DRAFT TRANSPORTATION MANAGEMENT PLAN

I-5/I-84 Banfield Interchange Bridge Ramps
Pacific Highway, MP 289.75 - MP 294.21
Multnomah Counties
Key #19531

Oregon Department of Transportation
Region 1 Traffic Unit
123 NW Flanders Street
Portland, Oregon  97209

Prepared by:
Simon Eng, P.E.
Region 1 Traffic Analysis Team Leader

April 3, 2017
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1 INTRODUCTION

The primary purpose of this project is to provide bridge deck structural overlays on three bridges and a deck seal on the fourth bridge at the I-5/I-84 interchange. This Transportation Management Plan (TMP) aims to address traffic impacts and operation strategies to be implemented during project construction and provide details behind the development of Traffic Control Plans (TCP) and other measures that will be put in place for construction to minimize disruptions to travelers and freight without compromising public or worker safety and the quality of the work being performed. The TMP should be considered a living document subject to additions and modifications throughout the life of the project.

1.1. Project Area Boundaries

The project is on I-84 at its interchange with I-5 in the City of Portland just east of the Willamette River. A vicinity map is provided in Figure 1.

1.2. Proposed Improvements

The main components of the project are:

- Provide structural overlay, retrofit bridge rail and replace compression joint seals on:
  - I-84 westbound to I-5 northbound ramp, Bridge No. 08588A
  - I-84 westbound to I-5 southbound ramp, Bridge No. 08588B
  - I-5 southbound to I-84 eastbound ramp, Bridge No. 08588C

- Provide deck seal on the I-5 northbound to I-84 eastbound ramp, Bridge No. 08588D.

- Pave the I-84 WB exit-ramp to Convention Center.

Figure 1: Vicinity Map
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. Goals of this Project-Level TMP include the following:

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

To accomplish these goals, the Project-Level TMP incorporates the following elements:

- Project area characteristics
- Factors impacting construction staging
- Potential mobility issues
- Proposed construction staging
- Lane closure restrictions
- Traffic management and operation strategies
- Incident management plan
- Public information and communication plan

2 Project Area Characteristics

The following section includes a summary of existing transportation conditions within the project area relevant to this TMP, including a description of the project area and traffic and roadway characteristics.

2.1 Traffic Characteristics

The 2015 annual average daily traffic (AADT) volumes on the five project ramps are shown in Table 1.

Table 1 - Existing 2015 Traffic Volumes

<table>
<thead>
<tr>
<th>Highway</th>
<th>Milepoint</th>
<th>2015 AADT</th>
<th>Ramp</th>
<th>Percentage of Trucks</th>
</tr>
</thead>
<tbody>
<tr>
<td>I-84 WB</td>
<td>0.37</td>
<td>24,280</td>
<td>I-84 westbound to I-5 northbound ramp, Bridge No. 08588A</td>
<td>4.6%</td>
</tr>
<tr>
<td>I-84 WB</td>
<td>0.37</td>
<td>55,120</td>
<td>I-84 westbound to I-5 southbound ramp, Bridge No. 08588B</td>
<td>4.6%</td>
</tr>
</tbody>
</table>
2.2 Roadway Characteristics
According to the 1999 Oregon Highway Plan, I-84 and I-5 are Interstate Freeways, State Freight Routes and federally designated Truck Routes on the National Highway System. I-84 runs east-west and is primarily a six-lane facility between I-5 and I-205. I-5 is the main north-south freeway in the Portland Metro area and is primarily a six-lane facility as well.

2.3 Location of Other Construction Projects
To minimize construction impacts for traffic traversing the project area on I-84, I-5 and the surrounding roadways, this project will be coordinated with other projects planned in the project area. These projects are listed below.

- 2016 Interstate Signing, K19201, Contract# ?
- Burnside Bridge Rehab, K18383, Contract# 14965
- I-5 Bridge Deck Rehab, K18564, Contract#?
- I-5 Interstate Bridge to Hassalo St, K17516
- I-5 Morrison Bridge Interchange Ramps Deck Seal, K18573
- I-5 Fremont Bridge, K19533 – This project must be completed prior to the I-84/I-5 Banfield Interchange Bridge Ramps project because the Fremont Bridge will be used for detour during the structural overlay of the I-84 westbound to I-5 southbound ramp.

2.4 Project Stakeholders
During project construction, there may be times when it becomes necessary to contact stakeholders in the project area regarding new developments such as schedule changes, traffic control changes, or major incidents. Primary stakeholders include major road authorities, emergency facility service providers, hospital medical facility providers, government contacts, local shopping centers, and local utilities.

Local emergency service providers will be notified of the expected I-84 and I-5 ramp closures to ensure emergency services are able to reach all locations in the project area during construction. The contractor should meet with the emergency service providers prior to the beginning of construction to confirm expectations for emergency services and coordinate communications. A list of project stakeholders is provided in Table 3.
Table 2 - Project Stakeholders

