Chapter 6: TRANSPORTATION OPERATIONS CENTER (TOC) STRATEGY

6.1 INTRODUCTION

This chapter discusses the Regional Transportation Operations Center (TOC) vision for the Eugene-Springfield metropolitan area. Most of the participating agencies have some sort of traffic operations and/or traffic management system(s) in place currently, however, as will be discussed later in this chapter, none of the local agencies have identified enough of an operational requirement to compel them to build a single agency Transportation Operations Center. The focus of this chapter is on the issues, benefits and approach, to increase coordination between agency traffic management systems and the concept of a Regional Transportation Operations Center. This chapter provides the following:

- Review of the existing traffic management and operations systems, as well as emergency response and emergency management centers in the Eugene-Springfield area (Section 6.2).
- Summary of the functions of a TOC and benefits of a Regional TOC (Section 6.3).
- Description of alternative architectures of a Regional TOC (Section 6.4).
- Summary of findings of the TOC concept from stakeholder input (Section 6.5).
- Description of the current TOC vision for the region (Section 6.6).

6.2 SUMMARY OF EXISTING CENTERS AND OPERATIONS

Many of the transportation and emergency operations agencies in the Eugene-Springfield metropolitan area have management centers where they perform their traffic and transportation management functions. These are described in more detail in this section. Addresses of each of these facilities are included in Appendix B and the sites are mapped in Chapter 1.

6.2.1 ODOT Northwest TOC

The Oregon Department of Transportation has Transportation Operations Centers in four of the five ODOT regions statewide and these include:

- Region 1 Traffic Management & Operations Center (TMOC) in Portland
- Region 2 Northwest TOC (NWTOC) in Salem
- Region 3 TOC in Central Point
- Region 4 TOC in Bend

Region 5 will house the TOC systems in the LaGrande maintenance building, but will not likely have a true TOC facility.

The ODOT Northwest TOC (NWTOC) facility is collocated with a number of agencies in the new State Joint Emergency Operations and Military Center in Salem. Other agencies and departments that are collocated in this building include: the State Military Department, Oregon State Police (OSP), OSP Northern Command Center, Law Enforcement Data Systems, State Office of Emergency Management and the State Department of Corrections.

ODOT built the NWTOC facility with the intention of using it to manage all of ODOT Region 2 ITS infrastructure and systems, including devices in the Eugene-Springfield area[1]. The systems managed from this facility include:

- Closed-Circuit Television (CCTV) Camera Surveillance
- ODOT's Highway Traffic Conditions Reporting System (HTCRS)
- Highway Advisory Telephone
- Highway Advisory Radio (HAR)
- Dynamic Message Signs (DMS)
- Road Weather Information Stations
- Paging Systems
- On-Ramp Control
- TripCheck Web Site
- Various Other Systems

ODOT is currently in the process of developing a new, statewide Transportation Operations Center System (TOCS)[2] that will integrate ODOT's Advanced Transportation Management System (ATMS) functions with their Computer Aided Dispatch (CAD) functions. This TOCS system will additionally be integrated with Oregon State Patrol's CAD system.

ODOT is also currently in the process of procuring a high bandwidth center-to-center connection between Salem and Eugene and will be able to operate CCTV, DMS and other devices in the District 5 area from the NWTOC in Salem.

ODOT currently performs dispatch functions for the District 5 incident response program from the Northwest TOC and will continue to do so in the future. This program is described in more detail herein.

[1] *ODOT ITS Strategic Plan: 1997 – 2017*, Oregon Department of Transportation, Oct. 1998.
[2] *Draft Transportation Operations Center Software Concept of Operations*, Oregon Department of Transportation, Nov. 2002.

6.2.2 Transportation Management Systems

Although the traffic management agencies in the Eugene-Springfield metropolitan area do not have designated formal traffic operations space (i.e. a TOC), each of the four traffic management agencies in the region currently manage, operate, and maintain traffic control equipment from their offices. Table 6-1 highlights the traffic management functions performed by these agencies and Chapter 1 provides additional details about these traffic management systems.

