All other elements are good.
240	5.56	Signage	Panel	Condition		Good	All other elements good
239	5.58	Signage	Panel		0	Fair	NW corner 92nd (westbound)
414	5.58	Signage	Panel	Condition		Good	All other elements are good.
229	5.59	Signal System		0	Condition	Good	92nd east leg
230	5.59	Signal System		0	Condition	Good	92nd North leg
231	5.59	Signal System		0	Condition	Good	92nd South leg
232	5.59	Signal System		0	Condition	Good	92nd West leg
233	5.59	Signage	Panel	Condition		Poor	NE corner
234	5.59	Signage	Panel	Condition		Good	NE corner
238	5.59	Signage	Panel	Condition		Good	NW corner of 92nd (southbound) three signs
495	5.59	Lighting	Support structure		0	Good	Luminaire and structure good
496	5.59	Lighting	Support structure		0	Good	
497	5.59	Lighting	Luminaire		0	Fair	HPS Luminaire
404	5.6	Signage	Panel	Condition		Poor	good.
405	5.6	Signage	Panel	Condition		Good	All other elements are good.
413	5.6	Signage	Panel	Condition		Good	All other elements are good.
406	5.62	Signage	Panel	Condition		Fair	All other elements are good.
235	5.65	Signage	Panel	Condition		Good	All other elements good
407	5.65	Signage	Support	Condition		Poor	in fair condition.
409	5.65	Signage	Panel	Condition		Poor	other elements are good.
412	5.65	Signage	Panel	Condition		Good	All other elements are good.
408	5.66	Signage	Support	Condition		Good	Wood pole. All other elements are good.
236	5.67	Signage	Panel	Condition		Fair	All other elements good
410	5.67	Signage	Panel	Condition		Poor	All other elements are good.
411	5.67	Signage	Panel	Condition		Good	All other elements are good.
237	5.68	Signage	Panel	Condition		Good	All other elements good

APPENDIX C

ADA DATA

Appendix C includes ADA data collected and compiled from ODOT TransGIS data, Inner Powell Safety Improvement Project, and ODOT staff information.

Intersection	Ramp Location	Ramp Direction (if applicable)	Ramp Condition	Ramp Condition Notes	Ramp Closure
SE 9th Ave	NW	EB	Poor		
SE 9th Ave	SW	EB	Poor		
SE 9th Ave	NE	WB	Poor		
SE 9th Ave	SE	WB	Poor		
SE 10th Ave	NW	EB	Poor		
SE 10th Ave	SW	EB	Poor		
SE 10th Ave	NE	WB	Poor		
SE 10th Ave	SE	WB	Poor		
SE 10th Ave	NE, Island	WB	Poor		
SE 11th Ave	NW, island	WB	Poor		
SE 11th Ave	SW	EB	Poor		
SE 11th Ave	NE, Island	WB	Poor		
SE 11th Ave	SE	EB	Poor		
SE Milwaukie Ave	NW, Island	EB	Poor		
SE Milwaukie Ave	SW	EB	Poor		
SE Milwaukie Ave	NE, Island	WB	Poor		
SE Milwaukie Ave	NE	WB	Poor		
SE Milwaukie Ave	SE	WB	Poor		
SE 12th Ave	SW	EB	Poor		
SE 12th Ave	SE	WB	Poor		
SE 12th Ave	SE, side	NB	Poor		
SE 13th Pl	NW	EB	Poor		
SE 13th Pl	NE	WB	Poor		
SE 13th Pl	NE, side	SB	Poor		
SE 13th Pl	E, Median	NB	Poor		
SE 13th Ave	SW	EB	Poor		
SE 13th Ave	SE	WB	Poor		
SE 14th Ave	SW		Not applicable	Frontage Rd ramp	
SE 14th Ave	SE		Not applicable	Frontage Rd ramp	
SE 15th Ave	SW		Not applicable	Frontage Rd ramp	
SE 15th Ave	SE		Not applicable	Frontage Rd ramp	
SE 15th Ave	SE, Side		Not applicable	Frontage Rd ramp	
SE 15th Ave	SE, Opposite side		Not applicable	Frontage Rd ramp	
SE 16th Ave	SW		Not applicable	Frontage Rd ramp	
SE 16th Ave	SE		Not applicable	Frontage Rd ramp	

Intersection	Ramp Location	Ramp Direction (if applicable)	Ramp Condition	Ramp Condition Notes	Ramp Closure
SE 18th Ave	NW		Not applicable	Frontage Rd ramp	
SE 18th Ave	NE		Not applicable	Frontage Rd ramp	
SE 19th Ave	NW		Not applicable	Frontage Rd ramp	
SE 19th Ave	NE		Not applicable	Frontage Rd ramp	
SE 19th Ave	SE		Not applicable	Frontage Rd ramp	
SE 20th Ave	NW	EB	Poor		
SE 20th Ave	NE	WB	Poor		
SE 20th Ave	SW	EB	Poor		
SE 20th Ave	SE	WB	Poor		
SE 21st Ave	NW		Good	Safety Improvement Project	Permitted ramp closure
SE 21st Ave	NE		Good	Safety Improvement Project	
SE 21st Ave	SW		Good	Safety Improvement Project	Permitted ramp closure
SE 21st Ave	SE		Good	Safety Improvement Project	
SE 22nd Ave	NW	EB	Poor		
SE 22nd Ave	NE	WB	Poor		
SE 22nd Ave	SW	EB	Poor		
SE 22nd Ave	SE	WB	Poor		
SE 23rd Ave	NW		Poor	diagonal ramp	
SE 23rd Ave	NE		Poor	diagonal ramp	
SE 23rd Ave	SW		Poor	ramp is needed & missing	
SE 23rd Ave	SE		Poor	ramp is needed & missing	
SE 24th Ave	NW		Not applicable		Permitted ramp closure
SE 24th Ave	NE		Good	WB, Safety Improvement Project	
SE 24th Ave	SW		Not applicable		Permitted ramp closure
SE 24th Ave	SE		Good	NB, Safety Improvement Project	
SE 24th Ave	W, Island	SB	Poor		Permitted ramp closure
SE 25th Ave	NW		Poor	diagonal	
SE 25th Ave	NE		Poor	diagonal	

Intersection	Ramp Location	Ramp Direction (if applicable)	Ramp Condition	Ramp Condition Notes	Ramp Closure
SE 25th Ave	SW		Poor	ramp is needed & missing	
SE 25th Ave	SE		Poor	ramp is needed & missing	
SE 26th Ave	NW		Good	EB, Safety Improvement Project	
SE 26th Ave	NE		Good	WB, Safety Improvement Project	
SE 26th Ave	SW		Good	EB, Safety Improvement Project	
SE 26th Ave	SE		Good	WB, Safety Improvement Project	
SE 28th Ave	NW		Poor	diagonal	
SE 28th Ave	NE	WB	Poor		
SE 28th Ave	SW	EB	Poor		
SE 28th Ave	SE		Poor	diagonal	
SE 28th Ave	E, median	NB	Poor		
SE 28th Ave	W, Median	NB	Poor		
SE 28th Pl	NW	SB	Poor		
SE 28th Pl	NE	SB	Poor		
SE 28th Pl	SW	EB	Poor		
SE 28th Pl	SE		Poor	diagonal	
SE 29th Ave	NW		Poor	diagonal	
SE 29th Ave	NE		Poor	diagonal	
SE 29th Ave	SW		Poor	diagonal	
SE 29th Ave	SE		Poor	diagonal	
SE 31st Ave	NW		Not applicable		Permitted ramp closure
SE 31st Ave	NE		Good	Safety Improvement Project	
SE 31st Ave	NE, Side	NB	Poor		
SE 31st Ave	SE		Good	Safety Improvement Project	
SE 31st Ave	SW		Not applicable		Permitted ramp closure
SE 32nd Ave	NW		Poor	ramp is needed & missing	
SE 32nd Ave	NE		Poor	ramp is needed & missing	
SE 32nd Ave	SW		Poor	diagonal	
SE 32nd Ave	SE		Poor	diagonal	
SE 33rd Ave	NW		Good	EB,Safety Improvement Project	
SE 33rd Ave	NE		Good	WB,Safety Improvement Project	

Intersection	Ramp Location	Ramp Direction (if applicable)	Ramp Condition	Ramp Condition Notes	Ramp Closure
SE 33rd Ave	SW		Good	EB,Safety Improvement Project	
SE 33rd Ave	SE		Good	WB,Safety Improvement Project	
SE 33rd Pl	NW, side	SB	Poor		
SE 33rd Pl	SW		Poor	diagonal	
SE 33rd Pl	SE		Poor	diagonal	
SE 34th Ave	NW, Side		Good	SB,Safety Improvement Project	
SE 34th Ave	NE, Side		Not applicable		Permitted ramp closure
SE 34th Ave	SW		Good	NB,Safety Improvement Project	
SE 34th Ave	SE		Not applicable		Permitted ramp closure
SE 34th Ave	West, median	NB	Poor		
SE 35th Pl	NE		Poor	SB ramp is needed & missing	
SE 35th Pl	SW		Poor	diagonal	
SE 35th Pl	SE		Poor	diagonal	
SE 36th Ave	NW		Not applicable		Permitted ramp closure
SE 36th Ave	NE	WB	Poor		
SE 36th Ave	SE,side	NB	Poor		
SE 36th Ave	SE	EB	Poor		
SE 36th Pl	SW		Poor	diagonal	
SE 36th Pl	SE		Poor	diagonal	
SE 37th Ave	NW		Poor	SB ramp is needed & missing	
SE 37th Ave	NE		Poor	SB ramp is needed & missing	
SE 37th Ave	SW	EB	Poor		
SE 37th Ave	SE	WB	Poor		
SE 38th Ave	SW	EB	Not applicable		Permitted ramp closure
SE 38th Ave	SE	WB	Not applicable		Permitted ramp closure
SE 39th Ave	NW		Poor	diagonal	
SE 39th Ave	NE		Poor	diagonal	
SE 39th Ave	SW		Poor	diagonal	
SE 39th Ave	SE		Poor	diagonal	
SE 40th Ave	SW	EB	Poor		
SE 40th Ave	SE	WB	Poor		
SE 42nd Ave	NE, side	SB	Poor		

Intersection	Ramp Location	Ramp Direction (if applicable)	Ramp Condition	Ramp Condition Notes	Ramp Closure
SE 42nd Ave	NE	WB	Poor		
SE 42nd Ave	SW	EB	Not applicable		Permitted ramp closure
SE 42nd Ave	SE	WB	Poor		
SE 43rd Ave	SW	WB	Not applicable		Permitted ramp closure
SE 43rd Ave	SE	EB	Poor		
SE 45th Ave	NW		Poor	diagonal	
SE 45th Ave	NE		Poor	diagonal	
SE 45th Ave	SW, side	SB	Poor		
SE 45th Ave	SE, side	SB	Poor		
SE 47th Ave	NW		Poor	diagonal	
SE 47th Ave	NE		Poor	diagonal	
SE 47th Ave	NE, side	SB	Poor		
SE 47th Ave	SW, side		Poor	ramp is needed & missing	
SE 47th Ave	SE, side		Poor	ramp is needed & missing	
SE 47th Ave	SE, side	NB	Poor		
SE 49th Ave	NW		Poor	diagonal	
SE 49th Ave	NE		Poor	diagonal	
SE 49th Ave	SW		Poor	diagonal	
SE 49th Ave	SE		Poor	diagonal	
SE 50th Ave	NW		Poor	diagonal	
SE 50th Ave	NE		Poor	diagonal	
SE 50th Ave	SW	EB	Poor		
SE 50th Ave	SW, Island WB	WB	Poor		
SE 50th Ave	SW, Island EB		Poor	diagonal	
SE 50th Ave	SE		Poor	diagonal	
SE 51st Ave	NW		Poor	diagonal	
SE 51st Ave	NE		Poor	diagonal	
SE 51st Ave	SW, side	NB	Poor		
SE 51st Ave	SE, side	NB	Poor		
SE 52nd Ave	NW		Poor	diagonal	
SE 52nd Ave	NE		Poor	diagonal	
SE 52nd Ave	SW		Poor	diagonal	
SE 52nd Ave	SE		Poor	diagonal	
SE 53rd Ave	NW		Poor	diagonal	
SE 53rd Ave	NE		Poor	diagonal	
SE 53rd Ave	SW	EB	Poor		
SE 53rd Ave	SE	NB	Poor		
SE 54th Ave	NW	diagonal	Poor	diagonal	

Intersection	Ramp Location	Ramp Direction (if applicable)	Ramp Condition	Ramp Condition Notes	Ramp Closure
SE 54th Ave	NE	WB	Not applicable		Permitted ramp closure
SE 54th Ave	E, median double	NB	Poor		
SE 54th Ave	SW,side	NB	Poor		
SE 55th Ave	NW	EB	Poor		
SE 55th Ave	NE	WB	Poor		
SE 55th Ave	SW	EB	Poor		
SE 55th Ave	SE	WB	Poor		
SE 56th Ave	NW	EB	Poor		
SE 56th Ave	NE	WB	Poor		
SE 56th Ave	SW	EB	Poor		
SE 56th Ave	SE	WB	Poor		
SE 57th Ave	NW		Poor	diagonal	
SE 57th Ave	NE		Poor	diagonal	
SE 57th Ave	SW		Poor	diagonal	
SE 57th Ave	SE		Poor	diagonal	
SE 57th Ave	NE, side	NB	Poor		
SE 57th Ave	SE, side	SB	Poor		
SE 57th Ave	Island	NB	Poor		
SE 58th Ave	NW		Poor	diagonal	
SE 58th Ave	NE		Poor	diagonal	
SE 58th Ave	SW, side	NB	Poor		
SE 58th Ave	SE, side	NB	Poor		
SE 60th Ave	NW		Poor	diagonal	
SE 60th Ave	NE		Poor	diagonal	
SE 60th Ave	SW		Poor	diagonal	
SE 60th Ave	SE		Poor	diagonal	
SE 61st Ave	NE, side	SB	Poor		
SE 61st Ave	NE, Island	NB	Poor		
SE 61st Ave	SW		Poor	diagonal	
SE 61st Ave	SE	WB	Poor		
SE 61st Ave	SE, side	NB	Poor		
SE 62nd Ave	NW		Poor	diagonal	
SE 62nd Ave	NE	WB	Poor		
SE 62nd Ave	SW	NB	Poor		
SE 62nd Ave	SE		Poor	diagonal	
SE 63rd Ave	NW	EB	Poor		
SE 63rd Ave	W, Island	NB	Poor		
SE 63rd Ave	NE		Poor	diagonal	
SE 63rd Ave	NE, side	SB	Poor		
SE 63rd Ave	E, Island	NB	Poor		
SE 63rd Ave	SW	EB	Poor		
SE 63rd Ave	SE	WB	Poor		
SE 64th Ave	NW		Poor	diagonal	

Intersection	Ramp Location	Ramp Direction (if applicable)	Ramp Condition	Ramp Condition Notes	Ramp Closure
SE 64th Ave	NE	WB	Poor		
SE 64th Ave	SW		Poor	diagonal	
SE 64th Ave	SE	WB	Poor		
SE 65th Ave	NW		Poor	diagonal	
SE 65th Ave	NE		Poor	diagonal	
SE 65th Ave	SW		Poor	diagonal	
SE 65th Ave	SE		Poor	diagonal	
SE 66th Ave	NW		Poor	diagonal	
SE 66th Ave	NE		Poor	diagonal	
SE 66th Ave	SW	NB	Poor		
SE 66th Ave	SE	NB	Poor		
SE 67th Ave	NW		Poor	diagonal	
SE 67th Ave	NE		Poor	diagonal	
SE 67th Ave	SW	NB	Poor		
SE 67th Ave	SE		Poor	diagonal	
Powell BLVD Frontage Rd	SW, island	EB	Poor		
Powell BLVD Frontage Rd	SE, island	WB	Poor		
SE 68th Ave	NW		Poor	diagonal	
SE 68th Ave	NE		Poor	diagonal	
SE 68th Ave	SW		Poor	diagonal	
SE 68th Ave	SE		Poor	diagonal	
SE 69th Ave	NW		Poor	diagonal	
SE 69th Ave	NE		Poor	diagonal	
SE 69th Ave	SW		Poor	diagonal	
SE 69th Ave	SE		Poor	diagonal	
SE 70th Ave	NW, side	SB	Poor		
SE 70th Ave	NE, side	SB	Poor		
SE 70th Ave	SW		Not applicable		Permitted ramp closure
SE 70th Ave	SE		Not applicable		Permitted ramp closure
SE 71st Ave	NW		Poor	diagonal	
SE 71st Ave	NE		Poor	diagonal	
SE 71st Ave	SW, side	NB	Poor		
SE 71st Ave	SE, side	NB	Poor		
SE 72nd Ave	NW, side	SB	Poor		
SE 72nd Ave	NE, side	SB	Poor		
SE 72nd Ave	SW		Poor	diagonal	
SE 72nd Ave	SE		Poor	diagonal	
SE 73rd Ave	NW, side	SB	Poor		
SE 73rd Ave	NE, side	SB	Poor		
SE 73rd Ave	SW		Poor	diagonal	
SE 73rd Ave	SE		Poor	diagonal	

Intersection	Ramp Location	Ramp Direction (if applicable)	Ramp Condition	Ramp Condition Notes	Ramp Closure
SE 74th Ave	NW	EB	Poor		
SE 74th Ave	NE	SB	Poor		
SE 74th Ave	SW		Poor	diagonal	
SE 74th Ave	SE		Poor	diagonal	
SE 75th Ave	NW	EB	Poor		
SE 75th Ave	NE	WB	Poor		
SE 75th Ave	SW	EB	Poor		
SE 75th Ave	E, Island	NB	Poor		
SE 75th Ave	SE	NB	Poor		
SE 76th Ave	NW		Poor	SB ramp is needed and missing	
SE 76th Ave	NE	SB	Poor		
SE 76th Ave	SW		Poor	diagonal	
SE 76th Ave	SE	NB	Poor		
SE 77th Ave	NW	SB	Poor		
SE 77th Ave	NE	SB	Poor		
SE 77th Ave	W, Island	SB	Poor		
SE 77th Ave	SW	EB	Poor		
SE 77th Ave	SE	WB	Poor		
SE 78th Ave	NW	SB	Poor		
SE 78th Ave	NE	SB	Poor		
SE 78th Ave	SW, side	NB	Poor		
SE 78th Ave	SE, side	NB	Poor		
SE 79th Ave	NW	diagonal	Poor	diagonal	
SE 79th Ave	NE	diagonal	Poor	diagonal	
SE 79th Ave	SW	EB	Poor		
SE 79th Ave	SE	WB	Poor		
SE 80th Ave	NW	SB	Poor		
SE 80th Ave	SW		Poor	diagonal	
SE 80th Ave	SE		Poor	diagonal	
SE 82nd Ave	NW	SB	Poor		
SE 82nd Ave	NE	SB	Poor		
SE 82nd Ave	SW	EB	Poor		
SE 82nd Ave	SE	NB	Poor		
SE 84th Ave	NW	EB	Poor		
SE 84th Ave	NE		Poor	SB ramp is missing and needed	
SE 84th Ave	SW	EB	Poor		
SE 84th Ave	SE		Poor	NB ramp is missing and needed	
SE 85th Ave	NW		Poor	SB ramp is missing and needed	
SE 85th Ave	NE	SB	Poor		
SE 85th Ave	SW		Poor	NB ramp is needed & missing	

Intersection	Ramp Location	Ramp Direction (if applicable)	Ramp Condition	Ramp Condition Notes	Ramp Closure
SE 85th Ave	SE	NB	Poor		
SE 86th Ave	NW	SB	Poor		
SE 86th Ave	NE		Not applicable	closed	
SE 86th Ave	SW		Poor	diagonal	
SE 86th Ave	SE		Not applicable	NB closed	Permitted ramp closure
SE 87th Ave	NW		Poor	diagonal, SB path is obstructed	
SE 87th Ave	NE	WB	Poor		
SE 87th Ave	SW		Poor	NB, path obstructed by median	
SE 87th Ave	SE		Poor	NB, path obstructed by median	
SE 88th Ave	NW		Poor	ramp is needed & missing	
SE 88th Ave	NE		Poor	ramp is needed & missing	
SE 88th Ave	SW		Poor	diagonal	
SE 88th Ave	SE		Poor	diagonal	
SE 89th Ave	NW	EB	Poor		
SE 89th Ave	NE	WB	Poor		
SE 89th Ave	E, Island	NB	Poor		
SE 89th Ave	SE	NB	Poor		
SE 90th Pl	NW		Poor	diagonal, SB path is obstructed	
SE 90th Pl	NE	SB	Poor		
SE 90th Pl	SW		Poor	NB ramp missing and path obstructed	
SE 90th Pl	SE		Poor	diagonal	
SE 92nd Ave	NW		Poor	SB, Programmed for upgrade	
SE 92nd Ave	NE		Poor	diagonal, Programmed for upgrade	
SE 92nd Ave	SW		Poor	diagonal, Programmed for upgrade	
SE 92nd Ave	SE		Poor	diagonal, Programmed for upgrade	
I-205	NW	EB	Not applicable		Permitted ramp closure
I-205	NE	WB	Poor		

Intersection	Ramp Location	Ramp Direction (if applicable)	Ramp Condition	Ramp Condition Notes	Ramp Closure
I-205	SW	EB	Not applicable		Permitted ramp closure
I-205	SE	WB	Poor		

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ATTACHMENT C
Corridor Element Upgrades

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INNER POWELL

SE 9th to I-205 Upgrade Study and Cost Estimate

Corridor Element Upgrades

September 2019

1. INTRODUCTION AND PURPOSE OF MEMORANDUM

1.1 Purpose of Study

House Bill 2017 (HB 2017) Section 27e requires the Oregon Transportation Commission (OTC) to study the costs to upgrade and transfer the portion of Southeast (SE) Powell Boulevard from the intersection with SE 9th Avenue to the Interstate 205 (I-205) interchange in Portland, Oregon. This segment of SE Powell Boulevard is referred to as *Inner Powell.* The OTC directed the Oregon Department of Transportation (ODOT) to prepare the *Inner Powell: SE 9th to I-205 Upgrade Study and Cost Estimate* (Study). The Study will establish a state of good repair (SOGR) threshold for various roadway elements to help ODOT determine the cost to upgrade existing assets and transfer ownership and maintenance of Inner Powell from ODOT to the City of Portland (City). The OTC is required to report the Study's findings to the Oregon Legislature's Joint Committee on Transportation by January 1, 2020.

1.2 Study Area

The Study area is SE Powell Boulevard from the intersection with SE 9th Avenue to the I-205 interchange (see Figure 1) in Portland. This segment is approximately 4.5 miles long and correlates roughly to mileposts 1.2 to 5.7. For the purposes of this Study, the curb line of Powell Boulevard is set in place; ODOT is primarily responsible for corridor elements from "curb-to-curb" (i.e., the roadway). Certain corridor elements that span the curb line, such as signal structures or sidewalk ramps meeting Americans with Disabilities Act (ADA) standards are also assumed to be included in the Study area.

The segment of Powell Boulevard between SE 9th Avenue and SE 86th Avenue is currently a state highway over a city street. ODOT maintains the roadway from curb-to-curb, and the City maintains the landscaped medians and area outside of the curb line, such as sidewalks. The segment from SE 86th Avenue to I-205 is a State Fee Simple right-of-way, which is owned, controlled, and maintained by the State, except certain elements for which there are maintenance agreements between ODOT and the City (refer to *Misc. Contracts and Agreement No. 7219 – Construction Finance Agreement Interstate Transfer Project*, executed in 1980).

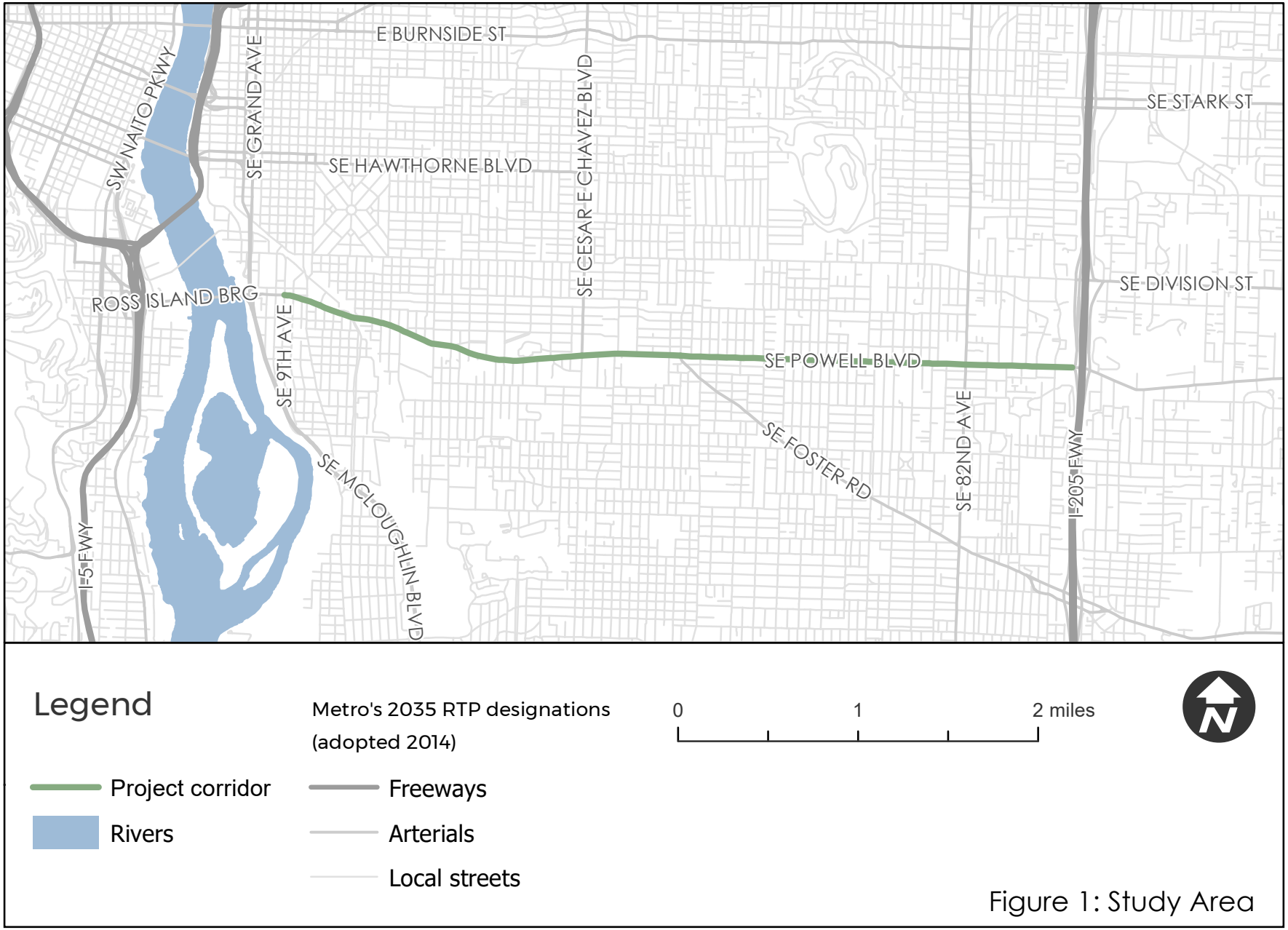


Figure 1: Study Area

1.3 Purpose of the Memorandum

This memorandum documents recommended upgrades for specific corridor elements along Inner Powell that were identified as "fair" or "poor" in Technical Memorandum #3, *Existing Conditions* (June 2019) to bring each element up to a state of good repair as defined in Technical Memorandum #2*, State of Good Repair and Assessment Methods* (February 2019). The Project team assessed specific conditions for each of the following elements and recommended upgrades.

- Pavement
- Signals and signal systems
- Pavement markings (striping)
- Signage
- Lighting
- ADA curb ramps and pushbuttons
- Sidewalks and concrete median curbs
- Drainage
- Utilities
- Hazardous Materials

This memorandum includes the following sections:

1. Introduction and Purpose of Memorandum
2. Methodology
3. Corridor Element Upgrades
4. Next Steps

Appendix A includes abbreviations and acronyms. Appendix B includes a complete set (in MS Excel) of all corridor elements and their proposed upgrades.

2. METHODOLOGY

This section describes the proposed upgrades (i.e., treatments) for each corridor element, based on that element's existing condition.

2.1 Pavement

The Project team identified three upgrade options to address deficiencies in the corridor's pavement. Recommended upgrade options include: joint sealant, resurfacing, and reconstruction.

- **Joint sealants** are used for wide and long cracks to seal out water that can contribute to degradation of the pavement subgrade.
- **Resurfacing** involves placing a new layer of asphalt over the existing asphalt (an overlay) or milling the top few inches of pavement and replacing it with a new layer of

pavement (mill and overlay). Resurfacing addresses pavement deficiencies including cracking and potholes and extends the useful life of the pavement with a reduced cost compared to complete pavement reconstruction. Resurfacing includes grinding, paving, restriping, and loop replacement.

