Traffic Management Plan (TMP)

For

Clackamas Regional Center Mobility Improvements Project

Prepared by

DKS

Version 1.0
March 23, 2018
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1.0 Introduction

The purpose of this Traffic Management Plan (TMP) is to provide the details behind the traffic control plan (TCP) and other measures that will be implemented for the construction of the Clackamas Regional Center (CRC) Mobility Improvements Project.

The TCP aims to minimize disruptions to motorists, the freight industry, and communities without compromising public and worker safety or the quality of work being performed.

1.1 Project Description

The project area is located within Clackamas County. The area is bounded by Sunnybrook Boulevard and Sunnyside Road from Stevens Road to OR213 (82nd Avenue). The project area also includes a segment of Harmony Road from OR213 to the Aquatic Center entrance, west of Fuller Road. Figure 1 shows a vicinity map of the project area with proposed improvements.

The project aims to improve mobility in the Clackamas Regional Center and relieve congestion on Sunnyside Road near the I-205 overcrossing.

This TMP includes temporary traffic control and detours for the following work areas:

- Harmony Road: RRFB to OR213 (82nd Avenue)
- Sunnyside Road: OR213 (82nd Avenue) to Stevens Road
- Sunnyside Connector Road: OR213 (82nd Avenue) to Sunnyside Road
- Sunnybrook Boulevard: OR213 (82nd Avenue) to east of 84th Avenue
- OR213 (82nd Avenue): South of Sunnybrook Boulevard to south Clackamas Town Center Driveway
- Northbound I-205 Frontage Road: Sunnybrook Boulevard to Sunnyside Road
- Sunnybrook Boulevard/93rd Avenue
- Sunnybrook Boulevard/I-205 Northbound Ramps
- Sunnybrook Boulevard/97th Avenue/Mather Road

Figure 1: Project Area
1.2 Proposed Improvements

Multimodal transportation improvements identified in Phase 1 include new or extended travel lanes, widening of the I-205 overcrossing, signal modifications, bike lanes, new or improved sidewalks, multimodal pathways, storm drainage facilities, landscaping, and street lighting. These recommendations aim to improve the safety and operations of motor vehicle, transit, pedestrian, and bicycle facilities in three zones, as shown in Figure 2.

Figure 2: Project Area Zones

Zone 1: This area focuses on the SE 82nd Avenue corridor from north of Sunnyside/Harmony Road to south of Sunnybrook Boulevard. This zone includes Clackamas Community College – Harmony Campus, the North Clackamas Aquatic Center, Three Creeks natural area, and Toys R Us, with single-family dwellings north of Harmony Road.

Recommended Improvements

- Add sidewalks on the north side of Harmony Rd from intersection with SE 82nd Ave to Clackamas Community College
- Add new pedestrian crossing with RRFB on Harmony Rd at Clackamas Community College
- Improve bike facilities on Harmony Rd
- Add an east-west ped/bike connection from the existing path south of the North Clackamas Aquatic Center to connect with Sunnybrook Blvd. Add short ped/bike segments to create north-south connection along the Aquatic Center from the existing path to Harmony Rd
- Extend traffic separator on Harmony Rd, west from SE 82nd Ave to allow for access management and the extension of the eastbound left turn lane
- Add new pedestrian crossing with RRFB on Fuller Rd at Southgate St intersection
- Restripe crosswalk and improve sight distance issue at the Harmony/Fuller intersection
- Improve lighting along Harmony Rd within construction limits
- Widen SE 82nd Ave to allow for northbound and southbound dual lefts and single right turn lanes
Install transit amenities along SE 82nd Ave within construction limits. Provide new southbound bus stop north of 82nd Ave/Sunnyside Rd intersection and relocate existing bus stops

- Maintain and/or add bike lanes as required throughout the project limits
- Install traffic separators along SE 82nd Ave for access management from Sunnyside Dr to Sunnybrook Blvd
- Extend the Sunnyside Rd multi-use path to the 82nd/Sunnyside/Harmony intersection
- Provide stormwater management improvements
- Review options for gateway features
- Widen SE 82nd Ave to allow for southbound dual lefts at the intersection of Sunnybrook Blvd and increase left turn queue storage
- Extend queue storage for westbound dual lefts on Sunnybrook Blvd
- Improve bus stop waiting area on southbound SE 82nd Ave/Sunnybrook Blvd to include a bus pullout

**Zone 2:** This area includes a segment of Sunnyside Road between 84th Avenue and I-205. This area forms the core of the commercial uses in the Clackamas Regional Center, with multiple accesses to the Clackamas Town Center Mall and Clackamas Promenade.