<table>
<thead>
<tr>
<th>Agency/Organization</th>
<th>Agency Representatives</th>
<th>Name</th>
<th>Title</th>
<th>Phone #</th>
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</thead>
<tbody>
<tr>
<td>Oregon Department of Transportation (ODOT)</td>
<td></td>
<td>Kelly Hawley</td>
<td>Project Leader</td>
<td>503-731-3001</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Dee Hidalgo</td>
<td>Community Affairs</td>
<td>503-731-8237</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Christy Jordan</td>
<td>MCTD Freight Mobility Coordinator</td>
<td>503-378-6192</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Tony Coleman</td>
<td>Region 1 Mobility Liaison</td>
<td>503-731-8480</td>
</tr>
<tr>
<td>City of Portland</td>
<td></td>
<td>Dylan Rivera</td>
<td>Public Information</td>
<td>503-823-5185</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Lisa Elbert</td>
<td>Signal and Lighting Engineer</td>
<td>503-823-5218</td>
</tr>
<tr>
<td>TriMet</td>
<td>Public Relations</td>
<td>--</td>
<td></td>
<td>503-962-4910</td>
</tr>
<tr>
<td>Washington Department of Transportation (WSDOT)</td>
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<td></td>
<td></td>
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<tr>
<td>Schools</td>
<td></td>
<td>Portland Public Schools</td>
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<td>503-916-2000</td>
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<tr>
<td>Emergency Services</td>
<td></td>
<td>Emergency Dispatch</td>
<td>Emergency Only</td>
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<td></td>
<td></td>
<td>Oregon Emergency Management</td>
<td>Non-Emergency</td>
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<tr>
<td></td>
<td></td>
<td>Multnomah County Office of Emergency Management</td>
<td></td>
<td>503-988-6700</td>
</tr>
<tr>
<td>Agency/Organization</td>
<td>Name</td>
<td>Title</td>
<td>Phone #</td>
<td></td>
</tr>
<tr>
<td>Oregon State Police</td>
<td>Andy McCool</td>
<td>Lieutenant</td>
<td>503-731-3020</td>
<td></td>
</tr>
<tr>
<td>Multnomah County Sheriff</td>
<td>Michael Reese</td>
<td>Sheriff</td>
<td>503-988-4300</td>
<td></td>
</tr>
<tr>
<td>Portland Police Bureau</td>
<td>--</td>
<td>--</td>
<td>503-823-0000</td>
<td></td>
</tr>
<tr>
<td>Portland Fire and Rescue</td>
<td>--</td>
<td>--</td>
<td>503-823-3700</td>
<td></td>
</tr>
<tr>
<td>Hospitals/Medical Facilities</td>
<td>Providence Medical Center</td>
<td>--</td>
<td>503-215-1111</td>
<td></td>
</tr>
<tr>
<td>Utility Owners</td>
<td>Oregon Utility Notification Center</td>
<td>--</td>
<td>800-332-2344</td>
<td></td>
</tr>
</tbody>
</table>
3 Factors Impacting Construction Staging

This section includes an overview of the factors that impact construction staging: project schedule, proposed improvements and impacts to traffic flow, alternate routes, existing vehicle restrictions, environmental issues, seasonal restrictions, and construction noise regulations.

3.1 Project Schedule

The scheduled bid date for this project is April 2018, with construction running through November 2018. The structural overlays must be done in dry weather, so this work will be done in summer 2018.

3.2 Potential Impacts to Traffic Flow

I-84 westbound to I-5 northbound ramp, Bridge No. 08588A
Structural overlay on this ramp will require 14 days of full closure. Traffic will be detoured to the I-84 westbound to I-5 southbound ramp and loop around to access I-5 north via the Marquam Bridge, I-405 northbound and the Fremont Bridge.

This ramp carries more than 24,000 vehicles a day. Closing it will have significant impact. I-84 is expected to have stop and go conditions between I-205 and I-5 and the impact may extend east of I-205. The I-84 westbound to I-5 southbound ramp is already operating at capacity so it won’t be able to handle most of the traffic wanting to access I-5 north. As a result, traffic demand management and operations strategies need to be considered in order to minimize traffic impacts. Here are some traffic demand management and operations strategies:

Option 1 – Advise motorists of how bad I-84 WB is going to be and ask them to ride transit, carpool, telecommute, use alternate routes, etc. to reduce the traffic demand. There are a number of parallel east-west routes for commuters to travel on including Sandy Blvd, NE Lombard St, NE Killingsworth St, NE Glisan St, Burnside St, Stark St, Belmont St, Division St, Powell Blvd, and Holgate St. Coordinate with all stakeholders including WSDOT about the ramp closure. Utilize the new Advanced Transportation Management System on I-84.

Option 2 - Implement Option 1 + close the following ramps on I-84 westbound:
 I-205 northbound to I-84 westbound entrance ramp
 Halsey St., 58th Ave, 43rd Ave, Sandy Blvd, and 33rd Ave entrance ramps

I-84 westbound to I-5 southbound ramp, Bridge No. 08588B
Structural overlay on this ramp will require 14 days of full closure. Traffic will be detoured to the I-84 westbound to I-5 northbound ramp and loop around to access I-5 north via the Fremont Bridge, I-405 southbound and the Marquam Bridge.

This ramp carries more than 55,000 vehicles a day, more than double the daily volume for the I-84 westbound to I-5 northbound ramp.

The I-84 westbound to I-5 northbound ramp is a single lane ramp and is already operating at capacity. Closing it will have more significant impact than closing the I-84 westbound to I-5 northbound. I-84 is expected to have stop and go conditions between I-5 and east of I-205. As a result, similar traffic demand management and operations strategies need to be considered in order to minimize traffic impacts.