- Full depth **pavement reconstruction** is the replacement of the entire existing pavement structure with an equivalent or deeper pavement structure. Reconstruction is necessary for pavement sections with significant levels of deterioration that cannot be repaired by other treatment methods. This treatment includes extending concrete bus pads used at bus stop locations that show evidence of accelerated deterioration.

Table 1 lists which upgrade is proposed for each specific pavement condition.

Table 1. Pavement Upgrades

Existing Condition	Joint Seal	Resurface	Reconstruct
Surface level longitudinal cracks		●	
Worn down and raveling		●	
Long, deep, or severe cracks	●		
Small, localized cracks		●	
Large area cracks with no pattern		●	
Small, deep holes			●
Patterned cracks			●
Localized, severe cracking with no pattern			●
Drainage issues			●
Deep holes, potholes		●	
Some raveling, uneven surfaces, small divots		●	
Minimal patching, no severe deformation		●	
Small sunken patches			●
Sinking, large patch, deep deformation, large divots, previously patched			●
3/4" or less rutting		●	
Large rutting depth (>3/4") but no cracking		●	
Damage to pavement approaching bus stop			●
Large rutting depth (>3/4") and cracking			●

2.2 Signals

The Project team identified three upgrade options to address signal system deficiencies: full replacement of signal system, replacement of system elements, and cleaning and maintenance.

- **Full replacement of signal system** involves replacing pedestrian pushbuttons, wiring systems, mounting, and support structure where signals are incorrectly located, have damage affecting functionality, or are missing entirely. Full replacement also occurs if the signal is rated <50% in Oregon's Traffic Signal Asset Management rating system.
- **Replacement of signal system elements** involves replacing aspects and wiring systems as needed where there are aspects with non-12" light-emitting diodes (LEDs), or there are missing/damaged backplates or signal heads.
- **Cleaning and maintenance** involves cleaning, maintaining, or replacing minor parts where necessary due to graffiti, blemishes, or minor physical damage.

Table 2 lists which upgrade is proposed for each specific signal system condition.

Table 2. Signal System Upgrades

Existing Condition	Replace full signal system	Replace signal system elements	Clean and maintain signal
Fair, incorrectly located signal system	●		
Fair, signal systems with graffiti			●
Poor, signal system not accessible	●		
Poor, signal system damaged	●		
Poor, signal system aspects are not 12"		●	
Poor, signal system is rated <50%	●		

2.3 Striping

The Project team identified two upgrade options to address pavement markings (striping) deficiencies: spot treatment and restriping.

- **Spot treatment** involves filling in limited areas where striping is faded or worn beyond recognition.
- **Restriping** involves removing and replacing areas where striping is missing or illegible over a larger area.

Table 3 lists which upgrade is proposed for each specific striping condition.

Table 3. Striping Upgrades

Existing Condition	Spot Treatment	Remove and restripe
Fair, generally faded but recognizable	●	
Poor, missing or illegible		●

2.4 Signage

The Project team identified three upgrade options to address signage: sign replacement, sign support replacement, and sign cleaning.

- **Sign replacement** occurs when the sign is damaged or has graffiti, but the support is functional.
- **Sign support replacement** occurs when the sign is in good condition, but the support or footing has structural damage. The support will be replaced, and the existing sign will be retained. Sign supports cannot be repaired so both fair and poor sign supports will be fully replaced.

Table 4 lists which upgrade is proposed for each specific signage condition.

Table 4. Signage Upgrades

Existing Condition	Replace sign	Replace sign support
Fair, panels with blemishes	●	
Fair, panels with graffiti, but legible	●	
Poor, panels with graffiti (illegible)	●	
Poor, panels damaged or faded	●	
Poor, panels without retroreflective sheeting	●	
Fair or poor sign support		●
Fair or poor sign footing		●

2.5 Lighting

The Project team identified two upgrade options to address lighting based on the existing conditions: replace and install.

- **Luminaire/Cabinet Replacement** occurs when a luminaire is not in good condition because LED luminaires cannot be repaired or service cabinet is functionally damaged.
- **New Light Pole** occurs when lighting is missing from a footing, is non-functional, a luminaire is missing from a pole, or a pole is extensively damaged.

Table 5 lists which upgrade is proposed for each specific lighting condition.

Table 5. Lighting Upgrades

Existing Condition	Replace luminaire	Install new light pole
Fair or poor luminaire	●	
Missing or nonfunctional crosswalk lighting		●
Service cabinet with damage affecting functionality	●	

2.6 Sidewalks and Concrete Median Curbs

The Project team identified two upgrade options to address sidewalks: full removal and replacement of sidewalks, and repair.

- **Full removal and replacement** occurs when cracks or openings cause the sidewalk to appear sunken in or cause a tripping hazard.
- **Repair** occurs when cracks or openings exist that do not otherwise cause a tripping hazard. Localized grouting or joint sealing can be performed to re-establish a functional sidewalk.

Table 6 lists which upgrade is proposed for each specific sidewalk condition.

Table 6. Sidewalk Upgrades

Existing Condition	Remove and replace	Repair
Fair, cracks or chipping but no tripping hazard		●
Fair, cracks or sunken causing tripping hazard	●	
Poor, cracks or sunken causing tripping hazard	●	

The Project team identified two upgrade options to address concrete median curbs: curb replacement, and curb repair.

- **Curb replacement** occurs when curbs are patched, deformed, or deteriorating.

- **Curb repair** occurs when minimal cracks are found, but curb is otherwise undamaged.

Table 7 lists which upgrade is proposed for each specific concrete median curb condition.

Table 7. Concrete Median Curb Upgrades

Existing Condition	Replace curb	Repair curb
Fair, minimal cracking of curb		●
Poor, patching, deformation, or deterioration of curb	●	

2.7 ADA Ramps and Pushbuttons

ADA improvements are required to meet current ODOT standards. The Project team identified four upgrade options to address ADA ramps and pushbuttons: complete ramp replacement or installation, pushbutton replacement, potential crosswalk closures, and clean, maintain, or relocate pushbutton.

- **ADA ramp replacement or installation** occurs when a ramp is not compliance with ODOT's current ADA standards or is missing and needed. ADA features of a curb ramp are linked such that it is difficult to replace only one component that is out of compliance without affecting other components. For this reason, curb ramps not meeting ADA standards are recommended for complete replacement. ADA ramp replacement includes all work required to construct a new ADA ramp such as drainage relocations, utility relocations, signal poles, signal detectors, right-of-way (ROW) impacts, sawcutting, striping, paving, etc.
- **Pushbutton replacement** occurs when the pushbutton is not functional, missing, not accessible, or has significant damage. New pushbutton standards have been adopted since many in the corridor were installed, so pushbuttons rated as poor are recommended for complete removal and reinstallation.
- **Potential crosswalk closures** are locations where ODOT recommends potential closures along Powell Boulevard for safety where there are existing or proposed enhanced crossing in proximity. Crosswalk closures require installation of closure signing.
- **Clean, maintain, or relocate** pushbutton applies to pushbuttons that are otherwise in fair condition.

Table 8 lists which upgrade is proposed for each specific ADA curb ramp or pushbutton condition.

Table 8. ADA Curb Ramp and Pushbutton Upgrades

Existing Condition	Ramp replacement or installation of new ramp(s)	Pushbutton Replacement	Potential Crosswalk Closure	Clean, Maintain, or Relocate
Non-compliant ADA ramp	●			
Missing ADA ramps	●			
Diagonal ramp	●			
Served by other enhanced ramp location			●	
Poor pushbutton, not functional, missing, not accessible, or significant damage		●		
Fair, pushbutton				●

Each proposed ADA upgrade, as described, has the potential to impact adjacent features on the corridor including concrete curb, pavement, striping, drainage inlets, utilities, right-of-way (ROW), signage, trees, signals, and lighting equipment. The team will inventory adjacent impacts associated with ADA ramp upgrades and include them in the proposed upgrade cost estimates.

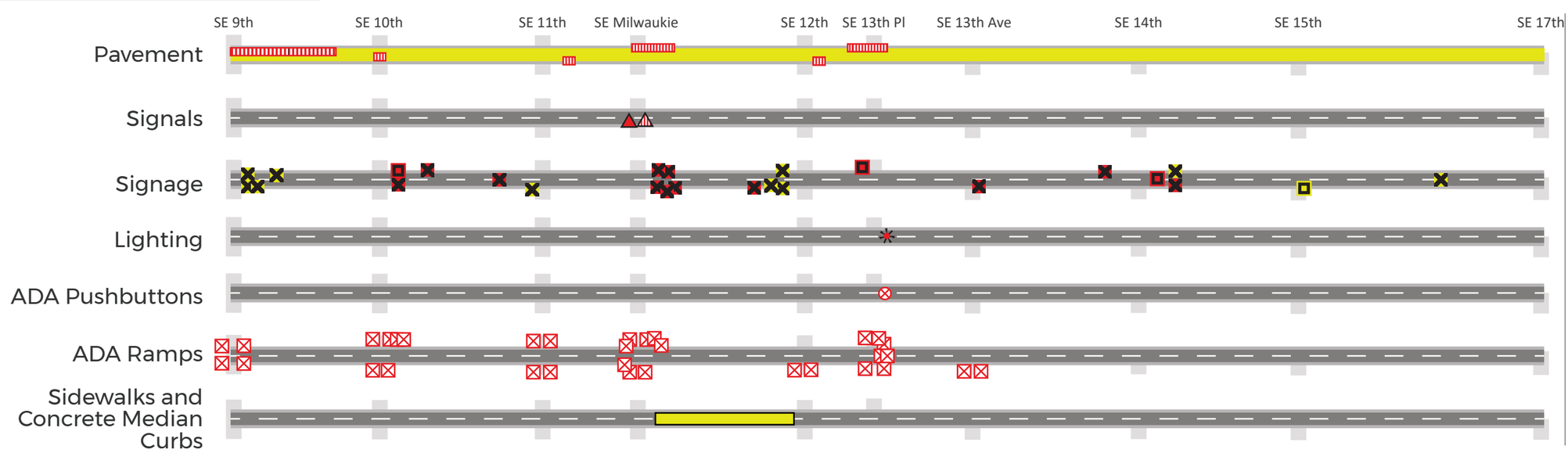
3. Corridor Element Upgrades

3.1 Corridor Elements

The team divided the project corridor into 11 segments, each approximately 2,000 feet long, for ease of visualization. The following 11 sheets show an aerial map of each segment with mileposts. Below each aerial map is a roadway diagram for each corridor element listed below. The recommended upgrades for each element that was rated as "fair" or "poor" in Technical Memorandum #3, Existing Conditions (June 2019), have unique icons that align with the aerial map. If a segment does not have a specific element roadway diagram, it is because there are no upgrades identified for that element along the segment corridor. The following elements are included on the roadway diagrams:

- Pavement
- Signals
- Striping
- Signage
- Lighting
- ADA pushbuttons
- ADA ramps
- Sidewalks (including concrete median curbs)

SE 9th Ave - SE 17th Ave



0 125 250 Feet

N

LEGEND

- Segment start and end
- Milepost marker

Note: The cost estimate prepared for Inner Powell will consider all existing programmed projects within the Project corridor.

ADA Pushbutton locations are for intersection at large, not specific corners due to GIS shapefile discrepancies.

Drainage, utilities, and hazardous materials upgrades will be incorporated into the Project's cost estimate.

Pavement
- Poor, reconstruct pavement
- Fair, resurface pavement

Signals
- Poor, replace with new 12" aspect and wiring system as needed
- Intersection requires full replacement

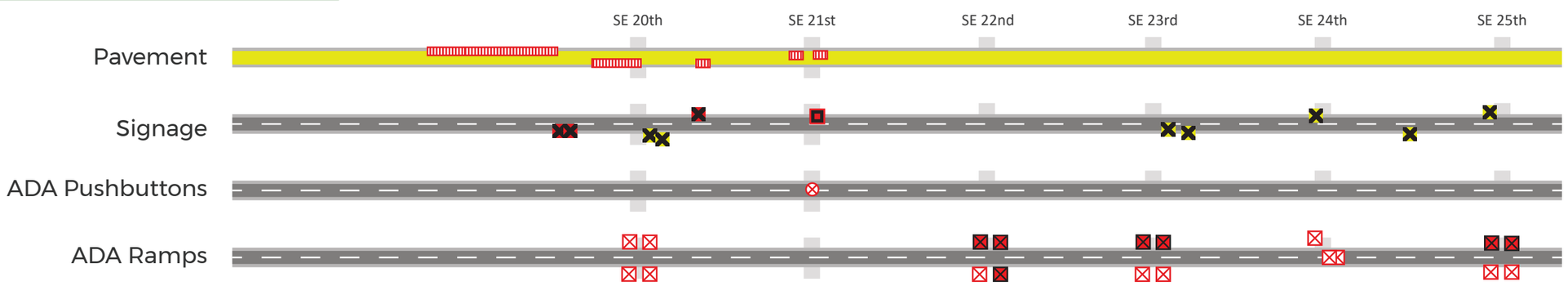
Signage
- Poor, replace with new sign(s)
- Poor, replace sign support
- Fair, replace with new sign(s)
- Fair, replace sign support

Lighting
- Poor, install new light pole(s), luminaires and wiring system as needed

ADA Pushbuttons and Curb Ramps
- Poor, replace ramp
- Poor, replace pedestrian pushbuttons

Sidewalks and Concrete Median Curbs
- Fair, repair median curb

SE 17th Ave - SE 26th Ave



0 125 250 Feet N

LEGEND

- Segment start and end
- Milepost marker

Note: The cost estimate prepared for Inner Powell will consider all existing programmed projects within the Project corridor.

ADA Pushbutton locations are for intersection at large, not specific corners due to GIS shapefile discrepancies.

Drainage, utilities, and hazardous materials upgrades will be incorporated into the Project's cost estimate.

Pavement

- Poor, reconstruct pavement
- Fair, resurface pavement

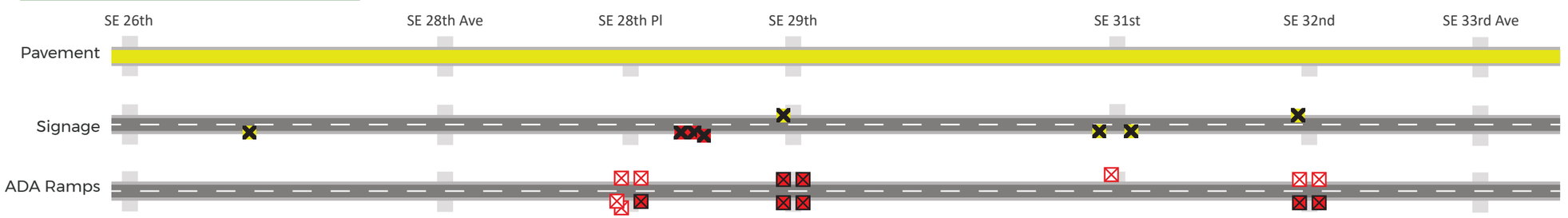
Signage

- Poor, replace with new sign(s)
- Poor, replace sign support
- Fair, replace with new sign(s)

ADA Pushbuttons and Curb Ramps

- Poor, replace ramp
- Poor, replace diagonal ramp with 2 ramps
- Poor, replace pedestrian pushbuttons

SE 26th Ave - SE 33rd Ave



Pavement
- Fair, resurface pavement

Signage
- Poor, replace with new sign(s)
- Fair, replace with new sign(s)

ADA Pushbuttons and Curb Ramps
- Poor, replace ramp
- Poor, replace diagonal ramp with 2 ramps

0 125 250 N
Feet

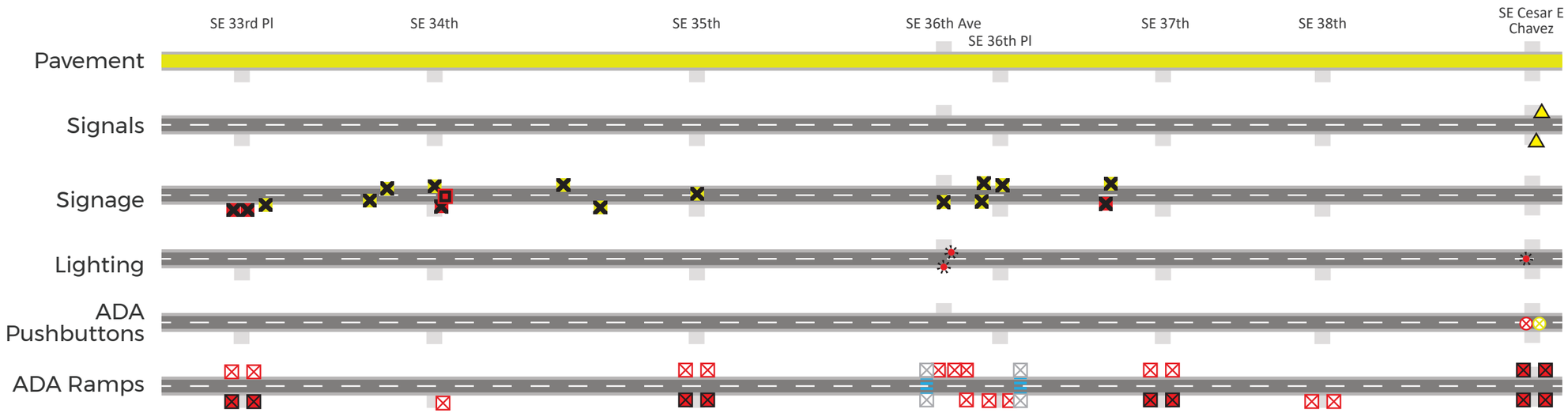
LEGEND

- Segment start and end
- Milepost marker

Note: The cost estimate prepared for Inner Powell will consider all existing programmed projects within the Project corridor.

Drainage, utilities, and hazardous materials upgrades will be incorporated into the Project's cost estimate.

SE 33rd Ave - SE Cesar E. Chavez Blvd



0 125 250 N

Feet

LEGEND

- Segment start and end
- Milepost marker

Pavement

- Fair, resurface pavement

Signals

- Fair, cleaning or minor maintenance

Signage

- Poor, replace with new sign(s)
- Poor, replace sign support
- Fair, replace with new sign(s)

Lighting

- Poor, install new light pole(s), luminaires and wiring system as needed

ADA Pushbuttons and Curb Ramps

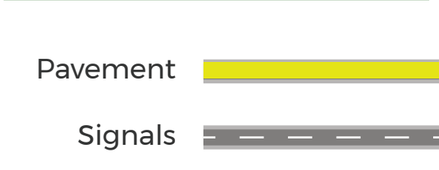
- Poor, replace ramp
- Poor, replace diagonal ramp with 2 ramps
- Poor, replace pedestrian pushbuttons
- Fair, clean, maintain or relocate pushbuttons
- Potential ramp and crossing closure

Note: The Region 1 Bike Ped Crossings Project includes improvements at SE 36th Ave. The cost estimate prepared for Inner Powell will take those improvements and any existing programmed projects within the Project corridor into consideration.

ADA Pushbutton locations are for intersection at large, not specific corners due to GIS shapefile discrepancies.

Drainage, utilities, and hazardous materials upgrades will be incorporated into the Project's cost estimate.

SE Cesar E Chavez Blvd - SE 47th Ave



0 125 250 Feet

N

LEGEND

- Segment start and end
- Milepost marker

Note: The cost estimate prepared for Inner Powell will consider all existing programmed projects within the Project corridor.

ADA Pushbutton locations are for intersection at large, not specific corners due to GIS shapefile discrepancies.

Drainage, utilities, and hazardous materials upgrades will be incorporated into the Project's cost estimate.

Pavement
- Fair, resurface pavement

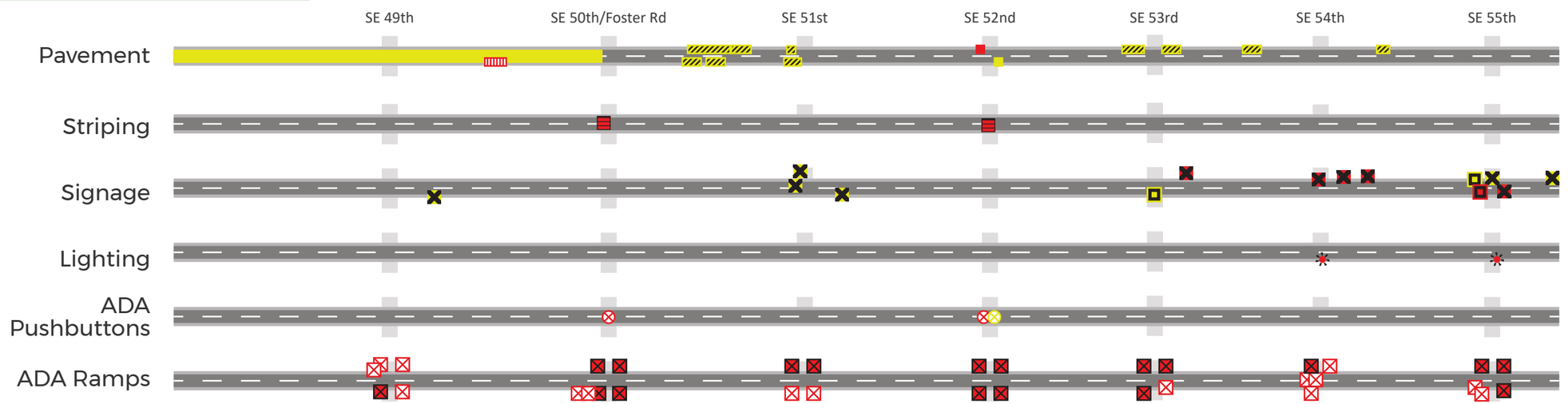
Signals
- Intersection requires full replacement

Signage
- Poor, replace with new sign(s)
- Fair, replace with new sign(s)

Lighting
- Poor, install new light pole(s), luminaires and wiring system as needed

ADA Pushbuttons and Curb Ramps
- Poor, replace ramp
- Poor, replace diagonal ramp with 2 ramps
- Poor, replace pedestrian pushbuttons
- Potential ramp and crossing closure

SE 47th Ave - SE 55th Ave



0 125 250 Feet

N

LEGEND

- Segment start and end
- Milepost marker

Pavement
- Poor, reconstruct pavement
- Poor, resurface pavement
- Fair, resurface pavement
- Fair, apply joint sealing

Striping
- Poor, remove existing striping and restripe entirely

Signage
- Poor, replace with new sign(s)
- Poor, replace sign support
- Fair, replace with new sign(s)
- Fair, replace sign support

Lighting
- Poor, install new light pole(s), luminaires and wiring system as needed

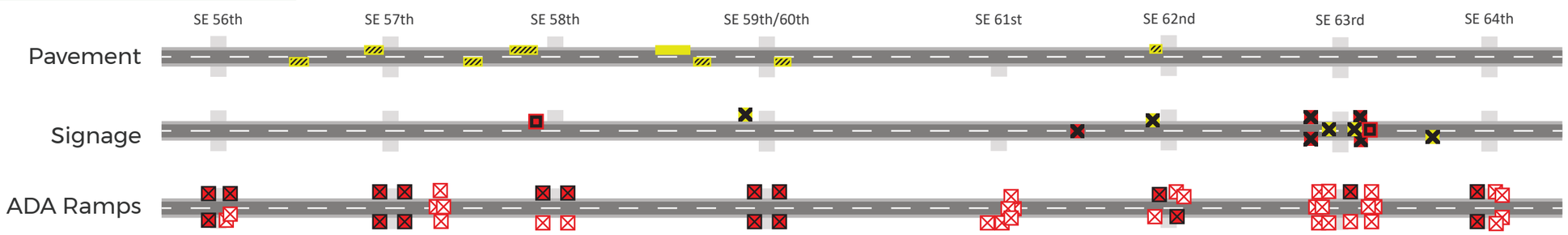
ADA Pushbuttons and Curb Ramps
- Poor, replace ramp
- Poor, replace diagonal ramp with 2 ramps
- Poor, replace pedestrian pushbuttons
- Fair, clean, maintain or relocate pushbuttons

Note: The cost estimate prepared for Inner Powell will consider all existing programmed projects within the Project corridor.

ADA Pushbutton locations are for intersection at large, not specific corners due to GIS shapefile discrepancies.

Drainage, utilities, and hazardous materials upgrades will be incorporated into the Project's cost estimate.

SE 55th Ave - SE 64th Ave



0 125 250 Feet

N

LEGEND

- Segment start and end
- Milepost marker

Pavement

- Fair, resurface pavement
- Fair, apply joint sealing

Signage

- Poor, replace with new sign(s)
- Poor, replace sign support

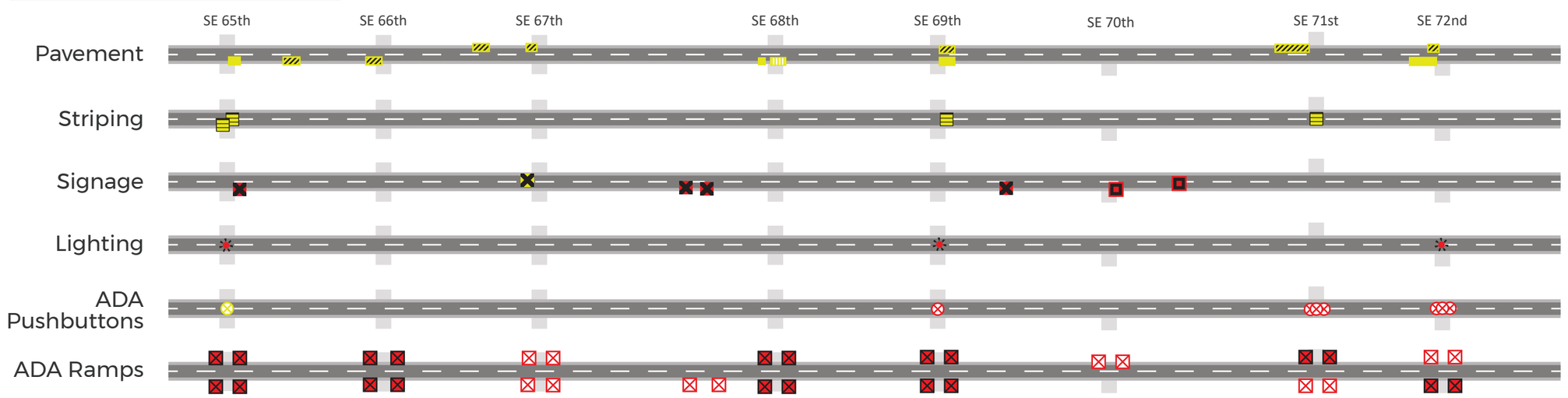
ADA Pushbuttons and Curb Ramps

- Poor, replace ramp
- Poor, replace diagonal ramp with 2 ramps

Note: The cost estimate prepared for Inner Powell will consider all existing programmed projects within the Project corridor.

Drainage, utilities, and hazardous materials upgrades will be incorporated into the Project's cost estimate.

SE 64th Ave - SE 72nd Ave



0 125 250 Feet

N

LEGEND

- Segment start and end
- Milepost marker

Note: The cost estimate prepared for Inner Powell will consider all existing programmed projects within the Project corridor.

ADA Pushbutton locations are for intersection at large, not specific corners due to GIS shapefile discrepancies.

Drainage, utilities, and hazardous materials upgrades will be incorporated into the Project's cost estimate.

Pavement
- Fair, apply joint sealing
- Fair, resurface pavement
- Fair, reconstruct pavement

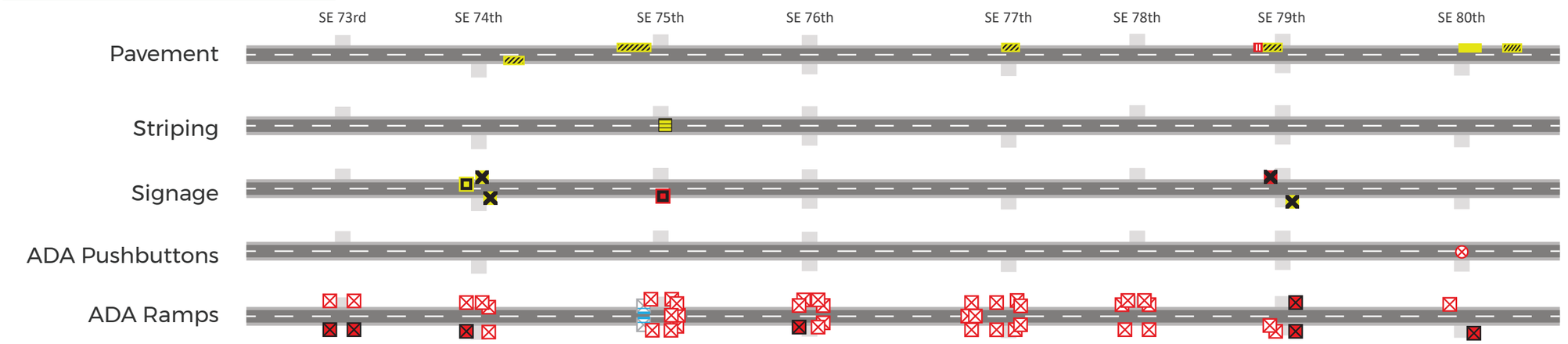
Striping
- Fair, spot treatment of striping

Signage
- Poor, replace with new sign(s)
- Poor, replace sign support

Lighting
- Poor, install new light pole(s), luminaires and wiring system as needed

ADA Pushbuttons and Curb Ramps
- Poor, replace ramp
- Poor, replace diagonal ramp with 2 ramps
- Poor, replace pedestrian pushbuttons
- Fair, clean, maintain or relocate pushbuttons

SE 72nd Ave - SE 80th Ave



0 125 250 Feet

N

LEGEND

- Segment start and end
- Milepost marker

Note: The SE Powell Boulevard High Crash Corridor Safety Plan includes improvements at SE 79th Ave. The cost estimate prepared for Inner Powell will take those improvements and any existing programmed projects within the Project corridor into consideration.