**Recommended Improvements**

- Modify boulevard treatment from SE 82nd Ave to I-205 to include lane redesign, median improvements, sidewalk reconstruction, improved lighting, and landscaping
- Provide signal improvements, including flashing yellow arrow for left turns at signalized intersections
- Construct a new pedestrian connection along the Clackamas Promenade’s eastern access drive from the crosswalk on Sunnyside Rd at the 9000 block (Petco)
- Construct stormwater planters
- Construct a cycle track on the south side of Sunnyside Rd from 84th Ave to I-205 bridge
- Remove overgrown vegetation and provide lighting as needed
- Remove slip-lane from I-205 to Clackamas Town Center near the Claim Jumper restaurant

**Zone 3:** This area includes the I-205 interchange at Sunnyside Road and Sunnybrook Boulevard. The interchange is the primary access to the Clackamas Regional Center. Sunnyside Rd and Sunnybrook Blvd also serve as major east-west connectors to the residential and commercial uses in the area.

**Recommended Improvements**

- Construct walkway from Max Green Line platform directly south through existing fence along north and eastern edges of the Clackamas Town Center southeast parking lot to the I-205 multi-use path.
- Install a pedestrian signal to cross the right turn lane at the I-205 southbound off-ramp
- Widen I-205 bridge to accommodate eastbound and westbound dual left turn lanes and 10-foot multi-use paths on north and south side of bridge
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- Widen I-205 northbound off-ramp to Sunnyside Rd
- Construct sidewalk extension/bulb to accommodate pedestrians and cyclists around signal pole at the Sunnyside Rd/I-205 northbound interchange
- Install green transition bike lanes as required
- Restripe eastbound lanes on Sunnybrook Blvd between I-205 northbound off-ramp and 97th Ave. Provide a right turn lane, bike lane, and two thru lanes. Modify pork chop island and signal as necessary
- Modify striping and signal phasing at Sunnybrook Blvd/93rd Ave

1.3 TMP Goals

The primary purpose of the TMP is to address the construction-related traffic impacts of this project in a cost-effective and timely manner with minimal interference to the traveling public. The goals of this TMP are as follows:

- Describe the project construction footprint
- Aid in creating a project development team and decision-making environment that looks at options available to limit and mitigate anticipated construction impacts
- Communicate what elements will be included in the project to mitigate any anticipated disruptions to travelers and freight without compromising public or worker safety

To accomplish these goals, this TMP incorporates the following elements:

- Description of the project area
- Description of the proposed improvements
- Identification of other agency and local jurisdiction projects in the area requiring coordination
- Identification of project stakeholders
- Identification of traffic mobility issues during construction
- Identification of restricted work times
- Consideration of over-sized vehicle accommodations
- Selection of traffic mitigation measures
- Description of construction staging and schedule
- Recommendations for managing access during construction
- Provisions for Incident Management and Mobility Communication Plans

2.0 Study Area Characteristics

This section summarizes existing transportation conditions in the project vicinity that are pertinent to this TMP, including a description of existing traffic characteristics.

2.1 Location

The project is located in Clackamas County. The project incorporates roadways under the jurisdiction of Clackamas County, as well as Oregon Department of Transportation (ODOT) within ODOT Region 1 and ODOT Maintenance District 2B.
2.2 Concurrent Construction Projects

To minimize the cumulative delay for traffic traveling through the project area on Sunnyside Road, Sunnybrook Boulevard, and OR213 (82nd Avenue), the project must be coordinated with other projects in the area. When possible, projects should be scheduled during different time periods or staged to avoid overlapping periods of high delays. Communication protocols are described in Section 8.0.

Other construction projects planned within or near the project vicinity are identified in Table 1.

Table 1: Concurrent Construction Projects

<table>
<thead>
<tr>
<th>Scheduled Construction</th>
<th>Project</th>
</tr>
</thead>
<tbody>
<tr>
<td>Spring 2018 – Late 2019</td>
<td>I-205 SB Auxiliary Lane and Paving</td>
</tr>
<tr>
<td>Late 2018 – Summer 2019</td>
<td>I-205 NB M.P. 13.3 Sunnybrook Auxiliary Lane</td>
</tr>
<tr>
<td>Late 2018 – Fall 2019</td>
<td>OR224: I-205 to Rusk Rd Widening</td>
</tr>
<tr>
<td>Late 2018 – Late 2019</td>
<td>I-205: NB Auxiliary Lane and Paving</td>
</tr>
</tbody>
</table>

2.3 Roadway Network

Characteristics of the major roadways in the study area are presented in Table 2. Data collected includes functional classification, roadway cross-section, posted speed limits and presence of a median.