Option 1 – Advise motorists of how bad I-84 WB is going to be and ask them to ride transit, carpool, telecommute, use alternate routes etc. to reduce the traffic demand. There are a number of parallel east-west routes for commuters to travel on including Sandy Blvd, NE Lombard St, NE Killingsworth St, NE Glisan St, Burnside St, Stark St, Belmont St, Division St, Powell Blvd, and Holgate St. Coordinate with all stakeholders including WSDOT about the ramp closure. Utilize the new Advanced Transportation Management System on I-84.

Option 2 - Implement Option 1 + close the following ramps on I-84 westbound:
 I-205 northbound to I-84 westbound entrance ramp
 Halsey St., 58th Ave, 43rd Ave, Sandy Blvd, and 33rd Ave entrance ramps

In addition, consider closing:
 I-205 southbound to I-84 westbound entrance ramp

I-5 southbound to I-84 eastbound ramp, Bridge No. 08588C
Structural overlay on this ramp will also require 14 days of full closure. Traffic will be detoured to I-405 southbound and loop around to access I-84 eastbound via the Marquam Bridge. I-405 southbound is already operating at capacity, so similar traffic demand management strategies mentioned previously need to be considered in order to minimize traffic impacts. Ramps on I-84 westbound don’t need to be closed, obviously.

As a traffic operation strategy, consider temporarily converting the Grand Avenue eastbound entrance ramp as an add lane rather than merging with I-84 eastbound traffic at the entrance gore. Also consider let the Grand Avenue eastbound entrance ramp run “free” by not running the ramp meter.

I-5 northbound to I-84 eastbound ramp, Bridge No. 08588D
Deck seal on the ramp will be performed with ramp closure at night. Nighttime ramp closure will have minimal traffic impact as the traffic volume is low at night.

I-84 WB exit-ramp to Convention Center
Paving on the ramp will be performed with ramp closure at night. Nighttime ramp closure
will have minimal traffic impact as the traffic volume is low at night.

- **Striping** - Work can be done on the last day of ramp closure or on a separate day with ramp closure at night for all the ramps. Nighttime ramp closure will have minimal traffic impact as the traffic volume is low at night.

### 3.3 Existing Vehicle Restrictions

ODOT Motor Carrier Transportation (MCTD) does not have existing weight, height, or width restrictions for vehicles within the project limits at this point. When construction starts, the project team needs to obtain most current information from MCTD.

### 3.4 Environmental Issues

There are no environmental issues.

### 3.5 Seasonal Restrictions

The structural overlays must be done in dry weather. Some construction activities such as paving or pavement marking installation also require relatively dry and warmer conditions. These activities will occur during the summer months.

### 3.6 Construction Noise Regulations

Several jurisdictions will be impacted by this project. The applicable noise regulations for the City of Portland have been included in Attachment B, and the basic requirements are listed below.

- The noise from construction or demolition activities between the hours of 6 p.m. and 7 a.m., seven days a week, within the city limits of Tualatin will require a noise variance.
- The City of Portland permits a liberal construction noise standard (85 dBA at a 50-foot distance) from 7 a.m. to 6 p.m. Monday through Saturday but only permits minimal noise outside of these hours. A construction noise variance will likely be required for this project and will be obtained from the City of Portland.

### 4 Potential Mobility Issues

This section includes a discussion of traffic mobility issues during construction, consideration of oversized vehicles, input from the public and stakeholders, agency coordination, and holidays and special events.

#### 4.1 Traffic Mobility during Construction

Since I-5 and I-84 are designated freight routes and part of the National Highway System, the temporary traffic control and associated detour routes will be required to accommodate oversized vehicles during daylight hours (one half hour before sunrise to one half hour after sunset). Emergency vehicle access must also be provided at all times.
4.2 Consideration of Oversized Vehicles

Over-dimensional vehicles can be anticipated between the following sunrise and sunset periods:

- January: between 7:00 a.m. and 5:30 p.m.
- February: between 6:30 a.m. and 6:00 p.m.
- March: between 7:00 a.m. and 8:00 p.m.
- April: between 6:00 a.m. and 8:30 p.m.
- May: between 5:30 a.m. and 9:00 p.m.
- June: between 5:00 a.m. and 9:30 p.m.
- July: between 5:00 a.m. and 9:30 p.m.
- August: between 5:30 a.m. and 9:00 p.m.
- September: between 6:00 a.m. and 8:00 p.m.
- October: between 7:00 a.m. and 7:00 p.m.
- November: between 6:30 a.m. and 5:30 p.m.
- December: between 7:00 a.m. and 5:00 p.m.

During times of anticipated over-dimensional vehicles presence, it is expected to maintain a minimum useable roadway width on I-5 and I-84, as shown in Table 4:

Table 3 - Construction Time and Minimum Usable Roadway Width on I-5 and I-84

<table>
<thead>
<tr>
<th>Construction Time</th>
<th>Single Lane (feet)</th>
<th>Two Lanes (feet)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Daytime</td>
<td>22</td>
<td>28</td>
</tr>
<tr>
<td>Nighttime</td>
<td>16</td>
<td>28</td>
</tr>
</tbody>
</table>

MCTD requirements for notification of freight restrictions on state highways are as follows:

- **No advance notification required:** Minimum available horizontal clear distance is 22 feet for I-5 and I-84.
- **Vertical clearance restrictions:** 35-day notification required for vertical clearance restrictions less than 14 feet-10 inches. Any change from existing clearance, including lane shifts under a structure, will require 14-day notification.
- **Ramp closures:** 14-day notification required if a ramp is closed for any period of time.
- **Daylight width restrictions – Single lane:** Width restrictions resulting in a single lane of traffic during daylight hours require 35-day notification for a horizontal clear distance of less than 19 feet for I-5 and I-84. Width restrictions between 19 and 22 feet require 14-day notification.
- **Nighttime width restrictions – Single lane:** Width restrictions resulting in a single lane of traffic during nighttime hours require 35-day notification for a horizontal clear distance of less than 15 feet for I-5 and I-84. Width restrictions between 15 and 22 feet require 14-day notification.
• **Daylight and nighttime width restrictions – Two lanes:** 35-day notification required if minimum available horizontal clear distance is less than 32 feet for two lanes of one-way traffic or for two opposing lanes of head-to-head traffic.