ADA Pushbutton locations are for intersection at large, not specific corners due to GIS shapefile discrepancies.

Drainage, utilities, and hazardous materials upgrades will be incorporated into the Project's cost estimate.

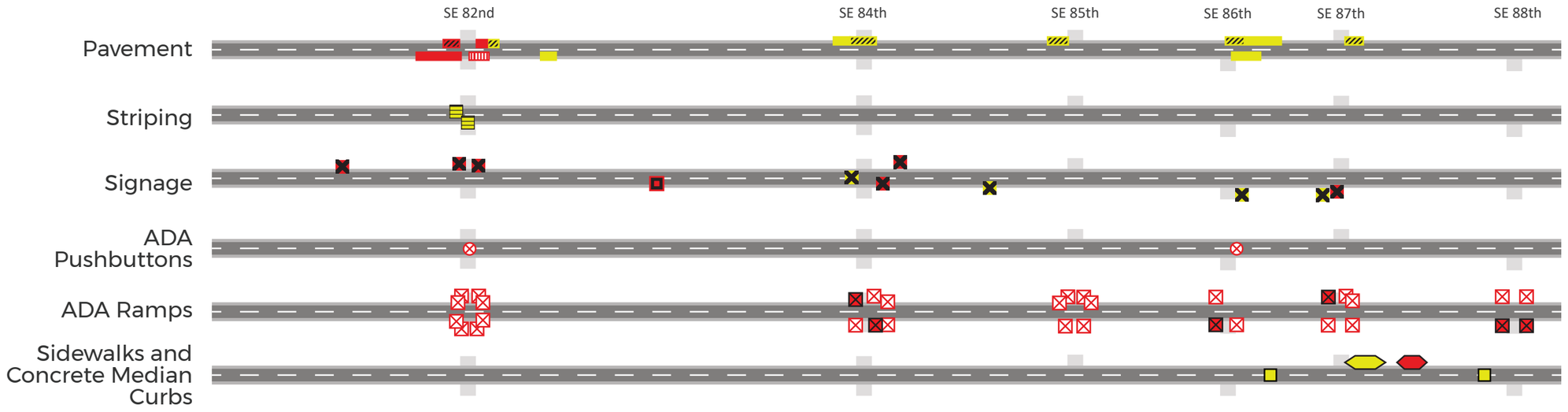
Pavement
- Poor, reconstruct pavement
- Fair, apply joint sealing
- Fair, resurface pavement

Striping
- Fair, spot treatment of striping

Signage
- Poor, replace with new sign(s)
- Poor, replace sign support
- Fair, replace sign support

ADA Pushbuttons and Curb Ramps
- Poor, replace ramp
- Poor, replace diagonal ramp with 2 ramps
- Poor, replace pedestrian pushbuttons
- Potential ramp and crossing closure

SE 80th Ave - SE 88th Ave



0 125 250 N
Feet

LEGEND

- Segment start and end
- Milepost marker

Pavement

- Poor, apply joint sealing
- Poor, resurface pavement
- Poor, reconstruct pavement
- Fair, apply joint sealing
- Fair, resurface pavement

Striping

- Fair, spot treatment of striping

Signage

- Poor, replace with new sign(s)
- Poor, replace sign support

ADA Pushbuttons and Curb Ramps

- Poor, replace ramp
- Poor, replace diagonal ramp with 2 ramps
- Poor, replace pedestrian pushbuttons

Sidewalks and Concrete Median Curbs

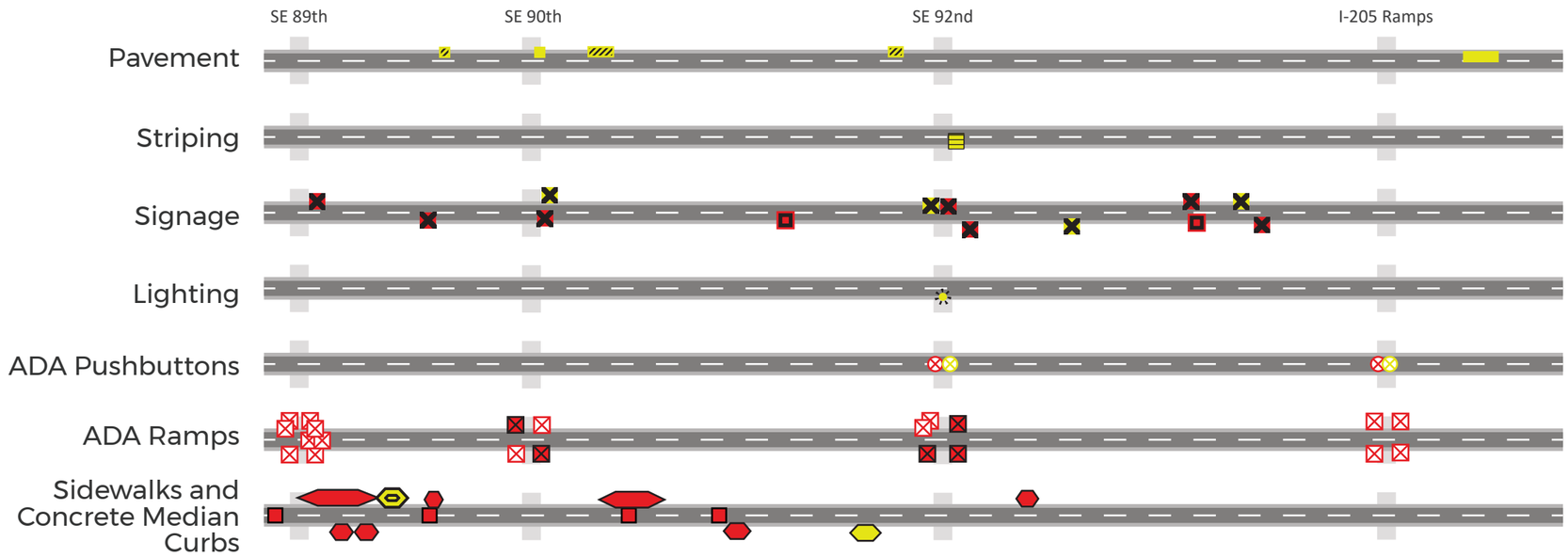
- Poor, replace sidewalk
- Fair, replace sidewalk
- Fair, repair median curb

Note: The cost estimate prepared for Inner Powell will consider all existing programmed projects within the Project corridor.

ADA Pushbutton locations are for intersection at large, not specific corners due to GIS shapefile discrepancies.

Drainage, utilities, and hazardous materials upgrades will be incorporated into the Project's cost estimate.

SE 88th Ave - I-205



0 125 250 Feet

N

LEGEND

- Segment start and end
- Milepost marker

Pavement
- Fair, apply joint sealing
- Fair, resurface pavement

Striping
- Fair, spot treatment of striping

Signage
- Poor, replace with new sign(s)
- Fair, replace with new sign(s)
- Poor, replace sign support

Lighting
- Fair, replace with new LED luminaire

ADA Pushbuttons and Curb Ramps
- Poor, replace ramp
- Poor, replace diagonal ramp with 2 ramps
- Poor, replace pedestrian pushbuttons
- Fair, clean, maintain or relocate pushbuttons

Sidewalks and Concrete Median Curbs
- Poor, replace sidewalk
- Fair, replace sidewalk
- Fair, repair sidewalk
- Poor, replace median curb

Note: There is an existing ADA curb ramp work package that includes improvements at SE 92nd Ave. The cost estimate prepared for Inner Powell will take those improvements and any existing programmed projects within the Project corridor into consideration.

ADA Pushbutton locations are for intersection at large, not specific corners due to GIS shapefile discrepancies.

Drainage, utilities, and hazardous materials upgrades will be incorporated into the Project's cost estimate.

3.2 Utilities and Drainage

The Project corridor has experienced consistent traffic conditions over the years that has produced similar wear and tear throughout the corridor. Therefore, the team evaluated utilities and drainage features along two representative corridor segments instead of the entire corridor. The condition of the utilities and drainage elements in these representative segments is the basis of assumption for the entire corridor as described in the subsections below. The two representative segments along Powell Boulevard are SE 50th Avenue to SE 52nd Avenue and SE 82nd Avenue to SE 87th Avenue.

The representative segments are approximately 0.38 miles (or one-twelfth) of the 4.53-mile-long corridor being studied. Therefore, the proposed upgrades for the representative segments will be increased by a factor of 12 to determine the anticipated treatments needed for the entire corridor for each of these two elements.

3.2.1 Utilities

The Project Team considered utilities embedded in the roadway or sidewalks in the Project area. Because most of the deterioration around utilities is surface level, upgrade options include adjusting the structure or resurfacing the pavement. Severely deteriorated or damaged utilities will be removed and replaced to prevent further damage to the roadway.

Utility structures with collar cracking, uneven surfaces, vertical displacement between finished grade and utility, not to code, or showing surface smoothing need adjustment. The pavement surrounding these utilities will be resurfaced after the utility is adjusted. Severely cracked utilities with structural sublayer deterioration will be removed and replaced, and the surrounding pavement fully reconstructed. Any utility lids found to be missing will be replaced. Table 9 lists the upgrades proposed for each utility treatment within the assessed segments.

Table 9. Utility Treatments

Existing Condition	Remove and replace	Adjust elevation and repair pavement
Elevation of frame or top slab creating functional issues		●
Surface utility feature is damaged or missing	●	

3.2.2 Drainage

Surface discontinuities, severe cracks around a drainage inlet, and elevation difference between pavement and structure are all indicative of significant damage to a drainage structure or surrounding pavement section. Therefore, treatments considered to repair drainage features generally include adjusting the structure's elevation and replacing with a new structure.

Pavement deterioration caused by a drainage feature will be remedied using the same techniques outlined in Table 1, Pavement Upgrades.

The Project team evaluated drainage features for deterioration around the outside rim of the surface mounted feature and the frame or top slab. Table 10 lists the upgrade options for each drainage condition within the assessed segments.

Table 10. Drainage Upgrades

Existing Condition	Remove and replace	Remove and relocate	Adjust elevation and repair pavement	Clear, grub, and replant
Inlets with raveling or collar cracking	●			
Inlets not parallel with the curb line or not located in the flow line		●		
Inlets with an elevation difference between the collar and pavement, severe pavement cracking near the inlet, or uneven surfacing around the structure			●	
Poor stormwater planter				●

3.3 Hazardous Materials

Hazardous materials (including contaminated soils and hazardous waste) are common along highway corridors. Proposed hazardous element upgrades have the potential to disturb hazardous materials that require proper testing, handling, and disposal. The Project team will include hazardous material handling and disposal in the cost estimate.

4. Cost Estimate

The Project team used this corridor element upgrade list to develop cost estimates for upgrades to each identified element within the Project corridor to bring the corridor to a state of good repair. Costs per upgrade are included in Appendix B. Appendix C summarizes the cost estimate for the identified upgrades and describes the methodology to develop the costs. The estimated total cost, including program costs and contingencies, is approximately $30,837,557 (in 2019 dollars).

APPENDIX A

ABBREVIATIONS AND ACRONYMS

ADA	Americans with Disabilities Act
City	City of Portland
HB	House Bill
I-205	Interstate 205
LED	light-emitting diode
ODOT	Oregon Department of Transportation
OTC	Oregon Transportation Commission
ROW	right-of-way
SE	southeast
SOGR	state of good repair
Study	Inner Powell: SE 9th Avenue to I-205 Upgrade Study and Cost Estimate

APPENDIX B

UPGRADE LIST

Milepost	Nearest Cross Street	ADA Corner Position	ADA Corner	Element	Sub-element	Condition	Treatment	Treatment Quantity	Cost notes	Unit	Cost (USD)
1.19	SE 9th Ave - SE 50th Ave	NA	NA	Pavement	Multiple	Fair	Resurface	900043	Curb to curb resurfacing of entire segment from SE 9 Ave to	SF	2088100
1.2	SE 9th Ave	3	NE	ADA	Ramps	Poor	Replace	1		EACH	18100
1.2	SE 9th Ave	4	NW	ADA	Ramps	Poor	Replace	1		EACH	18100
1.2	SE 9th Ave	2	SE	ADA	Ramps	Poor	Replace	1		EACH	18100
1.2	SE 9th Ave	1	SW	ADA	Ramps	Poor	Replace	1		EACH	18100
1.21	SE 9th Ave	NA	NA	Signage	Panel	Fair	Replace with a new sign	1		EACH	364
1.21	SE 9th Ave	NA	NA	Signage	Panel	Fair	Replace with a new sign	1		EACH	364
1.21	SE 9th Ave	NA	NA	Signage	Panel	Fair	Replace with a new sign	1		EACH	364
1.22	SE 9th Ave	NA	NA	Signage	Panel	Fair	Replace with three new signs	3		EACH	1092
1.24	SE 9th Ave	NA	NA	Pavement	Cracked	Poor	Reconstruct	2400		SF	29712
1.25	SE 10th Ave	4	NE, ISLAND	ADA	Ramps	Poor			Cost covered under ramp replacement at same position.	EACH	
1.25	SE 10th Ave	NA	NA	Signage	Support	Poor	Replace with a new sign support with appropriate mounting and footing	1		EACH	529
1.25	SE 10th Ave	3	NE	ADA	Ramps	Poor	Replace	1		EACH	18100
1.25	SE 10th Ave	4	NE, ISLAND	ADA	Ramps	Poor	Replace	1		EACH	18100
1.25	SE 10th Ave	5	NW	ADA	Ramps	Poor	Replace	1		EACH	18100
1.25	SE 10th Ave	2	SE	ADA	Ramps	Poor	Replace	1		EACH	18100
1.25	SE 10th Ave	1	SW	ADA	Ramps	Poor	Replace	1		EACH	18100
1.25	SE 10th Ave	NA	NA	Signage	Panel	Poor	Replace with a new sign and install a new sign support with appropriate mounting and footing	1		EACH	726
1.25	SE 10th Ave	NA	NA	Pavement	Cracked	Fair	Resurface		Addressed by corridor segment resurfacing (9th-50th)	SF	
1.26	SE 10th Ave	NA	NA	Pavement	Cracked	Poor	Reconstruct	180		SF	2228
1.26	SE 10th Ave	NA	NA	Signage	Panel	Poor	Replace with a new sign and install a new sign support with appropriate mounting and footing	1		EACH	726
1.28	SE 11th Ave	NA	NA	Signage	Panel	Poor	Replace with a new sign and install a new sign support with appropriate mounting and footing	1		EACH	726
1.29	SE 11th Ave	NA	NA	Pavement	Patched/deformed	Fair	Resurface		Addressed by corridor segment resurfacing (9th-50th)	SF	
1.3	SE 11th Ave	NA	NA	Pavement	Rutted	Poor	Reconstruct	240		SF	2971
1.3	SE 11th Ave	NA	NA	Signage	Panel	Fair	Replace with a new sign	1		EACH	364
1.3	SE 11th Ave	3	NE, ISLAND	ADA	Ramps	Poor	Replace	1		EACH	18100
1.3	SE 11th Ave	4	NW, ISLAND	ADA	Ramps	Poor	Replace	1		EACH	18100
1.3	SE 11th Ave	2	SE	ADA	Ramps	Poor	Replace	1		EACH	18100

Milepost	Nearest Cross Street	ADA Corner Position	ADA Corner	Element	Sub-element	Condition	Treatment	Treatment Quantity	Cost notes	Unit	Cost (USD)
1.3	SE 11th Ave	1	SW	ADA	Ramps	Poor	Replace	1		EACH	18100
1.32	SE Milwaukie Ave	3A	NE, ISLAND	ADA	Ramps	Poor			Cost covered under ramp replacement at same position.	EACH	
1.32	SE Milwaukie Ave	4	NW, ISLAND	ADA	Ramps	Poor			Cost covered under ramp replacement at same position.	EACH	
1.32	SE Milwaukie Ave	1	SW	ADA	Ramps	Poor			Cost covered under ramp replacement at same position.	EACH	
1.32	SE Milwaukie Ave	NA	NA	Pavement	Rutted	Poor	Reconstruct	1200		SF	14856
1.32	SE Milwaukie Ave	NA	NA	Signal System	Signal indication	Poor	Replace with a new 12" aspect and install complementary wiring system as needed	1		EACH	900
1.32	SE Milwaukie Ave	NA	NA	Signal System		Poor	Intersection requires full replacement	1		EACH	594200
1.32	SE Milwaukie Ave	NA	NA	Signage	Panel	Poor	Replace with a new sign and install a new sign support with appropriate mounting and footing	1		EACH	726
1.32	SE Milwaukie Ave	NA	NA	Signage	Panel	Poor	Replace with a new sign and install a new sign support with appropriate mounting and footing	1		EACH	726
1.32	SE Milwaukie Ave	3	NE	ADA	Ramps	Poor	Replace	1	Signalized Intersection	EACH	38400
1.32	SE Milwaukie Ave	3A	NE, ISLAND	ADA	Ramps	Poor	Replace	1	Signalized Intersection	EACH	38400
1.32	SE Milwaukie Ave	4	NW, ISLAND	ADA	Ramps	Poor	Replace	1	Signalized Intersection	EACH	38400
1.32	SE Milwaukie Ave	2	SE	ADA	Ramps	Poor	Replace	1	Signalized Intersection	EACH	38400
1.32	SE Milwaukie Ave	1	SW	ADA	Ramps	Poor	Replace	1	Signalized Intersection	EACH	38400
1.33	SE Milwaukie Ave	NA	NA	Pavement	Cracked	Poor	Reconstruct	480		SF	5942
1.33	SE Milwaukie Ave	NA	NA	Pavement	Cracked	Poor	Reconstruct	360		SF	4457
1.33	SE Milwaukie Ave	NA	NA	Pavement	Cracked	Fair	Resurface		Addressed by corridor segment resurfacing (9th-50th)	SF	
1.34	SE Milwaukie Ave	NA	NA	Signage	Panel	Poor	Replace with a new sign and install a new sign support with appropriate mounting and footing	1		EACH	726
1.34	SE Milwaukie Ave	NA	NA	Signage	Panel	Poor	Replace with a new sign and install a new sign support with appropriate mounting and footing	1		EACH	726
1.34	SE Milwaukie Ave	NA	NA	Signage	Panel	Poor	Replace with a new sign and install a new sign support with appropriate mounting and footing	1		EACH	726
1.34	SE Milwaukie Ave	NA	NA	Concrete	Separator	Fair	Curb replace	60		LF	4982

Milepost	Nearest Cross Street	ADA Corner Position	ADA Corner	Element	Sub-element	Condition	Treatment	Treatment Quantity	Cost notes	Unit	Cost (USD)
1.36	SE 12th Ave	NA	NA	Signage	Panel	Poor	Replace with a new sign and install a new sign support with appropriate mounting and footing	1		EACH	726
1.37	SE 12th Ave	NA	NA	Signage	Support	Fair	Replace with a new sign support with appropriate mounting and footing	1		EACH	529
1.37	SE 12th Ave	NA	NA	Signage	Panel	Fair	Replace with a new sign	1		EACH	364
1.37	SE 12th Ave	NA	NA	Signage	Panel	Fair	Replace with a new sign	1		EACH	364
1.38	SE 12th Ave	NA	NA	Pavement	Cracked	Poor	Reconstruct	4000		SF	49520
1.38	SE 12th Ave	2	SE	ADA	Ramps	Poor	Replace	1		EACH	18100
1.38	SE 12th Ave	1	SW	ADA	Ramps	Poor	Replace	1		EACH	18100
1.39	SE 13th Pl	NA	NA	Pavement	Patched/deformed	Poor	Reconstruct	1500		SF	18570
1.39	SE 13th Pl	NA	NA	Signage	Support	Poor	Replace with a new sign support with appropriate mounting and footing	1		EACH	529
1.4	SE 13th Pl	2	NA	ADA	Pushbuttons	Poor	Replace		Pushbutton cost covered in ADA ramp replacement at this location.	EACH	0
1.4	SE 13th Pl	2A	E, MEDIAN	ADA	Ramps	Poor			Cost covered under ramp replacement at same position.	EACH	
1.4	SE 13th Pl	3	NE	ADA	Ramps	Poor			Cost covered under ramp replacement at same position.	EACH	
1.4	SE 13th Pl	2A	E, MEDIAN	ADA	Ramps	Poor	Replace	1		EACH	18100
1.4	SE 13th Pl	3	NE	ADA	Ramps	Poor	Replace	1		EACH	18100
1.4	SE 13th Pl	4	NW	ADA	Ramps	Poor	Replace	1		EACH	18100
1.4	SE 13th Pl	2	SE	ADA	Ramps	Poor	Replace	1		EACH	18100
1.4	SE 13th Pl	1	SW	ADA	Ramps	Poor	Replace	1		EACH	18100
1.4	SE 13th Pl	NA	NA	Lighting	Support structure	Poor	Install two new light poles, two new	1		EACH	41735
1.43	SE 13th Ave	2	SE	ADA	Ramps	Poor	Replace	1		EACH	18100
1.43	SE 13th Ave	1	SW	ADA	Ramps	Poor	Replace	1		EACH	18100
1.44	SE 13th Ave	NA	NA	Signage	Panel	Poor	Replace with two new signs and install	2		EACH	1452
1.44	SE 13th Ave	NA	NA	Pavement	Cracked	Fair	Resurface		Addressed by corridor segment resurfacing (9th-50th)	SF	
1.47	SE 14th Ave	NA	NA	Signage	Panel	Poor	Replace with a new sign and install a new sign support with appropriate	1		EACH	726
1.5	SE 14th Ave	NA	NA	Signage	Panel	Fair	Replace with a new sign	1		EACH	364

Milepost	Nearest Cross Street	ADA Corner Position	ADA Corner	Element	Sub-element	Condition	Treatment	Treatment Quantity	Cost notes	Unit	Cost (USD)
1.51	SE 14th Ave	NA	NA	Signage	Panel	Poor	Replace with a new sign and install a new sign support with appropriate	1		EACH	726
1.55	SE 15th Ave	NA	NA	Signage	Support	Fair	Replace with a new sign support with appropriate mounting and footing	1		EACH	529
1.59	SE 17th Ave	NA	NA	Signage	Panel	Fair	Replace with a new sign	1		EACH	364
1.71	SE 20th Ave	NA	NA	Pavement	Cracked	Poor	Reconstruct	300		SF	3714
1.74	SE 20th Ave	NA	NA	Signage	Panel	Poor	Replace with a new sign and install a new sign support with appropriate	1		EACH	726
1.75	SE 20th Ave	NA	NA	Signage	Panel	Poor	Replace with a new sign and install a new sign support with appropriate	1		EACH	726
1.76	SE 20th Ave	NA	NA	Pavement	Cracked	Poor	Reconstruct	4125		SF	51068
1.76	SE 20th Ave	3	NE	ADA	Ramps	Poor	Replace	1		EACH	18100
1.76	SE 20th Ave	4	NW	ADA	Ramps	Poor	Replace	1		EACH	18100
1.76	SE 20th Ave	2	SE	ADA	Ramps	Poor	Replace	1		EACH	18100
1.76	SE 20th Ave	1	SW	ADA	Ramps	Poor	Replace	1		EACH	18100
1.77	SE 20th Ave	NA	NA	Signage	Panel	Fair	Replace with a new sign	1		EACH	364
1.77	SE 20th Ave	NA	NA	Signage	Panel	Fair	Replace with a new sign	1		EACH	364
1.77	SE 20th Ave	NA	NA	Pavement	Cracked	Poor	Resurface		Addressed by corridor segment resurfacing (9th-50th)	SF	
1.78	SE 20th Ave	NA	NA	Signage	Panel	Poor	Replace with a new sign and install a	1		EACH	726
1.79	SE 21st Ave	NA	NA	Pavement	Patched/deformed	Poor	Reconstruct	25		SF	310
1.81	SE 21st Ave	NA	NA	Pavement	Cracked	Poor	Reconstruct	9		SF	111
1.81	SE 21st Ave	NA	NA	Pavement	Cracked	Poor	Reconstruct	300		SF	3714
1.81	SE 21st Ave	NA	NA	ADA	Pushbuttons	Poor	Remove the existing pedestrian	1		EACH	15515
1.81	SE 21st Ave	NA	NA	Signage	Support	Poor	Replace with a new sign support with	1		EACH	529
1.81	SE 21st Ave	NA	NA	Pavement	Cracked	Fair	Resurface		Addressed by corridor segment resurfacing (9th-50th)	SF	0
1.85	SE 22nd Ave	NA	NA	Pavement	Cracked	Fair	Resurface		Addressed by corridor segment resurfacing (9th-50th)	SF	0
1.86	SE 22nd Ave	2	SW	ADA	Ramps	Poor	Replace	1		EACH	18100
1.86	SE 22nd Ave	5	NE	ADA	Ramps	Poor	Replace with 2 ramps	1		EACH	18100
1.86	SE 22nd Ave	6	NW	ADA	Ramps	Poor	Replace with 2 ramps	1		EACH	18100
1.86	SE 22nd Ave	3	SE	ADA	Ramps	Poor	Replace with 2 ramps	1		EACH	18100
1.91	SE 23rd Ave	2	SE	ADA	Ramps	Poor	Replace	1		EACH	18100
1.91	SE 23rd Ave	1	SW	ADA	Ramps	Poor	Replace	1		EACH	18100
1.91	SE 23rd Ave	3	NE	ADA	Ramps	Poor	Replace with 2 ramps	1		EACH	18100
1.91	SE 23rd Ave	4	NW	ADA	Ramps	Poor	Replace with 2 ramps	1		EACH	18100
1.92	SE 23rd Ave	NA	NA	Signage	Panel	Fair	Replace with a new sign	1		EACH	364
1.93	SE 23rd Ave	NA	NA	Signage	Panel	Fair	Replace with a new sign	1		EACH	364

Milepost	Nearest Cross Street	ADA Corner Position	ADA Corner	Element	Sub-element	Condition	Treatment	Treatment Quantity	Cost notes	Unit	Cost (USD)
1.96	SE 24th Ave	NA	NA	Signage	Panel	Fair	Replace with a new sign	1		EACH	364
1.97	SE 24th Ave	2A	E, ISLAND	ADA	Ramps	Poor			Island does not extend across crosswalk. No Work required	EACH	
1.97	SE 24th Ave	NA	NA	Pavement Markings	Bike/ped related markings	Fair	Spot treatment		Addressed by corridor segment resurfacing (9th-50th)	EACH	0
1.97	SE 24th Ave	2A	E, ISLAND	ADA	Ramps	Poor			Island does not extend across crosswalk. No Work required	EACH	
1.97	SE 24th Ave	4	NW	ADA	Ramps	Poor	Replace	1		EACH	18100
1.99	SE 25th Ave	NA	NA	Signage	Panel	Fair	Replace with a new sign	1		EACH	364
2.01	SE 25th Ave	NA	NA	Signage	Panel	Fair	Replace with a new sign	1		EACH	364
2.02	SE 25th Ave	2	SE	ADA	Ramps	Poor	Replace	1		EACH	18100
2.02	SE 25th Ave	1	SW	ADA	Ramps	Poor	Replace	1		EACH	18100
2.02	SE 25th Ave	3	NE	ADA	Ramps	Poor	Replace with 2 ramps	1		EACH	18100
2.02	SE 25th Ave	4	NW	ADA	Ramps	Poor	Replace with 2 ramps	1		EACH	18100
2.07	SE 26th Ave	NA	NA	Pavement Markings	Bike/ped related markings	Fair	Spot treatment		Addressed by corridor segment resurfacing (9th-50th)	EACH	0
2.07	SE 26th Ave	NA	NA	Pavement Markings	Bike/ped related markings	Fair	Spot treatment		Addressed by corridor segment resurfacing (9th-50th)	EACH	0
2.07	SE 26th Ave	NA	NA	Pavement Markings	Bike/ped related markings	Fair	Spot treatment		Addressed by corridor segment resurfacing (9th-50th)	EACH	0
2.07	SE 26th Ave	NA	NA	Pavement Markings	Bike/ped related markings	Fair	Spot treatment		Addressed by corridor segment resurfacing (9th-50th)	EACH	0
2.07	SE 26th Ave	NA	NA	Pavement	Cracked	Fair	Resurface		Addressed by corridor segment resurfacing (9th-50th)	SF	0
2.08	SE 26th Ave	NA	NA	Pavement	Patched/deformed	Fair	Resurface		Addressed by corridor segment resurfacing (9th-50th)	SF	0
2.11	SE 28th Ave	NA	NA	Signage	Panel	Fair	Replace with a new sign	1		EACH	364
2.14	SE 28th Ave	NA	NA	Pavement	Cracked	Fair	Resurface		Addressed by corridor segment resurfacing (9th-50th)	SF	0
2.18	SE 28th Ave	NA	NA	Pavement	Cracked	Poor	Resurface		Addressed by corridor segment resurfacing (9th-50th)	SF	0
2.18	SE 28th Ave	NA	NA	Pavement	Rutted	Fair	Resurface		Addressed by corridor segment resurfacing (9th-50th)	SF	0
2.22	SE 28th Pl	1	SW	ADA	Ramps	Poor			Cost covered under ramp replacement at same position.	EACH	
2.22	SE 28th Pl	3	NE	ADA	Ramps	Poor	Replace	1		EACH	18100
2.22	SE 28th Pl	4	NW	ADA	Ramps	Poor	Replace	1		EACH	18100