82nd Avenue runs north-south connecting I-205 and 82nd Drive to the study area and north to Southeast Portland. It generally has two lanes in each direction and a center left-turn lane. It is classified by the Oregon Department of Transportation (ODOT) as a District Highway with a special transportation area (STA) designation.2

Sunnyside Road and Sunnybrook Boulevard form the primary east-west travel routes through the study area and are classified by Clackamas County as Major Arterials. Sunnyside Road varies between a five-lane and up to eight-lane cross section with many of the signalized intersections in the study area having multiple turn lanes. Sunnybrook Boulevard maintains a four to five-lane cross-section through the study area. These roadways provide access to the Clackamas Town Center from I-205 (northbound and southbound) and 82nd Avenue.

The remaining roadways in the study area, 84th Avenue, 93rd Avenue, and 97th Avenue, are collectors. These roadways provide intermediate north-south travel routes through the study area and generally maintain a two to three-lane cross-section.
Table 2: Existing Roadway Characteristics

<table>
<thead>
<tr>
<th>Roadway</th>
<th>Functional Classa</th>
<th>Jurisdiction</th>
<th>Cross Section</th>
<th>Raise Median</th>
<th>Posted Speed</th>
</tr>
</thead>
<tbody>
<tr>
<td>82nd Avenue</td>
<td>Principal Arterial</td>
<td>ODOT</td>
<td>5-lane</td>
<td>No</td>
<td>35-55 mph</td>
</tr>
<tr>
<td>Sunnyside Road</td>
<td>Major Arterial</td>
<td>Clackamas County</td>
<td>5-8 lanes</td>
<td>Yes</td>
<td>40 mph</td>
</tr>
<tr>
<td>Sunnybrook Boulevard</td>
<td>Major Arterial</td>
<td>Clackamas County</td>
<td>4-5-lane</td>
<td>Yes</td>
<td>35 mph</td>
</tr>
<tr>
<td>Harmony Road</td>
<td>Major Arterial</td>
<td>Clackamas County</td>
<td>2-4 lanes</td>
<td>No</td>
<td>40 mph</td>
</tr>
<tr>
<td>84th Avenue</td>
<td>Collector</td>
<td>Clackamas County</td>
<td>3-lane</td>
<td>No</td>
<td>25 mph</td>
</tr>
<tr>
<td>93rd Avenue</td>
<td>Collector</td>
<td>Clackamas County</td>
<td>2-3 lanes</td>
<td>No</td>
<td>25 mph</td>
</tr>
<tr>
<td>97th Avenue</td>
<td>Collector</td>
<td>Clackamas County</td>
<td>2-lane</td>
<td>No</td>
<td>30 mph</td>
</tr>
</tbody>
</table>

* Functional classification based on Clackamas County TSP, 2013

2.4 Existing Traffic Conditions

In the project area, 82nd Avenue carries approximately 30,400 vehicles per day, Sunnyside Road carries 20,000 vehicles per day, and Sunnybrook Boulevard carries 13,800 vehicles per day. Heavy vehicles represent about 4.9 percent of the traffic on OR213 and 2.9 percent on Sunnyside Road.

2.5 Project Stakeholders

During development of the construction documents, as well as during construction, stakeholders can be a valuable source of information for the project when it comes to identifying impacts to utilities present near the construction area, special events, harvest schedules, other construction activities within the area, emergency services, freight movements, and public sentiment concerning the proposed project.

There may be times during project construction when it becomes necessary to contact stakeholders in the area to inform them of new developments such as schedule changes, traffic control changes, road closures, or major incidents. Communication protocols are described in Section 8.0.