City of Eugene CCTV Camera Access

Table 6-1. Traffic Management Systems

Traffic Management Agency	Existing and Planned Traffic Management Functions
ODOT District 5	▪ Operation/maintenance of 9 traffic signals (none are centrally controlled or coordinated). ▪ Operation of an incident response program, which includes four full-time staff members, incident response vehicles, and two portable dynamic message signs. ▪ Planned operation of highway advisory radio.
City of Eugene	▪ Operation/maintenance of 224 traffic signals (includes 60 ODOT-owned), which utilize inductive loops or video detection. ▪ QuicNet/4.1 central signal system (approximately 85 percent of the traffic signals are interconnected to QuicNet). ▪ System detection capabilities in four locations. ▪ Monitoring capabilities of four CCTV cameras on Ferry Street Bridge. ▪ Operation of two dynamic speed sign flashers. ▪ Operation/maintenance of one weather station for irrigation purposes.
City of Springfield	▪ Operation/maintenance of 66 traffic signals (includes 23 ODOT-owned, 6 County-owned, and 2 privately-owned), which utilize inductive loops or video detection. ▪ QuicNet/4 central signal system (many of the traffic signals are interconnected to QuicNet). ▪ System detection capabilities in two locations.
Lane County	▪ Operation/maintenance of 17 traffic signals (mostly stand-alone). ▪ Traffic management for City of Coburg. ▪ Operation of one CCTV camera in Coburg and potential plans to install one or two more CCTV cameras for monitoring purposes.

6.2.3 Emergency Operations Centers

Three agencies have designated emergency operations centers (EOC's) in the Eugene-Springfield metropolitan area as shown in Table 6-2. These centers are only activated in the event of a large-scale emergency or disaster such as earthquakes, floods, or winter

City of Eugene Sheldon Fire Station #6
Source: WBGS Architecture Web Site (www.wbgs.com)

storms. The City EOC's are activated when emergency response is required for an event within the City and the Lane County EOC is activated for major emergencies that impact the region for longer durations. Local transportation personnel are responsible for coordinating with an activated EOC to maintain accessible transportation routes to shelters and to re-route traffic as necessary. The three regional EOC's do not currently have access to traffic control devices or systems.

Table 6-2. Regional Emergency Operations Centers

EOC	Location
City of Eugene	Eugene Fire & EMS Department Fire Station #6 (Sheldon Station)
City of Springfield	Springfield Fire & Life Safety Headquarters
Lane County	Central Lane Communications

6.2.4 Central Lane 911 Center

Central Lane Communications operates the largest of four Public Safety Answering Points (PSAP's), or 911 centers, in Lane County and provides call-taking and some dispatching for a number of regional emergency management agencies as shown in Table 6-3.

Central Lane Communications utilizes a modern Computer Aided Dispatch (CAD) system that is integrated with other systems including a mainframe Regional Information System (RIS), Area Information Records System (AIRS), the statewide Law Enforcement Data System (LEDS) and the National Crime Information Center (NCIC). Additionally, in 1998, Central Lane upgraded to an Enhanced 911 (E-911) system called VESTA, a Microsoft Windows® based system, which provides the call taker with the caller's name, telephone

Central Lane Communications
Source: City of Eugene Web Site (www.ci.eugene.or.us/police/911)

number, address and type of telephone service for all incoming calls. This system also indicates the correct police, fire and ambulance jurisdiction based on the caller's address.

Table 6-3. Call-Taking and Dispatch Provided by Central Lane 911

Emergency Management Agency		Central Lane 911 Services	
		Call-Taking	Dispatch*
Police	Oregon State Police	✓	
	Eugene Police Department	✓	✓
	Springfield Police Department	✓	
	Coburg Police Department	✓	
	Lane County Sheriff's Office	✓	
Fire & EMS	Eugene Fire & EMS Department	✓	✓
	Springfield Fire & Life Safety	✓	✓
	19 Rural Fire Districts in Lane County	✓	✓

* Agencies who do not utilize Central Lane Communications' dispatch services provide dispatch services through their own agency.

Central Lane operates 24 hours a day, 7 days a week on an overlapping "4-10" schedule, ensuring that there is typically one supervisor and a minimum of eight communications specialists during peak hours and a minimum of seven communications specialists during off-peak hours.