Milepost	Nearest Cross Street	ADA Corner Position	ADA Corner	Element	Sub-element	Condition	Treatment	Treatment Quantity	Cost notes	Unit	Cost (USD)
2.22	SE 28th Pl	1	SW	ADA	Ramps	Poor	Replace	1		EACH	18100
2.22	SE 28th Pl	2	SE	ADA	Ramps	Poor	Replace with 2 ramps	1		EACH	18100
2.22	SE 28th Pl	NA	NA	Pavement	Cracked	Fair	Resurface		Addressed by corridor segment resurfacing (9th-50th)	SF	0
2.24	SE 28th Pl	NA	NA	Signage	Panel	Poor	Replace with a new sign and install a new sign support with appropriate	1		EACH	726
2.25	SE 28th Pl	NA	NA	Signage	Panel	Poor	Replace with a new sign and install a	1		EACH	726
2.25	SE 28th Pl	NA	NA	Signage	Panel	Poor	Replace with a new sign and install a new sign support with appropriate mounting and footing	1		EACH	726
2.26	SE 29th Ave	NA	NA	Signage	Panel	Fair	Replace with a new sign	1		EACH	364
2.26	SE 29th Ave	NA	NA	Pavement	Cracked	Fair	Resurface		Addressed by corridor segment resurfacing (9th-50th)	SF	0
2.27	SE 29th Ave	3	NE	ADA	Ramps	Poor	Replace with 2 ramps	1		EACH	18100
2.27	SE 29th Ave	4	NW	ADA	Ramps	Poor	Replace with 2 ramps	1		EACH	18100
2.27	SE 29th Ave	2	SE	ADA	Ramps	Poor	Replace with 2 ramps	1		EACH	18100
2.27	SE 29th Ave	1	SW	ADA	Ramps	Poor	Replace with 2 ramps	1		EACH	18100
2.36	SE 31st Ave	NA	NA	Signage	Panel	Fair	Replace with a new sign	1		EACH	364
2.36	SE 31st Ave	NA	NA	Pavement	Cracked	Fair	Resurface		Addressed by corridor segment resurfacing (9th-50th)	SF	0
2.37	SE 31st Ave	4	NW	ADA	Ramps	Poor	Replace	1		EACH	18100
2.38	SE 31st Ave	NA	NA	Signage	Panel	Fair	Replace with a new sign	1		EACH	364
2.4	SE 32nd Ave	NA	NA	Pavement	Cracked	Fair	Resurface		Addressed by corridor segment resurfacing (9th-50th)	SF	0
2.43	SE 32nd Ave	NA	NA	Signage	Panel	Fair	Replace with a new sign	1		EACH	364
2.43	SE 32nd Ave	3	NE	ADA	Ramps	Poor	Replace	1		EACH	18100
2.43	SE 32nd Ave	4	NW	ADA	Ramps	Poor	Replace	1		EACH	18100
2.43	SE 32nd Ave	2	SE	ADA	Ramps	Poor	Replace with 2 ramps	1		EACH	18100
2.43	SE 32nd Ave	1	SW	ADA	Ramps	Poor	Replace with 2 ramps	1		EACH	18100
2.46	SE 33rd Pl	NA	NA	Drainage	Frame or top slab	Poor	Remove, replace and curb line	1	Remove and Replace Inlet	EACH	1595
2.47	SE 33rd Pl	NA	NA	Pavement Markings	Bike/ped related markings	Poor	Remove existing pavement marking and restripe pavement marking	0	Striping addressed by corridor segment resurfacing (9th-50th)	EACH	0
2.48	SE 33rd Pl	NA	NA	Pavement	Cracked	Poor	Pothole Reconstruct; joint sealing	40	Covered as Reconstruct	SF	495
2.48	SE 33rd Pl	NA	NA	Pavement Markings	Bike/ped related markings	Fair	Spot treatment		Addressed by corridor segment resurfacing (9th-50th)	EACH	0
2.48	SE 33rd Pl	NA	NA	Pavement	Cracked	Fair	Resurface		Addressed by corridor segment resurfacing (9th-50th)	SF	0
2.52	SE 33rd Pl	NA	NA	Pavement	Cracked	Fair	Resurface		Addressed by corridor segment resurfacing (9th-50th)	SF	0
2.53	SE 33rd Pl	NA	NA	Signage	Panel	Fair	Replace with a new sign	1		EACH	364
2.53	SE 33rd Pl	NA	NA	Signage	Support	Poor	Replace with a new sign and install a	1		EACH	529
2.53	SE 33rd Pl	4	NE, SIDE	ADA	Ramps	Poor	Replace	1		EACH	18100
2.53	SE 33rd Pl	3	NW, SIDE	ADA	Ramps	Poor	Replace	1		EACH	18100

Milepost	Nearest Cross Street	ADA Corner Position	ADA Corner	Element	Sub-element	Condition	Treatment	Treatment Quantity	Cost notes	Unit	Cost (USD)
2.53	SE 33rd Pl	2	SE	ADA	Ramps	Poor	Replace with 2 ramps	1		EACH	18100
2.53	SE 33rd Pl	1	SW	ADA	Ramps	Poor	Replace with 2 ramps	1		EACH	18100
2.53	SE 33rd Pl	NA	NA	Signage	Panel	Poor	Replace with a new sign and install a	1		EACH	726
2.55	SE 34th Ave	NA	NA	Signage	Panel	Fair	Replace with a new sign	1		EACH	364
2.56	SE 34th Ave	NA	NA	Signage	Panel	Fair	Replace with a new sign	1		EACH	364
2.56	SE 34th Ave	NA	NA	Pavement Markings	Bike/ped related markings	Fair	Spot treatment		Addressed by corridor segment resurfacing (9th-50th)	EACH	0
2.58	SE 34th Ave	NA	NA	Signage	Support	Fair	Replace with a new sign support with appropriate mounting and footing	1		EACH	529
2.58	SE 34th Ave	NA	NA	Signage	Panel	Fair	Replace with a new sign	1		EACH	364
2.58	SE 34th Ave	NA	NA	Pavement Markings	Bike/ped related markings	Poor	Remove existing pavement marking and restripe pavement marking	0	Addressed by corridor segment resurfacing (9th-50th)	EACH	0
2.58	SE 34th Ave	2	SE	ADA	Ramps	Poor	Replace	1		EACH	18100
2.58	SE 34th Ave	NA	NA	Signage	Panel	Poor	Replace with a new sign and install a new sign support with appropriate	1		EACH	726
2.61	SE 35th Pl	NA	NA	Signage	Panel	Fair	Replace with a new sign	1		EACH	364
2.62	SE 35th Pl	NA	NA	Signage	Panel	Fair	Replace with a new sign	1		EACH	364
2.66	SE 35th Pl	3	NE	ADA	Ramps	Poor	Replace	1		EACH	18100
2.66	SE 35th Pl	4	NW	ADA	Ramps	Poor	Replace	1		EACH	18100
2.66	SE 35th Pl	2	SE	ADA	Ramps	Poor	Replace with 2 ramps	1		EACH	18100
2.66	SE 35th Pl	1	SW	ADA	Ramps	Poor	Replace with 2 ramps	1		EACH	18100
2.73	SE 36th Ave	5	NE	ADA	Ramps	Poor			Programmed STIP Project	EACH	
2.73	SE 36th Ave	3	SE, SIDE	ADA	Ramps	Poor	Recommend closure	1		EACH	1300
2.73	SE 36th Ave	4	NE, SIDE	ADA	Ramps	Poor			Recommended Closure with SE, SIDE. No proposed work	EACH	
2.73	SE 36th Ave	2	SE	ADA	Ramps	Poor			Programmed STIP Project	EACH	
2.73	SE 36th Ave	NA	NA	Signage	Panel	Fair	Replace with a new sign	1		EACH	364
2.73	SE 36th Ave	NA	NA	Lighting	Support structure	Poor	Install a new light pole, a new approved luminaire, and complementary wiring system as needed	1		EACH	23585
2.73	SE 36th Ave	NA	NA	Lighting	Support structure	Poor	Install two new light poles, two new approved luminaires, and complementary wiring system as	1		EACH	41735
2.73	SE 36th Ave	5	NE	ADA	Ramps	Poor	Replace	1	Programmed STIP Project	EACH	
2.73	SE 36th Ave	6	NW	ADA	Ramps	Poor	Replace	1		EACH	18100

Milepost	Nearest Cross Street	ADA Corner Position	ADA Corner	Element	Sub-element	Condition	Treatment	Treatment Quantity	Cost notes	Unit	Cost (USD)
2.73	SE 36th Ave	2	SE	ADA	Ramps	Poor	Replace	1	Programmed STIP Project	EACH	18100
2.73	SE 36th Ave	3	SE, SIDE	ADA	Ramps	Poor	Replace	1		EACH	
2.73	SE 36th Ave	NA	NA	Pavement	Cracked	Fair	Resurface		Addressed by corridor segment resurfacing (9th-50th)	SF	
2.74	SE 36th Pl	NA	NA	Signage	Panel	Fair	Replace with a new sign	1		EACH	364
2.74	SE 36th Pl	NA	NA	Signage	Panel	Fair	Replace with a new sign	1		EACH	364
2.74	SE 36th Pl	NA	NA	Signage	Panel	Fair	Replace with a new sign	1		EACH	364
2.77	SE 37th Ave	NA	NA	Signage	Panel	Fair	Replace with a new sign	1		EACH	364
2.77	SE 37th Ave	NA	NA	Signage	Panel	Poor	Replace with a new sign and install a new sign support with appropriate	1		EACH	726
2.8	SE 37th Ave	3	NE	ADA	Ramps	Poor	Replace	1		EACH	18100
2.8	SE 37th Ave	4	NW	ADA	Ramps	Poor	Replace	1		EACH	18100
2.8	SE 37th Ave	2	SE	ADA	Ramps	Poor	Replace with 2 ramps	1		EACH	18100
2.8	SE 37th Ave	1	SW	ADA	Ramps	Poor	Replace with 2 ramps	1		EACH	18100
2.8	SE 37th Ave	NA	NA	Pavement	Cracked	Poor	Resurface		Addressed by corridor segment resurfacing (9th-50th)	SF	0
2.85	SE 38th Ave	2	SE	ADA	Ramps	Poor	Replace	1		EACH	18100
2.85	SE 38th Ave	1	SW	ADA	Ramps	Poor	Replace	1		EACH	18100
2.85	SE 38th Ave	NA	NA	Pavement	Cracked	Fair	Resurface		Addressed by corridor segment resurfacing (9th-50th)	SF	0
2.91	SE Cesar E Chavez Blvd	NA	NA	ADA	Pushbuttons	Poor	Remove the existing pedestrian		Pushbutton cost covered in ADA	EACH	0
2.91	SE Cesar E Chavez Blvd	NA	NA	ADA	Pushbuttons	Poor	Remove the existing pedestrian		Pushbutton cost covered in ADA	EACH	0
2.91	SE Cesar E Chavez Blvd	1	NA	ADA	Pushbuttons	Poor	Replace		Pushbutton cost covered in ADA ramp replacement at this	EACH	0
2.91	SE Cesar E Chavez Blvd	4	NA	ADA	Pushbuttons	Fair	Clean, maintain or relocate		Pushbutton cost covered in ADA ramp replacement at this	EACH	0
2.91	SE Cesar E Chavez Blvd	4	NA	ADA	Pushbuttons	Fair	Clean, maintain or relocate		Pushbutton cost covered in ADA ramp replacement at this location.	EACH	0
2.91	SE Cesar E Chavez Blvd	2	NA	ADA	Pushbuttons	Poor	Replace		Pushbutton cost covered in ADA ramp replacement at this location.	EACH	0

Milepost	Nearest Cross Street	ADA Corner Position	ADA Corner	Element	Sub-element	Condition	Treatment	Treatment Quantity	Cost notes	Unit	Cost (USD)
2.91	SE Cesar E Chavez Blvd	3	NA	ADA	Pushbuttons	Poor	Replace		Pushbutton cost covered in ADA ramp replacement at this location.	EACH	0
2.91	SE Cesar E Chavez Blvd	1	NA	ADA	Pushbuttons	Poor	Replace		Pushbutton cost covered in ADA ramp replacement at this location.	EACH	0
2.91	SE Cesar E Chavez Blvd	2	NA	ADA	Pushbuttons	Poor	Replace		Pushbutton cost covered in ADA ramp replacement at this location.	EACH	0
2.91	SE Cesar E Chavez Blvd	3	NA	ADA	Pushbuttons	Poor	Replace		Pushbutton cost covered in ADA ramp replacement at this location.	EACH	0
2.91	SE Cesar E Chavez Blvd	NA	NA	Signal System	Pedestrian crossing hardware	Fair	Cleaning or minor maintenance	1		EACH	900
2.91	SE Cesar E Chavez Blvd	NA	NA	Signal System	Pedestrian crossing hardware	Fair	Cleaning or minor maintenance	1		EACH	900
2.91	SE Cesar E Chavez Blvd	NA	NA	ADA	Pushbuttons	Poor	Remove the existing pedestrian pushbutton and ped pedestal, install a new pedestrian pedestal, pushbuttons		Pushbutton cost covered in ADA ramp replacement at this location.	EACH	0
2.91	SE Cesar E Chavez Blvd	NA	NA	ADA	Pushbuttons	Poor	Remove the existing pedestrian pushbutton and ped pedestal, install a new pedestrian pedestal, pushbuttons		Pushbutton cost covered in ADA ramp replacement at this location.	EACH	0
2.91	SE Cesar E Chavez Blvd	NA	NA	Lighting	Support structure	Poor	Install two new light poles, two new approved luminaires, and complementary wiring system as	1		EACH	41735
2.91	SE Cesar E Chavez Blvd	NA	NA	Pavement	Cracked	Poor	Resurface		Addressed by corridor segment resurfacing (9th-50th)	SF	0
2.91	SE Cesar E Chavez Blvd	NA	NA	Pavement	Patched/deformed	Poor	Resurface		Addressed by corridor segment resurfacing (9th-50th)	SF	0
2.91	SE Cesar E Chavez Blvd	3	NE	ADA	Ramps	Poor	Replace with 2 ramps	1	Signalized Intersection	EACH	38400
2.91	SE Cesar E Chavez Blvd	4	NW	ADA	Ramps	Poor	Replace with 2 ramps	1	Signalized Intersection	EACH	38400
2.91	SE Cesar E Chavez Blvd	2	SE	ADA	Ramps	Poor	Replace with 2 ramps	1	Signalized Intersection	EACH	38400

Milepost	Nearest Cross Street	ADA Corner Position	ADA Corner	Element	Sub-element	Condition	Treatment	Treatment Quantity	Cost notes	Unit	Cost (USD)
2.91	SE Cesar E Chavez Blvd	1	SW	ADA	Ramps	Poor	Replace with 2 ramps	1	Signalized Intersection	EACH	38400
2.95	SE 40th Ave	NA	NA	Signage	Panel	Fair	Replace with a new sign	1		EACH	364
3	SE 40th Ave	2	SE	ADA	Ramps	Poor	Replace	1		EACH	18100
3	SE 40th Ave	1	SW	ADA	Ramps	Poor	Replace	1		EACH	18100
3	SE 40th Ave	NA	NA	Pavement	Cracked	Poor	Resurface		Addressed by corridor segment resurfacing (9th-50th)	SF	0
3.02	SE 40th Ave	NA	NA	Utilities	Frame or top slab	Poor	Remove and Replace	1		EACH	1445
3.08	SE 42nd Ave	NA	NA	Signage	Panel	Poor	Replace with a new sign and install a	1		EACH	726
3.08	SE 42nd Ave	NA	NA	Signage	Panel	Poor	Replace with a new sign and install a	1		EACH	726
3.09	SE 42nd Ave	2	NA	ADA	Pushbuttons	Poor	Replace		Pushbutton cost covered in ADA	EACH	0
3.09	SE 42nd Ave	5	NA	ADA	Pushbuttons	Poor	Replace		Pushbutton cost covered in ADA	EACH	0
3.09	SE 42nd Ave	NA	NA	Signage	Panel	Poor	Replace with a new sign and install a	1		EACH	726
3.09	SE 42nd Ave	NA	NA	Pavement	Cracked	Fair	Resurface		Addressed by corridor segment resurfacing (9th-50th)	SF	0
3.1	SE 42nd Ave	6	NW	ADA	Ramps	Poor	Replace	1	Signalized Intersection	EACH	38400
3.1	SE 42nd Ave	4	NE, SIDE	ADA	Ramps	Poor	Replace	1	Signalized Intersection	EACH	38400
3.1	SE 43rd Ave	NA	NA	Signage	Panel	Fair	Replace with a new sign	1		EACH	364
3.1	SE 43rd Ave	NA	NA	Signal System		Poor	Intersection requires full replacement	1		EACH	594200
3.1	SE 42nd Ave	NA	NA	Signage	Panel	Poor	Replace with a new sign and install a	1		EACH	726
3.1	SE 42nd Ave	5	NE	ADA	Ramps	Poor	Replace	1	Signalized Intersection	EACH	38400
3.1	SE 42nd Ave	3	SE, SIDE	ADA	Ramps	Poor	Replace	1	Signalized Intersection	EACH	38400
3.1	SE 42nd Ave	2	SE	ADA	Ramps	Poor	Replace	1	Signalized Intersection	EACH	38400
3.1	SE 42nd Ave	1	SW	ADA	Ramps	Poor	Replace	1	Signalized Intersection	EACH	38400
3.11	SE 43rd Ave	NA	NA	Signage	Panel	Fair	Replace with a new sign	1		EACH	364
3.11	SE 43rd Ave	NA	NA	Signage	Panel	Poor	Replace with a new sign and install a new sign support with appropriate	1		EACH	726
3.13	SE 43rd Ave	2	SE	ADA	Ramps	Poor	Replace	1		EACH	18100
3.13	SE 43rd Ave	1	SW	ADA	Ramps	Poor	Replace	1		EACH	18100
3.13	SE 43rd Ave	NA	NA	Signage	Panel	Poor	Replace with a new sign and install a new sign support with appropriate	1		EACH	726

Milepost	Nearest Cross Street	ADA Corner Position	ADA Corner	Element	Sub-element	Condition	Treatment	Treatment Quantity	Cost notes	Unit	Cost (USD)
3.16	SE 45th Ave	NA	NA	Signage	Panel	Fair	Replace with two new signs and install two new sign supports with appropriate	2		EACH	728
3.2	SE 45th Ave	NA	NA	Signage	Panel	Fair	Replace with a new sign	1		EACH	364
3.2	SE 45th Ave	NA	NA	Signage	Panel	Poor	Replace with a new sign and install a new sign support with appropriate mounting and footing	1		EACH	726
3.21	SE 45th Ave	4	NW	ADA	Ramps	Poor			Cost covered under ramp replacement at same position.	EACH	
3.21	SE 45th Ave	NA	NA	Lighting	Support structure	Poor	Install a new light pole, a new approved luminaire, and complementary wiring system as needed	1		EACH	23585
3.21	SE 45th Ave	4	NW	ADA	Ramps	Poor	Replace	1		EACH	18100
3.21	SE 45th Ave	1	SW	ADA	Ramps	Poor	Recommend closure	1		EACH	1300
3.21	SE 45th Ave	2	SE	ADA	Ramps	Poor	Replace	1		EACH	18100
3.21	SE 45th Ave	3	NE	ADA	Ramps	Poor	Replace with 2 ramps	1		EACH	18100
3.22	SE 45th Ave	NA	NA	Lighting	Support structure	Poor	Install a new light pole, a new approved luminaire, and complementary wiring system as needed	1		EACH	23585
3.22	SE 45th Ave	NA	NA	Signage	Panel	Poor	Replace with two new signs and install two new sign supports with appropriate mounting and footing	2		EACH	1452
3.25	SE 45th Ave	NA	NA	Signage	Panel	Fair	Replace with a new sign	1		EACH	364
3.29	SE 47th Ave	NA	NA	Signage	Panel	Poor	Replace with a new sign and install a new sign support with appropriate mounting and footing	1		EACH	726
3.29	SE 47th Ave	NA	NA	Pavement	Cracked	Fair	Resurface		Addressed by corridor segment resurfacing (9th-50th)	SF	0
3.3	SE 47th Ave	4	NA	ADA	Pushbuttons	Poor	Replace		Pushbutton cost covered in ADA ramp replacement at this location.	EACH	0
3.3	SE 47th Ave	2	SE	ADA	Ramps	Poor	Recommended Closure	1		EACH	1300
3.3	SE 47th Ave	1	SW	ADA	Ramps	Poor	Recommended Closure	1		EACH	1300
3.3	SE 47th Ave	3	SE, SIDE	ADA	Ramps	Poor	Replace	1		EACH	18100
3.3	SE 47th Ave	5	NE	ADA	Ramps	Poor	Replace	1		EACH	18100
3.31	SE 47th Ave	NA	NA	Lighting	Support structure	Poor	Install a new light pole, a new approved luminaire, and complementary wiring system as needed	1		EACH	23585
3.31	SE 47th Ave	NA	NA	Utilities	Pavement around	Poor	Remove and Replace	1		EACH	1445
3.31	SE 47th Ave	4	NE, SIDE	ADA	Ramps	Poor	Replace	1		EACH	18100
3.31	SE 47th Ave	6	NW	ADA	Ramps	Poor	Replace	1		EACH	18100

Milepost	Nearest Cross Street	ADA Corner Position	ADA Corner	Element	Sub-element	Condition	Treatment	Treatment Quantity	Cost notes	Unit	Cost (USD)
3.33	SE 47th Ave	NA	NA	Signage	Panel	Fair	Replace with a new sign	1		EACH	364
3.35	SE 49th Ave	NA	NA	Pavement	Cracked	Fair	Resurface		Addressed by corridor segment resurfacing (9th-50th)	SF	0
3.39	SE 49th Ave	4	NW	ADA	Ramps	Poor			Cost covered under ramp replacement at same position.	EACH	
3.39	SE 49th Ave	NA	NA	Utilities	Surface mounted feature	Fair	Adjust elevation and repair pavement	1		EACH	1445
3.39	SE 49th Ave	3	NE	ADA	Ramps	Poor	Replace	1		EACH	18100
3.39	SE 49th Ave	4	NW	ADA	Ramps	Poor	Replace	1		EACH	18100
3.39	SE 49th Ave	2	SE	ADA	Ramps	Poor	Replace	1		EACH	18100
3.39	SE 49th Ave	1	SW	ADA	Ramps	Poor	Replace with 2 ramps	1		EACH	18100
3.41	SE 49th Ave	NA	NA	Signage	Panel	Fair	Replace with a new sign	1		EACH	364
3.43	SE 49th Ave	NA	NA	Pavement	Cracked	Poor	Reconstruct	30		SF	371
3.45	SE 50th Ave/SE Foster Rd	NA	NA	Pavement Markings	Bike/ped related markings	Poor	Remove existing pavement marking and restripe pavement marking	1	Addresses all pavement markings from corridor segment	EACH	125000
3.45	SE 50th Ave/SE Foster Rd	NA	NA	Pavement	Cracked	Fair	Resurface		Addressed by corridor segment resurfacing (9th-50th)	SF	0
3.45	SE 50th Ave/SE Foster Rd	NA	NA	Pavement	Cracked	Poor	Resurface		Addressed by corridor segment resurfacing (9th-50th)	SF	0
3.46	SE 50th Ave/SE Foster Rd	4	NA	ADA	Pushbuttons	Poor	Replace		Pushbutton cost covered in ADA	EACH	0
3.46	SE 50th Ave/SE Foster Rd	4	NA	ADA	Pushbuttons	Poor	Replace		Pushbutton cost covered in ADA	EACH	0
3.46	SE 50th Ave/SE Foster Rd	2	NA	ADA	Pushbuttons	Poor	Replace		Pushbutton cost covered in ADA	EACH	0
3.46	SE 50th Ave/SE Foster Rd	2	NA	ADA	Pushbuttons	Poor	Replace		Pushbutton cost covered in ADA	EACH	0
3.46	SE 50th Ave/SE Foster Rd	1	SW	ADA	Ramps	Poor	Replace	1	Signalized Intersection	EACH	38400
3.46	SE 50th Ave/SE Foster Rd	1A	SW, ISLAND WB	ADA	Ramps	Poor	Replace	1	Signalized Intersection	EACH	38400
3.46	SE 50th Ave/SE Foster Rd	3	NE	ADA	Ramps	Poor	Replace with 2 ramps	1	Signalized Intersection	EACH	38400
3.46	SE 50th Ave/SE Foster Rd	4	NW	ADA	Ramps	Poor	Replace with 2 ramps	1	Signalized Intersection	EACH	38400
3.46	SE 50th Ave/SE Foster Rd	2	SE	ADA	Ramps	Poor	Replace with 2 ramps	1	Signalized Intersection	EACH	38400
3.46	SE 50th Ave/SE Foster Rd	1A	SW, ISLAND EB	ADA	Ramps	Poor	Replace with 2 ramps	1	Signalized Intersection	EACH	38400
3.47	SE 50th Ave/SE Foster Rd	NA	NA	Pavement	Patched/deformed	Fair	Pothole Reconstruct	3		SF	41
3.47	SE 50th Ave/SE Foster Rd	NA	NA	Drainage	Frame or top slab	Poor	Remove, replace and curb line	1	Remove and Replace Inlet	EACH	1595
3.47	SE 50th Ave/SE Foster Rd	NA	NA	Drainage	Frame or top slab	Fair	Remove, replace and stripe	1	Remove and Replace Inlet	EACH	1595
3.47	SE 50th Ave/SE Foster Rd	NA	NA	Pavement	Cracked	Fair	Resurface		Addressed by corridor segment resurfacing (9th-50th)	SF	0
3.47	SE 50th Ave/SE Foster Rd	NA	NA	Pavement	Cracked	Fair	Resurface		Addressed by corridor segment resurfacing (9th-50th)	SF	0
3.49	SE 51st Ave	NA	NA	Pavement	Cracked	Fair	Joint sealing	120		SF	400
3.49	SE 51st Ave	NA	NA	Pavement	Cracked	Fair	Joint sealing	120		SF	400
3.49	SE 51st Ave	NA	NA	Pavement	Cracked	Fair	Joint sealing	200		SF	666
3.5	SE 51st Ave	NA	NA	Pavement	Cracked	Fair	Joint sealing	72		SF	240
3.5	SE 51st Ave	NA	NA	Pavement	Cracked	Fair	Joint sealing	72		SF	240
3.5	SE 51st Ave	NA	NA	Drainage	Frame or top slab	Poor	Adjust elevation	1	Adjust Elevation and Repair Pavement	EACH	1620