A list of the primary stakeholders in the project area including major road authorities, emergency service providers, government contacts, local utilities, and other is compiled in Table 3.
### Table 3: Project Stakeholders List

<table>
<thead>
<tr>
<th>Agency/Organization</th>
<th>Name</th>
<th>Title</th>
<th>Phone</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Agency Representatives</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Clackamas County</td>
<td>Dave Queener</td>
<td>Project Manager</td>
<td>(503) 742-4322</td>
</tr>
<tr>
<td></td>
<td>Terry Mungenast</td>
<td>Construction Project Manager</td>
<td>(503) 742-4656</td>
</tr>
<tr>
<td>Oregon Department of Transportation (ODOT)</td>
<td>Rick Garrison</td>
<td>Maintenance District 2B</td>
<td>(503) 653-5655</td>
</tr>
<tr>
<td></td>
<td>Geoff Bowyer</td>
<td>Region 1 TMOC</td>
<td>(503) 731-4703</td>
</tr>
<tr>
<td></td>
<td>Doug Anderson</td>
<td>Signal Operations (East Side)</td>
<td>(503) 731-8213</td>
</tr>
<tr>
<td></td>
<td>Motor Carrier Headquarters</td>
<td></td>
<td>(503) 378-5849</td>
</tr>
<tr>
<td>City of Happy Valley Engineering Division</td>
<td>Carol Earle</td>
<td>City Engineer</td>
<td>(503) 783-3815</td>
</tr>
<tr>
<td>City of Milwaukie Engineering Department</td>
<td>Charles Eaton</td>
<td>Engineering Director</td>
<td>(503) 786-7605</td>
</tr>
<tr>
<td>TriMet</td>
<td>Public Relations</td>
<td>-</td>
<td>(503) 962-4910</td>
</tr>
<tr>
<td><strong>Emergency Services</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dispatch Phone for Emergency Response</td>
<td>Emergency Only</td>
<td>-</td>
<td>911</td>
</tr>
<tr>
<td>Oregon Emergency Management</td>
<td>Non-Emergency</td>
<td>-</td>
<td>(503) 378-2911</td>
</tr>
<tr>
<td>Clackamas County Disaster Management</td>
<td>-</td>
<td>-</td>
<td>(503) 655-8378</td>
</tr>
<tr>
<td>Multnomah County Fire &amp; Rescue</td>
<td>-</td>
<td>-</td>
<td>(503) 742-2600</td>
</tr>
<tr>
<td>Oregon State Police- Portland Area</td>
<td>Andy McCool</td>
<td>Lieutenant</td>
<td>(503) 731-3029</td>
</tr>
<tr>
<td><strong>Schools</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>North Clackamas School District</td>
<td>-</td>
<td>-</td>
<td>(503) 353-6000</td>
</tr>
<tr>
<td>Clackamas Education Service District</td>
<td>General Number</td>
<td>-</td>
<td>(503) 675-4000</td>
</tr>
<tr>
<td><strong>Utilities</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Oregon Utility Notification Center</td>
<td>-</td>
<td>-</td>
<td>(800) 332-2344</td>
</tr>
<tr>
<td>See Section 00150 of the Special Provisions for project-specific utility contacts (Special Provisions to be developed during final design)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Other</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Oregon Trucking Association</td>
<td>-</td>
<td>-</td>
<td>(503) 513-0005</td>
</tr>
<tr>
<td>AAA Oregon</td>
<td>-</td>
<td>-</td>
<td>(800) 444-8091</td>
</tr>
</tbody>
</table>

### 3.0 Factors Impacting Construction Staging

#### 3.1 Proposed Improvements and Impacts to Traffic Flow

This project includes improvements for the areas listed in Section 1.1. The most notable construction work is the widening of the I-205 overcrossing, which will require lane closures on I-205 ramps, Sunnyside Road, and Sunnybrook Boulevard. To mitigate the impact to traffic flow, full-closures and major lane closures will occur during nighttime hours.
3.2 Existing Restrictions

ODOT Motor Carrier Transportation Division (MCTD)\(^1\) currently lists no existing road and bridge restrictions for the project area that will be in effect during construction of the project. Current information should be obtained from MCTD at the start of construction.

3.3 Alternate Routes

In addition to planned detour routes as discussed in Section 6.2, alternate routes exist that can be chosen by drivers who wish to avoid construction areas, or that can be used in case of an incident. Sunnybrook Boulevard and Sunnyside Road can be used interchangeably as a through route or as access to I-205. Additionally, the I-205 overcrossing at Monterey Avenue may be used to avoid construction areas.

These routes and roadways have not been reviewed or approved by local jurisdictions for use as detours. These are provided for emergency use and for information regarding routes that may see increased traffic during construction.

