MOBILITY PROCEDURES MANUAL

Oregon Department of Transportation

APRIL 2015

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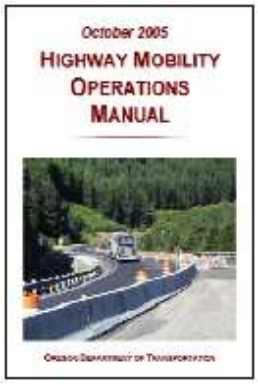
Chapter 1 – Introduction

Background and Purpose

Mobility is important to ODOT, the trucking industry, and the traveling public. Mobility can be defined as the ease with which people and goods move throughout their community, state, and the world. Transportation's most essential function is to provide safe mobility for people and goods.



In, 2005, the original Highway Mobility Operations Manual (HiMOM) was created in response to an unprecedented increase in road and bridge work largely due to OTIA III. Keeping traffic and freight moving during this time was one of the top priorities of the Governor, Legislature, and the Director. The budget note to House Bill 2041 (OTIA III legislation) directed ODOT to develop a strategy that maximized the ease of traffic and freight movement throughout the state. That strategy was developed in collaboration with key stakeholders, including AAA, OBDP, OTA, to name a few.

In 2011, a team was formed to update the mobility manual per the direction of Matt Garrett. This team consists of members from Highway, Transportation Development Division (TDD), and Motor Carrier Transportation Division (MCTD). The updated manual has been renamed the Mobility Procedures Manual (MPM). The MPM describes a set of standards and processes that help ensure that ODOT complies with the mobility provisions of Federal Highway Administration (FHWA) rules, upholds its commitments with the freight industry, and meets the Agency's goals for traffic mobility and safety. It is best thought of as a working tool for ODOT planning, project development, construction, maintenance, and MCTD staff, not as a stand-alone policy.

Why Mobility Matters

Mobility is important to Oregon's economy. It ensures access to jobs, services, and markets. The MPM focuses on freight and traffic mobility during and after construction and maintenance activities.

What's at Stake?

Oregon's economic health and well-being depends on our ability to communicate and coordinate.

> *"Trucking will continue to be the dominant mode for freight transport reflecting the shift towards higher value products, greater time sensitivity in product movements, and the ability of trucks to reach all parts of the state. This will create increasing demand on the state's highways and local roads, and metropolitan congestion will become an increasing concern for key industries.* ***Oregon Freight Plan, June 2011***

Effectively managing work zone impacts is essential to meeting the Department's mobility goals. ODOT supports the efforts of FHWA and complies with the provisions of the *Rule on Work Zone Safety & Mobility* in 23 CFR 630 Subpart J.

This rule was updated to:

- Address traffic volumes and congestion, roadway capacity, work zone safety, more work performed under traffic, and public frustration with work zones;
- Facilitate consideration of safety and mobility impacts of work zones, and implementation of management strategies to mitigate impacts; and
- Install provisions that are sufficiently flexible to be applied to both current and future work zone issues.

Ensuring mobility, therefore involves minimizing delays due to construction and maintenance work, but also involves minimizing physical restrictions (such as weight, height, and width).

Following approval of the OTIA III legislation, ODOT's message on mobility has been clear -- throughout construction and maintenance activities, the goal will be to maintain mobility and keep traffic and freight moving.

The benefits of ODOT's mobility efforts have been many during the past few years. We've (1) worked to minimize delays, (2) better evaluated the mobility trade-offs between project alternatives, (3) coordinated maintenance and construction work on parallel routes, (4) better communicated delays and restrictions to the trucking industry and the general public, and (5) worked in closer collaboration with the freight industry to address mobility issues. These efforts have led to better decision making and have benefited the economy.

Key Elements

There are several key elements required to achieve and maintain mobility in a general sense for both freight and passenger cars. These key elements include critical route pairs, effective communication, vertical clearance restrictions, horizontal clearance restrictions, weight restrictions, diversions, detours, staging, permitting, and other issues.

This manual helps identify the importance of these key elements and provides guidance on how each should be addressed during the project development process. This manual is separated into sections dealing with temporary and permanent conditions with the recognition that different procedures apply to these conditions.

Critical Route Pairs

ODOT is committed to keeping freight moving safely and efficiently throughout Oregon in support of the State's economy. If a route needs to be restricted, ODOT will collaborate closely with the freight industry to minimize the impact of construction projects on mobility.

An important concept that affects mobility practices is critical route pairs. If the route that is identified on the list of critical route pairs (see Table 1 below) needs to be temporarily restricted, ODOT will take steps to make sure that the paired critical route on the list is not restricted. For instance, on the Portland to Coast Route, if US 30 needs to be restricted, ODOT will make sure that Hwy 26 is not restricted during that same period.

It is essential to communicate within a region, between regions, and statewide in development, construction, and maintenance to ensure an identified alternate critical route pair will not be concurrently restricted. A local detour is acceptable if it provides the shortest practical distance and will accommodate vehicles of the same weight and dimensions that are normally allowed on the route under construction.

Table 1 – Critical Route Pairs

Highway	Paired With	Area
I-5	OR 212, US 26, US 97	Washington – California
I-84	OR 212, US 26, US 97, US 20 *(Sometimes includes OR 78 and US 95.)*	Portland – Ontario
US 30	US 26	Portland – Coast
OR 22 & OR 18	US 20 *(Upon completion of the Pioneer & Eddyville Project.)*	Willamette Valley – Coast
OR 126	OR 38	Willamette Valley – Coast
OR 38	OR 42	I-5 – Coast
OR 126	OR 58	I-5 – Central Oregon

Chapter 2 – Communication, Roles, Resolution

Introduction

This chapter combines three related topics. It begins with an overview of the expectations with respect to **communication** of mobility issues. That is followed by a detailed description of mobility **roles and responsibilities** for ODOT and the trucking industry. The third section outlines a standard repeatable **process for resolving** mobility issues.

Communications

Communications within ODOT and with the freight industry and public stakeholders are critical to the success of traffic mobility on Oregon's transportation system. During the planning and design phases of a project, the project team must correctly identify the impacted mobility stakeholders and provide for their input into processes. During construction and maintenance operations, clear lines of communication are needed to identify, notify, and resolve issues as they arise.

Policy Guidance

The Highway Division Project Delivery Leadership Team has stressed the importance of involving freight industry and public stakeholders in two Operational Notices:

> *"Appropriate and timely communication within ODOT and with industry stake-holders affects the success of traffic mobility on Oregon's transportation system. Actions that may affect mobility require specific notification and communication processes. These processes include collaboration with key industry stakeholders in initial and continuing conversations about alternatives and mitigation requirements." (PD-16)*

> *"Project delivery success relies on working with the public to find efficient, effective, and sustainable transportation solutions that are sensitive to community and social values. Simply quoting standards, rules and policies without providing context and explanation is not effective, nor acceptable. It is our obligation to effectively communicate and clearly illustrate the reasons for recommended courses of action in a way the public can understand." (PD-12)*

The ODOT Director has also addressed the importance of engaging freight industry stakeholders in the project development process:

> *"The process is intended to be collaborative between ODOT and industry. Industry is to participate in initial and continuing conversations about detour alternatives and mitigation requirements. The purpose of this requirement is to enable ODOT to take advantage of industry practical knowledge and to build trust between the two parties." (Freight Mobility – ODOT Commitments with the Freight Industry" 12/22/04)*

> *The ODOT Policy regarding size and weight restrictions on state highways stresses involving freight industry stakeholders to minimize impacts to freight mobility: "It is the policy of the Department to work collaboratively and minimize the impact, where possible, to the motor carrier industry and local government when it becomes necessary to restrict the allowable size and weight of loads on the state highway system in order to maintain safe travel." (PMT 06-01 – Size and Weight Restrictions on State Highways Policy" 06/29/06)*

These policies are consistent with an agency-wide commitment to engage industry stakeholders with effective communication in all of ODOT's planning, design/engineering, construction, and maintenance activities.

Notifications and Appropriate Follow-up

❖ *Motor Carrier Transportation Division*

The Motor Carrier Transportation Division (MCTD) is the **primary** contact to engage industry stakeholders for all of ODOT's planning, design/engineering, construction, and maintenance mobility issues and concerns. The MCTD Freight Mobility Coordinator needs to be involved in **all** communications with industry stakeholders. When contacting local industry stakeholders, the MCTD Freight Mobility Coordinator must be involved. Local contact with the trucking industry absent MCTD involvement **does not satisfy the project communication requirements** addressed in this manual. The audience of potentially impacted freight stakeholders extends well beyond known familiar local users of the road system. MCTD tracks and relays information to all industry stakeholders within the United States and Canada that are authorized to use Oregon's state highway system. The MCTD Freight Mobility Coordinator will also set up meetings with industry representatives when needed.

❖ *Regions*

Each Region has a Mobility Liaison who is the point of contact for the Region Manager, Motor Carrier Transportation Division (MCTD), and the MCTD Freight Mobility Coordinator. The Mobility Liaison is also the primary resource for planners, project team leaders, and managers in the Region to assist them in meeting mobility goals.

❖ *Informing the General Public*

ODOT will inform the public about the Department's approach to mobility management so they will know we are fulfilling our mission to keep Oregon moving. The Communications Division will use several tools and approaches to let taxpayers know we are coordinating efforts to minimize expense and inconvenience for motorists and motor carriers.

Regarding day-to-day information about traffic delays, the goal is to make communication seamless for the average motorist. The public will continue receiving traffic mobility information through established channels: (1) TripCheck.com; (2) 511; (3) weekly construction reports from Regions; and (4) the news media. ODOT may provide new types of information regarding corridor delays through existing channels, but also new communication channels such as Twitter, Facebook, and blogs.

Project teams will continue developing and implementing project communication plans, but flexibility will be important. Corridor management means that delays on one project may impact the level and type of communication needed on another project miles away.

To illustrate this point, assume a communication plan for a project in the Portland area calls for a moderate amount of communication to the public because the project is not expected to have a major impact on traffic. However, cumulative delays from other projects on the same corridor are making this project more critical to managing the corridor delay threshold. If motorists could be encouraged to avoid the Portland-area project, the delay will be reduced and corridor goals met. Therefore, it is decided that the public should receive more information in a higher-profile format for the Portland-area project than originally scheduled.

Specific Roles and Responsibilities

ODOT's effectiveness in achieving mobility goals depends on involvement of many people inside and outside the Agency. This section describes the specific roles of ODOT staff and consultants who share a responsibility in managing mobility.

Statewide

ODOT Mobility Policy Committee

The ODOT Mobility Policy Committee is comprised of ODOT senior managers who retain oversight for the statewide mobility policy and process guidelines and have the responsibility to resolve complex and/or unprecedented issues raised to its attention by ODOT staff.

The Committee membership includes the Director, Highway Division Administrator, Transportation Development Division Administrator and Motor Carrier Transportation Division Administrator.

ODOT Motor Carrier Transportation Division (MCTD)

The MCTD Freight Mobility Coordinator will act as the liaison to the motor carrier industry. Any contacts with the motor carrier industry will be directed through the MCTD Freight Mobility Coordinator. MCTD will provide information regarding motor carrier operations and will follow the mobility guidance and policies as presented within this manual.

Regions

Mobility is most effectively managed at the region level. ODOT's Regions will manage mobility on all of their maintenance activities and construction projects. Each Region Manager has appointed a Region Mobility Liaison who will be the point of contact for region staff and the ODOT Mobility Policy Committee.

Region Mobility Liaison

The Mobility Liaison chairs the Region Mobility Committee.

The Mobility Liaison supports region staff in identifying mobility and freight issues. The Mobility Liaison will help facilitate region collaboration and communication with MCTD and freight industry stakeholders to seek options and solutions. Specific responsibilities include:

- Collecting mobility information for all projects occurring in the Region and in neighboring/ bordering jurisdictions;
- Identifying and developing resolution strategies for schedule and delay threshold conflicts that affect corridor mobility;

- Collecting data on existing or proposed detour routes;
- Working with project team leaders/managers to develop delay exception requests and seek input from MCTD Wednesday Freight Meetings;
- Working with industry stakeholders, the ODOT Mobility Policy Committee, region staff, MCTD, local governments, and others to resolve conflicts;
- Tracking all special community events, major agriculture activities, and any other information that would impact traffic volumes or delays;
- Ensuring interregional mobility via participation in corridor mobility committees;
- Collaborating with ODOT Rail Division about the viability of proposed detour routes and rail project operations that may affect mobility;
- Coordinating mobility with adjoining Regions on their activities; and
- Working with the Region Planning Unit to vet potential reduction in capacity issues with design proposals received from local stakeholders.
- Reviews designs for local programs including development reviews.

Region Mobility Committees

These committees are chaired by the Region Mobility Liaison and are the means by which the Regions meet to focus on mobility issues. The schedule and composition of these committees will be tailored to the needs of each region. Participants include:

- Region staff (e.g., area managers, district managers, planning manager, project leaders, and project managers);
- Local Agencies with projects affecting mobility, as needed; and

Area Managers

The Area Manager will work with the Region Mobility Liaison and project development and construction staff to ensure that projects and activities meet the mobility requirements. The Area Manager serves on the Region Mobility Committee. Specific duties include ensuring that staff:

- Engage the Mobility Liaison early when mobility issues are identified;
- Copy the Mobility Liaison on any project items for use in notifying the freight industry of public meetings and project plans;
- Identify and evaluate risks associated with mobility;
- Notify the Mobility Liaison of planned restrictions, delays, or detours;
- Evaluate alternative design practices, materials, and construction methods to minimize delays and restrictions; and
- Work with the Mobility Liaison, Region staff, MCTD, local governments, industry stakeholders, and others to resolve conflicts.

District Managers

District Managers will implement the mobility activities for their district and will monitor maintenance activities to meet the mobility requirements and ensure their projects conform to the mobility guidance and policies. The District Manager serves on the Region Mobility Committee and provides direction to maintenance staff similar to what the Area Manager does for project development and construction staff (see above).

The District Manager or their designee may require restrictions (e.g., emergency declarations) as necessary to protect the safety and convenience of the traveling public, to protect any highway or section from damage, to avoid conflict with highway construction or repair projects, or to cope with other local traffic conditions.

District Managers or their designee also have responsibility for:

- Notifying the Region Mobility Liaison and the MCTD Freight Mobility Coordinator when work zones restrict width, length, height, or weight of truck;
- Notifying the Region Mobility Liaison and the MCTD Freight Mobility Coordinator of planned detours;
- Notifying the Region Mobility Liaison and the MCTD Freight Mobility Coordinator when restrictions are changed or lifted;
- Submitting Form #734-2357 Highway Restriction Notice 14 or 28 days prior to any planned work zone restriction when maintenance mobility activities 2 or 3 applies.

  (See Maintenance Mobility Requirements under 'Notification Requirements' (Chapter 5).)

Project Staff

Project leaders, project managers, project inspectors, maintenance managers, and planners will ensure their projects conform to the mobility guidance and policies. Specific responsibilities for each include:

- Identifying and considering mobility issues and impacts of projects and activities;
- Involving the Mobility Liaison early in process when mobility issues are identified; and
- Identifying risks associated with mobility and plan/evaluate risk responses.

Planning staff have an important role to play in mobility. Mobility issues can arise in the development of plans (e.g., Transportation System Plans, Corridor Plans and Interchange Access Management Plans). Planning staff need to identify and evaluate potential mobility issues (e.g., reduction in capacity) early the in the planning process and involve the Region Mobility Liaison, MCTD, and industry stakeholders.

Project Leaders/Consultant Project Managers also have responsibility for:

- Identifying and considering mobility issues and impacts throughout project scoping and development;
- Developing project specific Transportation Management Plans (TMP);

- Involving the Mobility Liaison early in the process when mobility issues are identified, including potential detour routes, prior to Design Acceptance milestone;
- Working with the Mobility Liaison and the MCTD Freight Mobility Coordinator to identify potential reduction in capacity (ORS 366.215) design conflicts early.
- Developing Traffic Control Plans (TCP);
- Notifying the Mobility Liaison of planned restrictions, delays, or detours;
- Notifying the State Bridge Engineer regarding planned bridge load posting;
- Ensuring consideration is given to practical design practices, materials, and construction methods to minimize delays and restrictions;
- Ensuring consideration is given to various contracting methods to minimize delays and restrictions (i.e. A+B, or Incentive/Disincentive provisions); and
- Working with Mobility Liaison, region staff, MCTD, local governments, and others to resolve conflicts.

Project Managers also have responsibility for:

- Review and approve TMPs and TCPs;
- Notifying the Region Mobility Liaison and the MCTD Freight Mobility Coordinator when work zones restrict width, length, height, or weight of truck;
- Notifying the Region Mobility Liaison and the MCTD Freight Mobility Coordinator of planned detours;
- Notifying the Region Mobility Liaison and the MCTD Freight Mobility Coordinator when restrictions are changed or lifted;
- Notifying the Region Mobility Liaison and the MCTD Freight Mobility Coordinator of any changes to traffic control plan; and
- Working with the Mobility Liaison, region staff, MTCD, local governments, industry stakeholders, and others to resolve conflicts.
- Reviewing and approving adequacy of information contained in Form #734-2357 Highway Restriction Notice as prepared by contractor (at least 35 days prior to work beginning) and then forwarding the approved form to MCTD Freight Mobility Coordinator 14 to 28 days prior to any planned work zone restriction during construction. In the event Project Manager determines contractor submitted form does not contain required content, Project Manager will work with contractor to determine appropriate content before Project Manager submits Form #734-2357 Highway Restriction Notice to MCTD Freight Mobility Coordinator. Form #734-2357 Highway Restriction Notices that are transmitted to MCTD Freight Mobility Coordinator and subsequently determined to be inadequate or incomplete will be returned to Project Manager to rework with contractor. Notice is not considered given until an acceptable Form #734-2357 Highway Restriction Notice is approved by the MCTD Freight Mobility Coordinator.

Others

- ***ODOT Major Projects Branch (MPB)***

  The ODOT MPB Mobility Contact will provide input to consultants and ensure MPB projects and/or bundles conform to the mobility guidance and policies as presented within this manual. The MPB Mobility Contact will participate in bi-weekly mobility alignment meetings to include consultants and the Region Mobility Liaison.

  MPB will also participate in the Wednesday Freight Mobility Meetings as needed.