Milepost	Nearest Cross Street	ADA Corner Position	ADA Corner	Element	Sub-element	Condition	Treatment	Treatment Quantity	Cost notes	Unit	Cost (USD)
3.5	SE 51st Ave	NA	NA	Utilities	Frame or top slab	Fair	Adjust elevation and repair pavement	1		EACH	1445
3.51	SE 51st Ave	NA	NA	Pavement	Cracked	Fair	Joint sealing	72		SF	240
3.51	SE 51st Ave	NA	NA	Signage	Panel	Fair	Replace with a new sign	1		EACH	364
3.51	SE 51st Ave	NA	NA	Drainage	Surface mounted feature	Poor	Clearing, grubbing and planting		No Cost for this item		
3.51	SE 51st Ave	NA	NA	Utilities	Surface mounted feature	Fair	Adjust elevation and repair pavement	1		EACH	1445
3.52	SE 51st Ave	NA	NA	Pavement	Cracked	Fair	Joint sealing	960		SF	3197
3.52	SE 51st Ave	NA	NA	Signage	Panel	Fair	Replace with a new sign	1		EACH	364
3.52	SE 51st Ave	2	SE, SIDE	ADA	Ramps	Poor	Replace	1		EACH	18100
3.52	SE 51st Ave	1	SW, SIDE	ADA	Ramps	Poor	Replace	1		EACH	18100
3.52	SE 51st Ave	3	NE	ADA	Ramps	Poor	Replace with 2 ramps	1		EACH	18100
3.52	SE 51st Ave	4	NW	ADA	Ramps	Poor	Replace with 2 ramps	1		EACH	18100
3.53	SE 51st Ave	NA	NA	Signage	Panel	Fair	Replace with a new sign	1		EACH	364
3.54	SE 52nd Ave	NA	NA	Utilities	Pavement around surface mounted feature	Fair	Remove and Replace	1		EACH	1445
3.56	SE 52nd Ave	NA	NA	Utilities	Surface mounted	Fair	Adjust elevation and repair pavement	1		EACH	1445
3.56	SE 52nd Ave	NA	NA	Pavement	Patched/deformed	Poor	Resurface	3		SF	6
3.57	SE 52nd Ave	1	NA	ADA	Pushbuttons	Fair	Clean, maintain or relocate		Pushbutton cost covered in ADA ramp replacement at this	EACH	0
3.57	SE 52nd Ave	3	NA	ADA	Pushbuttons	Poor	Replace		Pushbutton cost covered in ADA	EACH	0
3.57	SE 52nd Ave	2	NA	ADA	Pushbuttons	Poor	Replace		Pushbutton cost covered in ADA ramp replacement at this location.	EACH	0
3.57	SE 52nd Ave	4	NA	ADA	Pushbuttons	Poor	Replace		Pushbutton cost covered in ADA	EACH	0
3.57	SE 52nd Ave	NA	NA	ADA	Pushbuttons	Poor	Replace with a new pedestrian		Pushbutton cost covered in ADA	EACH	0
3.57	SE 52nd Ave	NA	NA	Pavement	Bike/ped related	Poor	Remove existing pavement marking and	0	Addressed by pavement	EACH	0
3.57	SE 52nd Ave	NA	NA	Drainage	Frame or top slab	Fair	Grind and inlay	1	Adjust Elevation and Repair	EACH	1620
3.57	SE 52nd Ave	NA	NA	Utilities	Pavement around	Poor	Remove and Replace	1		EACH	1445
3.57	SE 52nd Ave	3	NE	ADA	Ramps	Poor	Replace with 2 ramps	1	Signalized Intersection	EACH	38400
3.57	SE 52nd Ave	4	NW	ADA	Ramps	Poor	Replace with 2 ramps	1	Signalized Intersection	EACH	38400
3.57	SE 52nd Ave	2	SE	ADA	Ramps	Poor	Replace with 2 ramps	1	Signalized Intersection	EACH	38400
3.57	SE 52nd Ave	1	SW	ADA	Ramps	Poor	Replace with 2 ramps	1	Signalized Intersection	EACH	38400
3.58	SE 52nd Ave	NA	NA	Pavement	Cracked	Fair	Resurface	2		SF	4
3.6	SE 53rd Ave	NA	NA	Pavement	Cracked	Fair	Joint sealing	100		SF	333
3.62	SE 53rd Ave	NA	NA	Pavement	Cracked	Fair	Joint sealing	120		SF	400

Milepost	Nearest Cross Street	ADA Corner Position	ADA Corner	Element	Sub-element	Condition	Treatment	Treatment Quantity	Cost notes	Unit	Cost (USD)
3.62	SE 53rd Ave	2	SE	ADA	Ramps	Poor	Replace	1		EACH	15400
3.62	SE 53rd Ave	3	NE	ADA	Ramps	Poor	Replace with 2 ramps	1		EACH	18100
3.62	SE 53rd Ave	4	NW	ADA	Ramps	Poor	Replace with 2 ramps	1		EACH	18100
3.62	SE 53rd Ave	1	SW	ADA	Ramps	Poor	Replace with 2 ramps	1		EACH	18100
3.62	SE 53rd Ave	NA	NA	Signage	Footing	Fair	Replace with a new sign support with	1		EACH	726
3.63	SE 53rd Ave	NA	NA	Signage	Panel	Poor	Replace with a new sign and install a new sign support with appropriate mounting and footing	1		EACH	726
3.64	SE 53rd Ave	NA	NA	Pavement	Cracked	Fair	Joint sealing	50		SF	167
3.66	SE 54th Ave	4A	E, MEDIAN DOUBLE	ADA	Ramps	Poor			Cost covered under ramp replacement at same position.	EACH	
3.66	SE 54th Ave	NA	NA	Lighting	Support structure	Poor	Install two new light poles, two new	1		EACH	41735
3.66	SE 54th Ave	4A	E, MEDIAN DOUBLE	ADA	Ramps	Poor	Replace	1		EACH	18100
3.66	SE 54th Ave	3	NE	ADA	Ramps	Poor	Replace	1		EACH	18100
3.66	SE 54th Ave	1	SW	ADA	Ramps	Poor	Replace	1		EACH	18100
3.66	SE 54th Ave	4	NW	ADA	Ramps	Poor	Replace with 2 ramps	1		EACH	18100
3.66	SE 54th Ave	NA	NA	Signage	Panel	Poor	Replace with two new signs and install two new sign supports with appropriate mounting and footing	2		EACH	1452
3.67	SE 54th Ave	NA	NA	Signage	Panel	Poor	Replace with two new signs and install two new sign supports with appropriate mounting and footing	2		EACH	1452
3.67	SE 54th Ave	NA	NA	Signage	Panel	Poor	Replace with a new sign and install a new sign support with appropriate mounting and footing	1		EACH	726
3.68	SE 54th Ave	NA	NA	Pavement	Cracked	Fair	Joint sealing	240		SF	799
3.7	SE 55th Ave	NA	NA	Lighting	Support structure	Poor	Install two new light poles, two new approved luminaires, and complementary wiring system as needed	1		EACH	41735
3.71	SE 55th Ave	NA	NA	Signage	Support	Fair	Replace with a new sign support with appropriate mounting and footing	1		EACH	529
3.71	SE 55th Ave	1	SW	ADA	Ramps	Poor			Cost covered under ramp replacement at same position.	EACH	
3.71	SE 55th Ave	NA	NA	Signage	Panel	Fair	Replace with a new sign	1		EACH	364
3.71	SE 55th Ave	NA	NA	Signage	Support	Poor	Replace with a new sign support with	1		EACH	529
3.71	SE 55th Ave	1	SW	ADA	Ramps	Poor	Replace	1		EACH	18100
3.71	SE 55th Ave	3	NE	ADA	Ramps	Poor	Replace with 2 ramps	1		EACH	18100
3.71	SE 55th Ave	4	NW	ADA	Ramps	Poor	Replace with 2 ramps	1		EACH	18100

Milepost	Nearest Cross Street	ADA Corner Position	ADA Corner	Element	Sub-element	Condition	Treatment	Treatment Quantity	Cost notes	Unit	Cost (USD)
3.71	SE 55th Ave	2	SE	ADA	Ramps	Poor	Replace with 2 ramps	1		EACH	18100
3.71	SE 55th Ave	NA	NA	Signage	Panel	Poor	Replace with a new sign and install a new sign support with appropriate mounting and footing	1		EACH	726
3.73	SE 55th Ave	NA	NA	Signage	Panel	Fair	Replace with a new sign	1		EACH	364
3.76	SE 56th Ave	2	SE	ADA	Ramps	Poor				EACH	
3.76	SE 56th Ave	2	SE	ADA	Ramps	Poor	Replace	1		EACH	18100
3.76	SE 56th Ave	3	NE	ADA	Ramps	Poor	Replace with 2 ramps	1		EACH	18100
3.76	SE 56th Ave	4	NW	ADA	Ramps	Poor	Replace with 2 ramps	1		EACH	18100
3.76	SE 56th Ave	1	SW	ADA	Ramps	Poor	Replace with 2 ramps	1		EACH	18100
3.78	SE 56th Ave	NA	NA	Pavement	Cracked	Fair	Joint sealing	600		SF	1998
3.8	SE 57th Ave	NA	NA	Pavement	Cracked	Fair	Joint sealing	180		SF	599
3.81	SE 57th Ave	3	NE	ADA	Ramps	Poor	Replace with 2 ramps	1		EACH	18100
3.81	SE 57th Ave	4	NW	ADA	Ramps	Poor	Replace with 2 ramps	1		EACH	18100
3.81	SE 57th Ave	2	SE	ADA	Ramps	Poor	Replace with 2 ramps	1		EACH	18100
3.81	SE 57th Ave	1	SW	ADA	Ramps	Poor	Replace with 2 ramps	1		EACH	18100
3.83	SE 57th Ave	1A	ISLAND	ADA	Ramps	Poor			Cost covered under ramp replacement at same position.	EACH	
3.83	SE 57th Ave	NA	NA	Pavement	Cracked	Fair	Joint sealing	300		SF	999
3.83	SE 57th Ave	1A	ISLAND	ADA	Ramps	Poor	Replace	1		EACH	18100
3.83	SE 57th Ave	4	NE, SIDE	ADA	Ramps	Poor	Replace	1		EACH	18100
3.83	SE 57th Ave	1	SE, SIDE	ADA	Ramps	Poor	Replace	1		EACH	18100
3.84	SE 57th Ave	NA	NA	Pavement	Cracked	Fair	Joint sealing	96		SF	320
3.85	SE 58th Ave	NA	NA	Pavement	Cracked	Fair	Joint sealing	576		SF	1918
3.85	SE 58th Ave	NA	NA	Signage	Support	Poor	Replace with a new sign support with appropriate mounting and footing	1		EACH	529
3.86	SE 58th Ave	2	SE, SIDE	ADA	Ramps	Poor	Replace	1		EACH	18100
3.86	SE 58th Ave	1	SW, SIDE	ADA	Ramps	Poor	Replace	1		EACH	18100
3.86	SE 58th Ave	3	NE	ADA	Ramps	Poor	Replace with 2 ramps	1		EACH	18100
3.86	SE 58th Ave	4	NW	ADA	Ramps	Poor	Replace with 2 ramps	1		EACH	18100
3.89	SE 59thAve/SE 60th Ave	NA	NA	Pavement	Patched/deformed	Fair	Resurface	44		SF	101
3.9	SE 59thAve/SE 60th Ave	NA	NA	Pavement	Cracked	Fair	Joint sealing	72		SF	240

Milepost	Nearest Cross Street	ADA Corner Position	ADA Corner	Element	Sub-element	Condition	Treatment	Treatment Quantity	Cost notes	Unit	Cost (USD)
3.9	SE 59thAve/SE 60th Ave	NA	NA	Pavement	Cracked	Fair	Joint sealing	60		SF	200
3.91	SE 59thAve/SE 60th Ave	NA	NA	Signage	Panel	Fair	Replace with a new sign	1		EACH	364
3.92	SE 59thAve/SE 60th Ave	NA	NA	Pavement	Cracked	Fair	Joint sealing	480		SF	1598
3.92	SE 59thAve/SE 60th Ave	3	NE	ADA	Ramps	Poor	Replace with 2 ramps	1		EACH	18100
3.92	SE 59thAve/SE 60th Ave	4	NW	ADA	Ramps	Poor	Replace with 2 ramps	1		EACH	18100
3.92	SE 59thAve/SE 60th Ave	2	SE	ADA	Ramps	Poor	Replace with 2 ramps	1		EACH	18100
3.92	SE 59thAve/SE 60th Ave	1	SW	ADA	Ramps	Poor	Replace with 2 ramps	1		EACH	18100
3.99	SE 61st Ave	2A	NE, ISLAND	ADA	Ramps	Poor			Cost covered under ramp replacement at same position.	EACH	
3.99	SE 61st Ave	1	SW	ADA	Ramps	Poor			Cost covered under ramp	EACH	
3.99	SE 61st Ave	2A	NE, ISLAND	ADA	Ramps	Poor	Replace	1		EACH	18100
3.99	SE 61st Ave	3	NE	ADA	Ramps	Poor	Replace	1		EACH	18100
3.99	SE 61st Ave	2	SE	ADA	Ramps	Poor	Replace	1		EACH	18100
3.99	SE 61st Ave	1	SW	ADA	Ramps	Poor	Replace	1		EACH	18100
4.01	SE 61st Ave	NA	NA	Signage	Panel	Poor	Replace with a new sign and install a new sign support with appropriate mounting and footing	1		EACH	726
4.03	SE 62nd Ave	NA	NA	Signage	Panel	Fair	Replace with a new sign	1		EACH	364
4.03	SE 62nd Ave	NA	NA	Pavement	Cracked	Fair	Joint sealing	360		SF	1199
4.04	SE 62nd Ave	3	NE	ADA	Ramps	Poor			Cost covered under ramp replacement at same position.	EACH	
4.04	SE 62nd Ave	3	NE	ADA	Ramps	Poor	Replace	1		EACH	18100
4.04	SE 62nd Ave	1	SW	ADA	Ramps	Poor	Replace	1		EACH	18100
4.04	SE 62nd Ave	4	NW	ADA	Ramps	Poor	Replace with 2 ramps	1		EACH	18100
4.04	SE 62nd Ave	2	SE	ADA	Ramps	Poor	Replace with 2 ramps	1		EACH	18100
4.07	SE 63rd Ave	NA	NA	Signage	Panel	Poor	Replace with a new sign and install a new sign support with appropriate mounting and footing	1		EACH	726
4.07	SE 63rd Ave	NA	NA	Signage	Panel	Poor	Replace with a new sign and install a new sign support with appropriate mounting and footing	1		EACH	726
4.08	SE 63rd Ave	3A	E, ISLAND	ADA	Ramps	Poor			Cost covered under ramp replacement at same position.	EACH	
4.08	SE 63rd Ave	6	NW	ADA	Ramps	Poor			Cost covered under ramp replacement at same position.	EACH	

Milepost	Nearest Cross Street	ADA Corner Position	ADA Corner	Element	Sub-element	Condition	Treatment	Treatment Quantity	Cost notes	Unit	Cost (USD)
4.08	SE 63rd Ave	3	SE	ADA	Ramps	Poor			Cost covered under ramp replacement at same position.	EACH	
4.08	SE 63rd Ave	2	SW	ADA	Ramps	Poor			Cost covered under ramp replacement at same position.	EACH	
4.08	SE 63rd Ave	6A	W, ISLAND	ADA	Ramps	Poor			Cost covered under ramp replacement at same position.	EACH	
4.08	SE 63rd Ave	NA	NA	Signage	Panel	Fair	Replace with a new sign	1		EACH	364
4.08	SE 63rd Ave	3A	E, ISLAND	ADA	Ramps	Poor	Replace	1		EACH	18100
4.08	SE 63rd Ave	4	NE, SIDE	ADA	Ramps	Poor	Replace	1		EACH	18100
4.08	SE 63rd Ave	6	NW	ADA	Ramps	Poor	Replace	1		EACH	18100
4.08	SE 63rd Ave	3	SE	ADA	Ramps	Poor	Replace	1		EACH	18100
4.08	SE 63rd Ave	2	SW	ADA	Ramps	Poor	Replace	1		EACH	18100
4.08	SE 63rd Ave	1	SW, SIDE	ADA	Ramps	Poor	Replace	1		EACH	18100
4.08	SE 63rd Ave	6A	W, ISLAND	ADA	Ramps	Poor	Replace	1		EACH	18100
4.08	SE 63rd Ave	5	NE	ADA	Ramps	Poor	Replace with 2 ramps	1		EACH	18100
4.1	SE 63rd Ave	NA	NA	Signage	Panel	Fair	Replace with a new sign	1		EACH	364
4.1	SE 63rd Ave	NA	NA	Signage	Support	Poor	Replace with a new sign support with appropriate mounting and footing	1		EACH	529
4.1	SE 63rd Ave	NA	NA	Signage	Panel	Poor	Replace with a new sign and install a new sign support with appropriate mounting and footing	1		EACH	726
4.1	SE 63rd Ave	NA	NA	Signage	Panel	Poor	Replace with a new sign and install a new sign support with appropriate mounting and footing	1		EACH	726
4.11	SE 63rd Ave	NA	NA	Signage	Panel	Fair	Replace with a new sign	1		EACH	364
4.13	SE 64the Ave	3	NE	ADA	Ramps	Poor			Cost covered under ramp replacement at same position.	EACH	
4.13	SE 64the Ave	2	SE	ADA	Ramps	Poor			Cost covered under ramp replacement at same position.	EACH	
4.13	SE 64the Ave	3	NE	ADA	Ramps	Poor	Replace	1		EACH	18100
4.13	SE 64the Ave	2	SE	ADA	Ramps	Poor	Replace	1		EACH	18100
4.13	SE 64the Ave	4	NW	ADA	Ramps	Poor	Replace with 2 ramps	1		EACH	18100
4.13	SE 64the Ave	1	SW	ADA	Ramps	Poor	Replace with 2 ramps	1		EACH	18100
4.17	SE 65th Ave	2	NA	ADA	Pushbuttons	Fair	Clean, maintain or relocate		Pushbutton cost covered in ADA ramp replacement at this	EACH	0

Milepost	Nearest Cross Street	ADA Corner Position	ADA Corner	Element	Sub-element	Condition	Treatment	Treatment Quantity	Cost notes	Unit	Cost (USD)
4.17	SE 65th Ave	NA	NA	Pavement Markings	Bike/ped related markings	Fair	Spot treatment	0	Addressed by pavement markings from corridor segment	EACH	0
4.17	SE 65th Ave	NA	NA	Pavement Markings	Bike/ped related markings	Fair	Spot treatment	0	Addressed by pavement markings from corridor segment restriping (50th-I-205)	EACH	0
4.17	SE 65th Ave	NA	NA	Lighting	Support structure	Poor	Install two new light poles, two new	1		EACH	41735
4.17	SE 65th Ave	NA	NA	Pavement	Patched/deformed	Fair	Resurface	4		SF	10
4.17	SE 65th Ave	3	NE	ADA	Ramps	Poor	Replace with 2 ramps	1	Signalized Intersection	EACH	38400
4.17	SE 65th Ave	4	NW	ADA	Ramps	Poor	Replace with 2 ramps	1	Signalized Intersection	EACH	38400
4.17	SE 65th Ave	2	SE	ADA	Ramps	Poor	Replace with 2 ramps	1	Signalized Intersection	EACH	38400
4.17	SE 65th Ave	1	SW	ADA	Ramps	Poor	Replace with 2 ramps	1	Signalized Intersection	EACH	38400
4.18	SE 65th Ave	NA	NA	Signage	Panel	Poor	Replace with a new sign and install a new sign support with appropriate mounting and footing	1		EACH	726
4.19	SE 65th Ave	NA	NA	Pavement	Cracked	Fair	Joint sealing	288		SF	959
4.21	SE 66th Ave	NA	NA	Pavement	Cracked	Fair	Joint sealing	240		SF	799
4.22	SE 66th Ave	3	NE	ADA	Ramps	Poor	Replace with 2 ramps	1		EACH	18100
4.22	SE 66th Ave	4	NW	ADA	Ramps	Poor	Replace with 2 ramps	1		EACH	18100
4.22	SE 66th Ave	2	SE	ADA	Ramps	Poor	Replace with 2 ramps	1		EACH	18100
4.22	SE 66th Ave	1	SW	ADA	Ramps	Poor	Replace with 2 ramps	1		EACH	18100
4.24	SE 67th Ave	NA	NA	Pavement	Cracked	Fair	Joint sealing	30		SF	100
4.26	SE 67th Ave	NA	NA	Pavement	Cracked	Fair	Joint sealing	120		SF	400
4.27	SE 67th Ave	NA	NA	Signage	Panel	Fair	Replace with a new sign	1		EACH	364
4.27	SE 67th Ave	3	NE	ADA	Ramps	Poor	Replace	1		EACH	18100
4.27	SE 67th Ave	4	NW	ADA	Ramps	Poor	Replace	1		EACH	18100
4.27	SE 67th Ave	2	SE	ADA	Ramps	Poor	Replace	1		EACH	18100
4.27	SE 67th Ave	1	SW	ADA	Ramps	Poor	Replace	1		EACH	18100
4.31	SE Powell Blvd/Frontage Rd	2	SE, ISLAND	ADA	Ramps	Poor	Replace	1		EACH	18100
4.31	SE Powell Blvd/Frontage Rd	1	SW, ISLAND	ADA	Ramps	Poor	Replace	1		EACH	18100
4.31	SE 68th Ave	NA	NA	Signage	Panel	Poor	Replace with two new signs and install	2		EACH	1452
4.31	SE 68th Ave	NA	NA	Signage	Panel	Poor	Replace with a new sign and install a	1		EACH	726

Milepost	Nearest Cross Street	ADA Corner Position	ADA Corner	Element	Sub-element	Condition	Treatment	Treatment Quantity	Cost notes	Unit	Cost (USD)
4.32	SE 68th Ave	NA	NA	Pavement	Cracked	Fair	Resurface	15		SF	34
4.33	SE 68th Ave	NA	NA	Pavement	Cracked	Fair	Reconstruct	15		SF	186
4.33	SE 68th Ave	3	NE	ADA	Ramps	Poor	Replace with 2 ramps	1		EACH	18100
4.33	SE 68th Ave	4	NW	ADA	Ramps	Poor	Replace with 2 ramps	1		EACH	18100
4.33	SE 68th Ave	2	SE	ADA	Ramps	Poor	Replace with 2 ramps	1		EACH	18100
4.33	SE 68th Ave	1	SW	ADA	Ramps	Poor	Replace with 2 ramps	1		EACH	18100
4.38	SE 69th Ave	2	NA	ADA	Pushbuttons	Poor	Replace		Pushbutton cost covered in ADA ramp replacement at this location.	EACH	0
4.38	SE 69th Ave	NA	NA	Pavement	Cracked	Fair	Joint sealing	72		SF	240
4.38	SE 69th Ave	NA	NA	Pavement	Bike/ped related	Fair	Spot treatment	0	Addressed by pavement	EACH	0
4.38	SE 69th Ave	NA	NA	Lighting	Support structure	Poor	Install two new light poles, two new	1		EACH	41735
4.38	SE 69th Ave	3	NE	ADA	Ramps	Poor	Replace with 2 ramps	1	Signalized Intersection	EACH	38400
4.38	SE 69th Ave	4	NW	ADA	Ramps	Poor	Replace with 2 ramps	1	Signalized Intersection	EACH	38400
4.38	SE 69th Ave	2	SE	ADA	Ramps	Poor	Replace with 2 ramps	1	Signalized Intersection	EACH	38400
4.38	SE 69th Ave	1	SW	ADA	Ramps	Poor	Replace with 2 ramps	1	Signalized Intersection	EACH	38400
4.39	SE 69th Ave	NA	NA	Pavement	Cracked	Fair	Resurface	11		SF	24
4.4	SE 69th Ave	NA	NA	Signage	Panel	Poor	Replace with a new sign and install a new sign support with appropriate mounting and footing	1		EACH	726
4.44	SE 70th Ave	NA	NA	Signage	Support	Poor	Replace with a new sign support with	1		EACH	529
4.44	SE 70th Ave	3	NE, SIDE	ADA	Ramps	Poor	Replace	1		EACH	18100
4.44	SE 70th Ave	4	NW, SIDE	ADA	Ramps	Poor	Replace	1		EACH	18100
4.46	SE 70th Ave	NA	NA	Signage	Support	Poor	Replace with a new sign support with appropriate mounting and footing	1		EACH	529
4.49	SE 71st Ave	NA	NA	Pavement	Cracked	Fair	Joint sealing	120		SF	400
4.5	SE 71st Ave	2	NA	ADA	Pushbuttons	Poor	Replace		Pushbutton cost covered in ADA ramp replacement at this location.	EACH	
4.5	SE 71st Ave	3	NA	ADA	Pushbuttons	Poor	Replace		Pushbutton cost covered in ADA	EACH	
4.5	SE 71st Ave	4	NA	ADA	Pushbuttons	Poor	Replace		Pushbutton cost covered in ADA	EACH	
4.5	SE 71st Ave	NA	NA	Pavement	Bike/ped related	Fair	Spot treatment		Addressed by pavement	EACH	
4.5	SE 71st Ave	2	SE, SIDE	ADA	Ramps	Poor	Replace	1	Signalized Intersection	EACH	38400
4.5	SE 71st Ave	1	SW, SIDE	ADA	Ramps	Poor	Replace	1	Signalized Intersection	EACH	38400

Milepost	Nearest Cross Street	ADA Corner Position	ADA Corner	Element	Sub-element	Condition	Treatment	Treatment Quantity	Cost notes	Unit	Cost (USD)
4.5	SE 71st Ave	3	NE	ADA	Ramps	Poor	Replace with 2 ramps	1	Signalized Intersection	EACH	38400
4.5	SE 71st Ave	4	NW	ADA	Ramps	Poor	Replace with 2 ramps		Programmed STIP Project	EACH	
4.53	SE 72nd Ave	NA	NA	Pavement	Cracked	Fair	Joint sealing	96		SF	320
4.53	SE 72nd Ave	NA	NA	Pavement	Rutted	Fair	Resurface	107		SF	242
4.54	SE 72nd Ave	4	NA	ADA	Pushbuttons	Poor	Replace		Pushbutton cost covered in ADA	EACH	
4.54	SE 72nd Ave	2	NA	ADA	Pushbuttons	Poor	Replace		Pushbutton cost covered in ADA	EACH	
4.54	SE 72nd Ave	3	NA	ADA	Pushbuttons	Poor	Replace		Pushbutton cost covered in ADA	EACH	
4.54	SE 72nd Ave	NA	NA	Lighting	Support structure	Poor	Install two new light poles, two new		Programmed STIP Project	EACH	
4.54	SE 72nd Ave	3	NE, SIDE	ADA	Ramps	Poor	Replace	1	Signalized Intersection	EACH	38400
4.54	SE 72nd Ave	4	NW, SIDE	ADA	Ramps	Poor	Replace	1	Signalized Intersection	EACH	38400
4.54	SE 72nd Ave	2	SE	ADA	Ramps	Poor	Replace with 2 ramps	1	Signalized Intersection	EACH	38400
4.54	SE 72nd Ave	1	SW	ADA	Ramps	Poor	Replace with 2 ramps	1	Signalized Intersection	EACH	38400
4.59	SE 73rd Ave	3	NE, SIDE	ADA	Ramps	Poor	Replace	1		EACH	18100
4.59	SE 73rd Ave	4	NW, SIDE	ADA	Ramps	Poor	Replace	1		EACH	18100
4.59	SE 73rd Ave	2	SE	ADA	Ramps	Poor	Replace with 2 ramps	1		EACH	18100
4.59	SE 73rd Ave	1	SW	ADA	Ramps	Poor	Replace with 2 ramps	1		EACH	18100
4.63	SE 74th Ave	5	NW	ADA	Ramps	Poor	Replace	1		EACH	18100
4.63	SE 74th Ave	NA	NA	Signage	Support	Poor	Replace with a new sign support with	1		EACH	529
4.63	SE 74th Ave	3	SE	ADA	Ramps	Poor	Replace	1		EACH	18100
4.63	SE 74th Ave	4	NE	ADA	Ramps	Poor	Replace	1		EACH	18100
4.63	SE 74th Ave	2	SW, SIDE	ADA	Ramps	Poor	Replace	1		EACH	18100
4.63	SE 74th Ave	5A	NW, ISLAND	ADA	Ramps	Poor	Replace	1		EACH	18100
4.63	SE 74th Ave	1	SW	ADA	Ramps	Poor	Replace	1		EACH	18100
4.64	SE 74th Ave	NA	NA	Signage	Panel	Fair	Replace with a new sign	1		EACH	364
4.64	SE 74th Ave	NA	NA	Signage	Support	Fair	Replace with a new sign support with appropriate mounting and footing	1		EACH	726
4.65	SE 74th Ave	NA	NA	Pavement	Cracked	Fair	Joint sealing	120		SF	400
4.68	SE 75th Ave	NA	NA	Pavement	Cracked	Fair	Joint sealing	192		SF	639
4.69	SE 75th Ave	2A	E, ISLAND	ADA	Ramps	Poor			Cost covered under ramp replacement at same position.	EACH	