3.4 Environmental Issues

There are currently no identified environmental issues associated with the project. However, the migratory bird nesting period spans from March 1\(^{st}\) to August 31\(^{st}\). All measures to prevent nesting or roosting must be performed by the contractor outside of this time period and in accordance with the Migratory Bird Treaty Act.

3.5 Seasonal Restrictions

There are several seasonal restrictions on construction activities in the project area:

- Due to the large amount of commercial land use in Clackamas Town Center, significant roadwork should not take place during the holiday season (November – December).
- Some construction activities such as paving or pavement marking installation require relatively dry and warm conditions.
- Seasonal restrictions for striping vary by the manufacturer. The moisture level, temperature level, and curing time restrictions should be verified with the paint manufacturer before the striping begins.

3.6 Construction Noise Regulations

Project related construction noise is governed by the Clackamas County Noise Control Ordinance.\(^2\) Sounds caused by construction activity are not regulated between the hours of 6 a.m. to 10 p.m. of the same day. Construction noise between 10 p.m. and 6 a.m. the following day is limited to 50 dBA, measured at or within three feet of a window or door of a noise sensitive unit.

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\(^1\) ODOT Motor Carrier Transportation Division, “Road and Bridge Restrictions”, as of June 26, 2017.

\(^2\) Clackamas County Code, Section 6.05 “Noise Control”
Because of the restrictions on nighttime noise, a noise variance from Clackamas County will be required for nighttime construction.

4.0 Potential Mobility Issues

4.1 Traffic Mobility Issues during Construction

Motor vehicle traffic on Sunnyside Avenue, Sunnybrook Avenue, and 82nd Avenue will experience mobility impacts due to reduced lane widths, lane closures, or full closures/detours during the project. Restrictions to roadway widths are discussed in Section 4.2, lane closures are discussed in Section 6.1.3, and detours are discussed in Section 6.2. Local connector roads, including 84th Avenue, 93rd Avenue, and 97th Avenue, as well as I-205 ramps at Sunnyside Road and Sunnybrook Boulevard, will also experience mobility issues because of construction.

Pedestrian and bicycle mobility will also be affected by construction activities. Sidewalks will be closed throughout the project area and lane closures may restrict access to bike lanes. Strategies for providing safe and equivalent access through and around the work zone for pedestrians will primarily include the use of pedestrian channelizing devices and pedestrian detour routes. While existing pedestrian facilities consist of mostly paved shoulders and marked crosswalks at signalized intersections, there is pedestrian activity within the project area due to the adjacent land uses. Temporary pedestrian access routes (TPAR’s) will be developed and shown on the temporary traffic control plans developed as part of the final design process. These plans will detail the location of the pedestrian channelizing devices, show the pedestrian detour route signing/barricades, and serve to notify the contractor of the anticipated pedestrian activity through and around the work zone. Where existing bike lanes are impacted, every effort will be made to provide dedicated and protected facilities (e.g. behind concrete barrier).

4.2 Consideration of Oversized Vehicles

I-205 and OR213 are part of the National Highway System. I-205 is also designated as a Freight Route by ODOT.3 It is essential that any temporary lane restrictions or detours can accommodate large trucks during construction. The use of lane closures on this corridor may impact the timely and dependable movement of goods through the region.

When a project restricts the width, length, height, or weight of vehicles through a work zone or detours trucks around a work zone, the MCTD must be notified by using the web-based electronic version of the “Highway Restriction Notice – Size and/or Weight” form (Form No. 734-2357) at least 35 calendar days before the restriction or detour takes effect.

4.3 Input from the Public and Stakeholders

Additional information to be provided as public involvement process is completed.

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3 Oregon Highway Plan, Oregon Department of Transportation, 1999, Appendix D
4.4 Local Agency Coordination

Local agencies should be contacted before beginning construction on this project to coordinate any issues that may not be included in this document. Close coordination with local agencies is necessary for the planning and use of detour routes.

Communication protocols are described in Section 8.0. A list of known projects near the project area is included in Section 2.2. Other possible coordination issues would be additional construction project (public or private), detour routes, maintenance activities, emergency situations, local events, etc. A list of agency contacts is included in Section 2.5.

4.5 Holidays and Events

Traffic can be impacted by holidays and local events, as well as seasonal activities. Local events scheduled in the project vicinity that would impact the construction schedule will be identified. Lane and roadways closures not included in the approved TCP will not be allowed during the following holidays:

- New Year’s Day: January 1
- Memorial Day Weekend: Last Monday in May
- Independence Day: July 4
- Labor Day: First Monday in September
- Thanksgiving: Fourth Thursday in November
- Christmas Day: December 25

5.0 Traffic Mitigation Measures

To help meet the performance goals for congestion management and promote work zone safety, a range of traffic management strategies was considered for implementation. Table 4 lists the traffic management strategies that were selected for consideration on this project.