The Central Lane Communications facility also holds a multi-purpose training room that includes a dedicated radio position and CAD terminal to serve as backup to 911 call-taking and radio functions. This room is also utilized as an emergency operations center for the Lane County Fire Defense Board and accommodates a dedicated workstation for Amateur Radio Emergency Services (ARES) in the event of a natural disaster or other large-scale incident in the local or regional areas.

6.2.5 Lane Transit District Transit Management Center

Lane Transit District (LTD) provides bus service for the Eugene-Springfield metropolitan area and throughout Lane County as described in Chapter 1. They operate dispatch functions for their fixed route fleet from their dispatch center (or transit management center) in Eugene. LTD's paratransit service is contracted to a private company, who performs all dispatch functions in a separate facility as part of the contract. LTD has several ITS projects planned, as described in Chapter 1, which will tie in to their dispatch center.

LTD has indicated interest in relocating to a Regional TOC location should this effort be championed by another agency.

6.2.6 University of Oregon Stadium Operations & Security (SOS) Center

As described in Chapter 1, the University of Oregon (UO) coordinates traffic and emergency management efforts with numerous local agencies before, during, and after home football games at Autzen Stadium. To enhance these efforts, UO constructed a Stadium Operations and Security (SOS) Room in the Len Casanova Center that overlooks the stadium. This room provides a central location for agency coordination and for agency representatives to communicate, via their agency's communication system, to their staff. At least one representative from the following agencies is present in the SOS room for home football games:

Autzen Stadium
Source: U O Web Site
(http://anniversary.uoregon.edu/tour/autzen.html)

- UO Athletic Department,
- Eugene Police Department
- City of Eugene Traffic
- Lane Transit District
- Eugene Fire & Emergency Medical Services (EMS) Department
- UO Campus Public Safety
- Event-Day Security

The SOS room also has monitoring capabilities of several CCTV cameras installed inside and outside the stadium. At this time, the SOS room is only used for football games.

6.3 FUNCTIONS OF A TOC AND BENEFITS OF A COORDINATED TOC APPROACH

A Transportation Operations Center (TOC) is the primary point of coordination for managing an agency's—or multiple agencies'—transportation resources. This may include centralized control of traffic signals, dispatch for maintenance and/or incident response vehicles, viewing of CCTV surveillance cameras, and operation of any number of other field devices such as traffic detection, road weather information stations, and dynamic message signs.

City of Seattle TMC
Source: IBI Group

The primary functions of a TOC include the following:

- **Management**: of traffic control devices, such as signal controllers and dynamic message signs.
- **Monitoring**: of traffic conditions, through the use of field devices such as detectors and CCTV cameras.
- **Incident Verification**: utilizing CCTV surveillance cameras to verify if an incident has occurred, determine location, severity and estimated duration of the incident, and determine an appropriate response.

- **Response**: may simply include notifying other responding agency(ies), or may involve dispatching Incident Response vehicles and/or initiation of an incident management plan.
- **Connection to Other Entities**: including emergency operations centers and 911 centers, communications with the media, and interfaces to other external entities.

6.3.1 Benefits of a Coordinated TOC Approach

A coordinated traffic operations center is one where multiple agencies agree to coordinate traffic management functions. This can be achieved through several methods including:

- Shared Data: may include, location and type of accidents, current signal timing plans, or access to messages currently posted on DMS.
- Shared Video: involves allowing other agencies to view camera images.
- Shared Control: may include allowing another agency to initiate signal timing plans or modify certain signal parameters under special circumstances, other examples include shared control of CCTV cameras and/or DMS.

A coordinated transportation operations center can be achieved through physical collocation of agencies or through a "virtual TOC" where agencies are connected by interfaces (see Section 6.4.2). Regardless of the physical architecture of a coordinated TOC, the benefits, described below, are the same.

Traffic Surveillance and Incident Detection: Few agencies can afford to dedicate staff to watching CCTV monitors to "look for" accidents. However, with a coordinated TOC, designated operators could perform traffic surveillance on behalf of multiple agencies (e.g. ODOT, Eugene, Springfield, and Lane County) in addition to other activities performed at their TOC.