Milepost	Nearest Cross Street	ADA Corner Position	ADA Corner	Element	Sub-element	Condition	Treatment	Treatment Quantity	Cost notes	Unit	Cost (USD)
4.69	SE 75th Ave	3	NE	ADA	Ramps	Poor			Cost covered under ramp replacement at same position.	EACH	
4.69	SE 75th Ave	4	NW	ADA	Ramps	Poor	Replace	1		EACH	18100
4.69	SE 75th Ave	2	SE	ADA	Ramps	Poor			Cost covered under ramp replacement at same position.	EACH	
4.69	SE 75th Ave	1	SW	ADA	Ramps	Poor	Replace	1		EACH	18100
4.69	SE 75th Ave	NA	NA	Signage	Support	Poor	Replace with a new sign support with	1		EACH	529
4.69	SE 75th Ave	4	NW	ADA	Ramps	Poor	Recommend closure	1		EACH	1300
4.69	SE 75th Ave	1	SW	ADA	Ramps	Poor	Recommend closure	1		EACH	1300
4.69	SE 75th Ave	2A	E, ISLAND	ADA	Ramps	Poor	Replace	1		EACH	18100
4.69	SE 75th Ave	3	NE	ADA	Ramps	Poor	Replace	1		EACH	18100
4.69	SE 75th Ave	2	SE	ADA	Ramps	Poor	Replace	1		EACH	18100
4.69	SE 75th Ave	NA	NA	Pavement Markings	Vehicle pavement markings	Fair	Spot treatment, measured in foot	0	Addressed by pavement markings from corridor segment	EACH	0
4.74	SE 76th Ave	3	NE	ADA	Ramps	Poor			Cost covered under ramp replacement at same position.	EACH	
4.74	SE 76th Ave	4	NW	ADA	Ramps	Poor			Cost covered under ramp replacement at same position.	EACH	
4.74	SE 76th Ave	2	SE	ADA	Ramps	Poor			Cost covered under ramp replacement at same position.	EACH	
4.74	SE 76th Ave	3	NE	ADA	Ramps	Poor	Replace	1		EACH	18100
4.74	SE 76th Ave	4	NW	ADA	Ramps	Poor	Replace	1		EACH	18100
4.74	SE 76th Ave	2	SE	ADA	Ramps	Poor	Replace	1		EACH	18100
4.74	SE 76th Ave	1	SW	ADA	Ramps	Poor	Replace with 2 ramps	1		EACH	18100
4.79	SE 77th Ave	4	NE	ADA	Ramps	Poor			Cost covered under ramp replacement at same position.	EACH	
4.79	SE 77th Ave	5	NW	ADA	Ramps	Poor	Replace	1		EACH	18100
4.79	SE 77th Ave	2	SW	ADA	Ramps	Poor			Cost covered under ramp replacement at same position.	EACH	
4.79	SE 77th Ave	3A	E, ISLAND	ADA	Ramps	Poor	Replace	1		EACH	18100
4.79	SE 77th Ave	4	NE	ADA	Ramps	Poor	Replace	1		EACH	18100
4.79	SE 77th Ave	6	NW, SIDE	ADA	Ramps	Poor	Replace	1		EACH	18100
4.79	SE 77th Ave	3	SE	ADA	Ramps	Poor	Replace	1		EACH	18100

Milepost	Nearest Cross Street	ADA Corner Position	ADA Corner	Element	Sub-element	Condition	Treatment	Treatment Quantity	Cost notes	Unit	Cost (USD)
4.79	SE 77th Ave	2	SW	ADA	Ramps	Poor	Replace	1		EACH	18100
4.79	SE 77th Ave	1	SW, SIDE	ADA	Ramps	Poor	Replace	1		EACH	18100
4.79	SE 77th Ave	6A	W, ISLAND	ADA	Ramps	Poor	Replace	1		EACH	18100
4.8	SE 77th Ave	NA	NA	Pavement	Cracked	Fair	Joint sealing	54		SF	180
4.84	SE 78th Ave	3	NE	ADA	Ramps	Poor			Cost covered under ramp replacement at same position.	EACH	
4.84	SE 78th Ave	4	NW	ADA	Ramps	Poor			Cost covered under ramp replacement at same position.	EACH	
4.84	SE 78th Ave	3	NE	ADA	Ramps	Poor	Replace	1		EACH	18100
4.84	SE 78th Ave	4	NW	ADA	Ramps	Poor	Replace	1		EACH	18100
4.84	SE 78th Ave	2	SE, SIDE	ADA	Ramps	Poor	Replace	1		EACH	18100
4.84	SE 78th Ave	1	SW, SIDE	ADA	Ramps	Poor	Replace	1		EACH	18100
4.85	SE 78th Ave	NA	NA	Utilities	Pavement around surface mounted feature	Poor	Remove and Replace	1		EACH	1445
4.88	SE 79th Ave	NA	NA	Pavement	Cracked	Fair	Joint sealing	72		SF	240
4.88	SE 79th Ave	NA	NA	Pavement	Patched/deformed	Poor	Reconstruct	24		SF	297
4.88	SE 79th Ave	NA	NA	Signage	Panel	Poor	Replace with a new sign and install a new sign support with appropriate mounting and footing	1		EACH	726
4.89	SE 79th Ave	NA	NA	Signage	Panel	Fair	Replace with a new sign	1		EACH	364
4.89	SE 79th Ave	1	SW	ADA	Ramps	Poor	Replace	1		EACH	18100
4.89	SE 79th Ave	1	SW	ADA	Ramps	Poor	Replace	1		EACH	18100
4.89	SE 79th Ave	3	NE	ADA	Ramps	Poor	Replace with 2 ramps	1		EACH	18100
4.89	SE 79th Ave	2	SE	ADA	Ramps	Poor	Replace with 2 ramps	1		EACH	18100
4.94	SE 80th Ave	4	NW	ADA	Ramps	Poor	Replace	1		EACH	18100
4.94	SE 80th Ave	2	SE	ADA	Ramps	Poor	Replace with 2 ramps	1		EACH	18100
4.95	SE 80th Ave	4	NA	ADA	Pushbuttons	Poor	Replace		Pushbutton cost covered in ADA ramp replacement at this location.	EACH	0
4.95	SE 80th Ave	NA	NA	Utilities	Pavement around surface mounted feature	Poor	Remove and Replace	1		EACH	1445
4.95	SE 80th Ave	NA	NA	Pavement	Cracked	Fair	Resurface	10		SF	23
4.97	SE 80th Ave	NA	NA	Pavement	Cracked	Fair	Joint sealing	36		SF	120
5	SE 82nd Ave	NA	NA	Signage	Panel	Poor	Replace with a new sign and install a new sign support with appropriate mounting and footing	1		EACH	726

Milepost	Nearest Cross Street	ADA Corner Position	ADA Corner	Element	Sub-element	Condition	Treatment	Treatment Quantity	Cost notes	Unit	Cost (USD)
5.02	SE 82nd Ave	NA	NA	Drainage	Frame or top slab	Fair	Adjust elevation	1	Adjust Elevation and Repair Pavement	EACH	1620
5.03	SE 82nd Ave	NA	NA	Utilities	Pavement around surface mounted feature	Poor	Remove and Replace	1		EACH	1445
5.03	SE 82nd Ave	NA	NA	Utilities	Surface mounted feature	Fair	Adjust elevation and repair pavement	1		EACH	1445
5.03	SE 82nd Ave	NA	NA	Pavement	Cracked	Poor	Joint sealing; resurface	72	Covered as Resurfacing	SF	240
5.03	SE 82nd Ave	NA	NA	Pavement	Patched/deformed	Poor	Resurface	53		SF	121
5.03	SE 82nd Ave	NA	NA	Pavement	Rutted	Poor	Resurface	133		SF	303
5.04	SE 82nd Ave	3	NE	ADA	Ramps	Poor			Cost covered under ramp replacement at same position.	EACH	
5.04	SE 82nd Ave	4	NW	ADA	Ramps	Poor			Cost covered under ramp replacement at same position.	EACH	
5.04	SE 82nd Ave	2	SE	ADA	Ramps	Poor			Cost covered under ramp replacement at same position.	EACH	
5.04	SE 82nd Ave	1	SW	ADA	Ramps	Poor			Cost covered under ramp replacement at same position.	EACH	
5.04	SE 82nd Ave	NA	NA	ADA	Pushbuttons	Poor	Replace	1		EACH	15515
5.04	SE 82nd Ave	NA	NA	Pavement	Patched/deformed	Poor	Reconstruct	480		SF	5942
5.04	SE 82nd Ave	NA	NA	Pavement	Bike/ped related	Fair	Spot treatment	0	Addressed by pavement	EACH	0
5.04	SE 82nd Ave	NA	NA	Pavement	Bike/ped related	Fair	Spot treatment, measured in foot	0	Addressed by pavement	EACH	0
5.04	SE 82nd Ave	NA	NA	Signage	Panel	Poor	Replace with a new sign and install a	1		EACH	726
5.04	SE 82nd Ave	NA	NA	Signage	Panel	Poor	Replace with a new sign and install a	1		EACH	726
5.04	SE 82nd Ave	3	NE	ADA	Ramps	Poor	Replace	1	Signalized Intersection	EACH	38400
5.04	SE 82nd Ave	4	NW	ADA	Ramps	Poor	Replace	1	Signalized Intersection	EACH	38400
5.04	SE 82nd Ave	2	SE	ADA	Ramps	Poor	Replace	1	Signalized Intersection	EACH	38400
5.04	SE 82nd Ave	1	SW	ADA	Ramps	Poor	Replace	1	Signalized Intersection	EACH	38400
5.05	SE 82nd Ave	NA	NA	Pavement	Cracked	Fair	Joint sealing	48		SF	160
5.05	SE 82nd Ave	NA	NA	Utilities	Frame or top slab	Fair	Adjust elevation and repair pavement	1		EACH	1445
5.05	SE 82nd Ave	NA	NA	Pavement	Patched/deformed	Poor	Resurface	16		SF	36
5.12	SE 82nd Ave	NA	NA	Drainage	Condition of pavement around surface mounted feature	Fair	Remove and relocate	1	Remove and Relocate Inlet	EACH	7245
5.12	SE 82nd Ave	NA	NA	Pavement	Patched/deformed	Fair	Resurface	13		SF	30

Milepost	Nearest Cross Street	ADA Corner Position	ADA Corner	Element	Sub-element	Condition	Treatment	Treatment Quantity	Cost notes	Unit	Cost (USD)
5.13	SE 82nd Ave	NA	NA	Utilities	Pavement around surface mounted feature	Fair	Adjust structure and resurface pavement	1		EACH	1445
5.15	SE 82nd Ave	NA	NA	Signage	Support	Poor	Replace with a new sign support with	1		EACH	529
5.15	SE 84th Ave	NA	NA	Utilities	Frame or top slab	Poor	Remove and Replace	1		EACH	1445
5.16	SE 84th Ave	NA	NA	Utilities	Frame or top slab	Fair	Adjust elevation and repair pavement	1		EACH	1445
5.19	SE 84th Ave	NA	NA	Utilities	Pavement around surface mounted feature	Fair	Adjust structure and resurface pavement	1		EACH	1445
5.2	SE 84th Ave	NA	NA	Signage	Panel	Fair	Replace with a new sign	1		EACH	364
5.2	SE 84th Ave	NA	NA	Utilities	Frame or top slab	Poor	Remove and Replace	1		EACH	1445
5.2	SE 84th Ave	NA	NA	Pavement	Cracked	Fair	Resurface	27		SF	61
5.21	SE 84th Ave	4	NE	ADA	Ramps	Poor			Cost covered under ramp replacement at same position.	EACH	
5.21	SE 84th Ave	NA	NA	Pavement	Cracked	Fair	Joint sealing	25		SF	83
5.21	SE 84th Ave	3	NE	ADA	Ramps	Poor	Replace	1		EACH	18100
5.21	SE 84th Ave	2A	SE, ISLAND	ADA	Ramps	Poor		1	Median does not extend into crosswalk, No work needed.	EACH	
5.21	SE 84th Ave	1	SW	ADA	Ramps	Poor	Replace	1		EACH	18100
5.21	SE 84th Ave	4	NW	ADA	Ramps	Poor	Replace with 2 ramps	1		EACH	18100
5.21	SE 84th Ave	2	SE	ADA	Ramps	Poor	Replace with 2 ramps	1		EACH	18100
5.21	SE 84th Ave	NA	NA	Drainage	Condition of pavement	Fair	Remove and relocate	1	Remove and Relocate Inlet	EACH	7245
5.21	SE 84th Ave	NA	NA	Utilities	Frame or top slab	Fair	Adjust elevation and repair pavement	1		EACH	1445
5.21	SE 84th Ave	NA	NA	Drainage	Surface mounted feature	Poor	Clearing, grubbing and planting		No Cost for this item		
5.22	SE 84th Ave	NA	NA	Signage	Panel	Poor	Replace with a new sign and install a new sign support with appropriate mounting and footing	1		EACH	726
5.22	SE 84th Ave	NA	NA	Signage	Panel	Poor	Replace with a new sign and install a new sign support with appropriate mounting and footing	1		EACH	726
5.24	SE 85th Ave	NA	NA	Signage	Panel	Fair	Replace with a new sign	1		EACH	364
5.24	SE 85th Ave	NA	NA	Drainage	Condition of pavement around surface mounted feature	Fair	Grind and inlay	1	Adjust Elevation and Repair Pavement	EACH	1620
5.24	SE 85th Ave	NA	NA	Utilities	Pavement around surface mounted feature	Fair	Adjust structure and resurface pavement	1		EACH	1445
5.26	SE 85th Ave	NA	NA	Pavement	Cracked	Fair	Joint sealing	25		SF	83

Milepost	Nearest Cross Street	ADA Corner Position	ADA Corner	Element	Sub-element	Condition	Treatment	Treatment Quantity	Cost notes	Unit	Cost (USD)
5.26	SE 85th Ave	NA	NA	Utilities	Pavement around surface mounted feature	Poor	Adjust structure and resurface pavement	1		EACH	1445
5.27	SE 85th Ave	3	NE	ADA	Ramps	Poor				EACH	
5.27	SE 85th Ave	4	NW	ADA	Ramps	Poor				EACH	
5.27	SE 85th Ave	3	NE	ADA	Ramps	Poor	Replace	1		EACH	18100
5.27	SE 85th Ave	4	NW	ADA	Ramps	Poor	Replace	1		EACH	18100
5.27	SE 85th Ave	2	SE	ADA	Ramps	Poor	Replace	1		EACH	18100
5.27	SE 85th Ave	1	SW	ADA	Ramps	Poor	Replace	1		EACH	18100
5.27	SE 85th Ave	NA	NA	Utilities	Frame or top slab	Fair	Adjust elevation and repair pavement	1		EACH	1445
5.31	SE 86th Ave	NA	NA	Concrete	Median	Fair	Curb repair	15		LF	1245
5.32	SE 86th Ave	NA	NA	Signage	Panel	Fair	Replace with a new sign	1		EACH	364
5.32	SE 86th Ave	2	NA	ADA	Pushbuttons	Poor	Replace		Pushbutton cost covered in ADA	EACH	0
5.32	SE 86th Ave	NA	NA	Pavement	Cracked	Fair	Joint sealing	24		SF	80
5.32	SE 86th Ave	NA	NA	Drainage	Condition of pavement	Fair	Remove and replace	1	Remove and Adjust Manhole	EACH	3215
5.32	SE 86th Ave	4	NW	ADA	Ramps	Poor	Replace	1	Signalized Intersection	EACH	38400
5.32	SE 86th Ave	2	SE	ADA	Ramps	Poor	Replace	1	Signalized Intersection	EACH	38400
5.32	SE 86th Ave	1	SW	ADA	Ramps	Poor	Replace with 2 ramps	1	Signalized Intersection	EACH	38400
5.33	SE 86th Ave	NA	NA	Drainage	Frame or top slab	Fair	Grind and inlay	1	Adjust Elevation and Repair	EACH	1620
5.33	SE 86th Ave	NA	NA	Drainage	Frame or top slab	Fair	Grind and inlay	1	Adjust Elevation and Repair	EACH	1620
5.33	SE 86th Ave	NA	NA	Pavement	Cracked	Fair	Resurface	93		SF	212
5.33	SE 86th Ave	NA	NA	Pavement	Patched/deformed	Fair	Resurface	67		SF	151
5.34	SE 87th Ave	NA	NA	Signage	Panel	Fair	Replace with a new sign	1		EACH	364
5.34	SE 87th Ave	NA	NA	Utilities	Pavement around surface mounted feature	Poor	Adjust structure and resurface pavement	1		EACH	1445
5.34	SE 87th Ave	NA	NA	Signage	Panel	Poor	Replace with a new sign and install a new sign support with appropriate mounting and footing	1		EACH	726
5.35	SE 87th Ave	NA	NA	Pavement	Cracked	Fair	Joint sealing	120		SF	400
5.35	SE 87th Ave	3	NE	ADA	Ramps	Poor	Replace	1		EACH	18100
5.35	SE 87th Ave	3	NE	ADA	Ramps	Poor	Replace	1		EACH	18100
5.35	SE 87th Ave	2	SE	ADA	Ramps	Poor	Replace	1		EACH	18100
5.35	SE 87th Ave	1	SW	ADA	Ramps	Poor	Replace	1		EACH	18100
5.35	SE 87th Ave	4	NW	ADA	Ramps	Poor	Replace with 2 ramps	1		EACH	18100
5.36	SE 87th Ave	NA	NA	Drainage	Frame or top slab	Fair	Adjust elevation	1	Adjust Elevation and Repair Pavement	EACH	1620
5.36	SE 87th Ave	NA	NA	Sidewalks	Other trip hazards	Fair	Replace	120		SF	3566
5.38	SE 87th Ave	NA	NA	Sidewalks	Cracks or openings	Poor	Replace	90		SF	2675
5.4	SE 88th Ave	3	NE	ADA	Ramps	Poor	Replace	1		EACH	18100

Milepost	Nearest Cross Street	ADA Corner Position	ADA Corner	Element	Sub-element	Condition	Treatment	Treatment Quantity	Cost notes	Unit	Cost (USD)
5.4	SE 88th Ave	4	NW	ADA	Ramps	Poor	Replace	1		EACH	18100
5.4	SE 88th Ave	2	SE	ADA	Ramps	Poor	Replace with 2 ramps	1		EACH	18100
5.4	SE 88th Ave	1	SW	ADA	Ramps	Poor	Replace with 2 ramps	1		EACH	18100
5.4	SE 88th Ave	NA	NA	Concrete	Median	Fair	Curb repair	25		LF	2076
5.42	SE 89th Ave	NA	NA	Concrete	Median	Poor	Curb replace	15		LF	1245
5.43	SE 89th Ave	2A	E, ISLAND	ADA	Ramps	Poor			Cost covered under ramp replacement at same position.	EACH	
5.43	SE 89th Ave	3	NE	ADA	Ramps	Poor			Cost covered under ramp replacement at same position.	EACH	
5.43	SE 89th Ave	4	NW	ADA	Ramps	Poor			Cost covered under ramp replacement at same position.	EACH	
5.43	SE 89th Ave	2A	E, ISLAND	ADA	Ramps	Poor	Replace	1		EACH	18100
5.43	SE 89th Ave	3	NE	ADA	Ramps	Poor	Replace	1		EACH	18100
5.43	SE 89th Ave	4	NW	ADA	Ramps	Poor	Replace	1		EACH	18100
5.43	SE 89th Ave	2	SE	ADA	Ramps	Poor	Replace	1		EACH	18100
5.43	SE 89th Ave	1	SW	ADA	Ramps	Poor	Replace	1		EACH	18100
5.43	SE 89th Ave	NA	NA	Signage	Panel	Poor	Replace with a new sign and install a	1		EACH	726
5.44	SE 89th Ave	NA	NA	Sidewalks	Other trip hazards	Poor	Replace	168		SF	4993
5.44	SE 89th Ave	NA	NA	Sidewalks	Other trip hazards	Poor	Replace	840		SF	24965
5.45	SE 89th Ave	NA	NA	Sidewalks	Cracks or openings	Poor	Replace	60		SF	1783
5.46	SE 89th Ave	NA	NA	Sidewalks	Cracks or openings	Fair	Repair	84		SF	2496
5.47	SE 90th Pl	NA	NA	Pavement	Cracked	Fair	Joint sealing	72		SF	240
5.47	SE 90th Pl	NA	NA	Sidewalks	Chipping or general	Poor	Replace	28		SF	832
5.47	SE 90th Pl	NA	NA	Signage	Panel	Poor	Replace with a new sign and install a new sign support with appropriate mounting and footing	1		EACH	726
5.48	SE 90th Pl	NA	NA	Concrete	Median	Poor	Curb replace	20		LF	1661
5.49	SE 90th Pl	3	NE	ADA	Ramps	Poor	Replace	1		EACH	18100
5.49	SE 90th Pl	1	SW	ADA	Ramps	Poor	Replace	1		EACH	18100
5.49	SE 90th Pl	4	NW	ADA	Ramps	Poor	Replace with 2 ramps	1		EACH	18100
5.49	SE 90th Pl	2	SE	ADA	Ramps	Poor	Replace with 2 ramps	1		EACH	18100
5.49	SE 90th Pl	NA	NA	Pavement	Cracked	Fair	Resurface	3		SF	6
5.5	SE 90th Pl	NA	NA	Signage	Panel	Fair	Replace with a new sign	1		EACH	364
5.5	SE 90th Pl	NA	NA	Signage	Panel	Poor	Replace with a new sign and install a new sign support with appropriate mounting and footing	1		EACH	726
5.51	SE 90th Pl	NA	NA	Sidewalks	Chipping or general deterioration	Poor	Replace	210		SF	6241
5.51	SE 90th Pl	NA	NA	Concrete	Median	Poor	Curb replace	27		LF	2242

Milepost	Nearest Cross Street	ADA Corner Position	ADA Corner	Element	Sub-element	Condition	Treatment	Treatment Quantity	Cost notes	Unit	Cost (USD)
5.53	SE 90th Pl	NA	NA	Sidewalks	Chipping or general deterioration	Poor	Replace	60		SF	1783
5.53	SE 90th Pl	NA	NA	Concrete	Median	Poor	Curb replace	27		LF	2242
5.55	SE 90th Pl	NA	NA	Signage	Support	Poor	Replace with a new sign support with	1		EACH	529
5.55	SE 90th Pl	NA	NA	Pavement	Cracked	Fair	Joint sealing	720		SF	2398
5.56	SE 90th Pl	NA	NA	Sidewalks	Cracks or openings	Fair	Replace	90		SF	2675
5.58	SE 92nd Ave	NA	NA	Signage	Panel	Fair	Replace with a new sign	1		EACH	364
5.58	SE 92nd Ave	NA	NA	Pavement	Cracked	Fair	Joint sealing	120		SF	400
5.58	SE 92nd Ave	NA	NA	Sidewalks	Cracks or openings	Poor	Replace	49		SF	1456
5.59	SE 92nd Ave	NA	NA	Lighting	Luminaire	Fair	Replace with a new LED luminaire	1		EACH	755
5.59	SE 92nd Ave	4	NA	ADA	Pushbuttons	Fair	Clean, maintain or relocate		Pushbutton cost covered in ADA ramp replacement at this location.	EACH	0
5.59	SE 92nd Ave	4	NA	ADA	Pushbuttons	Fair	Clean, maintain or relocate		Pushbutton cost covered in ADA	EACH	0
5.59	SE 92nd Ave	4	NW	ADA	Ramps	Poor			Cost covered under ramp replacement at same position.	EACH	
5.59	SE 92nd Ave	1	NA	ADA	Pushbuttons	Poor	Replace		Pushbutton cost covered in ADA	EACH	0
5.59	SE 92nd Ave	1	NA	ADA	Pushbuttons	Poor	Replace		Pushbutton cost covered in ADA	EACH	0
5.59	SE 92nd Ave	2	NA	ADA	Pushbuttons	Poor	Replace		Pushbutton cost covered in ADA	EACH	0
5.59	SE 92nd Ave	3	NA	ADA	Pushbuttons	Poor	Replace		Pushbutton cost covered in ADA	EACH	0
5.59	SE 92nd Ave	2	NA	ADA	Pushbuttons	Poor	Replace		Pushbutton cost covered in ADA	EACH	0
5.59	SE 92nd Ave	3	NA	ADA	Pushbuttons	Poor	Replace		Pushbutton cost covered in ADA	EACH	0
5.59	SE 92nd Ave	NA	NA	Pavement	Vehicle Pavement	Fair	Spot treatment, measured in foot	0	Addressed by pavement	EACH	0
5.59	SE 92nd Ave	NA	NA	Signage	Panel	Poor	Replace with two new signs and install	2		EACH	1452
5.59	SE 92nd Ave	4	NW	ADA	Ramps	Poor	Replace	1	Signalized Intersection	EACH	38400
5.59	SE 92nd Ave	3	NE	ADA	Ramps	Poor	Replace with 2 ramps	1	Signalized Intersection	EACH	38400
5.59	SE 92nd Ave	2	SE	ADA	Ramps	Poor	Replace with 2 ramps	1	Signalized Intersection	EACH	38400
5.59	SE 92nd Ave	1	SW	ADA	Ramps	Poor	Replace with 2 ramps	1	Signalized Intersection	EACH	38400
5.6	SE 92nd Ave	NA	NA	Signage	Panel	Poor	Replace with two new signs and install two new sign supports with appropriate mounting and footing	2		EACH	1452
5.62	SE 92nd Ave	NA	NA	Signage	Panel	Fair	Replace with a new sign	1		EACH	364
5.65	I-205 ramps	NA	NA	Signage	Support	Poor	Replace with a new sign support with appropriate mounting and footing	1		EACH	529

Milepost	Nearest Cross Street	ADA Corner Position	ADA Corner	Element	Sub-element	Condition	Treatment	Treatment Quantity	Cost notes	Unit	Cost (USD)
5.65	I-205 ramps	NA	NA	Signage	Panel	Poor	Replace with three new signs and install three new sign supports with appropriate mounting and footing	3		EACH	2178
5.67	I-205 ramps	NA	NA	Signage	Panel	Fair	Replace with a new sign	1		EACH	364
5.67	I-205 ramps	NA	NA	Signage	Panel	Poor	Replace with a new sign and install a new sign support with appropriate mounting and footing	1		EACH	726
5.69	I-205 ramps	3	NA	ADA	Pushbuttons	Fair	Clean, maintain or relocate		Pushbutton cost covered in ADA	EACH	0
5.7	I-205 ramps	3	NE	ADA	Ramps	Poor	Replace	1	Signalized Intersection	EACH	38400
5.7	I-205 ramps	4	NW	ADA	Ramps	Poor	Replace	1	Signalized Intersection	EACH	38400
5.7	I-205 ramps	2	SE	ADA	Ramps	Poor	Replace	1	Signalized Intersection	EACH	38400
5.7	I-205 ramps	1	SW	ADA	Ramps	Poor	Replace	1	Signalized Intersection	EACH	38400
5.73	I-205 ramps	NA	NA	Pavement	Rutted	Fair	Resurface	233		SF	530
5.77	I-205 ramps	3	NA	ADA	Pushbuttons	Fair	Clean, maintain or relocate		Pushbutton cost covered in ADA	EACH	0
5.77	I-205 ramps	3	NA	ADA	Pushbuttons	Poor	Replace		Pushbutton cost covered in ADA	EACH	0
5.77	I-205 ramps	1	NA	ADA	Pushbuttons	Poor	Replace		Pushbutton cost covered in ADA	EACH	0
5.77	I-205 ramps	2	NA	ADA	Pushbuttons	Poor	Replace		Pushbutton cost covered in ADA	EACH	0
5.77	I-205 ramps	2	NA	ADA	Pushbuttons	Poor	Replace		Pushbutton cost covered in ADA	EACH	0
5.77	I-205 ramps	4	NA	ADA	Pushbuttons	Poor	Replace		Pushbutton cost covered in ADA	EACH	0

APPENDIX C

COST TO IMPLEMENT UPGRADES

C.1 Cost Summary

This appendix provides a cost estimate for the identified upgrades necessary to bring Inner Powell up to a state of good repair. The cost estimate is based on the treatment quantities identified in Technical Memo 4, *Corridor Element Upgrades*. The cost estimate also includes program costs such as preliminary engineering, right-of-way, and construction management. Table C-1 shows a summary of costs. Section C.2 describes the cost estimate methodology.