The minimum available useable roadway is measured across the roadway between positive barriers, which can be any obstruction such as drums, concrete barrier, or guardrail. When a project restricts the width, length, height, or weight of vehicles through a work zone or detours trucks around the work zone, the contractor must notify MCTD, the Region Mobility Coordinator and the engineer, in writing, using Form #734-2357, at least 35 days in advance. The notification should include the reduced lane width or lowest dimension of vertical clearance for each stage, the anticipated duration and date of the restrictions, the approximate milepost location, and direction of travel affected. As soon as the restriction is lifted, notification must be sent to the same individuals on a revised copy of the original Form #734-2357 so this information can be relayed to all affected parties.

4.3 **Input from the Public and Stakeholders**

Keeping the public informed early and often and providing opportunities to give feedback are central to the public involvement efforts for this project. ODOT Community Involvement plans to hold up to two project open houses, including one online open house to inform the community about the project, construction activities, and expected impacts. Additional targeted engagement activities will be performed, as needed, to inform local businesses, neighborhood groups and associations, and local agencies and organizations about the project and potential impacts. A project website will also be developed to provide project information and updates to project stakeholders and highway users.

Project team members will continue to coordinate with the public and project stakeholders throughout the design and construction process.

4.4 **Agency Coordination**

Local agencies and other departments within ODOT should be contacted before project construction to coordinate any issues that may not have been known at the time this document was completed. Communication protocols are described in Section 8, and other known construction projects in the area are described in Section 2.3.

4.5 **Holidays and Special Events**

Traffic within the area can be impacted by holidays and local special events. Nighttime lane or ramp closures will not be allowed during holidays or special event days. The major holidays are included in the ODOT standard specifications. Local special events that may create an increased burden on the project area include:

- Rose Festival Grand Floral Parade on June 9, 2018
- Providence Bridge Pedal – August 12, 2018
- Race for the Cure – September 16, 2018
- Portland Marathon – October 7, 2018

Due to the project schedule constraints, these special events will be reviewed through Preliminary and Advance PS&E process for inclusion in the special provisions.
5 Proposed Construction Staging

5.1 Guiding Principle Decision Tree

The Guiding Principle Decision Tree form used in the development of the traffic control plans is provided in Attachment C. The decision tree form helps identify separation options available for the work zone and captures impacts to safety, mobility, delay, driver and bicycle/pedestrian convenience, and other impacts when assessing traffic control options. The general sequence for the proposed construction stages are provided in the following subsections.

5.2 Other Work

Permanent pavement markings for all locations will be completed using short-term nighttime ramp closures following completion of final paving.

6 Lane Closure Restrictions

To be provided by Preliminary PS&E.

Holidays and Special Events

Restricted work times for this project will be included in the special provisions, section 00220.40(e-2), and will include the special events identified in Section 4.5.

- **Holidays:** Do not close any traffic lanes between noon on the day preceding legal holidays or holiday weekends and midnight on legal holidays or the last day of holiday weekends, except for Thanksgiving, when no lanes may be closed between noon on Wednesday and midnight on the following Sunday.

- **Special Events:** Do not close any traffic lanes between midnight on the day preceding and midnight on the final day of special events.

7 Traffic Management and Operation Strategies

To help meet the performance goals for congestion management and promote work zone safety, a range of traffic management strategies were considered for implementation. An array of common traffic management strategies is available for consideration on this project. The strategies selected are described below. Any strategies that are cost-prohibitive at the project level may require funding from other sources if implementation is desired.

7.1 Public Information and Outreach Strategies

Public information and outreach is beneficial for maintaining public support for projects, as well as for encouraging changes in travel behavior during construction. Making the public aware of the potential delays incurred while traveling through the project area or detour
routes may encourage motorists to use alternate routes or plan trips to avoid peak construction activity times, which will help to manage congestion within the project area.

7.2 Motorist Information/ITS Strategies

Providing motorists with real-time information helps notify drivers of upcoming work zones and may alleviate congestion and delay. Existing Intelligent Transportation Systems (ITS) and other strategies may be used to provide traveler information in the following ways:

- **Variable message sign (VMS):** Variable message signs are electronic signs that can display changing messages. There are a number of VMS located in the Portland metro area, including the I-5 corridor within the project area. VMS should be used to warn drivers of any incidences or traffic delay within the construction area so that they can choose to detour to an alternate route if needed.

- **Portable changeable message signs (PCMS):** PCMS is a portable electronic sign that can display changeable messages. They are useful when informing drivers of upcoming construction periods and warning drivers of construction activities as needed.

- **Ground mounted signs:** Typically installed at the endpoints of work zones informing motorists of road construction and the possibility of delay. Ground mounted signage would also be needed to alert motorists of the availability of Highway Advisory Radio information if/when provided.