- ***ODOT Technical Services***

  ODOT Technical Services will provide input to region and MTCD staff regarding traffic control plans, traffic management plans, reductions in capacity, design exceptions and physical requirements for the movement of freight through temporary work zones and permanent changes to the highway system. Technical Services staff will participate on project development teams.

- ***Consultants***

  Consultants will sometimes provide mobility management for projects in ODOT's Statewide Transportation Improvement Program (STIP) that are outsourced. An example would be Oregon Bridge Delivery Partners (OBDP) management for OTIA III projects. Consultants will share information that will facilitate the coordination of their mobility management efforts with other ODOT projects (STIP, maintenance, etc.) and local projects. The Project Leader and/or Consultant Project Manager is responsible to ensure this information sharing occurs.

Mobility Exception Resolution Process

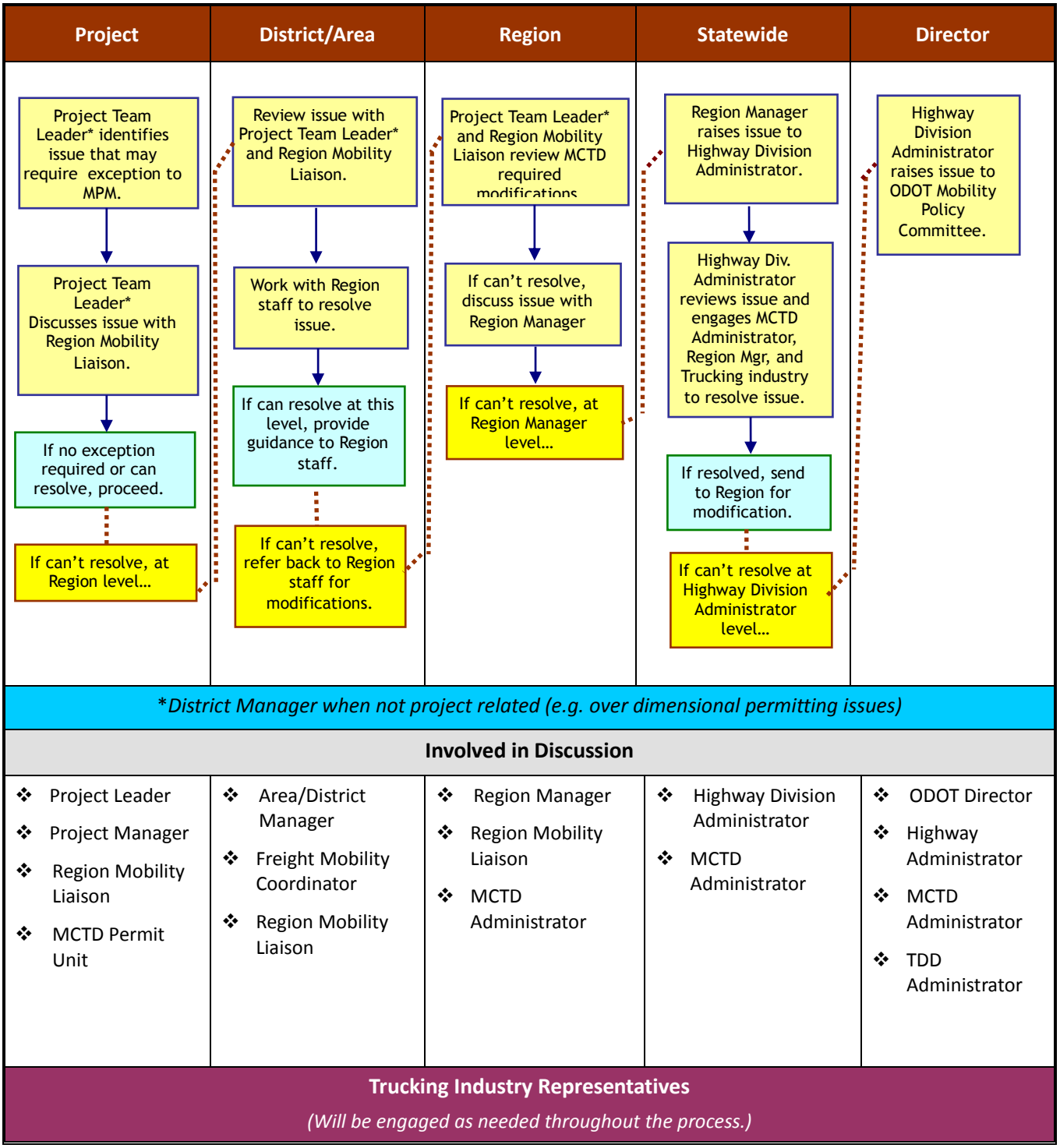
The MPM describes a wide range of mobility issues, standards, and processes for involvement at the region, statewide, and trucking industry levels. In the majority of cases, these will be sufficient to ensure that our project development, construction, and maintenance work will meet the mobility goals.

However, there will be some situations where agreement will need to be reached on exceptions to the standards in the MPM. This could include delays, vertical and horizontal clearances, detours, staging, and design.

A key to resolving many mobility issues is involving the appropriate groups early in the project development process. We work best when we sit around the table and hear each others points of view. The MCTD will help facilitate meetings between ODOT and the freight industry stakeholders to resolve mobility issues.

Figure 1 on the next page shows the process resolving special issues.

Figure 1 – Mobility Issues Resolution Process for MPM Exceptions



Chapter 3 – Freight Permitting Overview

Introduction

This chapter focuses on the freight permitting process by describing (1) permit types, (2) nighttime vs. daytime requirements, and (3) the process used for MCTD over-dimension permit requests.

It is important to understand the project area and the types of loads that travel the affected roadways. Understanding the types of loads that may be impacted will help minimize freight restrictions during permitted hours of operation. Additional information is available through the ODOT Motor Carrier Transportation Division (MCTD) Over-Dimension Operations website at ***https://www.oregon.gov/odot/mct/pages/over-dimension.aspx***.

Types of Freight Permits

There are two types of freight permits that are issued by MCTD: (1) C**ontinuous Trip Permits** (CTPs) and (2) **Single Trip Permits** (STPs). A permit is needed when:

- Width of the load or hauling equipment exceeds 8 feet, 6 inches;
- Height of vehicle or vehicle combination and load exceeds 14 feet;
- Any single axle weight exceeds 20,000 pounds;
- Any tandem axle weight exceeds 34,000 pounds;
- Gross combination weight exceeds 80,000 pounds;
- Front overhang exceeds 4 feet beyond the front bumper of the vehicle;
- Rear overhang exceeds 5 feet beyond the end of the semi-trailer, or the load exceeds 1/3 of the wheelbase of the combination, whichever is less;
- Rear overhang exceeds ¾ of the wheelbase of a solo vehicle;
- Gross weight of a group of axles exceeds allowable weights; and
- Vehicle or vehicle combination length exceeds the allowable length.

NOTE: Farm implements are exempt from obtaining overwidth permits on non-interstate highways per ORS 818.100 (12): ***https://www.oregonlegislature.gov/bills_laws/ors/ors818.html***.

Continuous Trip Permits (Annual Permits)

Approximately 175,000 CTPs are issued each year. CTPs are valid for one year and authorize unlimited trips.

MCTD issues CTPs for overwidth, overheight, overlength, and overweight operations. The following are some examples of types of permits that are issued.

- **Overwidth CTPs** allow loads up to ***14 feet wide*** (requiring a horizontal opening of 16 feet on tangent roadway and 17 feet on most curves) on all Interstate highways and other routes that are shown in black on the ***Freight Mobility Daylight Width Map***.
- Loads up to ***12 feet wide*** during daylight hours (requiring a horizontal opening of 14 feet on tangent roadway and 15 feet on most curves) are allowed to travel on routes shown in blue on the ***Freight Mobility Daylight Width Map***.

  Daylight hours are defined as ½ hour before sunrise until ½ hour after sunset.
- **Overheight CTPs** allow loads up to 14 feet 6 inches in height (requiring 14 feet 10 inches to provide a 4" buffer) to travel on specific routes shown in blue on the ***Freight Mobility Overheight Map***.

Maps are located on the web at: *www.oregon.gov/ODOT/MCT/Pages/StatewideTrafficMobility.aspx*.

When MCTD receives a restriction notification that will impact CTPs (whether it is an overwidth restriction, highway closure, etc.), they start the process of notifying the industry. MCTD is committed to providing 21-day notification to shippers. This is accomplished with a letter announcing the nature of the restriction and its associated duration and authorized detour route, if one exists. This letter is then mailed out to thousands of annual permit holders.

If mailings are required to notify the trucking industry of the upcoming restrictions, then it will be the responsibility of the Highway Division to pay for the printing and mailing costs of the necessary notifications.

The requirement to notify MCTD of a restriction 28 days* in advance is derived from this process and ensures that ODOT is able to continue to meet its commitments to the freight industry.

*__NOTE__: Contractors and other non-ODOT submitters need to submit the restriction notice 35 days in advance of work beginning for Project Manager Review.

Exemptions from requirement to send letters

When restrictions result from parades, races, or other civic events and all of the following requirements are met, a letter will not be mailed out:

- Restriction is for approximately 3 hours or less on a single day and the requesting party does not have funds or means to pay mailing costs.
- Restriction references closure for which ODOT Highway staff have approved a traffic control plan or for which a detour exists.
- Restriction does NOT involve the interstate system or a major freight route, in the opinion of the MCTD Freight Mobility Coordinator.
- There is no ODOT construction or maintenance project EA which should appropriately be charged to fund the mailings.
- The advance notification timelines have been met by the submitted restriction notice (35 days).

Single Trip Permits

Approximately 110,000 Single Trip Permits (STPs) are issued each year, which include superloads. STPs are valid for ten days.

MCTD issues STPs for overwidth, overheight, overlength, and overweight operations. Loads traveling under an STP permit are typically much greater in size and weight than what is authorized on a CTP permit. The motor carrier is issued a route-specific permit for the load based on the dimensions, and may be routed on any highway that has been approved for the size/weight. STP permits are routinely issued for over 14 feet wide up to 20 feet wide, and on occasion even wider loads. These loads may also be overheight (up to 17 feet and greater), overlength (up to 199 feet and greater), and overweight (over 200,000 lbs. and greater).

Restrictions that impact only STPs require MCTD to be notified 14 days in advance of the start of work. Since STPs are valid for ten days, the holder of the STP is authorized to transport the load anytime within the 10-day period (unannounced) during the authorized days/hours stated on the permit. The 14-day period allows MCTD to finish processing permits that have already been requested, stop issuing permits for the period during which the highway will be restricted, and allow STPs that have already been issued to expire.

Nighttime vs. Daytime Requirements

*There are **NO** nighttime travel restrictions for loads that are overheight, overweight, or overlength.* However, there are nighttime travel restrictions for overwidth loads exceeding certain dimensions (see below).

Nighttime hours are defined as ½ hour after sunset to ½ hour before sunrise.

The following overwidth loads operating under a CTP or STP permit are allowed to travel at night:

- Overwidth loads other than manufactured homes and modular homes up to 12 feet wide on Interstate highways;
- Manufactured homes/modular units up to 10 feet wide measured at the base on Interstate highways;
- Loads up to 10 feet wide (including mobile homes) on specific non-interstate routes (green routes on Freight Mobility Nighttime Width Map); ***https://www.oregon.gov/ODOT/MCT/Documents/NighttimeWidthMap.pdf***
- On a case by case basis, STP overwidth loads exceeding the above authorized widths (over 12 feet wide) can travel at night per District Manager approval on any route; and
- Emergency movements of loads exceeding the above authorized widths (over 12 feet wide) can occur at night on any route in the event of incidents creating such a need (train derailment, forest fire, etc.).

All other overwidth loads are restricted to traveling during daylight hours only (from ½ hour before sunrise to ½ hour after sunset).

It is important to note that the definition of daylight hours means that these hours will change with the seasons. Sunrise and sunset times must be checked for each project site to ensure that work and/or lane closures will not affect loads running under either a CTP or STP. There are many good internet sites that are resources for finding sunrise and sunset times, one of which can be found at ***https://www.sunrisesunset.com/predefined.asp***.

Also note that various weekend travel restrictions apply on the weekends during the summer months between Memorial Day and Labor Day, and on major holiday weekends throughout the year. Existing exemptions allow many wide loads to move on these weekends on all Interstate highways statewide up to certain dimensions, and on select 2-lane routes. *Consult with MCTD for more detailed information on these exemptions*.

Highway Division Process for MCTD Over-Dimension Permit Requests

The MCTD Over-Dimension (OD) Permit Unit has been provided a blanket authorization from ODOT Districts across the state to issue overwidth permits up to certain dimensions on Oregon highways.

The specific routes and widths are found in the *District Guide to Pilot Vehicle Requirements*: ***https://www.oregon.gov/ODOT/MCT/Documents/pilotcarguide.pdf*.**

When the dimensions of a load exceed what is authorized by the blanket authorization, the OD Permit staff contact the Road Authority to route and approve the load to move.

The District Manager is the Road Authority (through delegation from the Chief Engineer) and may authorize oversize permits exceeding the provisions of rule and statute if the movement would be in the public interest.

(B1 Bomber – 29 feet, 6 inches wide)

Chapter 4 – Temporary Conditions

Introduction

This chapter describes requirements for *temporary* traffic control regardless of its duration. These apply to *all* types of roadway activities including construction, maintenance, or any other type of ODOT activity on the roadway. The requirements described in this section are starting points for guiding mobility planning and decision making. However, there will be times where the requirements may not lead us to the right/best answer. In these instances, we need to engage the trucking industry as we implement the ***Mobility Issues Resolution Process*** described in Chapter 2.

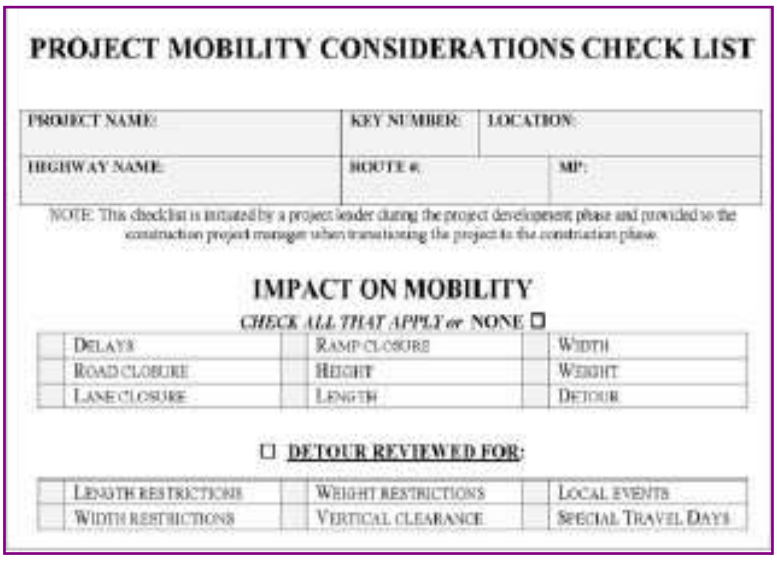
It's also important to note that ***safety is job #1 at ODOT***. When the ODOT Mobility Program was first presented to ODOT staff in 2005, there were some concerns raised as to whether safety was decreasing in importance to reduce delays or to provide passage of freight through work zones. ODOT's most important mission is to keep motorists and workers safe while keeping traffic moving throughout the state. As the Agency makes decisions about how to efficiently move traffic through work zones and other potentially congested areas, it must always do so with safety as its top priority.

Mobility Considerations Checklist

Potential impacts to freight and traffic must be considered when a project is early in the development phase. The Mobility Considerations Checklist is a fundamental part of this process. *A copy of the complete Checklist is included in Appendix C.*

The Checklist can be used during ***both project development and project construction*** (e.g., with a change order request). Completion of the Checklist requires that each project's potential impacts be assessed in the following categories:

- Critical route pairs;
- Delay;
- Road closure;
- Lane or ramp closure;
- Vertical clearance;
- Length restrictions;
- Width restrictions;
- Weight restrictions;
- Local/special events;
- Holiday travel days; and
- Detours/On-site diversions.



PROJECT MOBILITY CONSIDERATIONS CHECK LIST

PROJECT NAME:	KEY NUMBER:	LOCATION:
HIGHWAY NAME:	ROUTE #:	MP:

NOTE: This checklist is initiated by a project leader during the project development phase and provided to the construction project manager when transitioning the project to the construction phase.

IMPACT ON MOBILITY

CHECK ALL THAT APPLY or NONE ☐

	DELAYS		RAMP CLOSURE		WIDTH
	ROAD CLOSURE		HEIGHT		WEIGHT
	LANE CLOSURE		LENGTH		DETOUR

☐ **DETOUR REVIEWED FOR:**

	LENGTH RESTRICTIONS		WEIGHT RESTRICTIONS		LOCAL EVENTS
	WIDTH RESTRICTIONS		VERTICAL CLEARANCE		SPECIAL TRAVEL DAYS

The Checklist includes questions that must be addressed regarding a project's potential mobility impacts. It also outlines steps required for coordination and communication. Given that all STIP projects require a Transportation Management Plan (TMP), the Checklist information should be included in the TMP.

In the event of an operational emergency or natural disaster (e.g., fire, floods, and landslides), it is important to understand that ODOT places a priority on public safety. In such a situation, ODOT will work closely with the freight industry and other stakeholders to resolve issues associated with the temporary emergency as quickly as possible--keeping in mind that the freight industry is a necessary part of the response to any emergency or natural disaster.

Communication and Coordination Processes

It is important for project leaders, maintenance managers, Region Mobility Liaisons, and Region Access Management Engineers to communicate with MCTD regarding temporary restrictions during project development, construction, and maintenance.

Communication with MCTD – Project Development

During project development, if there is a proposed restriction being considered that will affect the ability to move freight through the project work zone, the MCTD Freight Mobility Coordinator should be engaged as soon as possible.

The "*Project Information Paper*" and the "Mobility Considerations Checklist" should be sent to the MCTD Freight Mobility Coordinator in addition to the staging details, detour plans, traffic control plans, and Special Provisions Section 220 as it relates to potential freight impacts. MCTD will use these documents to help facilitate conversations with the freight industry stakeholders.