<table>
<thead>
<tr>
<th>X</th>
<th>Public Information and Outreach</th>
<th>X</th>
<th>Incident Management</th>
</tr>
</thead>
<tbody>
<tr>
<td>X</td>
<td>Project Website</td>
<td></td>
<td>Call Boxes</td>
</tr>
<tr>
<td>X</td>
<td>Informational Mailers</td>
<td></td>
<td>Construction Zone Enhanced Enforcement Program</td>
</tr>
<tr>
<td>X</td>
<td>Open Houses</td>
<td></td>
<td>Dedicated Service Patrol</td>
</tr>
<tr>
<td>X</td>
<td>Motorist Information/ITS</td>
<td>X</td>
<td>Traffic Surveillance Stations (loop detectors and CCTV)</td>
</tr>
<tr>
<td>X</td>
<td>Variable Message Signs (VMS)</td>
<td>X</td>
<td>Cell Phones</td>
</tr>
<tr>
<td>X</td>
<td>Ground Mounted Signs</td>
<td>X</td>
<td>Traffic Control Officers</td>
</tr>
<tr>
<td></td>
<td>Commercial Traffic Radio</td>
<td></td>
<td>Full-Time Traffic Control Supervisor</td>
</tr>
<tr>
<td></td>
<td>Highway Advisory Radio (fixed and mobile)</td>
<td></td>
<td>Helicopter</td>
</tr>
<tr>
<td></td>
<td>Planned Lane Closure Website</td>
<td></td>
<td></td>
</tr>
<tr>
<td>X</td>
<td>TripCheck – ODOT’s ITS Website</td>
<td></td>
<td></td>
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<tr>
<td></td>
<td>Radar Speed Message Sign</td>
<td></td>
<td></td>
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<tr>
<td>X</td>
<td>Construction Strategies</td>
<td></td>
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<td></td>
<td>Incentive/Disincentive Provisions</td>
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<tbody>
<tr>
<td>HOV Lanes/Ramps</td>
</tr>
<tr>
<td>Park-and-Ride Lots</td>
</tr>
</tbody>
</table>
5.1 Public Information and Outreach

To maintain public support for projects and encourage changes in travel behavior during construction, the public must be properly notified and informed of construction activity. Notifying the public of the potential delays incurred while traveling through the corridor may encourage motorists to use alternate routes or plan trips to avoid peak travel times, while will help to manage congestion within the project area. The project is currently proposing to use a project website, informational mailers, and open houses to provide information to the public.

5.2 Motorist Information

- **Variable Message Signs:** Permanent Variable Message Signs (VMS) may be utilized at the discretion of Region 1 Traffic Management and Operations Center (TMOC) to notify motorists about incidents in the project area. For various stages of construction and for detours, portable changeable message signs should be used along I-205 to encourage motorists to use an alternative route during ramp and roadway closures.

- **Ground-mounted Signs:** Ground-mounted signs should be installed at each end of the work zone informing motorists of the road construction and the possibility of delay.

- **TripCheck (ODOT ITS Website) and CCTV Camera:** Including this project on ODOT’s ITS website [www.tripcheck.com](http://www.tripcheck.com) will help to inform users of construction activities. Increasing awareness may enhance work zone safety and promote use of alternate routes. There are several existing CCTV cameras in and around the project area. These cameras will be useful to provide construction-related traveler information.
5.3 Construction Strategies

- **Off Peak/Night/Weekend/Off Seasonal Work:** Night and weekend work will be necessary for any work that requires lane closures. Temporary lane closures should be done during off-peak hours or nights, if possible, to avoid excessive congestion.
- **Planned Lane/Ramp Closures:** Lane and ramp closures will be allowed during off-peak or nighttime hours, and will be coordinated with the Agency responsible for the closed facility.
- **Project Staging:** Construction in stages will be used to provide adequate work zones for the Contractor, separate workers from traffic, and create less delay for drivers.
- **Total Facility Closure:** A total closure can facilitate easier, faster, and safer construction while minimizing hazards for motorists and workers. During some portions of construction, short-term full closures of ramps may be necessary for demolition and construction activities. See Section 6.2 for detailed detour information for closure locations.
- **Truck Traffic/Permit Restrictions:** Width restrictions may be required at various locations, depending on existing roadway/lane widths and required work zones. Vertical restrictions may be required due to the overcrossing construction.
- **Coordination with Adjacent Construction:** Refer to Section 2.2 for nearby construction projects planned between 2017 and 2018. The coordination of this project with other projects in the area will help to avoid unnecessarily compounding motorist delay.
- **Temporary Signals:** Temporary signals will be used during major modifications or full replacements of existing signals. The following intersections will require a temporary signal:
  - Sunnyside Road/OR213 (82nd Avenue)
  - Sunnyside Road/I-205 Southbound Ramps
  - Sunnyside Road/I-205 Northbound Ramps