- **511 (Highway Advisory Telephone):** Inclusion of this project on ODOT’s statewide 511 highway advisory telephone system will help provide travelers with up-to-date information about construction activities and potential delays.

- **TripCheck (ODOT’s ITS Website):** TripCheck allows motorists to retrieve real time information and weather conditions via the Internet. In addition to the Internet, motorists may also call 511 to receive this same information. ODOT now also shares this information with Waze so users of the popular application receive notifications when approaching construction zones.

7.3 Construction Strategies

Useful construction strategies as they pertain to this project are described below.

- **Ramp metering:** Existing ramp meters will be utilized during construction to regulate the flow of traffic entering I-5 during construction.

- **Off-peak/off-seasonal/night/weekend work:** As much as possible, temporary lane or ramp closures should be undertaken during the off-peak or night time to avoid excessive congestion. Closures should adhere to the applicable restriction specifications.

- **Temporary pavement:** Building temporary surfacing to move traffic around the project.

- **Temporary striping:** When required, temporary striping on the travel lanes will be
provided to direct and control traffic in areas where lane shifts are necessary.

- **Planned lane ramp closures**: Temporary lane or ramp closures, when required, will be limited to the off-peak and night time hours.

- **Project phasing**: Maintaining the existing travel lane configuration in each direction during construction will create less delay for motorists. Although phasing requires a longer construction period, it minimizes impacts to traffic.

- **Temporary traffic screens**: Traffic screens help prevent driver distractions in work zones, which can help to keep traffic moving and enhance safety. Screens may be mounted on the top of permanent or temporary traffic barriers to block headlights or to discourage gawking.

- **Extended weekend closures**: Weekend closures are advantageous because of greatly reduced disruption of AM and PM peak commuters.

- **Coordination with adjacent construction**: The coordination of this project with other projects in the area, as discussed in Section 2.3, will help to avoid unnecessarily compounding traveler delay.

- **Full-time traffic control supervisor (TCS)**: Having a full-time TCS on-site allows one person to be dedicated to traffic control and not be distracted by other construction activities. Benefits include the ability to make quick decisions and to implement contingency plans as needed.

- **Rolling Slowdown**: Using construction vehicles to slow traffic to allow a large gap in the traffic stream (up to 20 minutes) to perform short duration construction work.

### 7.4 Incident/Emergency Management Strategies

The possibility of a minor incident increases within construction zones. Given that minor incidents can potentially evolve into a major event, an incident management plan is a helpful tool to detect and remove incidents from the highway and restore traffic capacity as quickly and safely as possible. The following incident and emergency management strategies could be implemented for this project:

- **Traffic surveillances stations/closed caption television (CCTV)**: ODOT has positioned continuous traffic monitoring surveillance cameras at key locations along all major highways in the Portland metropolitan region that can be accessed via ODOT’s website. Furthermore, monitoring loops embedded in roadway pavement provides continuous data that is kept by Portland State University Center for transportation studies.

- **Cell phones**: Mobile cellular telephones should be available at all times to quickly report incidents and emergencies within the project area.

- **Full-time TCS**: A more rapid response time to incidents is possible when a full-time TCS is on site to make the necessary quick decisions and implement contingency plans as...
warranted.

- **VMS:** VMS are electronic signs that can display changing message. There are a number of VMS located within and in advance of the project site. VMS should be used to warn drivers of any incidences or traffic delays within the construction area so that they can choose to detour to an alternate route if needed.

### 7.5 Demand Management

Demand management strategies include the following:

- **Temporary lanes or shoulder use:** When required, temporary use of roadway shoulders as travel lanes will be limited to locations determined during design to have adequate pavement strength to carry traffic.

### 7.6 Alternate Route Strategies

Alternative routes for motorists should be identified whenever a ramp or full roadway closure is anticipated during construction.

- **Ramp closures:** Detours will be provided for all ramp closures.

### 8 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. ODOT Region 1 has an incident management program in operation that is operated from the Region 1 Traffic Management and Operations Center (TMOC). Any incidents that impact traffic flow during construction should be coordinated with the TMOC. The Emergency Communication Plan and Contingency Plan are two important tools for incident management, described in the following sections.

### 8.1 Emergency Communications Plan

The Emergency Communication 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 and the appropriate response and communications for each type of emergency
- Roles and responsibilities of the stakeholders who 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. A template has been included in Attachment E to help guide the contractor in developing an Emergency Communication Plan.

8.2 Contingency Plan
As a part of an 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. A guideline has been included in Attachment F to help guide the contractor (once under contract) in developing a Contingency Plan.

9 Mobility Communication Plan
The Mobility Communication Plan provides communication strategies for informing affected road users, the general public and various project stakeholders about the project and changing work zone conditions. For this project, media releases must be coordinated with and reviewed by ODOT Region 1 staff. ODOT MCTD will handle communications with the freight industry. It is recommended that all other communications not described above be disseminated by ODOT Region 1 staff. Table 5 summarizes contractor and ODOT 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, TMOC, MCTD, and District 2B</td>
</tr>
<tr>
<td></td>
<td>Multnomah County</td>
</tr>
<tr>
<td></td>
<td>City of Portland</td>
</tr>
<tr>
<td></td>
<td>Media</td>
</tr>
<tr>
<td></td>
<td>General Public/Road Users</td>
</tr>
<tr>
<td></td>
<td>Police/Fire</td>
</tr>
<tr>
<td></td>
<td>Emergency Medical Services</td>
</tr>
<tr>
<td></td>
<td>Schools</td>
</tr>
<tr>
<td></td>
<td>Other Stakeholders</td>
</tr>
<tr>
<td>ODOT MCTD</td>
<td>Freight Industry</td>
</tr>
</tbody>
</table>
Appendix A

Emergency Communication Plan
Emergency Communication Plan Template

Advance communication prevents community problems
Communication is the cornerstone of a successful project. Much advance work has been done on this project to inform the public of impacts they can expect during construction, and to listen to community concerns so ODOT can minimize adverse impacts as much as possible. It is important that we keep our commitments and provide advance warning to the community when impacts are expected. This is a daily commitment shared by the project office, contractor and staff from both community and public affairs. In addition, there will be times when an emergency or crisis demands a quick communications response. This plan addresses such unexpected occurrences.