Table C-1. Inner Powell Cost Estimate Summary

No.	Update Item	Unit Cost	Quantity	Notes	Cost Estimate
1. Drainage & Utilities					
1A	Remove and adjust manhole	$3,215	12	Minor manhole adjustments, sawcut, curb, and pavement cost. Pavement and sawcut are calculated based on an assumed 7'x6' work area.	$38,575
1B	Remove and replace inlet	$1,595	36	Adjust inlet, sawcut, and pavement. Pavement and sawcut are calculated based on an assumed 7'x6' work area.	$57,405
1C	Remove and relocate inlet	$7,245	24	Adjust inlet, and remove and install pipe, sawcut and pavement. Pavement and sawcut are calculated based on an assumed 7'x6' work area.	$173,870
1D	Adjust elevation and repair pavement	$1,620	84	Adjust inlet the necessary sawcut and pavement.	$136,077
1E	Remove and adjust utility	$1,445	108	Adjust utilities, sawcut, and repave. Pavement and sawcut are calculated based on an assumed 7'x6' work area.	$156,015
1F	Adjust utility elevation and repair pavement	$1,445	168	Adjust utilities, sawcut, and pavement. Pavement and sawcut are calculated based on an assumed 7'x6' work area.	$242,689
Drainage & Utilities Total					*$804,630*

No.	Update Item	Unit Cost	Quantity	Notes	Cost Estimate
2. Concrete					
2A	Remove & replace sidewalk	$30	1,799	Remove and replace sidewalk in poor condition; includes sawcut and replacement of asphalt adjacent to curb. (unit: SF)	$53,466
2B	Remove & replace curbs	$83	189	Remove and replace curbs in poor condition, and sawcut and replace asphalt adjacent to curb. (unit: LF)	$15,693
Concrete Total					*$69,159*
3. Pavement					
3A	Joint seal	$3	7,444	Poured seals/foot bid item. (unit: SF)	$24,789
3B	3” Resurface	$2	900,949	Level 4 1/2" ACP wearing course, asphalt binder, emulsified asphalt for tack coat, and cold plane pavement removal. Includes striping. (unit: SF)	$2,090,202
3C	21” Reconstruct	$12	15,711	Level 4 1/2" ACP wearing course, 4 1/2" ACP base course, asphalt binder, aggregate base dense graded 1" or 3/4", emulsified asphalt for tack coat, removal of surfacings, bus pad repair, and subgrade geotextile. (unit: SF)	$194,502
Pavement Total					*$2,309,492*
4. ADA					
4A	ADA ramps - signalized	$38,400	55	Remove and replace adjacent concrete walks, remove and replace concrete curbs with concrete curb & gutter, extra for curb ramps, truncated domes on new surfaces, remove and reinstall signs, relocate fire hydrants, adjust catch basins, crosswalk closure signs as needed, and install new pedestrian pushbuttons.	$2,513,500

No.	Update Item	Unit Cost	Quantity	Notes	Cost Estimate
4B	ADA ramps - Unsignalized	$18,100	221	Remove and replace adjacent concrete walks, remove and replace concrete curbs with concrete curb & gutter, extra for curb ramps, truncated domes on new surfaces, remove and reinstall signs, relocate fire hydrants, crosswalk closure signs as needed, adjust catch basins.	$4,000,100
4C	ADA Ramps – closures for safety	$1,300	6	Place crosswalk closure signs at corners where ODOT recommends closure for ped safety.	$7,800
4D	ADA pushbuttons	$15,515	2	Remove non-compliance parts, install one junction box and one post mounted with one ped head and one pushbutton, assumes 100' complementary wiring system and 100' horizonal trenching drilling. The quantity does not include ADA ramp reconstruction.	$31,030
ADA Total					*$6,552,430*
5. Signals					
5A	New traffic signal	$594,200	2	Replace full signal at Powell Blvd at Milwaukie Ave and Powell Blvd at 42nd Ave/43rd Ave intersections based on signal condition rated <50% in Oregon's Traffic Signal Asset Management rating system	$1,188,400
5B	Traffic signal modification	$900	3	Minor improvements depending on individual condition	$2,700
Signals Total					*$1,191,100*

No.	Update Item	Unit Cost	Quantity	Notes	Cost Estimate
				Contingency (35%)	$4,920,104
				Total Construction Cost	*$18,977,542*
				PE/Util/ROW (33%)	$6,262,589
				Construction Engineering (20%)	$3,795,508
				Inflation (to 2019 dollars at 3.5% per year)	$1,042,816
Grand Total					**$30,837,557**

Costs are in 2018 dollars; amounts may not add due to rounding.
ACP = asphalt concrete pavement
LF = linear feet
LS = lump sum
PE = preliminary engineering
ROW = right of way
SF = square feet

C.2 Cost Estimating Methodology

The Project team developed the methodology using the best data available to estimate the proposed upgrade costs. The cost estimate is based on research of programmed work, owner maintenance and asset management input, a field inventory of existing conditions, and a breakdown of proposed upgrades. The Project team developed average unit costs for each upgrade with an understanding of the existing field conditions and upgrade quantities. The Project team also factored contingency costs, project delivery costs, and assumptions into the potential overall cost for bringing Inner Powell up to a state of good repair.

Unit Cost Determination

The Project team developed average unit costs for upgrades on a corridor basis using traditional ODOT bid item prices for the required work. The typical conditions along the Project corridor - such as intersection curb radii and pavement thickness - support this approach. The Project team quantified ODOT bid item prices for major work components for the unit of measurement for each upgrade as described in the subsections below. The team then applied average unit costs to the respective upgrades in Appendix B of Technical Memo 4.

Upgrade Quantities

Quantities are based on the proposed upgrades listed in Appendix B of Technical Memo 4. The Project team used assumptions to determine auxiliary work related to the upgrade treatments.

For example, the Project team assumed a length of asphalt sawcutting for ADA ramp replacements. The assumptions used were proportional to the treatment.

Delivery Costs and Contingencies

Delivery Costs

The Project team incorporated phases of work and delivery costs necessary to implement the proposed upgrades into the cost estimate. The Project team assumed a traditional design-bid-build delivery method to complete the construction work. As such, the cost estimate includes the following associated costs:

- Mobilization: 10%
- Traffic Control: 12%
- Preliminary engineering, right-of-way, and utility relocations: 33%
- Construction Engineering: 20%
- Inflation: 3.5%

Construction Contingency

The Study does not provide all the details needed to complete a full engineering-level cost estimate. The level of accuracy and detail presented in this cost estimate are equivalent to planning level work. Therefore, the Project team used a 35% construction contingency to account for known costs and unknown costs. Examples of these costs include mobilization, traffic control, hazardous materials disposal, and erosion control.

Drainage & Utilities

During the existing conditions inventory phase, the Project team documented drainage and utility elements along two segments of Inner Powell that equate up to 1/12th the length of the Project corridor. Therefore, the team used a factor of 12 to account for the entire Project corridor.

Hazardous Materials

Hazardous materials (including contaminated soils and hazardous waste) are common along highway corridors. Proposed hazardous element upgrades have the potential to disturb hazardous materials that require proper testing, handling, and disposal. The cost of hazardous material handling and disposal is built in the construction contingency as described above.

ATTACHMENT D

Inventory of Planned/Programmed Projects

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INNER POWELL

SE 9th to I-205 Upgrade Study and Cost Estimate

Inventory of Planned/Programmed Projects

January 2019

1. INTRODUCTION/PURPOSE OF MEMO

1.1 Purpose of Study

House Bill 2017 (HB 2017) requires the Oregon Transportation Commission (OTC) to study the costs to upgrade and transfer the portion of Southeast (SE) Powell Boulevard from the intersection with SE 9th Avenue to the intersection with Interstate 205 (I-205) in Portland, Oregon. This portion of SE Powell Boulevard is referred to as *Inner Powell.* OTC directed the Oregon Department of Transportation (ODOT) to prepare the *Inner Powell: SE 9th to I-205 Upgrade Study and Cost Estimate* (Study). The Study will establish a state of good repair threshold for various roadway elements to help ODOT determine the cost to upgrade and transfer ownership and maintenance of Inner Powell from ODOT to the City of Portland (City). OTC is required to report the study's findings to the Oregon Legislature's Joint Committee on Transportation by January 1, 2020.

1.2 Study Area

The Study area is SE Powell Boulevard from the intersection with SE 9th Avenue to the intersection with I-205 (Inner Powell) (see Figure 1). This segment is approximately 4.5 miles long and correlates roughly to Mile Points 1.2 to 5.7. For the purposes of this Study, the curb line of Powell Boulevard is set in place; ODOT is primarily responsible for corridor elements from "curb-to-curb" (i.e., the roadway). Certain corridor elements that span the curb line, such as signal structures or sidewalk ramps meeting Americans with Disabilities Act (ADA) standards are also included in the Study area for purposes of this Study.

The segment of Powell Boulevard between SE 9th Avenue and SE 86th Avenue is currently a City public right-of-way, which is controlled by the City. ODOT maintains the roadway from curb-to-curb, and the City maintains the landscaped medians. The segment from SE 86th Avenue to I-205 is a State Fee Simple right-of-way, which is owned, controlled, and maintained by the State.

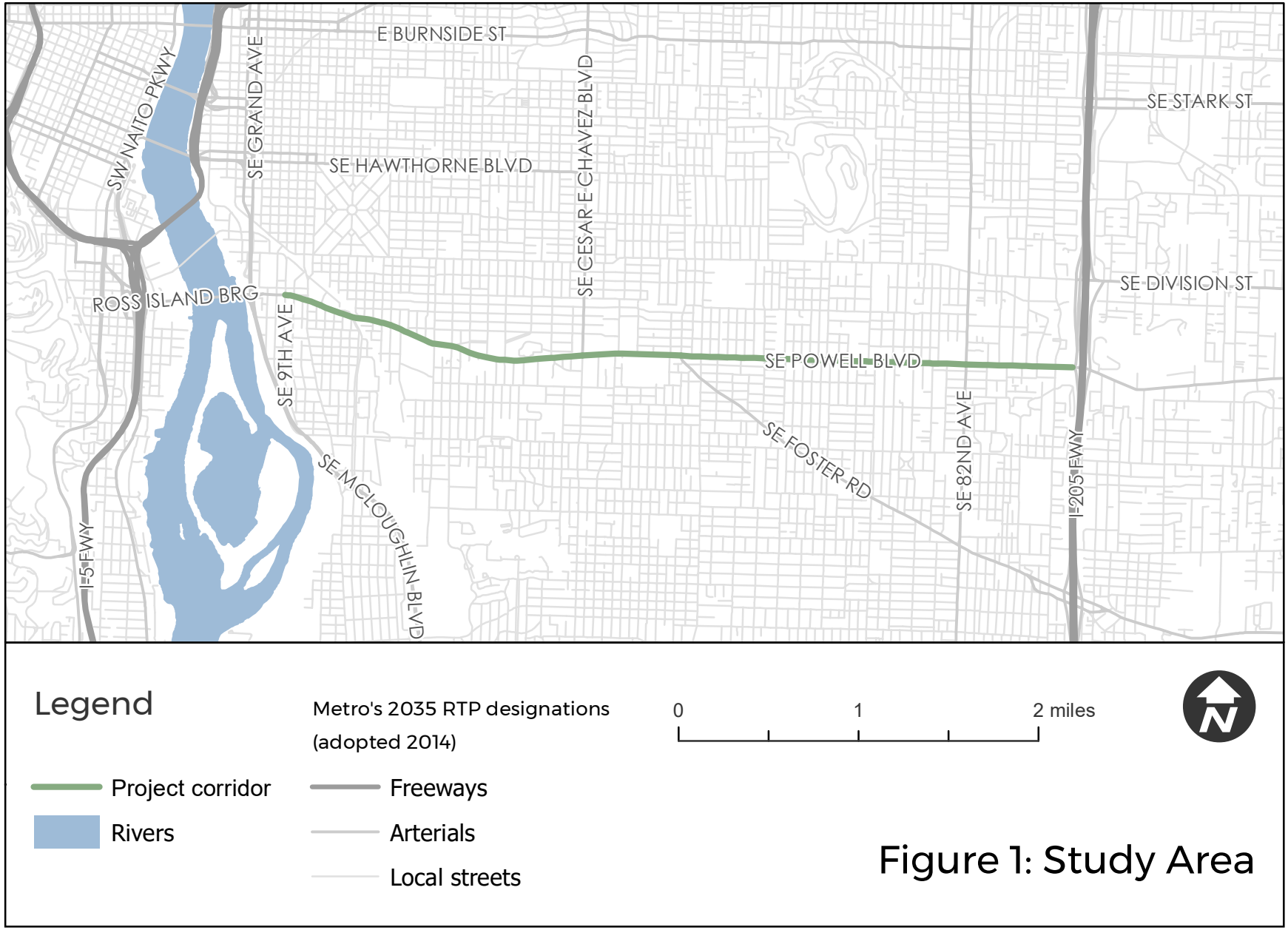

Figure 1: Study Area

1.3 Purpose of this Memorandum

The primary purpose of this memorandum is to document recently completed, underway, or planned (in the near-term) projects along Inner Powell and to document needs and recommendations for improvements to Inner Powell, as identified by relatively recent plans, studies or other analysis. The project team will use this information to inform the state of good repair thresholds and cost to upgrade the corridor. This memorandum also summarizes policy documents related to Inner Powell and Inner Powell's functional classification, as designated by each policy document to inform the project team about the policy context. To accompany this memorandum, there is an electronic Excel Spreadsheet tool that lists each of the Inner Powell recommendations listed in Section 6. This spreadsheet facilitates simple sorting of recommended improvements by intersection within the corridor.

2. METHODOLOGY

This memorandum is divided into 6 sections. Following the Introduction (Section 1) and this Methodology (Section 2), the memorandum summarizes federal, state, regional, and local road preservation policies and functional classification policies from plans related to Inner Powell (Section 3). Section 4 summarizes ODOT's jurisdictional transfer process. Section 5 is a comprehensive list of recently completed, under construction, or planned and programed projects within the Study area. These projects were extracted from public planning documents including, but not limited to, Metro's 2018 Regional Transportation Plan (RTP) and ODOT's Active 2018-2021 Statewide Transportation Improvement Program (STIP). Section 6 lists documented recommendations for the study area organized by project element as found in adopted policy documents and studies. Fifteen elements were considered, consistent with the Study scope: pavement, signals and signal systems, striping, signage, lighting, safety (roadway crossings and signing), vegetation, hazardous materials, utilities, sidewalk ramps meeting ADA standards, sidewalk repairs, drainage, school zones, park area locations, and bicycle systems and conditions.

3. POLICY DOCUMENTS RELATED TO INNER POWELL

Inner Powell serves a variety of stakeholders, transportation modes, and user groups including freight traffic, transit, pedestrians, bicyclists, regional and neighborhood car traffic, and emergency response. Such diverse use of Inner Powell is reflected in its functional classifications and plan designations at all levels. The following sections describe Inner Powell's classifications and designations at the federal, state, regional, and local levels.

3.1 Federal Classifications

At the federal level, Inner Powell has a functional classification as *Other Urban Principal Arterial*, *National Highway System Route*, and *National Network-Federally Designated Truck Route*.

Other Urban Principal Arterials are roadways serving major centers of metropolitan areas, are the highest traffic volume corridors, and have the longest trip demands (FHWA 2013).

National Highway System Routes were established by the federal government and are part of a network of controlled-access highways.

Federally Designated Truck Routes have moderate to high annual truck tonnage and provide connectivity to significant freight generating areas.

3.2 State Classifications

At the state level, Inner Powell is designated as *District Highway* in the Oregon Highway Plan (ODOT adopted in 1999, amended through 2015) and as a *Reduction Review Route* as determined by Oregon Revised Statute (ORS) 366.215.

District Highways are facilities of county-wide significance and function largely as county and city arterials or collectors.

Reduction Review Routes prohibit the Oregon Transportation Commission (OTC) from a permanent reduction of vehicle-carrying capacity[1] (RVC) of an identified freight route unless the OTC finds an exemption is in the best interest of the state and freight movement is not unreasonably impeded.

3.3 Regional Classifications

At the regional level, Inner Powell is designated within Metro's 2040 Growth Concept map (adopted in 1995) as *proposed high capacity transit tier 1* and in Metro's High Capacity Transit System Plan (adopted in 2009) as a *near term regional priority corridor*. Table 1 lists Inner Powell's designations per Metro's 2018 Regional Transportation Plan (RTP) (adopted in 2018).

Table 1. 2018 Metro RTP designations for Inner Powell

Designation	Definition
Major arterial	Up to four lanes with medians and with turn lanes and access management strategies, accommodate longer-distance through trips than minor arterials and serve more of a regional traffic function. Regional policy calls for safe crossings of streets and controlled pedestrian crossings.

[1] Vehicle carrying capacity, also known as the "hole-in-the-air", refers to the entire roadway, not just the load on the road at any particular moment. A RVC means a permanent reduction in the horizontal or vertical clearance of a highway section, by a permanent physical obstruction to motor vehicles located on usable right-of-way subject to OTC jurisdiction (ODOT 2015).

Designation	Definition
Regional Street	Four or more vehicle travel lanes, balanced multi-modal function, broad right-of-way (80 to 100 feet to more), limited on-street parking, wider travel lanes than boulevards, corridor land uses set back from the street, sidewalks with pedestrian buffering from the street, and a raised landscaped median with turn pockets at intersections. These facilities are located within low-density inner and outer residential neighborhoods to more densely developed commercial corridors and employment centers where development is set back form the street. They can be within main street districts where buildings are oriented toward the street at major intersections and transit stops.
Bikeway Gap	Gaps in the regional bikeway network. A bikeway is any road, street, path, or right-of-way that is designated in some matter to being open to bicycle travel, whether exclusive or shared with or pedestrians.
Regional Bicycle District (SE 9th Ave to SE 12th Ave, north of Powell Blvd)	Areas with high concentrations of transit, commercial, cultural, institutional and/or recreational destinations where bicycle travel is attractive, comfortable and safe. Bicycle districts are areas where high levels of bicycle use exist or are planned.
Bicycle Parkway (between SE 17th Ave and SE 52nd Ave)	Bicycle routes designed to serve as a bicycle highway providing for direct and efficient travel for large volumes of cyclists with minimal delays in different urban environments and to destinations outside the region.
Regional Bikeway (between 52nd Ave and I-205)	Designated routes that provide access to and within the central city, regional centers and town centers. They are typically located on arterial streets but may also be located on collectors or other low-volume streets. These bikeways should be designed using a flexible "toolbox" of bikeway designs, including bike lanes, cycle tracks (physically separated bicycle lanes) shoulder bikeways, shared roadway/wide outside lanes and bicycle priority treatments (e.g. bicycle boulevards).
Pedestrian Parkway	High-quality and high-priority routes for pedestrian activity. Pedestrian parkways are major urban streets that provide frequent and almost frequent transit service (existing and planned) or regional trails. Adequate with and separation between pedestrians and bicyclists should be provided on shared use bike pathways.
Vanpool Route	A specified route for organized ridesharing arrangements in which 7 to 15 people regularly commute together in a van. The van may be publicly owned, employer owned, individually owned, leased, or owned by a third party. Vanpool routes often stop or end at park-and-rides.
Roadway Connector	Designated freight route that connects freight facilities or freight generation areas to a main roadway route.

Designation	Definition
Enhanced Transit Concept Corridor	Provides transit priority treatments to improve transit speed and reliability above traditional transit service.

3.4 City Classifications

At the local level, Inner Powell includes designations by Portland's 2035 Comprehensive Plan (adopted in 2016) and by Portland's Transportation System Plan (adopted in 2018). Table 2 lists Inner Powell's designations per Portland's 2035 Comprehensive Plan (City of Portland 2018).

Table 2. 2035 City of Portland Comprehensive Plan designations for Inner Powell

Designation	Definition
Civic Corridor (west of SE 82nd Ave)	The city's busiest, widest, and most prominent streets. They provide major connections among centers, the rest of the city, and the region. They support the movement of people and goods across the city, with high levels of traffic and pedestrian activity.
Neighborhood Corridor (east of SE 82nd Ave)	Narrower main streets that connect neighborhoods with each other and to other parts of the city. They have transportation, land use, and design functions that are important at a neighborhood or district level. They support neighborhood business districts and provide housing opportunities close to local services, amenities, and transit lines. They include a mix of commercial and higher-density housing development.

Table 3 lists Inner Powell's designations per Portland's Transportation System Plan (PBOT 2018).

Table 3. City of Portland Transportation System Plan designations for Inner Powell

Designation	Definition
Major City Traffic Street	Principal routes for interdistrict traffic that has at least one trip end within a City of Portland transportation district. They provide separation between traffic and people walking, bicycling, and using mobility devices, and provide safe multimodal crossings to destinations. On-street parking may be removed to provide additional right-of-way. Changes to the roadway should improve the safety of pedestrians and bicyclists.
Local Service Bikeway (west of SE 71st Ave)	Provide local circulation needs for bicyclists and provide access to adjacent properties. On-street parking should not be removed to provide bicycle lanes, however, design treatments such as shared roadways, traffic calming, bicycle lanes, and extra-wide curb lanes should be considered. Conflicts should be minimized at crossings and bikeways should not have a side-effect of creating, encouraging or accommodating automobile through-traffic.

Designation	Definition
City Bikeway (east of SE 71st Ave)	Establish direct and convenient bicycle access to significant destinations, provide convenient access to Major City Bikeways and provide coverage within three city blocks of any given point. On-street parking and motor vehicle lanes may be removed to provide separated in-roadway bicycle facilities. Where space is limited, alternative approaches like property acquisition should be considered. City bikeways developed as shared roadways, should use all appropriate tools to achieve recommended performance guidelines.
City Walkway	Provide safe, convenient, and attractive pedestrian access to activities along major streets and to recreation and institutions; provide connections between neighborhoods; and provide access to transit.
Major Truck Street	Serve as principal routes for trucks in a Transportation District. They connect district-level truck trips to Regional Truckways, and trucks with no trip ends within the district should be discouraged from using Major Truck Streets. They should be designed to accommodate all truck types, as practicable.
Major Transit Priority Street (west of SE 50th Ave)	Facilitate frequent and reliable movement of transit vehicles that connect Central City, Regional Centers, and town centers with each other and to other major destinations. They are served by existing or planned frequent transit service.
Transit Access Street (east of SE 50th Ave)	Facilitate movement of transit vehicles connecting town centers, neighborhood centers, and industrial and employment areas with other destinations and other transit service.
Major Emergency Response Route	Serve primarily the longer, most direct legs of emergency response trips.
Regional Corridor	Serve people throughout the city and are designed to emphasize multimodal mobility between cities in the region. They generally feature a wider right-of-way than Community Corridors and are more often able to accommodate the full desired space for each mode. They usually include two to four vehicle lanes and occasionally have additional lanes for transit or left-turns. The curb zone should emphasize mobility functions such as bicycle facilities or turn-lanes near intersections and may be used for parking or loading if needed to support adjacent land uses. Bicycle facilities should be separated from motor vehicle traffic and sidewalks should be provided. Pedestrian and bicycle crossings should be signalized or improved with curb extensions or median islands and provided to serve transit stops.

4. Jurisdictional Transfer in Oregon

The following sections describe policies, state guidance, and case studies related to the jurisdictional transfer of highways in Oregon, as they provide relevant context and considerations for a potential transfer of Inner Powell from ODOT to the City of Portland.

4.1 What is Jurisdictional Transfer?

Jurisdictional transfer is the process of transferring roads from one jurisdiction to another. This process usually supports matching road ownership with road function. Ideally, local jurisdictions own, manage, and maintain roads that serve local functions while the State owns, manages, and maintains roads that serve intrastate or interstate functions.

Jurisdictional transfer can be triggered by a specific highway project (e.g., a highway bypass is constructed, so the former highway becomes a local roadway), or when the State or a local government desires a change. Jurisdictional transfers require approval of the State and any affected local governments. ODOT's handbook on jurisdictional transfers, Transferring Roads (ODOT 2003), lists several reasons why ODOT might want to transfer a highway segment to a local jurisdiction:

- On a District Highway, the vehicle trips are mostly local in nature – for shopping, local business, and recreation – and the District Highway is not an essential link needed to maintain continuity in the highway system.
- A new state highway bypasses a city, and the route through the city is no longer needed as part of the state system.
- A highway realignment leaves a portion of the old highway useful only for local access purposes.
- Having only one government making land use and access management decisions on a District Highway might result in greater efficiency and community responsiveness.
- The local government wants to make improvements, permit accesses, or maintain the District Highway or local interest road in a way that ODOT cannot do or is not willing to do. The local government may want to apply higher standards or apply a service level that ODOT would not address because the State places a low priority on that road.
- The trade will save ODOT money for signal power and maintenance, as well as plowing, sanding, and other maintenance work, and it is more efficient for the local government to provide these services.
- The highway is not needed for statewide or regional system connectivity.

The 1999 Oregon Highway Plan (OHP) in Policy 2C says that the state should consider, in cooperation with local jurisdictions, interjurisdictional transfers that:

- Rationalize and simplify the management responsibilities along a roadway segment or corridor;
- Reflect the appropriate functional classification of a roadway segment or corridor; and/or
- Lead to increased efficiencies in the operation and maintenance of a roadway segment or corridor.

OHP Action 2C.1 lists the types of roads that might be transferred to local jurisdictions. Road types like Inner Powell are:

- Urban arterials serving primarily local travel needs

4.2 Orphan Highways

"Orphan highways" are district and regional state highways that are owned by ODOT, but functionally serve as city streets or county roads. This may be due to changes in surrounding land uses or the transportation network that result in longer-distance regional trips shifting to nearby interstates or other highways. While ODOT can transfer control of state highways to cities or counties, the roadways must first be brought to a state of good repair and meet current design standards. The cost to do so is a major hurdle to jurisdictional transfers. In the 2015 legislative session, three pieces of legislation were introduced to better facilitate jurisdictional transfer, including two focused on identifying funding mechanisms. All three pieces of legislation stalled in committee.

Legislation focused on Jurisdictional Transfer in the 2015 Oregon Legislative Session

- SB 117 would have created a 12-member Task Force on Jurisdictional Transfers to evaluate and recommend potential transfer of state highways to cities or counties or transfer of county roads or city streets to the state highway program.
- SB 326 would have modified the state modernization program to make projects that facilitated jurisdictional transfers eligible for funding.
- HB 3302 would have allocated approximately $27 million per year for 10 years to fund jurisdictional transfer projects.

4.3 Issues to Consider

The 2003 handbook, Transferring Roads, describes the issues that ODOT and local governments should consider when determining whether transferring a road makes sense. These issues include the following:

- Goal of transfer
- Trip character
- Highway function
- Land use
- Access management
- Future needs
- Local government desire for a different level of service for a road or highway that is currently within the state system
- Benefits and costs
- Funding the transfer

4.4 Relevant Examples

The following sections describe relatively recent jurisdictional transfers from ODOT to the City of Portland.

4.4.1 Sandy Boulevard from Grand Avenue to 99th Avenue

In 2003, ODOT transferred a 5.6-mile segment of Sandy Boulevard from Grand Avenue to 99th Avenue to the City of Portland. Oregon Transportation Investment Act (OTIA) funds facilitated the transfer. ODOT used funds to make roadway preservation improvements on Sandy Boulevard between NE 13th and NE 47th Avenues. The City wanted to facilitate the Burnside/Couch couplet and installation of additional signals and pedestrian crossings that were not compatible with ODOT design standards. The transfer was intended to support redevelopment and growth within the Hollywood Town Center and Main Street improvements. The transfer reduced ODOT's maintenance costs, and regional through-traffic is served by Interstate 84.

4.4.2 Martin Luther King, Jr. Boulevard from Lombard Street to SE Division Street

In 2002, ODOT transferred Martin Luther King, Jr. Boulevard (Highway 99E) from NE Lombard Street to SE Division Street to the City of Portland. The transfer was necessary to facilitate the development of a boulevard between Broadway and Lombard to support revitalization through the Oregon Convention Center/Lloyd District Urban Renewal Plan and construction of the East Bank Esplanade.

5. Project Inventory

There are several projects along Inner Powell that are recently completed (since 2015), currently under construction, or are planned or programmed for the near future. The project team will consider these projects when developing the cost to upgrade and transfer Inner Powell. Projects are listed in Table 4. Sources are denoted by endnotes.