5.4 Incident Management/Emergency Communications Plan

- **Cell Phones:** It is recommended that mobile phones be present on-site at all times to quickly report incidents within the work zone.
- **Full-Time Traffic Control Supervisor:** Response time to incidents is generally faster when there is a full-time traffic control supervisor (TCS) on site to make quick decisions and implement contingency plans as necessary.

5.5 Alternate Route Strategies

Several exit or entrance ramps will need to be closed at various times during the project to facilitate work at ramp intersections. Successive ramps will not be closed concurrently, and during a closure, a detour route, as described in Section 6.2.2, will be provided.

6.0 Recommended Course of Action

This section summarizes the planned construction staging, lane restrictions, detours, and restricted work times proposed for construction of the CRC Mobility project.
6.1 Proposed Construction Schedule and Staging

6.1.1 Project Schedule

The project is scheduled to bid beginning November 2018. Construction is set to begin in March 2019 and will be completed by December 2020. However, refinements to this schedule will likely be made during construction.

6.1.2 Description of Planned Construction Staging

The widening of the Sunnyside Road bridge over I-205 will be completed in four construction stages.

- **Stage I:** Remove existing south-side overhang. Maintain existing traffic control.
- **Stage II:** Reduce all lanes to 11 ft. and install temporary traffic barrier. Remove existing south side railing to facilitate closure pour.
- **Stage III:** Move traffic over and install temporary traffic barrier. Remove existing north-side rail and pour sidewalk.
- **Stage IV:** Remove temporary barrier and locate WB lanes to final location.

Work for the rest of the project will generally be completed in three stages.

- **Stage I:** Widening along the south side of Sunnyside Road, multi-use path construction, temporary signals, paving along SE 80th Avenue, and stormwater quality facility along SE 84th Avenue.
- **Stage II:** Widening work along OR213, north side of Sunnyside Road, north side of Sunnybrook Boulevard, and off-site striping modifications.
- **Stage III:** Median installation, paving, pavement markings, and landscaping.

6.2 Detours

6.2.1 General Detour Requirements

In general, an evaluation of each detour route was conducted to ensure that it would safely accommodate the type and amount of traffic expected to use the route. The review focused on the following criteria:

- **Local agency requirements:** Contact local agencies concerning detour routes that will run through their jurisdictions. Local agency personnel can provide information about local requirements, roadway constraints, and public issues. They can also typically provide answers to most of the items that follow.

- **Restrictions on vehicle weight, height and width:** Determine the largest vehicle expected to use the detour route so that it may be accommodated when selecting the route. Structures such as bridges, overcrossings, and undercrossings are a few examples of locations that may have restrictions.
- **Construction projects along the detour route:** Coordinate with other construction activities that could affect traffic operations as described in Section [Error! Reference source not found.].

- **Expected delays:** Evaluate the expected increase in travel time for motorists that will be required to use the detours.

- **Pavement conditions:** Verify that the existing roadway facilities can support additional vehicle loading from detoured traffic. Review pavement design reports and/or consult local jurisdictions.

- **Roadway geometry:** Verify that existing lane widths, horizontal curves, or vertical curves are designed to accommodate the type of vehicles that will be detoured.

- **Safety:** Review the detour route for bike facilities, school or other special roadway crossing treatments. Determine the effect the detoured vehicles will have on these facilities.

- **Intersections:** For each intersection along the detour route, review turn radii to verify the largest expected vehicle can be accommodated and whether the intersection traffic control is appropriate for the increase in vehicle volumes. In addition, verify auxiliary turn lanes and that the amount of existing storage is sufficient for increased traffic volumes. Evaluate additional queuing caused by detour traffic at each intersection and the impacts excessive queuing may have (e.g. excessive delay, blocking adjacent intersections or railroad crossings, and safety issues).