A prompt and accurate response
Prompt dissemination of information ensures that people are informed of what is happening and how they might change their plans to mitigate the event’s affect on them. It is also vital because if the Oregon Department of Transportation does not tell its story right away, someone else – a motorist, a witness, someone who potentially has fewer facts – will tell the story for us.

Accurate information – even when it is not good news – lends credibility to ODOT and its desire to keep the public informed. It goes hand-in-hand with timely communications in allowing the public to make decisions based on the facts available.

Coordination with other agencies before releasing information is critical. All agencies involved in an emergency – local, state, federal, and private sector partners – should communicate the same messages. Conflicting messages damage the credibility of all participating agencies. The public may not take appropriate action to protect themselves or others if they receive conflicting information.

The importance of a communications plan
A plan ensures that all pertinent information – names, phone numbers, key messages, action plan outline, time line, media strategies, etc. – are in the possession of designated emergency/crisis responders so that response can be prompt, accurate and coordinated.

This emergency communication plan is designed to provide a basic outline for how to respond to some of the emergencies or crises that may occur during the project. It gives clear and systematic directions for establishing a chain of command, prioritizing audiences, developing messages, and delivering them in an organized fashion to a variety of audiences: employees, the media, the public. It is vital that responses be coordinated so that ODOT, its contractors, subcontractors and jurisdictional partners speak with "one voice" throughout all stages of the crisis and the public does not receive conflicting messages.

Who is the audience?
During an emergency, ODOT has two primary audiences. The first group is the people who need to act to help respond to the emergency: police, fire, medical, and HAZMAT.
The second group needs information in order to protect/prepare themselves. Included in this group are local businesses, residents, motorists and the media.

**Types/definitions of emergencies/crises**

As stated before, an emergency is anything that has the potential to harm life, property or the environment. Erosion of the public's confidence in ODOT on this project is also considered a crisis. The OTIA bridge projects have the potential for all four. Emergencies can take many different forms and each requires a different level of response. This plan will address some of the many kinds of emergencies/crises that may occur on this project. Please remember, all emergencies/incidents, big or small require a prompt, accurate and coordinated response.

- **Release of contaminants into the air/water**
  The accidental release of contaminants into the air/water (regardless of fault) would be considered an emergency. It has the potential to harm life (human and animal) by contaminating the environment.

**Unanticipated traffic or pedestrian delays or detours**

Despite everyone’s best efforts to communicate construction impacts on traffic, there will be times when lanes or ramps are closed longer than expected. Every effort must be made to avoid these situations. The traffic control plans and contract provisions for lane and ramp closures are included to prevent major traffic disruptions. In the event of an unanticipated traffic delay, it is essential that the project staff work with the contractor to reopen lanes or ramps as soon as possible. Liquidated damages may be applied against the contractor for these incidents, but ODOT needs to maintain safe traffic flow on our roadways. When these incidents occur, the public affairs and community affairs staff need to be involved early in the incident to help coordinate the flow of information through the news media and other information distribution channels.

**Vehicle accident/incident (non-injury)**

Much of Oregon’s highway and bridge construction takes place "under traffic." This means construction crews share roadway space with thousands of motorists every day. Work-zone wrecks (regardless of fault) would be considered an emergency.

An incident/accident would be defined as any occurrence involving damage to private property or vehicles. This also includes any unplanned incident that delays traffic for 20 minutes or more. Please use good judgment and call if there is any doubt. A minor incident can attract the attention of the public or media.

**Serious vehicle accident/incident (injury/death)**

Accidents/incidents resulting in injury/death of motorists, passengers, and construction workers would be classified as extremely serious. If such a situation occurs, prompt notification is critical.
All pedestrian/bicycle incidents
Pedestrian facilities are defined as either formal sidewalks or informal pathways that appear to be used frequently. Incidents occurring on pedestrian facilities, bicycle lanes or the adjacent roadway (regardless of fault) would be considered an emergency that needs to be reported to the appropriate project authorities, including public and community affairs staff. Closures of pedestrian facilities must be clearly thought through, discussed with public and community affairs and with pedestrian facility authorities. All discussions of closures must include alternate/detour route considerations.

Citizen Reports of Incidents
Depending on when an incident occurs, the District Office may be made aware of it before the inspector or construction office. This is especially true on weekends and outside of regular work hours. While the chances of a serious incident at the site drop dramatically during non-work hours, there is still the potential. Frequently, citizens report relatively simple issues like barrels or signs that have been knocked over or steel plates that have started to move. These issues are not the responsibility of the Maintenance offices and must be dealt with immediately. Once again, a prompt response is crucial.