Back-Up Operations: In a coordinated TOC scenario, one agency can provide back-up operations for other agencies in emergency situations (e.g. if one facility is closed due to building security issues, fire or other natural emergency) and during off-hours when the other agency's facility is closed.

Real-Time Traffic Information Sharing: Where multiple TOC's are "connected," transportation and emergency response agencies can easily share real-time traffic information.

Coordination with EOC's: A coordinated TOC structure can also be used to coordinate with emergency operations centers. The benefit of this scenario is that emergency operations personnel who typically receive notification of traffic accidents first and are at the front-lines on-site, would be communicating (either manually or electronically) with transportation personnel who have the ability to implement transportation responses (e.g. modified signal timing plans, dynamic message sign messages, Highway Advisory Radio notification etc). The ability to easily and quickly share pertinent information would benefit both transportation and emergency services personnel.

Coordinated Regional Transportation Responses: One of the greatest benefits of a coordinated TOC is being able to respond to events in a regional manner. The effects of a

traffic event, whether it be an accident or scheduled construction that extends beyond jurisdictional borders. When multiple agencies coordinate with one another, a continuous and consistent traffic management response that transcends jurisdictional boundaries can be put in place, thereby providing drivers with more reliable information, and responding in a uniform and timely manner. For example, drivers caught in major congestion on a freeway will often exit the freeway and use city streets as an alternative to reach their destination. This often causes unscheduled congestion on city streets. If ODOT and City transportation agencies have a coordinated TOC, a pre-approved signal timing plan could be put into effect in City and/or County jurisdictions in response to a traffic accident on a state freeway.

Traveler Information: In addition to traffic management responses, TOC operators are also usually responsible for providing traveler information. Most drivers are not concerned about whether they cross-jurisdictional boundaries during their trip. They are more concerned about whether they will have any traffic problems during their trip. In a coordinated TOC scenario, one agency can take on the responsibility of providing "regional" traveler information including scheduled (e.g. construction) and unscheduled (e.g. traffic accident, breakdowns) event information. A regional traveler information web site with map displays of the region, CCTV images and textual messages could be maintained by one TOC on behalf of all agencies in the region. In the Eugene-Springfield region, this could be achieved by expanding the ODOT TripCheck web site.

Other technologies that are becoming quite effective for the distribution of traveler information include e-mail, fax, or personal digital assistants (PDA's). Once a regional traffic information database has been created (i.e. with Center to Center (C2C) interfaces between the agencies), software modules/interfaces for each of these technologies can be developed to disseminate the information to the public in a simple format and timely manner. A coordinated TOC could manage and implement these traveler information responses.

6.4 PHYSICAL ARCHITECTURES OF A REGIONAL TOC

A coordinated or "Regional" TOC can take on various forms. Most Regional TOC's can be categorized as a "Single Center" Regional TOC, a "Virtual" TOC, or a combination of the two. These two main architecture types are described in more detail in this section.

6.4.1 Single Center: Regional TOC

A Single Center Regional TOC is a multi-agency, multi-jurisdictional facility, which often includes physical collocation of two or more of the participating agencies. The concept of a Regional TOC first came into being in the 1970's and 1980's when transportation agencies were beginning to appreciate the benefits of coordinated responses to cross-jurisdictional transportation operational issues. Regional TOC's were originally designed to allow one entity to detect, monitor and respond to events in a coordinated manner on behalf of numerous agencies. The systems and infrastructure used to respond to these events were typically housed in a central location and operated by personnel dedicated to the Regional TOC. Alternatively, each agency operated its own system(s) and developed interfaces to a Regional TOC facility to allow Regional TOC operators access and control of its devices

when "regional traffic events" occurred. The Spokane Regional TOC in Washington is a good example of this type of architecture.

6.4.2 Distributed: Virtual TOC

In recent years, with the advancement of technology, it has become apparent that the need for a central physical location for coordinated transportation responses is not always required. Other concepts such as a "Virtual TOC" employ workstations at individual agencies with interfaces to partner agencies' devices and systems as required. Data and control sharing interfaces are designed to distribute data (textual, geographic, and photographic information) and control requests/permission amongst coordinating public safety and transportation management agencies. Standard communications protocols are used to exchange real-time information in formats that can be integrated into various event management systems.