Table 4. Inventory of Recently Completed, Underway, or Near-term Future Projects along Inner Powell

Project	Improvement	Location	Status
PBOT Countdown pedestrian signal heads installed at 8 intersections[15]	Countdown pedestrian signal heads installed at 8 intersections	▪ SE Milwaukie Ave ▪ SE 13th Pl ▪ SE 21st Ave ▪ SE 26th Ave ▪ Cesar E Chavez ▪ SE 47th Ave ▪ SE 71st Ave ▪ SE 72nd Ave	Complete
PBOT Upgrade to LED street lighting: 7th - 52nd Avenues[15]	Upgrade street lighting to LED Lights	▪ SE 7th Ave to SE 52nd Ave	Complete
20's Bikeway[15]	Signalized crossing with median island	▪ SE 28th Ave	Complete
SE Cesar Chavez Blvd to Wolf Dr. Signal/Systemic project[10]	Systemic signal upgrades to 15 ODOT owned signals. Improvements include, but are not limited to, signal heads, reflective backboards, countdown pedestrian heads, red light extension, pedestrian-protective signal phasing, enforcement assistance lights, structure analysis, and signs	▪ Cesar E Chavez ▪ SE 42nd Ave ▪ SE Foster Road ▪ SE 52nd Ave ▪ SE 71st/72nd Ave ▪ SE 82nd Ave ▪ SE 86th Ave ▪ SE 92nd Ave ▪ I-205 SB off-ramp	Complete
Road Safety Audit: Cesar Chavez and 42nd/43rd Avenues[15]	Replace broken signal backplates with reflectorized backplates	▪ Cesar E Chavez	Complete
	Remove obsolete "No Parking" signs for more sidewalk space and less visual clutter	▪ SE 21st Ave to SE 45th Ave	
	Selective tree trimming and removal to increase sight distance at side streets and at crosswalks	▪ Cesar E Chavez to SE 43rd Ave	

Project	Improvement	Location	Status
Road Safety Audit: Cesar Chavez and 42nd/43rd Avenues[15] (continued)	Upgrade to 12" signal heads	▪ Cesar E Chavez to SE 43rd Ave	Planned (unfunded)
	Add audible warnings for crosswalks		
	Upgrade signage for EB lane drop + add appropriate "No Parking" signs or EB lane conversion to right turn lane		
Powell Boulevard Safety Project: SE 20th - 34th Avenues[4,13,15]	Advanced NEXT SIGNAL signs	▪ Generally: SE 20th Ave to SE 34th Ave (complete 2014)	Under construction
	Enhanced RRFBs on Powell Blvd to alert drivers of pedestrians crossing	▪ SE 24th Ave ▪ SE 31st Ave ▪ SE 34th Ave	
	High visibility striping and center islands	▪ SE 21st Ave to SE 34th Ave	
	Wider pedestrian waiting area near Cleveland High School to provide more space for students waiting to cross Powell Blvd	▪ SE 26th Ave (SE corner)	
	New truck apron to increase safety by allowing large vehicles to turn without entering the pedestrian zone or encroaching on vehicle lanes	▪ SE 26th Ave (SE corner)	
	New signals at intersections with enhanced safety features, including bigger and more visible signals and poles, and audible countdown pedestrian signals	▪ SE 21st Ave ▪ SE 26th Ave ▪ SE 33rd Ave	
	Selective tree removals and trimming to increase visibility at cross streets and crosswalks	▪ Generally: SE 20th Ave to SE 34th Ave	
	Enforcement lights for public safety, increased visibility of bicyclists, pedestrians and motorists	▪ Generally: SE 20th Ave to SE 34th Ave	

Project	Improvement	Location	Status
Powell Boulevard Safety Project: SE 20th - 34th Avenues[4,13,15] (continued)	Sidewalk repair	▪ Generally: SE 20th Ave to SE 34th Ave	Under construction
	Improve signage and install more visible street names	▪ Generally: SE 20th Ave to SE 34th Ave	
	Sidewalk ADA ramp improvements	▪ SE 21st Ave ▪ SE 24th Ave ▪ SE 26th Ave ▪ SE 31st Ave ▪ SE 33rd Ave ▪ SE 34th Ave	
	Brighter street lights	▪ SE 21st Ave ▪ SE 24th Ave ▪ SE 26th Ave ▪ SE 31st Ave ▪ SE 33rd Ave ▪ SE 34th Ave	
Streetscape Improvements: 7th - 92nd Avenues[15]	Implement ITS Measures	▪ SE 7th Ave to SE 92nd Ave ▪ New crosswalk enhancements: o Between SE 57th Ave and SE 58th Ave o SE 67th Ave o SE 75th Ave o Between SE 79th Ave and SE 80th Ave o SE 84th Ave o Between SE 90th and SE 92nd Ave	Planned (unfunded)
	Add 6 new enhanced crosswalks east of SE 57th Ave		
	Improve existing crosswalks		
	Improve pedestrian and bike crossings at signals		
	Use different sidewalk treatments to improve pedestrian environment		
	Incorporate storm water management		
	Add trees to medians and sidewalk where feasible		
	Routine landscape maintenance		

Project	Improvement	Location	Status
Powell-Division Transit and Development Project: 24th - 82nd Avenues[15]	RRFBs or enhanced crossings	▪ SE 47th/48th Ave ▪ SE 57th Ave ▪ SE 61st Ave ▪ SE 79th Ave	Planned (2018-2020)
	Larger bus shelters, wider sidewalk, and sign upgrades	▪ Cesar E Chavez	
	Extend island with queue jump	▪ SE 50th Ave	
	Relocate shelters, add leading pedestrian interval to signal	▪ SE 82nd Ave	
	Crosswalk striping	▪ SE 61st Ave ▪ SE 79th Ave	Planned (2019)
	Pedestrian refuge island	▪ SE 47th Ave ▪ SE 79th Ave	
Inner Powell Blvd Corridor Improvements[5,16]	Retrofit existing street with multimodal safety improvements including enhanced pedestrian and bicycle crossings, pedestrian and bike activated signals, median islands with trees, redesign of selected intersections and stormwater management facilities	▪ Entire corridor	Planned (2018-2027)
SE Powell Boulevard Enhanced Transit Concept (ETC)[5]	Construct safety access to transit improvements and transit priority treatments to reduce transit delay and improve transit reliability and travel times	▪ SE Milwaukie Ave to I-205	Planned (2018-2027)
Southern Triangle Access Improvements[5,16]	Improve traffic access to the Southern Triangle district from eastbound Powell Blvd	▪ SE 8th Ave to SE 17th Ave	Planned (2028-2040)
Powell-Division Corridor Safety & Access to Transit[16]	Construct improvements for safety, access to transit, and transit operations in the Powell-Division corridor	▪ Powell-Division Corridor, SE 22nd – city limits	Planned (2019-2029)

Project	Improvement	Location	Status
Region 1 Bike Ped Crossings[12]	Includes RRFBs, medians, illumination, crosswalks, tree trimming/removal, bike lane striping, sidewalks, ADA upgrades, and other improvements	▪ SE 26th Ave	Planned (2020)
	Install RRFB devices on each side of the existing crosswalk, extend the nose of the existing median and add RRFB device, rebuild two ramps at the existing crosswalk to current ADA standards, add advance stop bars and signage for pedestrian crossing, trim trees on NW and SW corners of Powell (may require tree removal), install new illumination pole on NW corner in sidewalk	▪ SE 36th Ave	
MP 1.25-5.69 illumination, signing and visibility improvements[12]	Install illumination	▪ SE 40th Ave ▪ Foster & SE 50th Ave ▪ SE 52nd Ave ▪ SE 72nd Ave ▪ SE 74th Ave	Planned (2020)
	Install reflectorized back plates and supplemental signal heads	▪ SE Milwaukie Ave ▪ Cesar E Chavez (complete) ▪ Foster & SE 50th Ave ▪ SE 92nd Ave ▪ I-205 SB ramp	
	Increase triangle sight distance	▪ SE 34th Ave ▪ SE 36th Ave ▪ SE 40th Ave ▪ SE 42nd Ave ▪ SE 74th Ave ▪ SE 77th Ave ▪ SE 89th Ave ▪ SE 90th Ave	

Project	Improvement	Location	Status
MP 1.25-5.69 illumination, signing and visibility improvements[12] (continued)	Increase the size of stop signs, properly place stop bar, and remove trees to increase visibility of pedestrians	▪ SE 10th Ave (Brooklyn St) ▪ SE Milwaukie Ave ▪ SE 13th Ave ▪ SE 24th Ave ▪ SE 25th Ave ▪ SE 31st Ave ▪ SE 34th Ave ▪ SE 36th Ave ▪ Cesar E Chavez ▪ SE 40th Ave ▪ SE 74th Ave ▪ SE 77th Ave ▪ SE 89th Ave ▪ SE 90th Ave	Planned (2020)
SE 71st Avenue illumination, sidewalk ramps and visibility improvements[12]	SE 71st Ave: New illumination poles on the NW and SW corners; upgrade ramp on NW corner to current ADA standards; trim trees on the EB approach (may require tree removal)	▪ SE 71st Ave	Planned (2020)
	SE 72nd Ave: New illumination poles on the NW and SW corners; assume no ADA upgrades required; trim trees on WB approach for pedestrian visibility (may require tree removal)	▪ SE 72nd Ave	
Inner Powell Bikeway[16]	Design and implement bicycle facilities. Consider freight movement needs, consistent with policies, street classification(s) and uses	▪ SE 71st Ave to I-205	Planned (2030-2040)

Notes:

The Portland 2035 Transportation System Plan (TSP) (PBOT 2018) identifies the Powell/Division High Capacity Transit (HCT) – Project Development project. Through the project's planning process, the project proceeded with HCT on Division Street only.

6. Corridor Needs and Recommendations

The following tables (Table 5 through Table 16) list the documented recommendations for improvements to Inner Powell based on the methodology described in Section 2. Recommendations are organized by element and are listed in geographic order, from west to east. There are no recommendations for improvements related to the pavement, hazardous materials, utilities, or park area elements. Other recommendations, listed in Table 16, include recommendations that do not fall in to a specific improvement element such as bus, operations, and access management. Sources are denoted by endnotes.

Table 5. Signals and Signal System Recommendations

Recommendation	Location
Implement ITS measures to maximize intersection capacity[14]	▪ Entire corridor
Modify existing signals; coordinate and optimize signal timing to improve traffic operations[3,5,14]	▪ Entire corridor
Use the pedestrian function with the FYA signals that will not allow a FYA to come up when a pedestrian call is placed[9]	▪ Between SE 20th Ave and SE 33rd Ave
Rebuild signal and install street name signs on overhead mast arms to increase their visibility, placing poles to give trucks more room to turn[9]	▪ SE 21st Ave
Install queue detection and warning system[9]	▪ SE 21st Ave
Provide green arrow or green arrow/green light left-turn phasing for all approaches and adjust signal phasing[9]	▪ SE 21st Ave
Install supplemental signal heads at near left side corners[9]	▪ SE 21st Ave ▪ Generally: SE 20th Ave to SE 33rd Ave
Permitted/protected left turn phasing[14]	▪ SE 26th Ave (north/south) ▪ WB SE 52nd Ave
Install new signal; modify pole locations and curb radii to accommodate turns and expand pedestrian refuge area on corners[9]	▪ SE 26th Ave ▪ SE 33rd Ave
Review signal timing and cycle lengths considering pedestrian and bicyclist wait times, left-turning from Powell, indication of bicycle detection, and running the signal with half-cycle[9]	▪ SE 33rd Ave
Replace broken signal backplates with new reflectorized backplates; upgrade to 12” signal heads[8]	▪ Generally: Cesar E Chavez to SE 43rd Ave
Install upgraded traffic signal system in a new mast arm assembly and place equipment and poles to avoid obstructing pedestrian paths and visibility[8]	▪ Generally: Cesar E Chavez to SE 43rd Ave

Recommendation	Location
Install red light enforcement assistance lights[8]	▪ Between Cesar E Chavez and 42nd/43rd Aves
Signal coordination with Powell/52nd Improvements[14]	▪ SE 52nd Ave
Upgrade signal hardware (replace antiquated inter-connect hardware and run underground wiring)[14]	▪ SE 52nd Ave & SE Foster Rd ▪ SE 65th Ave ▪ SE 69th Ave ▪ SE 71st Ave ▪ SE 72nd Ave
East/west permitted/protected phasing[14]	▪ SE 92nd Ave

Table 6. Striping Recommendations

Recommendation	Location
Provide striping improvements at pedestrian crossings[9]	▪ Generally: SE 20th Ave to SE 33rd Ave
Restripe the NB and SB approaches to include left-turn lanes[9]	▪ SE 21st Ave
"No Lane Change" striping[9]	▪ SE 31st Ave ▪ Generally: SE 20th Ave to SE 33rd Ave
Stripe centerline and prohibit parking near intersection on the south leg of the intersection[14]	▪ SE 72nd Ave

Table 7. Signage Recommendations

Recommendation	Location
Review sign placement and visibility (e.g., use the back side of a cantilever for a "Next Signal" sign)[9]	▪ Generally: SE 20th Ave to SE 33rd Ave
Provide signing improvements at pedestrian crossings[9]	▪ Generally: SE 20th Ave to SE 33rd Ave
Restrict right-turn on red using signage[9]	▪ SE 21st Ave NB Approach
Upgrade signage[8,9]	▪ SE 31st Ave (Motel 6 exit-only driveway) ▪ Generally: SE 21st Ave to SE 34th Ave ▪ Generally: Cesar E Chavez to SE 43rd Ave

Recommendation	Location
Install visible advanced warning signage[9]	▪ SE 31st Ave ▪ Generally: SE 20th Ave to SE 33rd Ave
Upgrade signage, drop and add appropriate "No Parking" signs or convert EB lane to right turn lane[8]	▪ EB lane from Cesar E Chavez to SE 40th Ave
Add a "Right Turn Stop for Pedestrian" sign[8]	▪ SE 42nd/43rd Aves (SB approach)

Table 8. Lighting Recommendations

Recommendation	Location
Provide pedestrian-scale lighting in advance of each unsignalized pedestrian crossing[9]	▪ SE 31st Ave ▪ Generally: SE 20th Ave to SE 33rd Ave

Table 9. Safety – Roadway Crossings and Signing Recommendations

Recommendation	Location
Install RRFBs to provide more visibility to drivers and assist pedestrians with crossing the street[17]	▪ Entire corridor
Improve safe pedestrian and bicycle crossings[,3,5,14]	▪ Entire corridor
Provide consistent treatment at enhanced, marked crosswalks (install advanced stop bar markings and signage, overhead signage, curb ramps and pedestrian scale lighting)[14]	▪ Entire corridor
Add triangle-shaped refuge islands adjacent to bus-only lane to assist pedestrians crossing the cross-streets[14]	▪ SE 8th Ave and SE 9th Ave (north side)
Provide pedestrian refuge island in the northeast corner[14]	▪ SE Milwaukie Ave
Square off intersection to improve pedestrian crossings[14]	▪ SE 20th Ave (SW corner)
Provide leading pedestrian phase at signalized intersections to allow pedestrians to enter the intersection before vehicles[9]	▪ Generally: SE 20th Ave to SE 33rd Ave
Prohibit right turns at intersections with a crash history involving right turning vehicles or limited sight distance[9]	▪ SE 21st Ave ▪ SE 26th Ave ▪ Generally: SE 20th Ave to SE 33rd Ave
Move the stop bar closer to the intersection to increase sight distance[9]	▪ SE 22nd Ave (NB approach)

Recommendation	Location
Provide curb extensions with stormwater facilities on cross-streets to shorten crossing distances for pedestrians and calm motor vehicle traffic turning into the neighborhood; coordinate with bus stop at SE 24th Ave[9,14]	▪ SE 22nd Ave to SE 26th Ave
Add an RRFB and pedestrian-scale lighting before crosswalk[5]	▪ SE 24th Ave
Expand pedestrian landing areas on the intersection corners to discourage pedestrians (e.g., students at Cleveland High School) from standing in the roadway[9]	▪ SE 26th Ave
Remove fence at the NW corner of Motel 6 property to improve sight distance[9]	▪ SE 31st Ave
Improve pavement markings[9]	▪ SE 31st Ave (Motel 6 exit-only driveway)
Upgrade unsignalized crossings to enhanced crossings with pedestrian refuge islands and RRFB[9]	▪ SE 31st Ave ▪ Generally: SE 20th Ave to SE 33rd Ave
Add new median refuge islands with a raised end, or "nose", to protect the crosswalk, street trees, and other enhancements (e.g., consistent signage, striping, and pedestrian-scale lighting treatments)[14]	▪ SE 31st Ave ▪ SE 34th Ave ▪ SE 36th Ave ▪ SE 45th Ave ▪ SE 47th Ave
Relocate ZipCar parking in east leg of the intersection farther south; complete sidewalk on the east side of the intersection; install a bulb-out that creates a buffer for parked cars on 33rd Ave[9]	▪ SE 33rd Ave
Remove obstructions for improved sight distance[8]	▪ Cesar E Chavez (NE corner)
Add audible warnings for crosswalks[8,14]	▪ Generally: Cesar E Chavez to SE 43rd Ave
Reduce cycle lengths, run half cycle lengths, implement leading pedestrian phase, implement a right-turn overlap (excluding pedestrians) to reduce pedestrian/bike delays[8]	▪ Generally: Cesar E Chavez to SE 43rd Ave
Replace pedestrian signal heads and push buttons to be consistent Entire corridor signalized intersections[8]	▪ Generally: Cesar E Chavez to SE 43rd Ave
Evaluate crosswalk locations[8]	▪ SE 42nd/43rd Aves

Recommendation	Location
Add enhanced, marked crosswalk; cut through existing median mid-block; rebuild raised end that protects the crosswalk, or "nose", of existing median at east leg of intersection (SE 79th Ave and SE 84th only); rebuild the end of existing median (SE 67th Ave and SE 75th Ave only)[14]	▪ Between SE 57th Ave and SE 58th Ave ▪ Between SE 79th Ave and SE 80th Ave ▪ Between SE 90th Ave and SE 92nd Ave ▪ SE 67th Ave (west leg of intersection) ▪ SE 75th Ave (east leg of intersection) ▪ SE 84th Ave
Install pedestrian and bicycle activated signals (e.g., HAWK signal)[14]	▪ Between SE 57th Ave and SE 58th Ave ▪ Between SE 79th Ave and SE 80th Ave
Add enhanced, marked pedestrian and bicycle crossing; construct a new median in the middle of the 62nd Ave intersection (prohibiting through movements and left turns onto Powell) or use existing cut through median island at 61st Ave and close driveway abutting Powell Blvd on the north side[14]	▪ SE 61st Ave or SE 62nd Ave
Lengthen crossing time for pedestrians[14]	▪ SE 71st Ave to SE 72nd Ave
Shorten crossing distances, make crosswalks more visible, and provide sufficient crossing time; pedestrian phases, automatic recall for pedestrian signals, right turn on red restrictions, curb reduction/extension, crossing island treatments, and red light cameras[17]	▪ SE 82nd Ave

Table 10. Vegetation Recommendations

Recommendation	Location
Add trees to existing and new median islands and along the sidewalk, where feasible[14]	▪ Entire corridor
Add a variety of tree species in median islands and along the sidewalk where feasible to provide canopy and increase the diversity of the urban canopy. Remove or trim trees so that branches are higher than 16' to maintain safety and driver sightlines; placement must meet 2006 ODOT guidelines for street trees[8,9,14]	▪ Entire corridor
Enlarge and provide new median; replace missing trees in existing tree wells and planting strips[14]	▪ Entire corridor
Build all new islands with pervious pavers and street trees with open wells[14]	▪ Entire corridor

Recommendation	Location
Install pervious pavers on existing median islands adjacent to marked crosswalks and retain remaining existing landscaping in medians, or remove all existing landscaping in medians and replace with pervious pavers[14]	▪ Entire corridor
Introduce trees recommended by the City Urban Forester[14]	▪ Entire corridor
Maintain overgrown landscaping[14]	▪ Entire corridor ▪ SE 9th Ave (behind ped. overpass) ▪ SE 17th Ave (along ped. path on underpass) ▪ East of SE 50th Ave (behind sound walls) ▪ Between SE 79th Ave and SE 80th Ave (on landscaped berm)
Incorporate art on existing pedestrian overpass and maintain surrounding landscaped areas[14]	▪ Between SE 8th Ave and SE 9th Ave
Add landscaped median island[14]	▪ Between SE 8th Ave and SE 9th Ave ▪ SE 23rd Ave ▪ SE 24th Ave
Enlarge and add vegetation to the refuge island in the west leg of the intersection. Add sidewalk planters in furnishing zone[14]	▪ SE Milwaukie Ave
Increase the size of tree wells to 4' wide and 6' long (parallel to the curb) to improve the health of exiting trees (where sidewalk zone is at least 10' wide in the interim, all trees in long-term); maintain existing trees and fill in missing trees with new species[14]	▪ West of SE 50th Ave

Table 11. Sidewalk Ramps Meeting ADA Standards Recommendations

Recommendation	Location
Install dual curbs where they do not exist and add single ramps at T-intersections on the non-corner side of the street, where feasible[14]	▪ Entire corridor
Square off currently rounded corner curb returns along the south side and build with dual curb ramps[14]	▪ Generally: SE 7th Ave to SE 10th Ave
Ensure that upgrades to sidewalks, bus stops, and pedestrian ramps are ADA compliant[8]	▪ Generally: Cesar E Chavez to SE 43rd Ave
Add curb ramps[14]	▪ SE 71st Ave cul-de-sac

Table 12. Sidewalk Repair Recommendations

Recommendation	Location
Implement different sidewalk treatments to improve pedestrian environment[14]	▪ Entire corridor
Build sidewalks (10' wide minimum) where there are none[17]	▪ Entire corridor
Widen existing sidewalk corridors to at least 10' (14' preferred) with landscaped buffer between pedestrians and motor vehicles[17]	▪ Entire corridor
Acquire a minimum of 2' private property to widen sidewalk realm to 12' minimum; maintain a minimum 6'-wide through Pedestrian Zone and 18" Frontage Zone'[14]	▪ Entire corridor
Extend sidewalks through the planting strip to the curb at intersections, so pedestrians can cross Powell Blvd[14]	▪ East of SE 50th Ave
Coordinate sidewalk improvements with future bikeway facility[14]	▪ SE 72nd Ave to SE 92nd Ave

Table 13. Drainage (including UICs) Recommendations

Recommendation	Location
Incorporate stormwater management facilities in the Furnishing Zone and curb extensions, where feasible[14]	▪ Entire corridor
Address sewer capacity problems[14]	▪ SE 7th Ave to SE 13th Ave ▪ SE 24th Ave to SE 25th Ave ▪ SE 66th Ave to SE 76th Ave ▪ SE 82nd Ave
Incorporate stormwater management facilities[14]	▪ Milwaukie Ave intersection in existing islands ▪ SE 28th Ave and Waverleigh in the bus stop plaza ▪ SE 92nd Ave (northeast corner)
Construct a curb extension to shorten the crossing distance and provide stormwater management for runoff from Powell Blvd. Up to 20,000 sf of street runoff from the EB lanes can be managed on the east side of the extension[14]	▪ SE 24th Ave (south side of Powell Blvd)
Install pervious pavers in the furnishing zone to accommodate street furniture[14]	▪ West of SE 50th Ave

Recommendation	Location
Close existing bus pull outs; integrate stormwater facilities into the former pull out areas[14]	▪ SE 67th Ave

Table 14. School Zone Recommendations

Recommendation	Location
Add overhead school crossing signs and/or high visibility crosswalk pavement markings[8]	▪ SE 42nd and 43rd Aves

Table 15. Bicycle System Connectivity and Condition Recommendations

Recommendation	Location
Add bike lanes and eliminate SB merging travel lane[14]	▪ SE Milwaukie Ave
Address barrier between neighborhoods to pedestrians and bicycles created by the railroad and railroad underpass (long-term) Improve the existing underpass with increased maintenance, lighting, murals, working with the homeless and police patrol (near-term)[14]	▪ SE 17th Ave Railroad Underpass
Use bike detection at signalized intersections[9]	▪ Generally: SE 20th Ave to SE 33rd Ave
Install bike boxes at signalized intersections[8,9]	▪ Generally: SE 20th Ave to SE 33rd Ave ▪ Generally: Cesar E Chavez to SE 43rd Ave
Install bike lanes on cross-streets heavily traveled by bicyclists; add bike lanes to intersection approaches to lead bicyclists to bike boxes or detection where appropriate[9]	▪ SE 21st Ave ▪ SE 26th Ave ▪ SE 33rd Ave ▪ Generally: SE 20th Ave and SE 33rd Ave
Widen both sides by removing the landscape strip and moving the bus stop to accommodate wider bike lanes or remove bike lanes and replacing with a bike crossing farther east[9]	▪ SE 26th Ave
Add bike detection and lighting[14]	▪ SE 71st Ave ▪ SE 72nd Ave
Provide (and sign) a route for bikes through the gap in the sound wall[14]	▪ Between SE 71st Ave and SE 72nd Ave
Mountable raised concrete bike lane; move back the curb and narrow the landscaped strip; provide a 5'– 6.5' bike lane elevated 3"-4" above roadway; provide an additional 1' rolled curb transition zone[14]	▪ Between 72nd Ave and SE 92nd Ave (north side of Powell)

Recommendation	Location
Elevated one-way bikeway adjacent to sidewalk except at corners; street level adjacent to travel lanes at intersections; Minimum of 4' wide (preferred 5' wide) bikeway facility. Buffer transition between the bikeway and sidewalk with tactile warning. Minimum 6'-wide (wider is preferred) concrete pedestrian through zone. Reduce the frontage zone, parking lot, and frontage zone where needed and where possible to provide the bikeway and pedestrian through zone[14]	▪ Between 72nd Ave and SE 92nd Ave (south side of Powell Blvd)

Table 16. Other Recommendations

Recommendation	Location
Bus	
Install concrete pads at bus stops at both the front and back door locations[14]	▪ Entire corridor
Relocate near side bus stops to the far side, if possible[9]	▪ Generally: SE 20th Ave to SE 33rd Ave
Eliminate or relocate EB TriMet stop to far side of crosswalk[9]	▪ SE 24th Ave
Install a queue jump for EB buses[9]	▪ SE 26th Ave
Consolidate bus stops to eliminate WB bus stop[8]	▪ SE 40th Ave
Access Management	
Develop an access management plan for Powell Boulevard that may review locations with access points overlapping (including pedestrian refuge islands), and consider a policy to consolidate driveways upon redevelopment[9]	▪ Entire corridor, with emphasis between SE 29th Ave and SE 31st Ave
Close residential driveway[9]	▪ SE 26th Ave (SE corner)
Extend traffic separator to restrict left-turn movements out of the Safeway Driveway[8]	▪ Cesar E Chavez
Evaluate alternatives for improving the third lane such as improving "Right Turn Ends" sign visibility or placement, adding merge arrow pavement markings, installing "No Parking" signs, or drop the lane as a right turn only lane at Cesar Chavez and eliminating the third EB lane from Cesar Chavez to 40th Ave. This will create an opportunity for a far side bus pullout in the WB direction[8]	▪ SE 40th Ave (EB)
Operations	
Reconfigure intersection lanes[14]	▪ SE Milwaukie Ave

Recommendation	Location
Add right-turn arrow pavement markings and one-way signage[9]	▪ SE 20th Ave (NB and SB approach)
Remove some on-street parking on SE 21st Ave[9]	▪ SE 21st Ave
Allow right-turns on red with shared through/right lane closer to the curb[9]	▪ SE 21st Ave
Re-orient existing angled on-street parking to parallel parking; widen sidewalk and/or add striping and signage indicating how to park[14]	▪ SE 22nd Ave
Install a new median just east of SE 23rd, to SE 24th, or from east of SE 23rd Ave to the left turn pocket for SE 26th Ave with turn pockets on SE 24th and SE 25th or as one contiguous median. All three alternatives call for pavers, street trees, and curb extensions on SE 22nd, 23rd, and 24th Aves[14]	▪ Between SE 22nd Ave and SE 26th Ave
Option 1:[9] Provide "Z" crossing for pedestrians to cross in two stages; remove WB left-turn pocket to enhance the median for pedestrians and signage; Reevaluate WB transit stop Install traffic signal to enhance existing marked pedestrian crossing and to accommodate bicycle crossings and connect with north-south bicycle corridor Review McDonald's site plan and coordinate with them with the intent to orient entries towards the new crossing or use signage to direct people to the crossing. Close or relocate bus stops in possible Combine access points on the north side of Powell Blvd; add buffered landscape strip or bike racks on both sides of Powell Blvd	▪ SE 28th Ave ▪ SE 28th Place ▪ SE 29th Ave
Option 2:[9] Add traffic signal that allows through movements for bicyclists and restricts vehicle traffic to right-in/right-out on the side streets and considers bicycle detection Relocate pedestrian crossing to 29th Ave. Review McDonald's site plan and coordinate with them with the intent to orient entries towards new crossing or use signage to direct people to the crossing. Close or relocate bus stops if possible Install an enhanced crossing with an overhead RRFB in place of one in the center median to allow EB left-turn movements; review transit stop locations. Combine access points on the north side of Powell Blvd. Add buffered landscape strip or bike racks on both sides of Powell Blvd	
Make SB approach right-turn only (due to new pedestrian refuge median and restricted sight distance)[9]	▪ SE 31st Ave SB approach

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APPENDIX A

ABBREVIATIONS AND ACRONYMS

ADA	Americans with Disabilities Act
Ave	Avenue
Blvd	Boulevard
City	City of Portland
EB	eastbound
FYA	flashing yellow arrow
HAWK	high intensity crosswalk beacon
HB	House Bill
HCT	high capacity transit
I-205	Interstate 205
ITS	intelligent transportation system
LED	light-emitting diode
NB	northbound
NE	northeast
NW	northwest
ODOT	Oregon Department of Transportation
OHP	Oregon Highway Plan
ORS	Oregon Revised Statute
OTC	Oregon Transportation Commission
ROW	right of way
RRFB	rectangular rapid flashing beacon
RTP	Regional Transportation Plan
RVC	reduction of vehicle-carrying capacity
SB	southbound
SE	southeast
St	Street
STIP	Statewide Transportation Improvement Program
SW	southwest
TSP	Transportation System Plan
WB	westbound