Roles and Responsibilities
The reporting structure and roles/responsibilities are keys to a successful emergency communication effort. The following briefly outlines those roles/responsibilities when an incident occurs:

ODOT's on-the-scene inspector notifies ODOT's Project Coordinator ______________, who notifies Project Manager ______________ and Assistant Project Manager ______________, who notifies Public Affairs Manager ______________ and Traffic Manager ______________. Until further notified, the on-scene inspector will be the main, on-site representative, and will be considered the communication link to key ODOT personnel only. This individual will not talk to the media or general public, or discuss the situation with anyone other than key contractor personnel.

Project Manager ______________ or his designee notifies Area Manager ______________ and Region Manager ______________. Region Manager ______________ will notify ODOT District ___ Manager ______________, and Maintenance/Operations Manager ______________. Public Affairs Manager ______________ will notify Community Affairs Manager ______________. These individuals, including Public Affairs Manager ______________ and Traffic Manager ______________ will determine lead roles/spokesperson(s). These individuals will also determine the course of action/response to the emergency, identify key messages and further define roles and responsibilities.

If deemed necessary, Public Affairs Manager ______________ will identify/coordinate a second on-the-scene ODOT representative. He will notify key multi-jurisdictional communication team members as necessary/needed. He will also act as
spokesperson and will coordinate any off-site or on-the-scene information/command center, if necessary. Community Affairs Manager _____________________ will be responsible for notifying businesses, the general public and residents who may be impacted by the incident, and will coordinate any special needs with the incident command staff.

Once a course of action has been determined, Area Manager _____________________ or his designee will alert the appropriate agencies:

- State and local police/fire/rescue
- Oregon Department of Fish & Wildlife
- Oregon Department of Environmental Quality
- Federal Environmental Protection Agency

The contractor and sub-contractors are employees of ODOT. They will participate in the emergency response as determined necessary by ODOT or by contractual obligation. Contract employees will not talk to the media/general public, or discuss the situation with anyone other than with key ODOT personnel.

**Information Sources**
Recorded ODOT highway construction information is available 24 hours a day by dialing 503-223-0066.

The project hot line number 503-____-_______ is available 24 hours a day for crisis calls.
Appendix B
Contingency Plan Guidelines
**Contingency Plan Guidelines**

**Explanation**
A 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’s contingency plan addresses activities under the contractor’s control in the work zone.

**Documentation**
Prior to construction, the Contractor is required to provide the following documentation to be kept on hand at each construction site.

1. **Communications, Roles and Responsibilities** – A plan for lines of communication, individual roles and responsibilities shall be developed by the Contractor. The contractor shall designate an individual (such as the Traffic Control Supervisor) as a point of contact within their organization. The Contractor’s plan should clearly state lines of communication and authority within their organization as well as reference those outlined in the Emergency Communications Plan or Mobility Communications Plan as applicable.

2. **Contractor’s Contingency Plan** – The Contractor shall develop a contingency plan for each construction site based on site specific conditions.

3. **Contingency Plan Trigger Points** - The following conditions or events will require a Contingency Plan to be implemented (documentation of these trigger points shall be included in the Contractor’s Contingency Plan):

   - Weather Conditions: __________________________________________
   - Traffic Conditions (e.g. high traffic demand level): __________________
   - Other Events (e.g. accidents): ___________________________________

4. **Coordination Strategy** – The Contractor shall develop a coordination strategy. Any contracting personnel recognizing a condition that would warrant implementing a Contingency Plan shall notify the Traffic Control Supervisor or other individual that has been designated as a “Point of Contact” for the contracting organization. The contracting organization’s representative shall conduct coordination efforts as outlined in the Coordination Strategy. The Coordination Strategy shall include any special agreements between individuals or agencies. Individuals to be involved in the Coordination Strategy should be included on the Project Contact Information List.

5. **Project Contact Information** – The Contractor shall develop and maintain a contact list of key project personnel (e.g. Traffic Control Supervisor, Resident Engineer, Maintenance Supervisor, Permit Inspector, State Patrol, other ODOT Contingency Plan Guidelines 2
representatives). Contact information for individuals on the Emergency Communications Plan and Mobility Communications Plan should also be included. See attached sample forms.

6. Traffic Contingency Plan – The Contractor shall develop a contingency plan to restore minimum operating capacity of the roadway.

7. Required Resources – The Contractor shall provide a list of available of stand-by equipment required for implementation of Contingency Plans. This list should include location of equipment and quantities if appropriate. Examples of items that may be included on the list are: portable changeable message signs, concrete barrier relocation equipment, etc. In addition, include the availability of local ODOT personnel for callout (normally requiring a Cooperative Agreement).
## Project Contact Information

<table>
<thead>
<tr>
<th>Name:</th>
<th>Title:</th>
<th>Phone:</th>
<th>Cell Phone:</th>
<th>Pager:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Name:</td>
<td>Title:</td>
<td>Phone:</td>
<td>Cell Phone:</td>
<td>Pager:</td>
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<tr>
<td>Name:</td>
<td>Title:</td>
<td>Phone:</td>
<td>Cell Phone:</td>
<td>Pager:</td>
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<td>Name:</td>
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<td>Phone:</td>
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<td>Pager:</td>
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<tr>
<td>Name:</td>
<td>Title:</td>
<td>Phone:</td>
<td>Cell Phone:</td>
<td>Pager:</td>
</tr>
</tbody>
</table>