While formal written notification (i.e. restriction notice) is not required during project development, coordinating and documenting issues with MCTD at the early stages of a project will help reduce or even eliminate issues that might otherwise become problems during construction. If severe restrictions are necessary to complete the work, the earlier MCTD knows about them, the more they can help engage the freight industry in finding potential solutions, and assist in ensuring the project schedule and/or budget is not put at risk. Documentation of final agreement should occur given the time lag between the decision and actual construction with the agreed to restriction or detour.

The MCTD Freight Mobility Coordinator will help identify the key industry stakeholders that will need to be notified and involved with the project development process. The MCTD Freight Mobility Coordinator will also act as the primary liaison between the project development team and the industry stakeholders from the inception to the conclusion of the project. However, the project leader remains accountable for communicating to the project manager mobility commitments made during project development.

Work that will restrict the movement of freight through the project site may typically involve the detouring of these vehicles. When considering detour alternatives in the project development phase, the MCTD Freight Mobility Coordinator must be notified so they can engage key industry stakeholders.

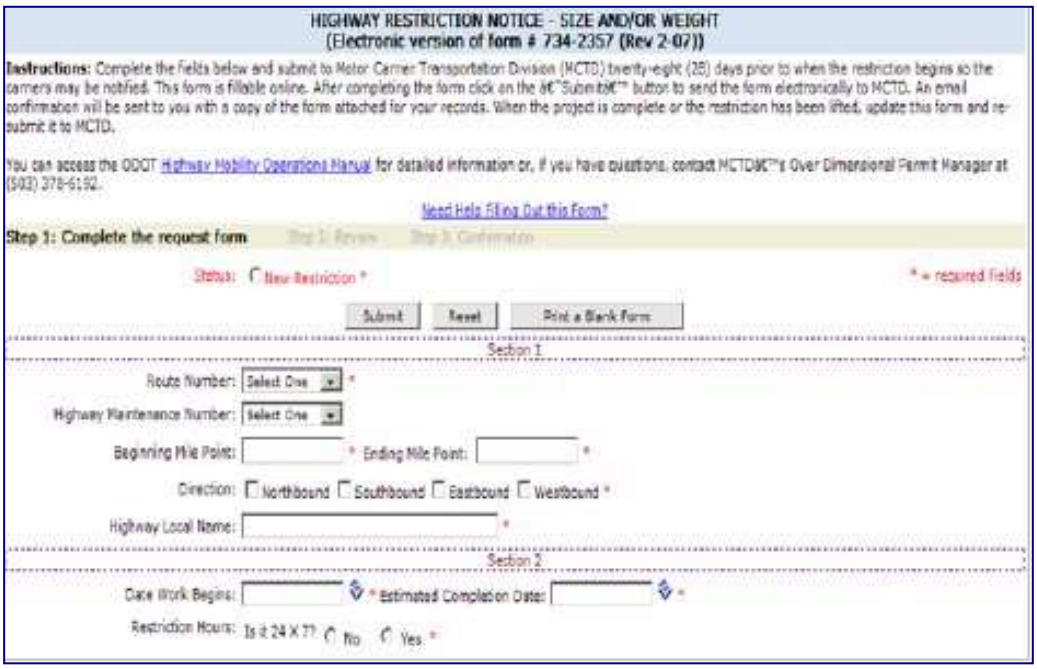
The MCTD Freight Mobility Coordinator and industry stakeholders are to participate in initial and continuing conversations about detour alternatives and mitigation requirements so that project teams can take advantage of their practical knowledge and build trust between the parties. In some cases, there may be temporary freight detours available that have been used previously that the project development team is not aware of. Industry representatives and MCTD personnel are familiar with the strengths and limitations of most alternate routes and can provide insight on

detour alternatives and mitigation requirements that may be required to upgrade a detour route so that it can handle freight traffic. Along with discussions with MCTD and freight stakeholders, discussions should also include AAA Oregon and any local governments that would be impacted by the detours so they may also have the opportunity to provide input.

Keep the MCTD Freight Mobility Coordinator involved before final design on all projects with freight impacts.

Communication & Coordination with MCTD - Construction

During construction, whenever a project (including projects on the state system that may be locally managed) restricts the width, length, height, or weight of trucks within a work zone, ODOT has committed to provide notification to industry stakeholders through the MCTD Freight Mobility Coordinator. Written notification using the online electronic restriction notice Form #734-2357 to the MCTD Freight Mobility Coordinator must take place within the number of days specified in Chapter 5 (Notification Requirements) ***prior*** to the planned freight restriction, so that MCTD can contact all affected users before the restriction takes effect.


HIGHWAY RESTRICTION NOTICE - SIZE AND/OR WEIGHT
(Electronic version of form # 734-2357 (Rev 2-07))

Instructions: Complete the fields below and submit to Motor Carrier Transportation Division (MCTD) twenty-eight (28) days prior to when the restriction begins so the carriers may be notified. This form is fillable online. After completing the form click on the â€˜Submitâ€™ button to send the form electronically to MCTD. An email confirmation will be sent to you with a copy of the form attached for your records. When the project is complete or the restriction has been lifted, update this form and re-submit it to MCTD.

You can access the ODOT Highway Mobility Operations Manual for detailed information or, if you have questions, contact MCTDâ€™s Over Dimensional Permit Manager at (503) 378-6192.

Need Help Filling Out this Form?

Step 1: Complete the request form

Status: New Restriction * * = required fields

Submit Reset Print a Blank Form

Section 1

Route Number: Select One *

Highway Maintenance Number: Select One

Beginning Mile Point: * Ending Mile Point: *

Direction: Northbound Southbound Eastbound Westbound *

Highway Local Name: *

Section 2

Date Work Begins: * Estimated Completion Date: *

Restriction Hours: Is it 24 X 7? No Yes *

MCTD communicates the planned restrictions to the freight industry by doing the following:

- Mailing out letters to the annual over-dimension permit holders;
- Issuing trucking advisories;
- Including them on the Road and Bridge Restrictions list which is maintained on the Over-Dimension web page;

In addition, MCTD must discontinue the issuance of single trip over-dimension permits (STPs).

The restriction notice form specifies the nature and location of the restriction, the date the restriction begins, the estimated date the restriction will be lifted, the hours for the restriction, and detour route information for freight traffic.

Traffic restrictions cannot start prior to the start date submitted on the form, and approved by MCTD.

Motor carriers will typically plan extra shipments before the restriction goes into effect and MCTD needs to discontinue issuing single trip over-dimension permits.

If the contractor is delayed and will not begin restricting traffic on the start date submitted on the form, notify the MCTD Freight Mobility Coordinator of the revised starting date. Also, notify the Freight Mobility Coordinator as soon as the restriction is lifted so that MCTD can relay this information to all affected parties as soon as possible and remove it from the Road and Bridge Restriction List.

Once a project has gone to construction, any proposed changes to the traffic control plan that may affect proposed restrictions must be communicated to the MCTD Freight Mobility Coordinator. The Mobility Considerations Checklist or the Traffic Management Plan can be used during construction also. MCTD will help evaluate the impacts to freight mobility and provide guidance to the Project Manager as well as notifying industry stakeholders.

Case Study - Communication & Coordination: Mill Creek Bridge Project

The Mill Creek Bridge Project, on US 26 in Wasco County, addressed a bridge deck failure on a historic steel truss structure. The project, located on the Warm Springs Indian Reservation, was surrounded by sensitive archaeological sites, cultural sites, and endangered species. The only detour route available to trucks would take them a great distance off of their route and cause extensive delays. This project was on a primary freight route carrying around 5,000 vehicles per day, including a significant truck percentage (15%).

The project team identified impacts the project would have on freight mobility and the need to involve industry stakeholders. The MCTD Freight Mobility Coordinator was included early on the project development team and communicated with industry stakeholders and invited two key industry representatives to meet with the project team.

The result was an alternate construction method that had been successfully used in other states to accelerate the work. By analyzing the shipping schedules for freight along this route, along with the traffic patterns for regular vehicles, a closure schedule was agreed upon which minimized impacts to the freight industry as well as the traveling public. The roadway closed for four days each week starting on Sunday night, sections of the deck were replaced with new pre-cast sections, and the route was reopened to traffic each Friday morning without restrictions. The MCTD Freight Mobility Coordinator and the industry representatives communicated the restrictions to industry stakeholders so they could schedule their trips to coincide with the route's open times.

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Transportation Management Plan Requirements

The purpose of a Transportation Management Plan (TMP) is to document critical information regarding the temporary Traffic Control Plan (TCP) associated with a roadway project. There are two separate perspectives that must be considered when deciding if a TMP is required for the project.

Perspective of ODOT's Traffic Control Plan Unit

A TMP is required for all construction projects. Maintenance activities are exempt unless the activity will impose a freight restriction that requires notification to MCTD.

A project-level TMP Guidance document is available on the ODOT TRS/TCPU website (***https://www.oregon.gov/ODOT/HWY/TS/Pages/traffic_control_plans.aspx***). The TMP provides additional information and documentation regarding decisions made that affected the development of the TCP. The TMP also includes ideas and decisions around the measures used to emphasize safety and mobility during implementation of the TCP.

The TCP will follow current ODOT standards and practices for the layout and placement of the traffic control devices, signs, and related equipment for the construction project. The supporting documentation will (1) consist of all of the correspondence, meeting minutes, calculations, models, and agreements that are used to support and show how the TCP was developed and (2) show that it achieves the goal of providing the best solution for mobility within the project and Region. For simpler projects, including maintenance projects, the TMP may consist of only the TCP and the Mobility Considerations Checklist.

For "significant" projects (projects within a Transportation Management Area or those that exceed $5 million or those with substantial mobility impacts) the TMP will not only include the TCP, but will include two additional components:

- **Transportation Operations (TO) Strategies** – strategies that will mitigate work zone impacts by reducing traffic volumes within the work zone; and
- **Public Information (PI) Strategies** – measures taken to inform the public of expected impacts and conditions.

While a TMP with all three components is intended for significant projects, it is recommended that all projects attempt to address the TO and PI components as well.

Temporary Horizontal, Vertical, and Weight Standards & Restrictions

Temporary horizontal, vertical, and weight restrictions can have severe impacts on freight mobility, and if not planned properly, can affect freight movement on entire routes. These types of restrictions require coordination with MCTD that should take place as soon as a restriction is being considered.

Horizontal Width

The horizontal width standards outlined below should be maintained and are consistent with ODOT's commitments made to the freight industry stakeholders to help minimize restrictions. Overwidth loads up to 16 feet wide are commonly transported throughout Oregon. Some examples include manufactured homes, windmill components, and farm implements. In addition, Oregon issues annual overwidth permits authorizing loads up to 14 feet in width for many 2-lane highways throughout Oregon. Based on these commitments, a minimum of 19 feet of horizontal width is required to be maintained on the interstate highways during the daylight hours.

Daylight hours are defined as ½ hour before sunrise until ½ hour after sunset.

Horizontal Width Standards Interstate/Multilane Highways during Daylight Hours

- Maintain 28 feet of horizontal clearance for two lanes of one-way traffic.
- Maintain 19 feet of horizontal clearance for one lane of one-way traffic.

Other 2-Lane Routes on National Highway System (NHS) during Daylight Hours

- Maintain 28 feet of horizontal clearance for two lanes of one-way traffic (single lane each direction).
- Maintain 16 feet of horizontal clearance for one lane of one-way traffic.

Refer to the Nighttime vs. Daytime Requirements in Chapter 3 for information regarding horizontal width requirements for nighttime hours.

Sunrise/Sunset Exceptions:

During the project development phase, when the traffic engineers or project development team determine longer work hours are needed, and horizontal width standards cannot be maintained for work occurring between April and August, project teams can seek an exception to encroach into the daytime hours to allow for a longer work window (up to 12 hours). These exceptions are called **Sunrise/Sunset Exceptions**, which are exceptions to OAR 734-082-0005 allowable overwidth movement hours.

To request a Sunrise/Sunset Exception, provide the following information to your region mobility liaison who will forward to the MCTD Freight Mobility Coordinator:

- Staging details (horizontal width, etc.)
- Project location
- Available horizontal pavement width between barriers.
- Dates and hours for width restrictions

The MCTD Freight Mobility Coordinator will share this information with the freight industry stakeholders. Depending on project location and types of loads moving through the project area, they may request the hours encroaching into the daylight be either in the morning or at the end of the day so freight would be least impacted.

Horizontal Width Restrictions/Notification Required When:

Interstate/Multilane Highways

- Less than 28 feet for two lanes of one-way traffic.
- Less than 22 feet for one lane of one-way traffic.

Other 2-Lane Routes on National Highway System (NHS)

- 28 feet of horizontal clearance for two lanes of one-way traffic (single lane each direction).
- 22 feet of horizontal clearance for one lane of one-way traffic.

A written notification using the on-line electronic restriction notice Form 734-2357 must be submitted to the MCTD Freight Mobility Coordinator when reducing the horizontal clearance to less than the clearances listed above in the horizontal width restrictions section.

The amount of notification needed (up to 35 days, depending on the submitter, see Chapter 5) varies depending of the type of highway, time of day, and number of lanes where width is reduced.

Vertical Clearance

Any proposed temporary reduction in vertical clearance from the existing is a restriction that is subject to the notification requirements described in Chapter 5. Some examples are temporary bridge falsework, bridge containment systems, closing lanes and/or diverting traffic into lanes with lower clearances underneath structures, etc. These restrictions require coordination with MCTD that should take place as soon as a restriction is being considered. For temporary clearance reductions, submittal of the Standard Vertical Clearance Form 734-2614a ***https://www.oregon.gov/ODOT/HWY/CONSTRUCTION/Pages/HwyConstForms1.aspx*** is required. Actual measurements on all structures must be submitted within 30 days of the reduction taking effect.

Weight

For potential weight restrictions, the *Guide Manual for Condition Evaluation of Load and Resistance Factor Rating* published by AASHTO is used to determine load rating factors.

Whenever load rating factors show insufficient load capacity for unrestricted use by Permit Vehicles, ODOT's Weight Restrictions Policy (PMT 06-01) will be followed.

Vertical, Horizontal, and Weight Restriction Considerations

Several factors must be considered before imposing temporary vertical, horizontal, or weight restrictions on a route. These include but are not limited to the following:

- Are there any available options that would eliminate the restriction?
- Are there any available options that would minimize the restriction?
- Are there any available options that would shorten the duration of the restriction?
- How will restricted traffic be detoured?
- Are there any restrictions on the detour route?
- Is this route being used as a detour for other restricted routes?
- How will all restricted vehicle owners be notified of the restriction?
- How will the restrictions affect existing MCTD permits?
- How will the restrictions affect emergency services?
- Is the highway part of a critical route pair?

If restrictions would limit or delay the passage of emergency services vehicles, then special coordination with these stakeholders must be made. If there is a conflict with other projects, then the work may need to be rescheduled to eliminate the conflict. When feasible, a back up route should be identified in case of a natural disaster or unplanned restriction on the proposed detour

route.

When planning a temporary vertical, horizontal, or weight restriction, the Region Mobility Liaison, project team leader/manager, MCTD Freight Mobility Coordinator, and industry representatives should be engaged in the decision making process. The MCTD Freight Mobility Coordinator has information about how many and what types of vehicles use each route. They also have experience setting up detours and providing appropriate notification to all affected vehicle owners. Industry representatives have a great deal of experience dealing with restrictions and in finding ways to avoid or minimize the restrictions.

Temporary weight restrictions can also be caused by catastrophic events such as natural disasters or vehicle collisions. In these cases, MCTD and the trucking industry will be notified and the bridge will be restricted until the extent of the damage is determined. Once the extent of the damage has been determined, either the temporary restriction will be lifted or a permanent restriction will be put into effect until repairs can be made. Every effort will be made to ensure that the time of the temporary restriction and the effect on the motor carrier industry are minimized.

In some cases, the cost of maintaining the vertical or horizontal clearance during construction will be high when the impacts of a temporary restriction to freight traffic using the route will be relatively small. This may occur when the duration of the project is short or if there are several unrestricted routes in close proximity to the route in question. In these cases, the Region Mobility Liaison, project team leaders, and MCTD will work with industry representatives to evaluate the different alternatives. MCTD will perform an informal cost-benefit review (*see Appendix D*) of strict adherence to the vertical and horizontal clearance standard and provide the results to the Region Mobility Liaison, project team leaders, and affected industry representatives for concurrence.

During construction, adequate signing and traffic control devices must be deployed to warn traffic and direct affected traffic around the restriction:

- For **vertical** clearance restrictions, false-work illumination and over-height vehicle warning systems can also be used, if needed;
- For **horizontal** clearance restrictions, temporary speed zone reductions and linear delineation systems on barrier or guardrail can also be used, if needed; and
- For **weight** restrictions, all requirements specified in ODOT's "*Size and Weight Restrictions on State Highways*" Policy (PMT 06-01) must be followed before a restriction can take place. During construction, adequate signing and traffic control devices must be deployed to warn traffic and direct affected traffic around the restriction. Flaggers and/or law enforcement officers may need to be employed to ensure detour compliance in rare circumstances.

Written notification using the online electronic restriction notice form #734-2357 must be sent to the MCTD Freight Mobility Coordinator at least within the number of days specified in Chapter 5 (Notification Restrictions) before any freight restriction can be implemented.

MCTD must be notified for all ***on-site diversions*** where clearance under structures (bridges, signs trusses, etc.) may be a concern to ensure that specific lane routing is not utilized at the project location to allow over-height loads to pass.

Case Study – Lancaster Drive Bridge Project

The Lancaster Drive Bridge portion of the OR22: North Santiam Highway Bridge Repairs Project, along the North Santiam Highway in Marion County, addressed a failing concrete structure that crossed over a high volume roadway. Further complicating the matter, this particular route already had a vertical height restriction.

To strengthen and repair this structure, steel plating needed to provide the required structural reinforcement. Steel plates on the top of the deck would be bolted to other plates on the bottom of the deck to provide the needed structural support. Unfortunately, the existing vertical clearance of the structure was already only 15' 3". By bolting steel plating to the bottom of the structure, the project would be reducing the vertical clearance by an additional 2" – 2½".

To determine the impacts of further reducing the vertical clearance on this structure, the MCTD Freight Mobility Coordinator and freight industry stakeholders were contacted. Due to the severity of the impacts to freight mobility along this freight route, additional options to reinforce the bridge without reducing the vertical clearance were researched. The bridge designer found a way to provide the needed structural reinforcement without reducing the portal height for the structure. The needed repairs were made without restricting freight mobility.