- **Duration of detour:** Determine the amount of time the detour will be required.

- **Adjacent land use:** Determine which businesses, residences, and other land uses will be affected by the detour. Depending on the level of impact, some type of public announcement may be required and should be coordinated with local jurisdiction personnel. Schools located on detour routes can be affected by increases in noise levels.

- **Alternate routes:** Establish an alternate detour route should a primary detour route have to be closed. This alternate route would be part of a contingency plan should an unforeseen event occur that would close the detour route for an extended period of time. Alternative routes may not be possible in all cases. The contingency plan should reflect these cases.

- **Permanent signing:** Determine which existing signs need to be covered or modified to accommodate the detours.

### 6.2.2 Project-Level Detour Information

Detour route information to be provided as detour routes are identified and evaluated.

### 6.3 Variances and Procedures Requiring ODOT Approval

Speed reductions will be considered if subsequent analysis or further discussions with stakeholders indicate a temporary speed zone reduction is needed.

### 6.4 Access

Appropriate management of access is not only necessary for maintaining access to roadway-adjacent properties, but can significantly improve roadway safety by minimizing disruptions in traffic flow,
reducing the number of conflict points, and simplifying motorist decision-making. Existing private driveways and public access points will be maintained during construction and the contractor will coordinate with Clackamas County so they can keep property owners and local agencies apprised of how construction activities may impact them.

### 6.5 Specifications

The following sections of the 2018 Oregon Standard Specifications for Construction, including Clackamas County modifications, and the associated Special Provisions should be included in the construction contract to ensure that mobility issues are addressed during construction:

- **00220 Accommodations for Public Traffic:** Typical project-specific items to be addressed under this section by Special Provision include:
  - Public safety and mobility
  - Notification to local agencies of road closures
  - Notification to ODOT’s Motor Carrier Transportation Division of vertical and horizontal roadway restrictions
  - Accommodations for Bicycles and Pedestrians
  - Lane closure restrictions
  - Road closure restrictions

- **00225 Work Zone Traffic Control:** Each project has specific items that are required for temporary work zone traffic control. Most items used by ODOT for temporary traffic control are listed in this section. Unless newly-approved traffic control devices are accepted for use on a project, this section has minimal additions.

### 7.0 Incident Management Plan

Incident management is a planned and coordinated program that detects and removes incidents from the highway and restores traffic capacity as safely and quickly as possible. Some incident management strategies are identified in Section 5.4. The Emergency Communication Plan and Contingency Plan are two important tools for incident management that are described in the following sections.

### 7.1 Emergency Communications Plan

The Emergency Communications Plan describes how communications will occur and lists important contact information for responding to an incident. Important elements include:

- Goals and objectives of the plan
- Key contacts and their contact information
- Emergency and Essential Services contacts
- Definitions of emergencies along with the response to these, including the communications response procedures
- Roles and responsibilities of those who will execute the plan
Maintaining an updated list of emergency contacts for use in the event of an incident shall be the responsibility of the contractor.

### 7.2 Contingency Plan

As a part of the Incident Management Plan, the Contingency Plan includes both traffic and contractor contingency plans. The traffic contingency plan addresses specific actions that will be taken to restore or minimize effects on traffic when the congestion or delay exceeds original estimates due to unforeseen events such as work-zone accidents, higher than predicted traffic demand, or delayed lane closures. The contractor contingency plan addresses activities under the contractor's control in the work zone.

### 8.0 Mobility Communications Plan

The Mobility Communication Plan provides communication strategies for informing affected road users, the public, and various project stakeholders about the project and changing work zone conditions. For this project, media releases will be coordinated and distributed by Clackamas County staff.

Table 5 summarizes contractor and Clackamas County communication responsibilities.

**Table 5: Communication Responsibilities**

<table>
<thead>
<tr>
<th>Responsible Party</th>
<th>Communication Target</th>
</tr>
</thead>
<tbody>
<tr>
<td>Contractor</td>
<td>ODOT Region 1, ODOT MCTD</td>
</tr>
<tr>
<td>Clackamas County staff</td>
<td>ODOT, City of Happy Valley and Milwaukie, Media, General public, Road users, Local agencies, Police, Fire, Emergency medical services, Schools, Other stakeholders not assigned to other parties, Railway industry, Shipping industry</td>
</tr>
<tr>
<td>ODOT MCTD</td>
<td></td>
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