Sheet ___ of ___
Appendix C
Decision Tree
**Decision Tree**
Evaluate Separation Opportunities, Other WZ Concepts, WZ Devices

I-5/I-84 Banfield Interchange Bridge Ramps, MP 289.75 – MP 294.21

<table>
<thead>
<tr>
<th>Opportunities to Evaluate</th>
<th>Possible</th>
<th>Impacts</th>
<th>Stakeholders</th>
<th>Decision</th>
</tr>
</thead>
<tbody>
<tr>
<td>Full road closure</td>
<td>Yes (Night time ramp closures)</td>
<td>1.) I-84 WB to I-5 NB (08588A) closed. Traffic must continue SB onto I-5 &amp; follow the I-405 NB detour to reconnect with I-5 NB. 2.) I-84 WB to I-5 SB (08588B) closed. Traffic must continue NB onto I-5 &amp; follow the I-405 SB detour to reconnect with I-5 SB. 3.) I-5 SB to I-84 EB (08588C) closed. Traffic must continue SB onto I-405 and reconnect with I-5 SB and continue onto I-84 EB. 4.) I-5 NB to I-84 EB (08588D) closed. Traffic must continue NB onto I-405 and reconnect to with I-5 SB and I-84 EB.</td>
<td>ODOT, City of Portland</td>
<td>Bridge maintenance requires full closure of each ramp (one at a time). Each ramp will be closed for 2 weeks. Appropriate detour routes with traffic control and signing will be in place to direct traffic to alternate interstate access points.</td>
</tr>
<tr>
<td>Partial road closure</td>
<td>Yes (Night time I-5/I-84 partial lane closures)</td>
<td>AC approaches will need to be transitioned/repaird to match new elevation with existing grade.</td>
<td>ODOT, City of Portland</td>
<td>Bridge maintenance requires access to accommodate AC approach pavement transitions. Appropriate traffic control and signing will be in place to direct traffic.</td>
</tr>
<tr>
<td>Full detour</td>
<td>Yes</td>
<td>Full detours may add traffic volumes to I-405 SB and NB, MLK-99E, NE Weidler, Williams, SE Belmont St., SE Morrison St to I-5NB, I-84 to I-405 NB. Closures and detours to be coordinated with Mobility</td>
<td>ODOT, City of Portland</td>
<td>Closures and detours will be used during day and night for each ramp closure.</td>
</tr>
<tr>
<td>Partial detour</td>
<td>No</td>
<td>None.</td>
<td>ODOT, City of Portland</td>
<td>Full closure for maintenance bridge work.</td>
</tr>
</tbody>
</table>

**Instructions:** For each phase, work through each opportunity on this "decision tree." Add other project-specific decisions as needed. (Add more instructions as needed.)

**Phase:**
- [ ] Scoping
- [ ] Project Initiation to DAP
- [ ] DAP to Advance Plans
- [ ] Construction
<table>
<thead>
<tr>
<th>Opportunities to Evaluate</th>
<th>Possible</th>
<th>Impacts</th>
<th>Stakeholders</th>
<th>Decision</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cross-overs</td>
<td>No</td>
<td>None.</td>
<td>ODOT, City of Portland</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Temporary barrier</td>
<td>No</td>
<td>None.</td>
<td>ODOT, City of Portland</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Increased clear space</td>
<td>No</td>
<td>None.</td>
<td>ODOT, City of Portland</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Decrease exposure time</td>
<td>No</td>
<td>None.</td>
<td>ODOT, City of Portland</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Accelerate/time incentives</td>
<td>Yes</td>
<td>Duration of ramp closures and schedule constraints due to weather limits, could be reduced with incentive/disincentive clause.</td>
<td>ODOT, City of Portland</td>
<td>Project will consider methods to reduce night time closure durations.</td>
</tr>
<tr>
<td>Law enforcement OT hours</td>
<td>No</td>
<td>None.</td>
<td>ODOT, City of Portland</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Construction Speed Zone Reduction</td>
<td>No</td>
<td>None.</td>
<td>ODOT, City of Portland</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Use drums and cones to close lane</td>
<td>Yes</td>
<td>Closed lanes.</td>
<td>ODOT, City of Portland</td>
<td>Drums and other traffic control items will be used to close/drop lanes that connect to closed ramps.</td>
</tr>
<tr>
<td>Use automated flagging station</td>
<td>No</td>
<td>None.</td>
<td>ODOT, City of Portland</td>
<td>Not necessary</td>
</tr>
<tr>
<td>Use temporary transverse RS upstream of flagging station</td>
<td>No</td>
<td>None.</td>
<td>ODOT, City of Portland</td>
<td>Not necessary</td>
</tr>
<tr>
<td>Work Zone ITS</td>
<td>No</td>
<td>None.</td>
<td>ODOT, City of Portland</td>
<td>Not necessary</td>
</tr>
<tr>
<td>Other: Flaggers</td>
<td>Yes</td>
<td>Work on ramp “A” will require containment flagging. Preliminary flagging estimates are $3,600/day</td>
<td>ODOT, City of Portland, UPRR</td>
<td>Flaggers to provide containment of water and debris. Avoiding UPRR R/W</td>
</tr>
<tr>
<td>Other: UPRR</td>
<td>Yes</td>
<td>Ramp “A” requires coordination with UPRR for work above or near UPRR R/W.</td>
<td>ODOT, City of Portland, UPRR</td>
<td>Flaggers to provide flagging of UPRR trains during construction.</td>
</tr>
</tbody>
</table>