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If **freeway ramps are used as a short "up and over" detour** around a vertical, horizontal, or weight restriction on a freeway, then MCTD must be involved to help evaluate the impacts of this type of routing for high or wide loads. It is also imperative that MCTD be notified of the implementation of this type of detour as it affects the permit instructions they provide to motor carriers. For instance, permits provide specific instructions on what lane to use and what ramps or exits they need to take in order move along the corridor. If the motor carrier encounters a work zone that directs them to use a ramp for an "up and over" that is not on their permit, then they face a dilemma as they are driving and must make a decision to not follow the permit and risk a potential violation or to travel through the restricted work zone and risk a potential collision or a potential collapse due to weight. Thus, it is critical for there to be clear communication between MCTD and the personnel responsible for the construction activities so permits get issued with correct current information.

Case Study – Weight Restriction: Cordon Road Bridge Project

The Cordon Road Bridge portion of the *OR22: North Santiam Highway Bridge Repairs Project*, is located along the North Santiam Highway in Marion County. ODOT had a failing concrete structure that crossed over a high volume roadway. This particular route is the primary freight detour route when closures on I-5 in the Salem area are needed. This route was the only available detour route for mobile home traffic that exceeded 16' 2".

To strengthen and repair this structure, it was determined that crack sealing and epoxy dowelling would be needed to provide the required structural reinforcement. Considering the weakness of the bridge, drilling holes into the existing supports in order to install the dowels weakened the bridge enough that it needed to be weight restricted during construction.

As soon as it was determined that the weight restrictions would be necessary, the "*Weight Restrictions on Bridges*" policy (PMT 06-01) went into effect and MCTD, key ODOT staff, and freight industry stakeholders were contacted to establish a plan and a suitable detour route. The duration of the weight limitations were limited to times with the least impacts to traffic. Weight restrictions and closures were planned to provide windows for the over-height vehicles to cross at times that the bridge was not restricted. Using input from all parties involved, the Project Team set up a detour route and a staging plan that reduced delays and minimized impacts to traffic mobility.

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Case Study – Horizontal Clearance: Siuslaw River Bridge Project

The Siuslaw River Bridge Project, along the Oregon Coast Highway in Lane County, addressed a failing metal grid deck on an old double bascule draw span of an historic structure. Built in 1936, the bridge only provided 27 feet of usable roadway width. This particular structure is the only crossing of the river for many miles and carries around 12,200 vehicles per day, including many trucks and recreational vehicles.

Due to the high traffic volumes involved and the importance of keeping this route open to traffic, the project team decided that staged construction would work better than a full closure with detour. Due to the length and nature of this structure, it was impractical to build a detour structure or widen the existing structure during construction. To stage the deck replacement, this project would need to further restrict a bridge that was already very narrow.

To determine the impacts of further reducing the horizontal clearance on this structure, the MCTD Freight Mobility Coordinator and freight industry stakeholders were contacted. Research was completed to develop additional options to minimize or eliminate the impacts of the horizontal clearance restriction.

Since impacts could not be avoided, efforts were made to accelerate construction and minimize the duration of the impacts. Specific construction timeframes were identified and aggressive construction windows were set to minimize the construction duration. A few days were also provided between stages for full, unrestricted traffic and freight flow to lessen the severity of the restriction. Communication protocols were established, so that industry stakeholders could prepare for these openings and maximize each day the bridge was unrestricted to the fullest advantage. **Although the restriction could not be avoided, through effective communication and planning, the impacts to freight mobility were minimized.**

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Length Restrictions

A highway length restriction is often caused by roadway curvature. Any project directly involving the source of a length restriction should consider evaluating the opportunity to remove the length restriction, whenever possible.

When planning a temporary length restriction, the Region Mobility Liaison, project team leader/manager, MCTD Freight Mobility Coordinator, and industry representatives should be engaged in the decision making process.

Delay

All construction projects will be evaluated for delay impacts to mobility and staging. Options will be carefully reviewed to minimize duration and severity of necessary delay impacts. Work zone delay is defined in the *ODOT Work Zone Traffic Analysis Manual*:

> *"For the purposes of Work Zone Traffic Analysis the concept of travel delay is defined as the additional average travel time that will be required to travel from one point to another as a result of construction activities. Existing delays resulting from current capacity and geometric deficiencies and from incidents are not included."*
>
> ***ODOT Work Zone Traffic Analysis Manual – Fall 2008.***

Delay also includes additional travel time resulting from detours and resulting from congestion on a roadway when a lane or shoulder is closed or traffic is diverted on-site.

Delay Requirements

A delay estimate must be prepared for every construction project on routes with delay thresholds. Guidance for this analysis can be found in the Work Zone Traffic Analysis Manual. The analysis can be performed using the Work Zone Traffic Analysis Tool.

Use of this tool requires an analyst to take the ODOT Work Zone Traffic Analysis Workshop, which is offered several times each year. Upon completion of this course, a username and password will be created to allow access to the analysis portion of the website.

Corridor Delay Thresholds

Corridor delay thresholds have been established for the routes covered by the Corridor Mobility Committee for I-5 North, I-5 South/OR 58, I-84, US 26/97/20, and the Coastal Network.

Corridor-Level Traffic Management Plans (TMPs) have been developed for each of these corridors. Delay thresholds are included in the individual TMPs for these routes.

Construction activities in these corridors need to be coordinated to ensure that the delay thresholds are met. Although it is recognized that meeting these thresholds will be a challenge during high traffic volume periods related to seasonal traffic, holidays, and special events, these thresholds will be in effect 24 hours per day, 365 days a year. To avoid undesirable delays during these high volume periods, special attention should be applied to staging techniques. If higher delays are

unavoidable, an exception to the corridor delay thresholds may be developed (*see description of process below*).

The delay thresholds will apply to all construction or maintenance-related projects in the corridor including OTIA STIP, and local projects, where applicable. The delay thresholds are compared to estimated delays for all projects and maintenance activities on a segment of corridor. This information will be collected as part of the Region Mobility Committee activities and the Corridor Mobility Committee activities.

For less restrictive **maintenance activities**, Regions decide as to whether or not delay estimates will be formally prepared. Regardless, the sum of the delay resulting from construction and maintenance activities must fall below the applicable corridor or segment delay threshold. In cases where the delay from maintenance projects cannot be accommodated within the threshold, it may be necessary to reschedule the maintenance activities (e.g., during nighttime hours or to another time when construction-related delays are lower) or seek a delay exception if rescheduling is not possible or practical.

Delay estimates should be performed as early as practical in the planning and design process and repeated as the project progresses to ensure that the final design will meet the delay expectations for the corridor. By estimating delays early, the planning team can identify if delays need to be mitigated by adjusting project schedules or programming the correct level of funding to minimize travel delays.

The comparisons between the estimated delays and the overall delay thresholds will help ODOT determine how travel will be impacted and how adjustments to projects will need to be made to achieve mobility goals in the corridor. Some projects may be scheduled concurrently, though work may take place at different times of day so that the projects may not actually be active simultaneously. This is not addressed in delay estimates since precise construction schedules have not been set. Once the projects are underway, data collection will provide a more accurate estimate of the delay impacts of active projects.

Once the delay impacts of projects have been established through field measurements (for projects under construction) or through estimation (planned projects), the following steps will be taken to attempt to keep total delays associated with all construction and maintenance activities scheduled in the corridor or segment below the delay thresholds:

1. If the **delay threshold is being exceeded**, adjustments to the schedule, adjustments to the staging, or adjustments to the traffic management strategies will need to be considered to reduce the delay below the threshold;
2. If project delays for a corridor **fall below the delay threshold**, the corridor or segment will be evaluated to determine if adequate delay time is available to accommodate other projects over the construction period; and
3. If the corridor **delay threshold is exceeded** and the corridor or segment cannot accommodate existing projects, a review of project schedules, staging, and traffic management strategies will be conducted to determine if, and at what cost, the delays associated with existing projects can be reduced. Consideration will also be given to revising the schedules, staging, and traffic management strategies (like public information)

of the other planned projects in the corridor so that new projects can be implemented in the corridor.

Traffic control strategies proposed which have the potential to result in significant delays or which, when added to the estimated delays for other construction projects in the corridor, would exceed the segment or corridor delay threshold, will require further analysis. If such strategies and associated delays cannot be avoided, the Region Mobility Liaison will work with region staff to identify potential schedule changes for the project or other projects in the corridor so as to minimize the impacts to corridor delay.

20-Minute Stop and Hold and Delay Exceptions

The corridor delay thresholds **do not preclude** the use of the 20-minute stop and hold staging strategy. The corridor delay thresholds are **average** delay times.

Delay Exceptions

Specific work activities and time periods may make it infeasible to achieve the delay thresholds in a particular segment or corridor. In these cases, an exception may be sought. The basis for exceptions would be an evaluation of the following minimum criteria:

- **Alternatives analysis** demonstrating the least amount of overall delay impact and potential economic impact to communities and businesses;
- Direct project **cost comparisons** of each staging alternative; and
- Ability to **communicate with the traveling public and trucking industry** to gain buy-in and awareness of the impacts and means to mitigate those impacts.

Delay exception requests will typically be pursued during project development by the Region Mobility Liaison and project team leader or maintenance manager. There may be times when an exception request will need to be developed during the construction phase. If so, the project manager or maintenance manager will work with the Region Mobility Liaison to develop the exception request.

The Region Mobility Liaison will share all exception requests with the MCTD Administrator for review and concurrence. **The Region Manager will be responsible for final approval of the request.** If an exception is necessary, it should be considered and processed during the design stages of a project and not immediately before a project is to begin. *An example of a delay exception request can be found in Appendix E.*

Upon approval of the exception, the delay thresholds will be modified to reflect the parameters of the exception. Such modifications will remain in effect for the duration of the specific project, after which the delay thresholds will revert to those documented in the Corridor-Level TMP. It is important to note that the estimated delays, as well as measured actual delays, are intended to represent the **average** delay for all vehicles during that time period. Thus, the intent is not to

determine the delay for the vehicle that is delayed the most. Some motorists may experience more delay while some motorists may experience less delay during the targeted period.

Ideally, such estimates and measurements would be conducted for each hour of the day and for each unique traffic control strategy. With consideration of the limited resources involved, it is recommended that such estimates and measurements be conducted for the highest volume time period of each unique traffic control strategy. For example, if a work zone includes a lane restriction during nighttime construction activities only, it is recommended that the delay estimates or measurements be conducted for the highest volume hour during the nighttime activities to determine the peak delay resulting from the lane restriction and again for the highest volume during the day (e.g., the afternoon peak hour) to determine the peak delay resulting from the base work zone configuration (i.e. when all lanes are open but the capacity is reduced due to work zone speed limits, rubbernecking, etc.).

Work zones identified as having unacceptable delays will be subject to mitigation. The Project-Level TMPs will include a contingency plan for addressing such conditions. The construction contractor will be required to implement mitigation strategies, as necessary, to reduce the delay in the subject work zone.

Case Study – Delay: I-5 Sutherlin to Roseburg Design-Build Project

Interstate 5 - Sutherlin to Roseburg design-build project required closing all the southbound lanes (two) of I-5 and staged a traffic diversion using the northbound lanes (two) of I-5. The diversion reduced traffic to one lane in each direction for 2 miles. To determine the impacts to mobility of diverting traffic to one lane, the Project Team performed a traffic analysis during the design stage. The analysis showed traffic delays would be minimal during peak hours, with no negative impacts to mobility. The diversion was anticipated to last 13 weeks.

Complicating the matter, the diversion occurred during the Easter Holiday and week of Spring Break. The capacity of the work zones would potentially not handle the anticipated traffic volumes without causing excessive delays during the holidays. In this illustration, the Project Team would need to explore various options to manage the impacts to mobility due to the one-time increase in holiday traffic volumes. The options available to the Project Team would include:

- Accelerating the construction (incentive contracting using 24 hour work and extra man-power) to allow for completion of the traffic diversion and lane reductions stage prior to the holiday.
- Temporarily removing the traffic diversion and lane reductions in order to handle the higher traffic volumes and minimize the delays.
- Exploring other design/detour options to eliminate or minimize delays; and
- Seeking an exception to the delay threshold requirements for the project to allow for the increased delays that would result due to the one-time increase in traffic volumes

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On-Site Diversions

One staging option commonly used to maintain traffic is the on-site diversion. An on-site diversion is a change in traffic pattern that shifts lanes from their existing alignment but maintains traffic flow on-site. If traffic is shifted to an off-site facility, such as another roadway, it is considered a detour. In some cases, an on-site diversion may mean a slight shift of the existing alignment to better accommodate shoulder work. Diversions may also involve a complete shift of traffic to the median or to the opposite side of a median to allow work to be completed on one-half of a divided highway. When using such diversions, weight restrictions and vertical clearances may be affected.

Under certain structures, vehicles of certain heights may be required to use a specific lane under which the vertical clearance is different than it is under adjoining lanes or shoulders. Therefore, MCTD must be notified for all on-site diversions whenever traffic is routed under structures.

Some structures that are weight restricted require heavy loads to utilize certain lanes or to straddle the center of the structure when passing over it. These weight restricted bridges are on the Weight Restriction List. Diversions over structures must consider existing permanent and temporary weight restrictions and consultation with MCTD should take place if any diversions will occur over such structures.

Detours

Detours are a staging strategy that involves shifting traffic onto a different roadway and away from the project site. This occurs during a closure of a facility to all traffic or to selected traffic, such as a closure for over-width vehicles only. The ODOT Director has addressed the importance of engaging industry stakeholders in ODOT's project development process:

> *"The process is intended to be collaborative between ODOT and industry. Industry is to participate in initial and continuing conversations about detour alternatives and mitigation requirements. The purpose of this requirement is to enable ODOT to take advantage of industry practical knowledge and to build trust between the two parties."*
>
> *"It is important for the various ODOT participants to be on the same page, but ODOT staff are not to work to reach a conclusion on the best detour or other traffic changes before beginning an earnest conversation with industry."*
>
> ***Freight Mobility – ODOT Commitments with the Freight Industry – 12/22/04***

Communication and engagement of industry stakeholders are an integral part of freight mobility during the development of detours.

Detour Notification and Communication

During project development, the MCTD Freight Mobility Coordinator needs to be notified about any planned off-site detour routes. MCTD will work the Region Mobility Liaison and project team leader/manager to engage industry stakeholders for the development of off-site detours.

When considering detour alternatives, the MCTD Freight Mobility Coordinator must be notified so they can help engage key industry stakeholders in the project development process. During construction, ODOT has committed to provide notification to industry stakeholders through the MCTD Freight Mobility Coordinator prior to moving traffic onto a planned detour route. Written notification (Form #734-2357) to the MCTD Freight Mobility Coordinator must take place within the number of days specified in Chapter 5 (Notification Restrictions) prior to moving traffic to the detour route, so they can contact all affected users before the detour route goes into effect. Written notification also needs to be sent to the MCTD Freight Mobility Coordinator as soon as the detour route is no longer needed, this information can be relayed to all affected parties as soon as possible.

The MCTD Freight Mobility Coordinator will identify the industry stakeholders which are affected by the detour and will notify permit holders of the detour route. In the case of single trip permits, the MCTD Freight Mobility Coordinator will use the permits to direct over-dimensional units to use the detour routes.

Selecting and Evaluating Detour Routes

All planned detours must take into account and provide for all traffic that is legally allowed to use the route, including freight traffic and over-dimensional units. The MCTD Freight Mobility Coordinator should determine what types of freight traffic currently use the route that will be closed. Any and all traffic that uses the existing route must be provided for on the detour route. If over-dimensional units use the existing route but cannot use the detour route, then either a different detour route is needed, or a second detour route for over-dimensional units is needed.

When a local detour route is not identified, ODOT will ensure that an alternative route is available while the primary route is compromised. The alternative route will substantially accommodate vehicles of the same weight and dimensions as are accommodated on the priority route (to the extent that these loads will reasonably and safely fit within the existing size constraints of the secondary route and within the delay thresholds that are normally allowed on the alternative route). In the event that a detour route is not initially agreed upon, the Region Mobility Liaison, project team leader/manager, MCTD Freight Mobility Coordinator, and industry stakeholders should meet, discuss options, and agree on a solution.

All detour routes need to be checked for restrictions which could affect freight traffic. All structures along the route need to be checked for weight restrictions. All turning movements need to be evaluated to see if they safely provide for turning movements and off tracking. All horizontal and vertical pinch points need to be checked to ensure that all vehicles can safely traverse the entire route. Once a detour route clear of restrictions has been identified, the route should actually be tested with a truck to check for problems with sight distance or grade if possible.

The approved detour route(s) should be those that have the least out-of-direction travel and create the least delays to traffic. The MCTD Freight Mobility Coordinator and industry stakeholders are critical partners in determining the best routes due to their familiarity with secondary routes and knowledge of freight restrictions on those routes.

Out of Direction Travel & Delay Considerations

Out-of-direction travel, simply stated, is the additional distance that a vehicle must travel on a detour route beyond what would need to be traveled on the existing route. If the existing route is 10 miles long without the detour, and 14 miles long when traffic is routed onto the detour, then the out-of-direction travel would be four miles.

Out-of-direction travel impacts to passenger vehicles are usually less costly than out-of-direction travel impacts to freight vehicles. When detour routes are established, the additional length that freight vehicles must travel impacts the weight/mile taxes, permits, and distance allowances. Detour route(s) need to be reviewed for these impacts, and those that have the least out-of-direction travel should be utilized whenever possible. Detour delay time is simply the amount of additional time it takes to travel a route once traffic is switched onto the detour. Depending on the length and nature of the detour, delay impacts to normal traffic are usually small, but impacts on mobility and freight traffic can be very large.

Significant delays to freight traffic can be caused by frequent stopping and restarting, stopping traffic at the bottom of steep grades, sending traffic through sharp corners, etc. When detour routes are established, consideration must be given to the special needs of freight traffic. If possible, the route should be driven in an actual freight vehicle to help identify problem areas. Detour route(s) need to be reviewed for these impacts, and those with the least detour delay times should be utilized whenever possible.

During the development of projects, special consideration should be made to eliminate or minimize out-of-direction and detour delay travel impacts. Whenever practical, full width on-site detours, or diversions, should be utilized. Innovative tools, such as incentive/disincentive clauses, or alternative contracting methods such as “A+B” contracting, should be considered to shorten the duration of the impact. Practitioners should consider using prefabricated construction materials that will reduce the overall construction time, and select construction methods that reduce overall construction duration.

Special Detour Considerations

There are several special considerations that must be taken into account when evaluating or designing a detour route. These include, but are not limited to, the following:

- How will the detour route affect emergency services response times?
- Will vehicles transporting hazardous materials be able to use the planned detour route?
- Are any other projects using the existing route as a detour?
- Are there other projects along the proposed detour route which will restrict traffic?
- Is there another detour route available if something happens to the proposed detour route?

If out-of-distance travel or detour delay times are excessive, then special coordination with emergency services must be made. If hazardous material is transported along the existing route, then the detour route must be evaluated to see if it can accommodate it as well. If there is a conflict with other projects, then the work should be rescheduled to eliminate the conflict. A back-up detour route should always be identified in case of a natural disaster or unplanned restriction on the proposed detour route.

Case Study – Detour: Chehalem Creek Bridge Project

The Chehalem Creek Bridge Project, along the Yamhill-Newberg Highway (OR 240) in Yamhill County, addressed a failing timber structure surrounded by wetlands, endangered fish habitat, and a FEMA flood plain. This particular route carried around 7,000 vehicles per day, including a significant truck percentage (8.2%). Due to the excessive environmental impacts and costs associated with a temporary bridge or staging scenario, the option for an off-site detour was selected.

Initially a 1/2 mile long detour was identified using nearby county roads. This route worked well for passenger car traffic, but would not accommodate freight traffic. Upon examining the detour route for impacts to trucks, it was noted that one of the bridges along this route was weight restricted and the turning radii at the intersections were too sharp for trucks.

By working with MCTD and the freight industry, the Project Team identified a longer detour route that had previously been utilized as an emergency truck detour. Although this route was four times longer than the initial detour route, the actual out-of-distance travel was the same.

Since the delay time was considered a significant impact to the trucking industry, modifications to the detour route were implemented to reduce the detour delay time. These modifications included radii improvements to three intersections, eliminating a four way stop along the route, changing through and stop movements at several intersections, and improving the sight distance along the route. The project team was able to provide free-flow conditions along the route, avoiding back-ups and minimizing delay.

Construction of the bridge was completed in about one-fourth the time that would have been needed to stage the construction. The overall cost of the project was also reduced without impacting the sensitive environmental concerns, and in the meantime, the infrastructure of the local road system was enhanced. Freight and other traffic experienced minimal delays and the work zone was much safer with the removal of active traffic from the construction site.

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Staging

Providing Traffic Control Plans with staging that maintains appropriate horizontal and vertical clearance will enable ODOT to repair and upgrade the existing system while transporting freight within the state. All construction projects will be evaluated for impacts to freight mobility and staging options will be carefully reviewed to minimize the duration and severity of the impacts from construction work. Potential impacts to the freight carrying-capacity of highways due to lane shifts during construction will also be evaluated.

Staging Notification and Communication

During project development, the MCTD Freight Mobility Coordinator should be notified about any planned staging restrictions that will potentially impact freight traffic. When considering staging alternatives, the MCTD Freight Mobility Coordinator should be notified so they can engage key industry stakeholders in the project development process.

During construction, ODOT has committed to provide notification to industry stakeholders through the MCTD Freight Mobility Coordinator prior to implementing any staging restrictions. Written notification (Form #734-2357)) to the MCTD Freight Mobility Coordinator must take place within the number of days specified in Chapter 5 (Notification Requirements) prior to implementing the staging restrictions, so MCTD can contact all affected users before the staging restrictions go into effect. The notification needs to be lifted as soon as the restrictions are no longer needed.

The MCTD Freight Mobility Coordinator will identify the industry stakeholders affected by the staging restrictions and will notify permit holders of these restrictions. In the case of single trip permits, the MCTD Freight Mobility Coordinator will limit or detour over-dimensional units while staging restrictions are in effect.

Selecting and Evaluating Staging Options

When evaluating staging options, the project team leader/manager must take into account and provide for all traffic that is legally allowed to use the route, including freight and over-dimensional units. The MCTD Freight Mobility Coordinator can determine whether or not freight traffic currently uses the affected route. If over-dimensional units use the existing route, a detour route must be provided and special consideration must be given to reduce the duration of the staging restriction.

When reviewing staging options during project development, it is important to compare what the overall impacts to industry stakeholders will be with each option. In some cases, a complete route closure with a detour over a shorter period will have a smaller overall impact than an expensive, prolonged staging plan that strives to keep the route open. Some stakeholders prefer a project with a shorter duration and a severe impact (i.e. brief closure with detour) over a project with a prolonged duration and minor impacts.

If staging restrictions would limit or delay the passage of emergency services vehicles, then special coordination with these stakeholders must be made.

Staging Delay Considerations

The project team leader/manager must take into account the impacts that each staging option will have in regards to delay time. Each option must be carefully evaluated and, when safe and practical, the option with the least impacts should be selected. Issues to be considered include:

- **Each project needs to be analyzed to ensure that sufficient capacity for the expected traffic volumes is maintained**. Staging options reviewed must be able to accommodate the expected traffic volumes at all times, especially during peak hours of travel. If the traffic analysis shows that traffic volumes for a staging option will exceed capacity, then the practitioner will need to provide for additional capacity or find a way to reduce the traffic volumes. If this cannot be done, then the staging option should be eliminated.
- **Night work can be used on many projects to avoid daytime impacts when traffic volumes are greater.** Temporary detour structures or temporary bridge widening can be used to provide additional capacity when traffic volumes are too high to close travel lanes. Volumes can be reduced through media campaigns and the use of message boards directing traffic to alternative routes.
- **Staging options that provide for continuous free-flow conditions with minimal delays and no restrictions should be used when possible.** Freeway crossovers and full-width detour structures on separate detour alignments are two examples. They provide a work zone which can be traversed at regular speeds with little to no interference.
- **When staging options that provide for minimal delays cannot be used, options with only minor delays should be used.** Staging that involves a controlled delay or a single lane closure would be examples of this. This would provide a work zone with moderate delays, and possibly a reduction of speed, but would not restrict freight traffic.
- **When staging options that provide for minor delays cannot be used, other options with more significant delay times may need to be used.** A staging plan that involves a two-way, one-lane configuration controlled by a temporary signal or flaggers is an example. Since this option can cause significant delays to freight traffic, the MCTD Freight Mobility Coordinator should be contacted so they can notify affected stakeholders.
- **The length of the work zone can affect the severity of the traffic delay and should be reviewed during the development of a staging plan.** Projects that extend over a large section of road should be broken into smaller segments whenever possible, so that the area of impact is reduced. On an urban modernization project, work should be limited to only a few blocks at a time if possible. For example, on a rural preservation overlay project, the length of the work zone should be controlled to minimize the amount of delay encountered.
- **Staging options need to be checked to avoid delays to freight traffic caused by frequent stopping and restarting, stopping traffic at the bottom of steep grades, sending traffic through sharp corners, etc.** Staging options need to be evaluated for these impacts, and those that have the least delay times should be used when possible.
- **During the development of projects, special consideration should be made to eliminate or minimize staging delay time impacts.** Whenever practical, the staging duration should be

limited. Innovative tools, such as incentive/disincentive clauses, or alternative contracting methods such as "A+B" contracting should be considered.

Special Staging Considerations

There are several special considerations that must be taken into account when evaluating or designing a staging option. These include, but are not limited to, the following:

- How will the staging affect emergency services response times?
- How will other projects be affected by the staging?
- Are there any ways to provide windows for unrestricted freight movement between stages?
- Have there been changes to vehicle capacity due to lane shifts?

If staging would limit or delay the passage of emergency services vehicles, then special coordination with these stakeholders must be made. If there is a conflict with other projects, then the work should be rescheduled to eliminate the conflict. If windows of unrestricted freight movement can be created while transitioning between stages, then this should be discussed with stakeholders as a viable option.

Case Study – Staging: Lake Creek Bridge Project

The Lake Creek Bridge Project, along the Santiam Highway (US 20) in Jefferson County, addressed a failing concrete structure on a freight route surrounded by sensitive wetlands, endangered fish habitat, and archaeological sites. This particular freight route carried around 5,500 vehicles per day with severe weekend fluctuations and had a very high truck percentage (23%). To further complicate the situation, the project was located at the bottom of a steep grade.

To minimize environmental impacts, the team initially looked at a single lane detour structure controlled by a temporary traffic signal or flaggers. This option looked like it might work for passenger car traffic, but it did not work for freight traffic. Upon examining this staging option for impacts to trucks, it was noted that significant queuing and delays would result from stopping trucks at the bottom of this steep grade. With the high truck percentage along this route (23%), the queues would backup literally for miles into sharp corners. Attempting to stop heavily loaded trucks going down the grade on the other side provided for another dangerous situation.

Considering the needs of MCTD and the freight industry, the project team selected a second option that utilized a two-lane detour, allowing for safe passage of all traffic without excessive queuing. The reversing curves in the detour alignment were modified to permit truck traffic to travel through the construction zone at only a slightly reduced speed. This staging option did not force freight traffic to stop at the bottom of the steep grade before going up, or stop traffic while going down the grade, significantly reducing staging delay time. With the two-lane detour, over-dimensional loads did not need to be restricted from the route during construction, and traffic was able to travel this route with minimal delays.

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Design Considerations

During the development of projects, special consideration to alternative design practices should be made to eliminate or minimize impacts to traffic. Whenever practical, design options should be used which will minimize delays and the overall duration of the project. Alternative construction materials, construction methods, and contracting methods should be used to reduce construction time and minimize impacts whenever possible.

Contacts with industry stakeholders, other states, and national construction organizations should be established to keep up with new technology and new methods that can be utilized for construction projects.

There are very few truly unique problems in transportation. Most issues that arise during the development of a project have surfaced before in other locations. If a problem arises which ODOT has not faced before, the project team should identify others who have faced a similar problem, evaluate how they addressed the problem, and review the lessons learned. This will increase options to help make better decisions and may offer protection from repeating the mistakes of others.

Design Materials

When selecting design materials, it is important to evaluate the impacts these will have on construction time. Whenever possible, prefabricated materials or other construction materials that reduce construction time should be considered. If the use of prefabricated materials can shorten the duration or completely eliminate a freight restriction, this should be considered.

Designs which use materials which will impose restrictions on freight traffic should be carefully evaluated for acceptable alternatives. If traffic will not be able to travel over a structure while half of the bridge deck is curing, then consideration should be given to selecting different materials which can avoid this restriction. Other states have tested and used different types of materials for accelerating construction projects, especially in areas with high traffic volumes.

There are several materials ODOT has already used which can greatly reduce traffic impacts. A few examples of these include the following:

- **Pre-Cast, Pre-Stressed Bridge Components** – By using prefabricated materials, on-site impacts can be reduced to assembly work only;
- **Concrete Accelerators** – Accelerators and other concrete admixtures can greatly reduce cure times for concrete members, reducing delay times and impacts to traffic; and
- **PPC for Deck Overlays** – By using Polyester Polymer Concrete instead of more traditional materials, cure times are greatly reduced and traffic restrictions to minimize vibration can be eliminated.

Construction Methods

When selecting design methods, it is important to evaluate what others have done and how these methodologies impacted traffic mobility. Whenever possible, methods which reduce construction time and delays should be used. Methods which allow significant portions of the work to be completed without affecting traffic should be used. If a method can eliminate or ease a freight restriction, this should be considered. Methods which other states have tested and used for accelerating construction projects should be evaluated and used whenever possible.

There are several methods that ODOT has already learned which greatly reduce traffic impacts. These include, but are not limited to, the following:

- **Exodermic Deck Replacements** – By using this process, the contractor can completely replace a bridge deck with only short-term (4-10 hour) night closures. A segment or two of the deck is replaced each night with a prefabricated segment, and the bridge can be reopened to normal traffic flow during the day;
- **Controlled Delay Method (CDM)** – By using a controlled delay instead of staging for short-term work, freight restrictions can be placed with only moderate delays. The contractor effectively has the entire road closed for construction work, while all traffic experiences is a mild queuing from slow moving traffic. Use of CDM as a staging strategy must include an analysis using the Work Zone Traffic Analysis Tool to determine appropriate times when traffic will not be significantly impacted;

- **Trenchless Technology** – By using boring, jacking, and ramming methods, culvert construction can be completed without costly detours or staging needing complicated shoring designs; and
- **Parallel Bridge Construction** – This method has been used in other states with great success. It involves constructing an overpass on the side of the freeway shoulder parallel to the roadway. Once the structure is completed it is raised with cranes and swung into position over the freeway.
- **Rapid Bridge Replacement** – Considerations should be made for rapid bridge replacement projects that can shorten the construction duration. ODOT has had great success with the projects constructed to date.

Staging methods that provide for continuous free-flow conditions with minimal delays and no restrictions should be used whenever possible. Staging options need to be checked to avoid delays to freight traffic caused by frequent stopping and restarting, stopping traffic at the bottom of steep grades, sending traffic through sharp corners, etc. Staging options need to be evaluated for these impacts, and those that have the least delay times should be utilized whenever possible.

Contracting Tools

Innovative contracting tools can and should be used, when appropriate, to minimize delay times and restriction impacts to traffic. Contracting tools can be used to either directly control impacts or to encourage innovation on the part of the construction contractor.

Used separately or combined with other methods, these contracting tools can be an effective means to reduce construction duration and impacts. There are several contracting tools ODOT already employs to minimize traffic impacts and provide for greater mobility. These include, but are not limited to, the following:

- **Incentive/Disincentive Clauses** – By using incentive/disincentive clauses, contractors are given extra motivation to find innovative ways to minimize construction impacts. An innovative contractor can increase its profit margin by finding ways to accelerate construction and minimize construction impacts. The extra cost to the department is easily covered by savings derived from the reduced construction time;
- **A+B Contracting** – By using this contracting method, contractors are rewarded by finding ways to reduce the contract duration. They can increase their profit margin by utilizing additional resources to speed up construction. Once more, the extra costs are covered by savings derived from the reduction in construction duration; and
- **Interim Completion Dates/Work Windows** – By using this method, work which has the greatest impacts to freight and other traffic can be limited to certain timeframes and durations. The project team can 1) limit closures and restrictions so they can only take place during specific windows, resulting in less impact on traffic; and 2) enforce these limitations with severe penalties or damages.

The use of alternative construction materials, construction methods, and contracting methods, whether separately or combined, can significantly reduce construction time and minimize impacts, thus increasing mobility.

Case Study – Design Considers: Mill Creek Bridge Project

The Mill Creek Bridge Project, along the Warm Springs Highway (US 26) in Wasco County, addressed a bridge deck failure on a historic steel truss structure which is one of the highest bridges in Oregon. The bridge was located on the Warm Springs Indian Reservation and was surrounded by sensitive archaeological and cultural sites, cultural sites, and endangered species. This is a primary freight route that carries 5,000 vehicles per day, with a significant truck percentage (15%). Initially, three options were considered:

- Close the road and detour all traffic until the bridge is completed;
- Build a single-lane detour bridge and alternate traffic along it; or
- Re-align the highway and build a parallel structure.

ODOT could not re-align the highway due to the excessive cost and environmental impacts. A single lane detour bridge could not be used due to adverse roadway geometry and safety concerns with traffic queues backing up into sharp curves. The roadway also could not be closed during construction because there were no suitable detour routes available and the impacts to the freight industry and the traveling public would be extreme ($265k-$316k per day).

The Project Team began seeking alternative construction methods. By meeting with the MCTD Freight Mobility Coordinator and representatives from the freight industry, the Project Team identified alternative construction materials and methods successfully used in other states. The Project Team decided upon a new process (exodermic deck replacement) used in New York and Illinois that required only short term closures. This replacement process enabled ODOT to replace small sections of the bridge with precast modular joint panels which fit together like a large jigsaw puzzle. The roadway was closed for four days each week starting on Sunday night, sections of the deck were cut out, the missing sections were replaced with new precast sections, and the route was reopened to traffic each Friday morning without restrictions. The contractor worked 24 hours a day during the closures and the deck was replaced in four weeks.

By working closely with the MCTD Freight Mobility Coordinator and freight stakeholders, it was determined when the route should be opened and closed, so truckers could plan their trips. Since the closures occurred on a set schedule, fewer vehicles were required to use the extensive detours. With the exodermic deck replacement process, the project did not have any impacts on the sensitive cultural, archaeological, or environmental sites adjacent to the bridgeusing this unusual method, and by closely coordinating the closures with the traffic flows, the deck was successfully replaced with minimal impacts to traffic and freight mobility and greater safety to both the contractor and the traveling public.

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Chapter 5 – Notification Requirements

Introduction

The purpose of this chapter is to provide ODOT Highway Division staff and contractors with simplified notification requirement criteria for freight restrictions.

Written notification using the online electronic restriction notice (Form #734-2357) located at (***https: // www.oregontruckingonline.com/cf/MCAD/pubmetaentry/restriction/index.cfm?***) must be sent to the MCTD Freight Mobility Coordinator within the number of days specified in the tables shown in this chapter before any roadway freight restriction condition can be implemented. Contractors and other non-ODOT submitters must submit the electronic restriction notice (Form#734-2357) at least **35** days prior to work beginning for Project Manager Review. Once the Project Manager has reviewed the notice for accuracy, they will forward it on to MCTD at least **28** days prior to work beginning. ODOT submitters must turn in the electronic restriction notice (Form#734-2357) at least 28 days prior to work beginning. The notice must be reviewed and approved prior to work beginning.

The Project Manager Restriction Checklist can be located here: ***https://www.oregon.gov/ODOT/MCT/Pages/StatewideTrafficMobility.aspx*.**

These simplified notification requirements are based largely on the types and sizes of loads that are expected to use a route. This notification chapter has been separated so that users may easily remove these pages from the overall manual and carry them with them.

The information in this chapter describes the process for determining if a notification is required. Detailed explanations of the conditions are found in Chapter 4 – Temporary Conditions.

Notification Requirements for Freight Restrictions

A freight restriction can be created by a construction or maintenance work zone activity which impedes the movement of freight by reducing the height, width, or weight carrying-capacity of the roadway facility.

The following instructions are for determining if a roadway freight restriction condition exists and if it is necessary to notify MCTD of the restriction. These instructions are consistent with the 2006 *ODOT Memo – Maintenance Mobility Requirements* at:

https://www.oregon.gov/ODOT/MCT/Documents/MaintenanceMobilityRequirements.pdf

When Notification is NOT Required

If work activity meets all six of the following requirements, then notification to MCTD is ***NOT*** required:

- **For interstate and multi-lane highways**: if minimum available horizontal clear distance after equipment/barriers has been cleared is 22 feet;
- **For two-lane highway or all other individual highways**: If minimum available horizontal clear distance after equipment/barriers has been cleared is 19 feet;
- **Able to accommodate all loads, including oversize loads**. Work equipment and traffic control devices must be able to be moved quickly to enable a load that approaches the work zone unannounced to be waved through. Waved through means that for width, length, or weight the work equipment and traffic control devices can be moved (and there is an understanding that it would be) if a permitted vehicle comes to the work zone unannounced to provide the required clear distance or the required clear distance was still available. This may result in a

slight delay to the oversize load or the traffic behind the load. It is okay to have a small delay as long as the load can get through the work zone.

- **No lane shifts or lane closures are beneath structures**. High loads may have specific lane usage required in their permits as bridges often have varying vertical clearances above different lanes (or shoulders). High loads may be inadvertently waved through a short-term work zone under a structure in a manner not prescribed in the permit resulting in collision with the structure;
- **No ramp closures**. Single Trip Permits are issued for over-dimension loads with specific routes the carrier must follow, including which exit to take or ramp to enter from, based on the dimensions of the load. In addition, many ramps are used to avoid low structures on the highway. Closure of the on or off ramp removes the "up and over" option for high loads and may result in a hit to the structure or cause other loads to be routed onto unauthorized routes that have not been reviewed for the size/weight of the load.
- The roadway facility is **not being weight restricted**.

If **any** of the above six conditions are **not** met, notification using the online electronic restriction notice Form #734-2357 needs to be sent to the MCTD Freight Mobility Coordinator . See "**When Notification is Required**" on the following pages.

When Notification IS Required

Notification using the online electronic restriction notice (*Form #734-2357)* must be sent to the MCTD Freight Mobility Coordinator for any of the following types of restrictions (note that more than one of the following may apply):

- If a state facility is fully closed or any component of traffic is detoured for any period of time regardless of whether or not a detour is available. See **Table 2 – Highway Closures** (on next page) to determine how much notice is required;
- If a ramp is closed for any period of time regardless of whether or not a detour is available. See **Table 3 – Ramp Closures** (on next page) to determine how much notice is required;
- If lanes are shifted or closed under a structure, or vertical clearance is reduced in any way, see **Table 4 – Vertical Clearance Restrictions** (on next page) to determine how much notice is required;
- For any width reductions that result in a single lane of traffic and occur during daylight hours (½ hour before sunrise to ½ hour after sunset). See **Table 5 – Daylight Single Lane Width Restrictions** (on next page) to determine how much notice is required;
- For any width reductions that result in a single lane of traffic and occur during nighttime hours (½ hour after sunset to ½ hour before sunrise). See **Table 6 – Nighttime Single Lane Width Restrictions** to determine how much notice is required;
- For any width reductions that result in less than 28 feet of width for two lanes of one-way traffic or for two opposing lanes of head-to-head traffic. See **Table 7 – Daylight and Nighttime Two-Lane Width Restrictions** to determine how much notice is required;
- For weight restrictions, refer to **Chapter 4** of this manual.

ODOT is committed to keeping freight moving safely and efficiently throughout Oregon in support of the state's economy.

If a route that is identified on the list of critical route pairs needs to be restricted (see **Table 1 – Critical Route Pairs** in Chapter 1), ODOT will take steps to make sure that the paired critical route on the list is not restricted.

Table 2 – Road Closures

Notification	Condition
28 to 35*-Day notification	Required for all full closures of state facilities.

Table 3 – Ramp Closures

Notification	Condition
28 to 35*-Day notification	Required if ramp is part of the **Critical Interchanges** listed in **Table 8.**
14-day notification	Required for all other ramp closures.

Table 4 – Vertical Clearance Restrictions

The amount of notification required is based on the route and the height of the restriction. Refer to the ***Freight Mobility Over-Height Map*** (see link at bottom of page) to determine the color of the route the restriction will be on and then use the table below to determine the amount of notification required:

Freight Mobility Over-height Map Color	Blue	Other
28 to 35*-Day notification	Less than 14’ 10”	N/A
14-day notification	Any change from existing clearance (includes lane shifts under structures.)	

Table 5 – Daylight Width Restrictions Resulting in Single Lane of Work Zone Traffic**

The amount of notification required is based on the route and the width of the restriction. Refer to the ***Freight Mobility Daylight Width Map*** (see link at bottom of page) to determine the color of the route the restriction will be on and then use the table below to determine the amount of notification required:

Freight Mobility Width Map Color	Black (Interstate)	Black (Non-Interstate)	Blue	Red
28 to 35*-Day notification	Less than 19’	Less than 17’	Less than 15’	N/A
14-day notification	19’ to 22’	17’ to 22’	15’ to 22’	Less than 22’

*Contractors and non-ODOT submitters must submit the restriction notice 35 days in advance of work beginning for Project Manager Review.

**Width generally refers to the *paved* width of the lane and any shoulders which are capable of supporting the freight traffic loads without failure. On a case by case basis, unpaved/aggregate shoulders may be determined to be useable. See Chapter 3 for discussion of allowable freight permitted widths.

NOTE: Refer to the Documents, Forms, and Maps Section for direct links to the maps: ***https://www.oregon.gov/ODOT/MCT/Pages/StatewideTrafficMobility.aspx***

Table 6 – Nighttime Width** Restrictions Resulting in Single Lane of Work Zone Traffic

The amount of notification required is based on the route and the width of the restriction. Refer to the ***Freight Mobility Nighttime Width Map*** (see link at bottom of page) to determine the color of the route the restriction will be on and then use the table below to determine the amount of notification required:

Freight Mobility Width Map Color	Green (Interstate)	Green (Non-Interstate)	Black
28 to 35*-Day notification	Less than 15'	Less than 13'	N/A
14-day notification	15' to 22'	13' to 22'	Less than 22'

*Contractors and non-ODOT submitters must submit the restriction notice 35 days in advance of work beginning for Project Manager Review.

**Width generally refers to the *paved* width of the lane and any shoulders which are capable of supporting the freight traffic loads without failure. On a case by case basis, unpaved/aggregate shoulders may be determined to be useable. See Chapter 3 for discussion of allowable freight permitted widths.

Table 7 – Daylight and Nighttime Width** Restrictions Resulting in Two Lanes of Work Zone Traffic

Notification	Condition
28 to 35*-Day notification	Required if width is reduced to less than 28 feet for two lanes of one-way traffic or for two opposing lanes of head-to-head traffic.

*Contractors and non-ODOT submitters must submit the restriction notice 35 days in advance of work beginning for Project Manager Review.

Width generally refers to the ***paved* width of the lane and any shoulders which are capable of supporting the freight traffic loads without failure. On a case by case basis, unpaved/aggregate shoulders may be determined to be useable. See Chapter 3 for discussion of allowable freight permitted widths.

NOTE: Refer to the Documents, Forms, and Maps Section for direct links to the maps:

https://www.oregon.gov/ODOT/MCT/Pages/StatewideTrafficMobility.aspx

Table 8 – Critical Interchange List

Hwy	Exit #	Route	Hwy	Exit #	Route
US 26	69	OR 217	I-5	168	OR 99 – Goshen-Divide Hwy
US 26	73	I-405	I-5	182	Creswell
			I-5	188	OR 58 / OR 99 – Goshen
US 26	N/A	OR 212	I-5	190	McVay Hwy
US 97	135A	US 97 Business	I-5	192	OR 99 – Pacific Hwy West
			I-5	194	OR 126 / I-105
US 97	N/A	US 20 / 3rd Street	I-5	195	Belt Line Hwy.
OR 22	1	I-5	I-5	216	Halsey-Sweet Home
OR 22	7	OR 214	I-5	228	OR 34 – Corvallis-Lebanon Hwy
OR 22	9	Shaw/Aumsville	I-5	233	US 20 – Santiam
			I-5	234	OR 99E – North Albany
OR 22	12	Golf Club Road	I-5	244	Jefferson Highway
OR 217	0A	US 26	I-5	249	OR 99E – Commercial Street
OR 217	1	OR 8 / OR 10	I-5	253	OR 22 – North Santiam
OR 217	4A	OR 210 / Progress	I-5	258	OR 99E – Hayesville
OR 217	5	OR 99W	I-5	260	OR 99 Bus. – Salem Parkway
			I-5	271	OR 214 – Woodburn
OR 217	7	I-5	I-5	282	Wilsonville-Hubbard Hwy
OR 569	6A	OR 99W / Pacific Hwy West	I-5	288	I-205
OR 569	9A	Delta Hwy.	I-5	292	OR 217
			I-5	294	OR 99W
OR 569	12	I-5	I-5	299	OR 43
I-5	11	OR 99 – South Ashland	I-5	300	I-405
I-5	14	OR 66 – Greensprings	I-5	301	I-84
I-5	30	OR 62 – Crater Lake Hwy	I-5	302B	I-405
I-5	35	OR 99 – Central Point	I-5	306	OR 99W - Delta Park
I-5	43	OR 99 – Rock Point	I-5	307	OR 99E – Marine Drive
I-5	45A	OR 99 – Homestead			
I-5	48	Rogue River	I-82	1	US 730 / US 395
I-5	55	US 199 – Grants Pass	I-82	11	I-84
I-5	58	OR 99 – Grants Pass Parkway			
I-5	99	OR 99 – North Canyonville	I-84	0	I-5
I-5	101A	Yokum Road	I-84	5A	OR 213 – 82nd Ave
I-5	108	OR 99 – Myrtle Creek	I-84	5B/6A	I-205
I-5	112	OR 99 – Dillard	I-84	17	Marine Drive/Troutdale
I-5	119	OR 42 – Coos Bay-Roseburg	I-84	44A	West Cascade Locks
I-5	120	OR 99 – Oakland-Shady	I-84	44B	East Cascade Locks
I-5	124	OR 138 – Harvard	I-84	62	US 30 – Hood River
I-5	129	Winchester	I-84	64	OR 35 / Bridge of the Gods
I-5	138	Sutherlin	I-84	69	US 30 – Mosier
I-5	140	OR 99 – North Oakland	I-84	83	US 30 – The Dalles
I-5	150	OR 99 – Yoncalla	I-84	87	US 197 – The Dalles Bridge
I-5	162	OR 99 – Umpqua			

Table 8 – Critical Interchange List (Continued)

Hwy	Exit #	Route		Hwy	Exit #	Route
I-84	97	OR 206 – Celilo-Wasco		I-105	0A	OR 99W
I-84	104	US 97 – Biggs		I-105	0B	Delta Highway
I-84	137	OR 19 – Arlington		I-105	3	I-5
I-84	147	OR 74 – Heppner				
I-84	168	US 730 – Boardman		I-205	1	I-5
I-84	182	OR 207 – Hermiston		I-205	8B	OR 43
I-84	188	US 395 – Stanfield		I-205	9	OR 99E – Oregon City
I-84	207	US 30 – West Pendleton		I-205	10	OR 213 – Park Place
I-84	209	US 395 – Emigrant Ave.		I-205	12	OR 212 / OR 224
I-84	211	OR 11 – South Pendleton		I-205	13	OR 224 / OR 213
I-84	213	US 30 – East Pendleton		I-205	19	US 26 – Division/Powell
I-84	216	Mission Junction		I-205	20D	I-84
I-84	252	OR 244 – Ukiah-Hilgard		I-205	22	I-84
I-84	259	US 30 – North LaGrande		I-205	23A/23B	US 30 Bus.
I-84	261	OR 82 – Wallowa		I-205	24	Airport Way
I-84	264	US 30 – South La Grande				
I-84	285	US 30 – North Powder		I-405	0A	I-5
I-84	302	OR 86 – Richland		I-405	1	US 26
I-84	304	OR 86 – Campbell Street		I-405	3A	US 30

Chapter 6 – Permanent Conditions

Introduction

This chapter provides guidance on making permanent changes to the roadway system. Permanent changes that will impact freight mobility need to be considered early in the planning and project development process for projects and must be discussed with MCTD and the stakeholders.

Coordination and Communication Requirements

New Construction or Improvement Projects

For new construction projects, grant-funded projects, or other activities that create permanent structures on state highways that have the potential to permanently reduce vehicle carrying-capacity require consultation with the stakeholders facilitated by MCTD.

MCTD should be engaged as soon as possible during the planning and project development process.

- Permanent reductions in existing vertical clearance **require consultation with MCTD**. See ODOT Highway Design Manual (4.5.1) for Vertical Clearance Standards: ***ftp://ftp.odot.state.or.us/techserv/roadway/web_drawings/HDM/2011%20HDM%20Rewrite/2012%20Chapter%204%20Cross%20Section%20Elements.pdf*.**
- Permanent reductions in existing vehicle-carrying capacity on Reduction Review Routes **require consultation with MCTD.** Guidelines can be found online at ***https://www.oregonlegislature.gov/bills_laws/ors/ors366.html.***

Consultation will allow ODOT to consider whether any potential reductions will have impacts on regional mobility in the future or if the potential for impacts is negligible.

Reduction in Vehicle-Carrying Capacity

The information in this section is consistent with the Oregon Administrative Rule (OAR 731-012-0012) adopted in August 2013. Additional information and maps of the ORS 366.215 routes can be found online at ***https://www.oregonlegislature.gov/bills_laws/ors/ors366.html.***

General

The ORS 366.215 Guidance Document applies to all projects in planning, project development, development review, and maintenance projects. The statute can be found in its entirety further in the chapter, in addition to a flow diagram to use to implement this statute.

Reduction of Vehicle-Carrying (RVC) Capacity

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 Reduction of Vehicle-carrying Capacity (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 useable right-of-way subject to Commission jurisdiction, unless such changes are supported by the Stakeholder Forum. Street markings such as bike lane striping or on street parking are not considered a reduction of vehicle-carrying capacity. We need to think of a RVC the same way the freight stakeholders do – if they can get through the highway segment today, they want to get through there tomorrow.

Reduction Review Routes

"Reduction Review Routes" (RRR) are routes that have been identified as state highways that are subject to ORS 366.215 and require a review under OAR 731-012-0030, Division 12. All projects that have the potential to reduce the hole-in-the-air on RRR must follow the process shown in the flow diagram in this chapter. The RRR can be found on the **TransGIS** website: ***https://gisintra.odot.state.or.us/TransGIS/***. To view the RRR, select "Freight", and scroll down to RRR and check the box.

Communications

Communication should take place early on with your Region Mobility Liaison, MCTD, and with the Stakeholder Forum (described later in this chapter.). Contact the MCTD Freight Mobility Coordinator (503-378-6192) to find out if a proposed change would reduce the Vehicle-carrying Capacity. This determination can be facilitated through MCTD either by meeting with the stakeholder forum, or by sharing documents via GovSpace. If the proposed change would reduce the Vehicle-carrying Capacity, contact the Freight Mobility Coordinator to schedule a meeting with the stakeholders to obtain their input/support.

The ODOT sponsor for the proposed project or design feature is typically Planning, District, or Project Delivery staff directly involved. The project sponsor should document the outcome of each step and communicate with the local government (if appropriate) throughout this process.

MCTD Needs

1. Location map, highway mile points.
2. Brief description of the problem or issues. Be very clear and thoughtful about describing the need for and importance of the proposed change (e.g. safety, operations, livability, economics).
3. Brief description of the proposed change.
4. Diagram of the existing roadway cross section:
   - ❖ Widths for travel lanes, shoulders, bike lanes, medians, parking, curb to curb dimensions, etc.
   - ❖ Description of any existing structures or obstacles in the right-of-way that may impact the hole-in-the-air such as signs, guardrails, landscaping, or other roadside features. (Need to consider features beyond the face of curb because there is overhang or off-tracking with some over-dimensional loads.)
5. Information on other pinch points on the highway near the proposed project. (Example – the block to the west of the proposed project has a cross section with travel lanes that are two feet less in width than the width at the project site.)
6. Diagram of the proposed roadway cross section along with any existing or proposed structures or obstacles in the right-of-way that may impact the hole-in-the-air such as medians, landscaping, signs, or other roadside features.

Stakeholder Forum (SF) Review

Meeting with the stakeholders to discuss your project is the key step in this process. The SF includes a variety of reps (bicycle, pedestrian, trucking industry, mobile home manufacturing, oversize load freight, automobile users, Association of General Contractors, and a rep from any affected city, county, or Metropolitan Planning Organization). In some cases, design issues can be resolved to the point where the stakeholders do not consider the project to be a RVC. Likewise, a proposed project may actually reduce the highway dimensions, but not significantly enough to impede the movement of over-dimensional freight. When either of these conditions occurs, the

net effect is a finding of No RVC from the stakeholders. If the SF reaches agreement on a design that avoids a RVC or is supported by the SF, this review is done.

It is entirely possible that after you meet stakeholders, there is disagreement about whether or not the project should go forward. Disagreement does not mean that the proposed change is without merit. If the RVC is not supported by the stakeholders, staff may recommend to the Director and Chief Engineer that the RVC is required by ODOT for safety purposes.

If staff determines the proposed action is subject to OAR 734, Division 51 (Access Management), then they can stop the review. Approach applications, access management plans/strategies & facility plans in project delivery required for Div. 51 are not subject to this review. Staff may continue with the proposed action using ODOT processes prescribed in Div. 51.

Safety Action

After reviewing the safety considerations of a proposed action that may result in a RVC, staff may recommend to the Director and Chief Engineer that the RVC is required by ODOT for safety purposes.

If the Director determines the proposed action is an RVC, the Chief Engineer reviews the proposed action and may certify that it is required by ODOT for safety purposes. Proposed actions certified by the Chief Engineer need OTC approval.

Action is Not Required for Safety or Access

If the proposed action is not required for access or safety, the Director may determine whether or not the action is a RVC. If the Director determines it is not, then staff can continue with the proposed action. The review is done.

If the Director determines the proposed action is an RVC, he may direct staff to do one of the following:

- Revise the proposed action and hold another stakeholder forum meeting.
- Inform the local government about their right to request an exemption.

Oregon Transportation Commission (OTC) Action

The OTC can approve the RVC if safety or access considerations require the reduction. The OTC can also approve an exemption of the statute at the request of a local government where the OTC finds the action to be in the best interest of the state and freight movement is not unreasonably impeded.

Under either option, the ODOT sponsor prepares an OTC packet, identifying the formal requestor (ODOT or the local agency) and requests approval of the RVC exemption of the statute. All requests must be in accordance with the Highway Program Office requirements and are scheduled for an upcoming OTC meeting.

The OTC packet should include a cover memo, a letter of request from the local agency and/or ODOT Region, a staff report from region staff stating why the RVC or the exemption should be approved or disapproved, information on stakeholder forum (including freight) support or non-support of the request, and a map.

These are the minimum required items to be included in the packet. Depending on the proposal, there may be other items that should be included in the packet. The appropriate stakeholders should be informed of the upcoming OTC meeting well in advance.

Planning Projects

ORS 366.215 applies to all aspects of ODOT's work including planning and affects documents such as, but not limited to Transportation System Plans, refinement plans, and facility plans. Planning documents that propose features that could be a RVC must be in compliance with the statute. Regions may decide to obtain approval for proposed future actions by following this process guideline. However, most planning level documents do not contain the level of detail often required to determine if the action is a RVC or would be supported by the stakeholders. In most cases, it is best to wait until project implementation to follow this process. In these cases, it is encouraged for planning documents to include the following statement or equivalent.

> *Planning concept potentially reduces vehicle-carrying capacity of the highway; further evaluation of the project design will be required at the time of implementation to ensure compliance with ORS 366.215.*

ORS 366.215 Creation of State Highways; Reduction in Freight-Carrying Capacity

- *(1) The Oregon Transportation Commission may select, establish, adopt, lay out, locate, alter, relocate, change and realign primary and secondary state highways.*
- *(2) Except as provided in subsection (3) of this section, the commission may not permanently reduce the vehicle-carrying capacity of an identified freight route when altering, relocating, changing or realigning a state highway unless safety or access considerations require the reduction.*
- *(3) A local government, as defined in ORS 174.116, may apply to the commission for an exemption from the prohibition in subsection (2) of this section. The commission shall grant the exemption if it finds the exemption is in the best interest of the state and freight movement is not unreasonably impeded by the exemption. [Amended by 1977 c.312 §2; 2003 c.618 §38]*

ORS 366.215 – No Reduction of Vehicle-Carrying Capacity FLOW DIAGRAM

Route ID & Staff Determination of Potential RVC

ODOT staff person (sponsor) determines if proposed action is on a Reduction Review Route (RRR). If not on a RRR, STOP this review is done. If on a RRR, sponsor notifies the local gov't & determines if there is a potential Reduction of Vehicle-carrying Capacity (RVC). In making this determination, the sponsor consults with appropriate ODOT staff including MCTD & if necessary external technical experts such as trucking industry reps.

If there is no potential RVC, STOP this review is done. If there is a potential RVC, ODOT sponsor notifies local government and prepares materials needed for review by the Stakeholder Forum (SF). ODOT sponsor sends materials (see page 2) to the MCTD Freight Mobility Coordinator and a meeting of the SF will be scheduled.

1

Stakeholder Forum

SF meets to advise ODOT on whether the proposed action meets the definition of a RVC. The SF may advise ODOT that a proposed action will not result in a RVC. If the SF reaches agreement on a design that avoids a RVC or is supported by the SF STOP this review is done. If agreement can't be reached, proceed to Step 3.

2

Proposed Actions for Access & Safety

After consulting with the SF, staff determines if the proposed action is subject to OAR 734, Div. 51 (Access Management). Approach applications, access management plans/strategies & facility plans in project delivery required for Div. 51 are not subject to this review. Staff may continue with the proposed action using ODOT processes proscribed in Div. 51. STOP This review is done.

After reviewing the safety considerations of a proposed action that may result in a RVC, staff may recommend to the Director and Chief Engineer that the RVC is required by ODOT for safety purposes (Step 4a).

3

OR

Action is Required for Safety

If Director determines the proposed action is a RVC, the Chief Engineer reviews the proposed action & may certify that it is required by ODOT for safety purposes. Proposed actions certified by the Chief Engineer need OTC approval.

4a

Action is Not Required for Safety or Access

If Director determines proposed action is not a RVC then staff can continue with the proposed action. STOP This review is done.

If Director determines proposed action is a RVC, he may direct staff to revise the proposed action and hold another SF (Step 2).

- OR -

Ask staff to inform the local gov't about their right to request an exemption of ORS 366.215 (Step 5).

4b.

OTC Action

The OTC will approve or deny proposed actions that result in a RVC for:

- proposed actions required for safety considerations
- a local gov't request for an exemption under ORS 366.215. Approval includes determination that the exemption is in the best interest of the state and the movement of freight will not unreasonably impeded.

6

Local Gov't Request

At request of a local gov't, Region Manager directs staff to prepare OTC agenda item for an exemption request.

The local gov't is responsible for providing analysis documenting the reason for request demonstrating that proposed action will not unreasonably impede the movement of freight.

5

Jurisdictional Transfers

As a matter of Department policy, in order to maintain viable freight routes, ODOT has determined that jurisdictional transfers of sections of state highways that have historically accommodated permitted over-dimensional freight movement must contain provisions in the transfer agreement which require the local jurisdiction to continue to allow movement of the same permitted loads, with existing pilot vehicle requirements, that have previously used the route when under state control. If an exception to this requirement is desired on any particular transferred segment, consultation with MCTD's Mobility Coordinator about alternate routing availability and with the freight industry to ascertain if they concur with the exemption request should occur before the exception is granted. If the Department and the freight industry end up in substantial disagreement, the Director will make the decision. The intent here is that the movement of freight will not be unreasonably restricted beyond the limits set by the state prior to the jurisdictional transfer. In addition, transfers of sections of highway that have previously been designated as part of the National Network Highway System must retain the Reasonable Access to terminals as defined in Federal regulation Title 23 Part 658.19, without restriction.

Permanent Vertical Clearance

Maintaining an appropriate vertical clearance is instrumental to successfully transporting freight within the State of Oregon. The movement of mobile homes, construction materials, construction equipment, and many other types of freight critical to Oregon's economy are restricted due to insufficient vertical clearance on many routes.

Vertical clearance on some of Oregon's key freight corridors has slowly decreased as roadway preservation activities have added additional layers of asphalt under structures.

The commitment by ODOT to maintain and improve the vertical clearance on the system will provide significant benefits to the health of Oregon's economy.

Vertical Clearance Design Standards

The following standards have been developed for permanent vertical clearance:

- The vertical clearance for all new structures on interstate freeways and all High Routes (shown in red on the Oregon Vertical Clearance Standards Map) shall be a minimum of 17 feet, 4 inches. The clearance shall be from the top of the pavement to the bottom of the structure and includes the entire roadway width including the usable shoulder width;
- The vertical clearance for new structures on all routes on the National Highway System not on High Routes shall be a minimum of 17 feet. The clearance shall be from the top of the pavement to the bottom of the structure and includes the entire roadway width including the usable shoulder width;
- The vertical clearance of structures on all other routes not on the National Highway System and not on High Routes shall be a minimum of 16 feet, over the entire roadway width including usable shoulders;
- The existing vertical clearance shall not be reduced below the minimum vertical clearance on any route;
- The existing vertical clearance shall not be reduced if the existing vertical clearance is substandard; and
- Any decrease in existing vertical clearance that is below the level of the minimum vertical clearance or any proposed decrease in vertical clearance in new construction requires consultation with MCTD to ensure understanding of user impact to proposed decrease. MCTD will work with the Region Mobility Liaison and project team leader/manager to fully evaluate user impacts and project construction and design options.
- There may be times when the implementation of ORS 366.215 results in a greater height than the standards listed above.

Vertical Clearance Standards can be found in the ODOT Highway Design Manual (4.5):

ftp://ftp.odot.state.or.us/techserv/roadway/web_drawings/HDM/2011%20HDM%20Rewrite/2012%20Chapter%204%20Cross%20Section%20Elements.pdf

Improving Vertical Clearance

Any project directly involving one of the structures identified as having substandard vertical clearance will need to be evaluated for opportunities to increase the vertical clearance. This could be accomplished through replacing the structure, raising the structure, or reconstructing the roadway under the structure to lower the grade. Structures that are no longer in use, such as abandoned railroad structures, should be removed whenever possible.

Whenever pavement replacement or overlay activities are planned under an existing structure, efforts should be made to preserve the existing vertical clearance under the structure. For overlay activities this may include grinding out the existing pavement and replacing it to the previous thickness so as not to decrease the vertical clearance.

In some rare cases, the cost of increasing the vertical clearance will be very high with little or no benefit to freight traffic using the route. This may occur when there are several unrestricted routes in close proximity to the route in question. In these cases MCTD will contact industry representatives and will perform an informal cost-benefit assessment to determine whether or not the load routing will be impaired if the vertical clearance for a substandard structure is not addressed. If MCTD determines that the load routing will not be impaired and the industry representatives concur, then the project can be reviewed for a design exception. An example of an actual cost-benefit assessment that resulted in a design exception request is located in Appendix D.

Permanent Horizontal Clearance

Existing capacity for freight mobility should appropriately be considered as comparable as a strategic asset which should be conserved whenever possible. Horizontal clearance is such a resource that once lost, will likely never be regained.

A permanent decrease in horizontal clearance will adversely affect the movement of freight which is properly considered the lifeblood of the economic engine of Oregon. It is also true that an increase in horizontal clearance at a point of constriction may open up an entire freight route to the passage of freight movement, therefore it is never wise to build to match an existing constriction; rather build with the hope that other existing pinch points will be removed in the future.

Types of freight movement dependent upon sufficient horizontal clearance consist of manufactured housing, windmill components, farm implements, construction materials/equipment, machinery, and military equipment among others.

Horizontal Clearance guidelines are located in the Oregon Highway Design Manual (HDM).

Any permanent decrease of existing horizontal clearance likely will be considered a reduction in vehicle-carrying capacity. See “Reduction in Freight Carrying Capacity” section of this chapter.

Permanent Weight Restrictions

Whenever a bridge load posting is deemed necessary, the State Bridge Engineer must immediately notify the Highway Division Manager, ODOT District Manager, MCTD Administrator, ODOT Communications Division, and the Office of the Director. The State Bridge Engineer provides information on severity of the bridge condition and the timeframe for condition posting, taking into account the time to prepare and implement detours without compromising the integrity of the bridge. The MCTD Administrator will then evaluate the impacts of the detour and notify all appropriate industry stakeholders of the restriction.

Weight Restriction Policy Considerations

Eliminating weight restrictions on Oregon's transportation system is very important to increasing freight mobility within the State. The movement of heavy loads such as bridge girders, construction equipment, and other special types of freight is critical to Oregon's economy. These loads are greatly restricted due to the problems ODOT is having with cracked bridges. Weight restrictions on many key freight corridors have limited freight movement and placed more stress on the routes that are open.

ODOT's current policy regarding weight restrictions on state highways is as follows:

> *"It is the policy of the Department to work collaboratively with and minimize the impact, where possible, to the motor carrier industry and local government when it becomes necessary to restrict the allowable size and weight of loads on the state highway system in order to maintain safe travel." - PMT 06-01 – Size and Weight Restrictions on State Highways Policy" dated 06/29/06*

In a letter to several key representatives of the freight industry, the ODOT Director stressed a commitment by the Department to involve industry stakeholders whenever a bridge will be closed or posted with a reduced load rating: "The third issue you raised dealt with the effective communications between ODOT and industry and local communities when a bridge was to be closed or posted with a reduced load rating. I'm sure that you recall the circumstances that led to the development and adoption of the OTC policy for effectively dealing with unanticipated bridge load restrictions and/or bridge closures.

That process includes the specific provision for an open and collaborative process with the trucking industry to consider and conclude such details as the types of trucks to be detoured, the detour route(s), starting date of closure/load restriction, maximum duration of detour, signing plan, special requirements, etc…"

> *"To address this issue I am instructing ODOT staff that the value of good communication applies equally to emergency closures and/or restrictions of bridges as well as to closures resulting from planned STIP projects. Therefore it will be my expectation that the OTC approved bridge closure communication plan protocol will apply equally to both circumstances." - Memo "RE: Dinner Meeting March 14, 2002" dated 03/26/02*

These commitments to engage industry stakeholders when a bridge will be closed or posted with a reduced load rating will enable ODOT to take advantage of industry practical knowledge to simplify and improve processes.

Weight Restriction Design Standards

The Guide Manual for Condition Evaluation and Load and Resistance Factor Rating (LRFR), published by the American Association of State Highway and Transportation Officials (AASHTO), is used to determine load rating factors. Whenever load rating factors show insufficient load capacity for unrestricted use by Permit Vehicles, ODOT's "Size and Weight Restrictions on State Highways" Policy (PMT 06-01) will be followed. This includes the assembly of a Response Team including the Area Manager, the motor carrier industry, engineering staff, and local government representatives.

Length Restrictions

Oregon has identified a number of length restricted state highways due to the geometric constraints the highway imposes.

Commonly, a highway length restriction is caused by roadway curvature. Any project directly involving the source of a length restriction should consider evaluating the opportunity to remove the length restriction, whenever possible. Length restricted routes in Oregon are identified on route maps that are readily available on the MCTD website found at ***https://www.oregon.gov/odot/mct/pages/over-dimension.aspx.***

Appendices

Appendix A: Definitions & Acronyms

AASHTO	American Association of State Highway and Transportation Officials.
CDM	Controlled Delay Method
CTP	Continuous Trip Permit. Valid for one year after effective date.
Critical Route Pairs	Various combinations of critical highways that ODOT will work to not restricted at the same time.
Delay	Additional average travel time that will be required to travel from one point to another as a result of construction or maintenance activities.
Delay Threshold	Total aggregate average peak delay allowed in a highway mobility segment at any one time.
FHWA	Federal Highway Administration
Freight Route	Identified segments of state highways in the Oregon Highway Plan that carry a significant tonnage of freight by truck and/or serve as the primary interstate and intrastate highway freight connections to ports, intermodal terminals, urban areas, and other states.
HLT	Highway Leadership Team
HiMOM	Highway Mobility Operations Manual
JTA	Jobs and Transportation Act of 2009
LRFR	Load and Resistance Factor Rating
Local Truck Route	Local Truck Routes are important linkages in the movement of freight throughout the state. Local jurisdictions must get consent of ODOT or County to designate a local truck route on state or county facilities within city boundaries. Local jurisdictions may prohibit the operation of trucks, machinery, or any other large or heavy vehicles upon any other of its highways that serve the same route or area served by the designated local truck route.
MCTD	Motor Carrier Transportation Division
MPB	Major Projects Branch
MPM	Mobility Procedures Manual
Mobility	Ease with which people and goods move throughout their community, state, and world.
Nighttime Hours	½ hour after sunset to ½ hour before sunrise.

Appendix A: Definitions & Acronyms (Continued)

OBDP	Oregon Bridge Delivery Partners
ODOT	Oregon Department of Transportation
OHP	Oregon Highway Plan
OTIA	Oregon Transportation & Investment Act (HB 2041).
OTC	Oregon Transportation Commission
PI	Public Information
PPC	Polyester Polymer Concrete
Permanent Reduction	A reduction subject to OAR 731-012-0010 will be considered permanent if the reduction is intended to be permanently left in place after installation and is not easily removable for short-term expansion of Vehicle-Carrying Capacity. (Permanent structures could include, but are not limited to, traffic signals, signposts, stationary bollards, curbs, trees, raised or depressed medians, roundabouts, streetlights and overhead wiring.) If there is uncertainty as to whether or not a structure is permanent, the Department will provide an opportunity for Stakeholder Forum input.
Proposed Action	Any activity that will alter, relocate, change or realign a state highway including those proposed in planning documents approved by a public agency.
RVC	Reduction of Vehicle-carrying Capacity
Reduction of Vehicle – Carrying Capacity	A permanent reduction in the horizontal or vertical clearance of a highway section, by a permanent physical obstruction to motor vehicles located on useable right-of-way subject to Commission jurisdiction, unless such changes are supported by the Stakeholder Forum. Street markings such as bike lane striping or on street parking are not considered a reduction of vehicle-carrying capacity.
Reduction Review Routes	Identified state highways that require a review under this rule prior to a Reduction of Vehicle-Carrying Capacity. For the purposes of this rule, the Reduction Review Routes will be the routes subject to ORS 366.215.
STIP	Statewide Transportation Improvement Program
STP	Single Trip Permit. Valid for 10 days after effective date.
Stakeholder Forum	A group of stakeholders with open membership that meets on an as-needed basis to advise the Department regarding the affect of Proposed Actions on the ability to move motor vehicles through a section of highway. Statewide transportation stakeholders and local agency(ies) affected by a proposed action will be invited to participate in the Stakeholder Forum meetings. At a minimum, the

	Department will invite to each Stakeholder Forum; a bicycle representative, pedestrian representative, a trucking industry representative, a mobile home manufacturing representative, an oversize load freight representative, a representative of automobile users, and a representative from any affected city, county or Metropolitan Planning Organization. In the case of a development review (ODOT staff review of a proposed land use action), a representative of the affected development will also be invited to participate in the meeting.
TCP	**Traffic Control Plan**
TDD	Transportation Development Department
TMP	Traffic Management Plan. Provides additional information and documentation regarding decisions made that affect the development of the TCP.
TO	Transportation Operations
Temporary Conditions	Traffic restriction conditions that occur only during the maintenance or construction phase of projects.
Vehicle-Carrying Capacity	The horizontal or vertical clearance of a highway section that can physically carry motor vehicles

Appendix B: Mobility Contacts

Salem Staff

Name	Title	Phone	Address
Christy Jordan	MCTD Freight Mobility Coordinator	503-378-6192 Fax: 503-378-2873	3930 Fairview Industrial Dr SE, Salem 97302
Nikki Bakkala	MCTD Over-Dimension Permit Unit Program Coordinator	503-378-5835 Fax: 503-378-2873	
Charlie Hutto	MCTD Over-Dimension Permit Unit Program Coordinator	503-378-6108 Fax: 503-378-2873	

Region Mobility Liaisons

Region	Name	Title	Phone	Address
1	Tony Coleman	Region Mobility Manager	503-731-8480 Cell: 503-880-8210	123 NW Flanders, Portland 97209
2	Nick Carl Angela Kargel	Traffic Analyst Mobility Liaison	503-986-2985 503-986-2656	Airport Rd, Bldg A, Salem 97301
3	Matt Malone	Policy & Operations Analyst	541-957-3503	3500 NW Stewart Pkwy, Roseburg 97470
4	Joel McCarroll	Region 4 Traffic Manager	541-388-6189 Cell: 541-419-0791	63055 N Hwy 97, Bend 97701
5	Jeff Wise	Region 5 Traffic Manager	541-963-1902	3012 Island Ave, La Grande 97850

ODOT Bridge Delivery Partners (OBDP)

Name	Title	Phone	Address
W. D. Baldwin	Traffic Mobility Manager	503-569-1419	1165 Union Street, Suite 200 Salem 97301
Willard Bradshaw	Corridor Mobility Manager	503-269-5173	

Appendix C: Mobility Considerations Checklist

PROJECT MOBILITY CONSIDERATIONS CHECK LIST

PDLT Operational Notice
PD-16 Checklist – Revised 07/07/2014

PROJECT NAME:	KEY NUMBER:	LOCATION:
HIGHWAY NAME:	ROUTE #:	Mile Post #:

NOTE 1: This checklist is initiated by a Project Leader or Local Agency Liaison during the project development phase, submitted with the PS&E Package, and provided to the construction project manager when transitioning the project to the construction phase.

NOTE 2: Off-system projects that create a mobility impact on the state system must also comply with PD-16 and this checklist. Project Leaders and Local Agency Liaisons with projects *(both on-system and off-system)* that have no mobility impacts should check the "No Mobility Impacts" box and sign the checklist (MCTD signature is not required for a "no mobility impact" project) before submitting it with the PS&E package.

NOTE 3: The following link provides detailed guidelines for submitting project information to MCTD for Mobility Considerations Checklist Approval: http://www.oregon.gov/ODOT/MCT/docs/Guidelines%20for%20Submitting%20Project%20Information.pdf

Check all that apply

IMPACT ON MOBILITY:

- ☐ No Mobility Impacts
- ☐ Road closure
- ☐ Weight
- ☐ Detour
- ☐ Delays
- ☐ Width
- ☐ Lane Closure
- ☐ Roundabout
- ☐ Ramp closure
- ☐ Height
- ☐ Length

DETOUR REVIEWED FOR:

- ☐ Length Restrictions
- ☐ Width Restrictions
- ☐ Weight Restrictions
- ☐ Vertical Clearance
- ☐ Local Events
- ☐ Special Travel Days

PROJECT MOBILITY RESTRICTION CONSIDERATIONS WORKSHEET	
Temporary Clearance Considerations	**Notes**
1. Are there any available options that would eliminate the restriction?	
2. Are there any available options that would minimize the restriction?	
3. Are there any available options that would shorten the duration of the restriction?	
4. How will restricted traffic be detoured?	
5. How will all restricted vehicle owners be notified of the restriction?	
6. How will the restriction affect existing MCTD permits?	

Mobility Considerations Checklist (Continued)

(PROJECT MOBILITY CONSIDERATIONS CHECK LIST, Cont.)

PDLT Operational Notice
PD-16 Checklist – Revised 07/07/2014

7. How will the restrictions affect emergency services?	
8. Are any other projects using the existing route as a detour? (e.g. Will you be detouring existing detoured traffic?	
Detour Considerations	**Notes**
1. Are there any restrictions on the detour route?	
2. Is this route being used as a detour for other restricted routes?	
3. How will the detour route affect emergency services response times?	
4. Will vehicles transporting hazardous materials be able to use the planned detour route?	
5. Are there other projects along the proposed detour route which will restrict traffic?	
6. Is there another detour route available if something happens to the proposed detour route?	

PROJECT MOBILITY COMMUNICATIONS CHECKLIST

Y	N	NA	Action
☐	☐	☐	Contacted MCTD Freight Mobility Coordinator: MCTDMOBILITYTEAM@odot.state.or.us
☐	☐	☐	Provided MCTD with current copy of TMP/Restriction Summary
☐	☐	☐	Met with Trucking Industry (if needed)
☐	☐	☐	Identified which part of the industry is effected by restriction, i.e. annual permit holders vs. single trip permits
☐	☐	☐	Project restrictions supported by MCTD & Trucking Industry: attach email(s) indicating MCTD support
☐	☐	☐	Additional coordination is required with MCTD
☐	☐	☐	Provided project information to Region Mobility Liaison
☐	☐	☐	Worked with the following groups to identify and resolve any potential conflicts:

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Mobility Considerations Checklist (Continued)

(PROJECT MOBILITY CONSIDERATIONS CHECK LIST, Cont.)

PDLT Operational Notice
PD-16 Checklist – Revised 07/07/2014

			☐ District Maintenance staff ☐ Oregon Bridge Delivery Partners ☐ Local road authorities ☐ Local utilities ☐ Rail Authorities
☐	☐	☐	Considered impacts of local events and special travel days prior to start of restriction
☐	☐	☐	Confirm inclusion of local events and special travel days within project Special Provisions
☐	☐	☐	Identified the need for **35 day written notice to MCTD** prior to start date of restriction per ODOT Special Provisions, section 00220.03(a)
☐	☐	☐	During construction provided **35 day written notice to MCTD** prior to start date of restriction

ADDITIONAL COMMENTS/NOTES

SUBMITTAL INSTRUCTIONS

Project Leaders/Local Agency Liaisons:

☐ Submit signed form and supporting emails to your Region Mobility Liaison at **Design Acceptance Phase (DAP)**.

☐ Re-engage MTCD as needed if there are changes to mobility impacts following DAP.

☐ Update and resubmit form and supporting emails to your Region Mobility Liaison as needed following DAP.

☐ Include a copy of the signed checklist in the PS&E packet submitted to the Office of Project Letting for **ODOT bid projects**. For **LPA certified projects**, complete ***Project Mobility Considerations Checklist*** and include as part of PS&E Package at the region office with a **copy to the Region Mobility Liaison**.

Construction/Consultant/LAL Project Managers:

☐ **Before** making changes during construction that have the potential to adversely affect mobility (i.e. additional restrictions) or run counter to previous agreements made during preliminary design:

☐ As soon as a restriction revision proposal is identified by either the ODOT PM or the Contractor, the PM must engage the contractor, Region Mobility coordinator and any relevant region resources to discuss proposed changes to determine if the change is warranted and supported by the Region.

If supported by Region, Project Managers must:

☐ Engage MCTD to discuss and obtain concurrence with the potential changes **before** any agreements are made with the contractor

☐ Document MCTD and trucking industry support of any potential new restrictions and **provide a copy of the documentation to the Region Mobility Liaison**.

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Mobility Considerations Checklist (Continued)

(PROJECT MOBILITY CONSIDERATIONS CHECK LIST, Cont.)

PDLT Operational Notice
PD-16 Checklist – Revised 07/07/2014

SIGNATURES

"This project has been vetted through MCTD and the Freight Industry. Documentation in file and/or attached."

***Note**: MCTD signature is <u>not</u> required for a project that has no mobility impacts*

REGION PROJECT LEADER, LAL, PROJECT MANAGER (PRINT)	SIGNATURE	DATE
MCTD FREIGHT MOBILITY COORDINATOR (PRINT)	**SIGNATURE**	**DATE**

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Appendix D: Design Exception Cost-Benefit Assessment

Background

In some rare cases, the cost of increasing the vertical clearance will be very high with little or no benefit to freight traffic using the route. This may occur when there are several unrestricted routes in close proximity to the route in question. In these cases MCTD will contact industry representatives and will perform an informal cost-benefit assessment to determine whether or not the load routing will be impaired if the vertical clearance for a substandard structure is not addressed. If MCTD determines that the load routing will not be impaired and the industry representatives concur, then the project can be reviewed for a design exception.

Likewise, in some cases, the cost of maintaining the horizontal clearance during construction will be very high when the impacts of a temporary restriction to freight traffic using the route will be relatively small. This may occur when the duration of the project is very short or if there are several unrestricted routes in close proximity to the route in question. In these cases, MCTD will contact industry representatives and meet with them to evaluate the different alternatives. MCTD will perform an informal cost-benefit assessment and provide the results to the affected industry representatives for concurrence.

Case in Point

a. City of Portland Project -- 33rd street over-crossing over Lombard Street will translate into very large cost increases to the city if they have to maintain 17'6" vertical clearance and they are inquiring if 17' 0" would be adequate?

b. Jordan Road under I-84 (east of Sandy River) would be very difficult to increase existing vertical clearance and ODOT Region 1 wonders if we even route trucks under I-84 on Jordan Road to connect up with the historic Columbia Highway? Can existing vertical clearance be maintained with no increase in clearance achieved in planned construction?

Course of Action

(1) Formulate a request:

Region-1 Area Manager Charles Sciscione requested MCTD Administrator Gregg Dal Ponte connect with industry representatives and perform an informal cost-benefit assessment to determine whether or not the load routing on the above mentioned projects will be impaired if the vertical clearance is not addressed. Gregg Dal Ponte forwarded the following message to MCTD staff:

> *"Consistent with our ongoing discussion of vertical clearances the trucking industry and ODOT have agreed to work together to review particular projects in which maintaining existing clearances might prove to be exceptionally expensive. In such situations all parties have agreed to consider the merits of rigidly adhering to the vertical clearance policy in a cost benefit sort of way. In that regard, Charlie Sciscione of ODOT Region-1 brings two such situations to light today and asks if concessions can be made. Our process should be to do an MCTD analysis and if based on our review we believe that load routing will not be impaired it should then fall to us (me) to approach the affected industry and seek their concurrence. The two locations Charlie inquires about today are:*
>
> *(a) City of Portland project -- 33rd street over crossing over Lombard Street will translate into very large cost increases to the city if they have to maintain 17'6" vertical clearance and they are inquiring if 17' 0" would be adequate?*
>
> *(b) Jordan Road under I-84 (east of Sandy River) would be very difficult to increase existing vertical clearance and Charlie wonders if we even route trucks under I-84 on Jordan Road to connect up with the historic Columbia Highway? Can existing vertical clearance be maintained with no increase in clearance achieved in planned construction?*
>
> *An expedited review and response to me would be appreciated. Thank you."*

(2) MCTD will perform an informal cost-benefit assessment and contact industry:

> *"As for the Jordan Rd exit on I-84 to Historic Columbia River Hwy, that highway is a red route for both height and width, but there is some use for logging and construction equipment getting into the Corbett, Larch Mtn area. We currently require front and rear pilots laden and unladen and must restrict height to the current very low clearances under I-84 at the Jordan Rd Exit 18. There is no other way for Over dimensional loads to get into this area as I understand Corbett Rd (Multnomah Co) has a restricted bridge on it and because of the curvy and steep*

nature of the road, it is not suitable for over size. There is not a lot of activity in terms of numbers of trips but that is partly due to the highly restrictive requirements to get in there, and a height clearance change at Jordan Rd would not change the restrictions other than height.

The Lombard/US30 Bypass at 33rd Ave is a little more difficult to assess. US30 Bypass is our principal high route through the Portland area. We presently, and for a long time, have had to detour around structures at both 33rd and 42nd Avenues by using City of Portland streets. By raising only 33rd Av, we would still have a height issue with 42nd Av which is currently the higher of the two structures and heights would be limited to 15' 6" eastbound, and 15' 4" westbound. As long as the alternate route using city streets remains viable it would likely not be much of an issue whether 33rd was at 17' or 17' 6".

However, if for any reason now, or in the future, this alternate route should become unavailable and/or there were future plans to raise the clearance at 42nd Av it would then be most advisable to go to the maximum height possible. We route a lot of large boats, private, commercial, and military using this route and they routinely measure at or over 17' high, so the maximum clearance possible would be most desirable. We also use this for a lot of prefab structural loads and other items moving in and around the Portland area. If the City of Portland can determine the future availability of this route or if we are aware of future plans that might change the 42nd Av structure or any other re-alignments that might affect the viability of this route, that would help in any decision making process to set a height on the 33rd Av structure."

(3) If MCTD determines that the load routing will not be impaired and the industry representatives concur, then the project can be reviewed for a design exception:

-----Original Message-----

From: DALPONTE Gregg L

Sent: Monday, February 07, 2005

To: TINDALL Douglas J

Subject: Vertical Clearance informal cost-benefit assessment

By the way, I called Charlie Scisione and told him he had agreement from the mobile home industry and heavy haul industry to go forward with the already designed work on I-205 that results in 16'8" vertical clearance under Halsey. Gregg

-----Original Message-----

From: TINDALL Douglas J

Sent: Tuesday, February 08, 2005

To: DALPONTE Gregg L

Subject: Vertical Clearance informal cost-benefit assessment

ALL RIGHT!!!!!! Proof that the system works.

Thanks for your help. Doug

Appendix E: Delay Exception Request Example

Oregon
Theodore R. Kulongoski, Governor

Department of Transportation
Region 3 ~ Headquarters
Matt Malone
Operations & Policy Analyst
3500 NW Stewart Parkway
Roseburg, Oregon 97470
Telephone (541) 957-3503
FAX (541) 957-3685

To: Randal Thomas
Statewide Traffic Mobility Manager

From: Matt Malone
Region 3 Mobility Liaison

Date: October 1, 2009

RE: Request for Exception to Corridor Delay Thresholds as Follows:

- *Segment 16-B on Hwy 42 (*MP 69-73*)*
- *OR42: Hoover Hill – Lookingglass Creek*
- *12 weeks of single-lane traffic (June-August 2010)*

Corridor/Segment of Concern

Highway:	Highway 42
Segment:	16-B
Limits of Segment	OR 42S – Interstate 5 (MP 12 - MP 76)
Current Segment Allowable Delay:	20 minutes

Projects within the Corridor/Segment

There is one other planned project in Segment 16-B during the proposed delay exception period. **Bundle 405: Beaver Creek – Middle Fork Coquille** is an OTIA III bridge project that is repairing several bridges in this segment. Maximum average peak delays on this project during the summer of 2010 are expected to be 10 minutes.

Rationale for Delay Exception Request

The *OR 42: Hoover Hill to Lookingglass Creek* project is located on OR 42 (Coos Bay-Roseburg Hwy) between milepoints 69.51 and 72.52.

The project includes extending the existing westbound passing lane at the eastern end of the project, replacing three substandard culverts, correcting two curves at the western end of the

1

Delay Exception Request Example (Continued)

project and a grind/inlay/overlay throughout the project limits. The construction of the three culverts and the tie in for the curve correction(s) will require traffic to be reduced to a single lane for up to twelve weeks, and is expected to cause signficant delays during construction.

Project Limits: OR42: Hoover Hill – Lookingglass Creek

This project will be constructed during the same time period as the *OR 42: Beaver Creek – Mid Fork Coquille River Bundle 405* project, which has projected average peak delays for this portion of the OR 42 corridor of up to ten minutes.

Construction for the Hoover Hill – Lookinglass project will be split into six stages. Stages 2, 3, 5, and 6 will require traffic to be reduced to a single lane configuration to allow for the tie in of the new section of roadway and the construction of the culverts. Each stage will take two to three weeks.

The work zone length will be limited in the specifications to not more than 3/4 mile. **Under this configuration peak delays will be up to 18 minutes.** Restrictions are expected to be in place starting after June 1st, will not last longer than twelve weeks, and will be complete before Labor Day. The contractor will be directed to have the roadway free from all obstructions for the Fourth of July weekend traffic.

Other Alternatives Considered & Mitigation

Potential alternatives are limited. There are no detour routes available that are suitable for all traffic. The other options considered were limiting the contractor to a single work zone at each culvert and at the tie in to the new roadway surface or construction of a detour road. The construction schedule showed that by limiting the contractor to a single, shortened work zone, the culvert work could not be completed within the available in-water work period. The second alternative, a two lane detour road, requires additional right of way, has geotechnical concerns and will be cost prohibitive to construct.

We will try to reduce delay reductions through a media campaign designed to alert motorists to potential delays and encourage them to use alternative routes if possible (e.g., Hwy 38).

Recommendation

Per the *Corridor Delay Threshold Memo Revised April 25, 2005*, we are requesting your approval of a temporary exception to the 20-minute delay threshold requirement for Segment 16-B. The planned lane closures (along with the 10 minute delays expected on Bundle 405) are expected to create delays that will exceed the threshold by up to 8 minutes during peak hours between early June and Labor Day 2010.

No construction projects are planed on Highway 38 during the summer of 2010, so it will serve as an alternate route without significant delays.

Appendix F: Key Policies & Memos

- Technical Bulletin No. HDM 05-01 Horizontal and Vertical Clearances for Large Loads on Interstate Freeways
- Weight Restrictions on Bridges Policy (PMT 06-01)
- Project Communication Plans (PD-12)
- Memo: Freight Mobility – ODOT Commitments With The Freight Industry
- Memo: Dinner Meeting on March 14, 2002
- Memo: Corridor Delay Thresholds
- Data Needed for Delay Calculations on STIP Projects
- Corridor Delay Thresholds: Questions and Answers
- Delay Category Definitions
- Request for Exception to Delay Thresholds: Outline (Memo Format)
- Request for Exception to Delay Thresholds: Process Flowchart

Appendix G: Useful Websites

- ODOT Statewide Traffic Mobility Intranet Home Page:
  https://www.oregon.gov/ODOT/MCT/Pages/StatewideTrafficMobility.aspx
- ODOT Operational Notices:
  https://www.oregon.gov/ODOT/Engineering/Pages/Technical-Guidance.aspx
- ODOT Engineering Services Home Page:
  https://www.oregon.gov/odot/engineering/pages/index.aspx
- ODOT Highway Design Manual:
  https://www.oregon.gov/ODOT/Engineering/Pages/Manuals.aspx
- ODOT Traffic Roadway Section Home Page:
  https://www.oregon.gov/odot/engineering/pages/index.aspx
- Motor Carrier Transportation Division Home Page:
  https://www.oregon.gov/ODOT/MCT/Pages/Index.aspx
- Motor Carrier Transportation Division Restriction Notification Form (#734-2357):
  https://www.oregontruckingonline.com/cf/MCAD/pubmetaentry/restriction/index.cfm
- Motor Carrier Transportation Division Route Maps:
  https://www.oregon.gov/ODOT/MCT/Pages/Over-Dimension.aspx
- Pilot Car Guide and Approved Dimensions for MCTD Single Trip Permits
  https://www.oregon.gov/ODOT/MCT/Documents/pilotcarguide.pdf