6.5 FINDINGS FOR EUGENE-SPRINGFIELD

Several interviews were conducted with transportation and public safety agencies in the Eugene-Springfield metropolitan area. As a result of these meetings a general consensus for a coordinated TOC concept was developed. The discussions led to the finding that most agencies are interested in participating in, and benefiting from, a coordinated TOC. However, the findings also indicate that a Virtual TOC would be more advantageous for the region than a Single Center Regional TOC. This section describes these findings.

6.5.1 Transportation Events Have No Boundaries

Special events, recurring congestion, and non-recurring events in the Eugene Springfield metropolitan area are not restricted to a single jurisdiction. Special events, described in Chapter 1, that impact traffic include, but are not limited to:

- Sporting Events (i.e., UO football games, basketball games and track meets)
- Lane County Fair (held at Lane Events Center)
- Events at the Lane Events Center
- Oregon Country Fair (in Veneta)
- Eugene Celebration
- Springfield Cruise
- Springfield Christmas Parade

Figures 1-3 and 1-4 in Chapter 1 illustrate recurrent congestion locations, including key bottlenecks, for existing and future conditions, respectively. Projections for 2015 traffic conditions indicate the number of potential bottleneck areas will increase dramatically. In addition to recurring events, all jurisdictions must deal with non-recurring events such as incidents and breakdowns. Figure 1-5 in Chapter 1 highlights high accident locations throughout the metropolitan area.

6.5.2 ODOT Northwest TOC Planned to Operate All of Region 2 Equipment

ODOT has an existing TOC in Salem (the NWTOC), which is discussed in more detail in Section 6.2.1. This facility was built with the intent of managing all of ODOT's Region 2 field devices, including those located in the Eugene-Springfield metropolitan area. Additionally, ODOT is in the process of establishing a high bandwidth connection between

the NWTOC and the ODOT District 5 maintenance facility in Springfield. This connection will allow the NWTOC to operate all existing and future ODOT District 5 devices in the area and may also facilitate coordinated operations between the NWTOC and the Cities of Eugene and Springfield and Lane County.

6.5.3 ODOT Message Broker Architecture

ODOT, through other initiatives around the state, is in the process of developing an architecture to support data and information exchange between multiple agencies. This system is intended to support data exchange between ODOT and other traffic agencies, public transportation providers, as well as first responders and emergency service providers. At the core of this architecture is an information management component that includes elements called "message brokers." In the information technology industry, "message brokers" are described as middleware components that can receive messages from multiple sources (applications), determine the correct destination and route the message to the correct channel, to support different applications sharing data with one another.

Figure 6-1 illustrates the current concept of the ODOT ITS Message Broker Architecture, which is being further developed and defined in other current ODOT projects, most notably, the TransPort Advanced Traveler Information Implementation (TATII) project. As part of TATII, ODOT will develop a pilot project that will expand the current Portland area traveler information that ODOT provides, by including information from other sources (agencies) including the City of Portland, TriMet, Portland International Airport, and emergency management agencies including the Oregon State Patrol and regional 911 centers. The results of this project may lay the foundation for ODOT's standard approach to information exchange among different agencies and organizations.

6.5.4 No Local Champion for Regional TOC

Several agencies involved in this project indicated interest in a multi-agency collocation concept, particularly with the Oregon State Police and other first responders. However, no agency has identified a strong operational requirement to build and staff a TOC[3]; therefore, there does not appear to be a compelling case for any agency to champion the development of a Single Center Regional TOC facility.

For a Single Center Regional TOC concept to come to fruition it is important that at least one agency champion the effort. This champion would need to coordinate with other agencies, collect/raise funds, manage the project design and implementation, and so forth. No agency currently has space set aside to house a Regional TOC, although ODOT District 5 indicated that space could be set aside in their planned Glenwood facility if the region agreed that an Regional TOC was necessary and if an agency stepped forward to champion the project.

[3] As discussed above, ODOT has an operational TOC in Region 2.

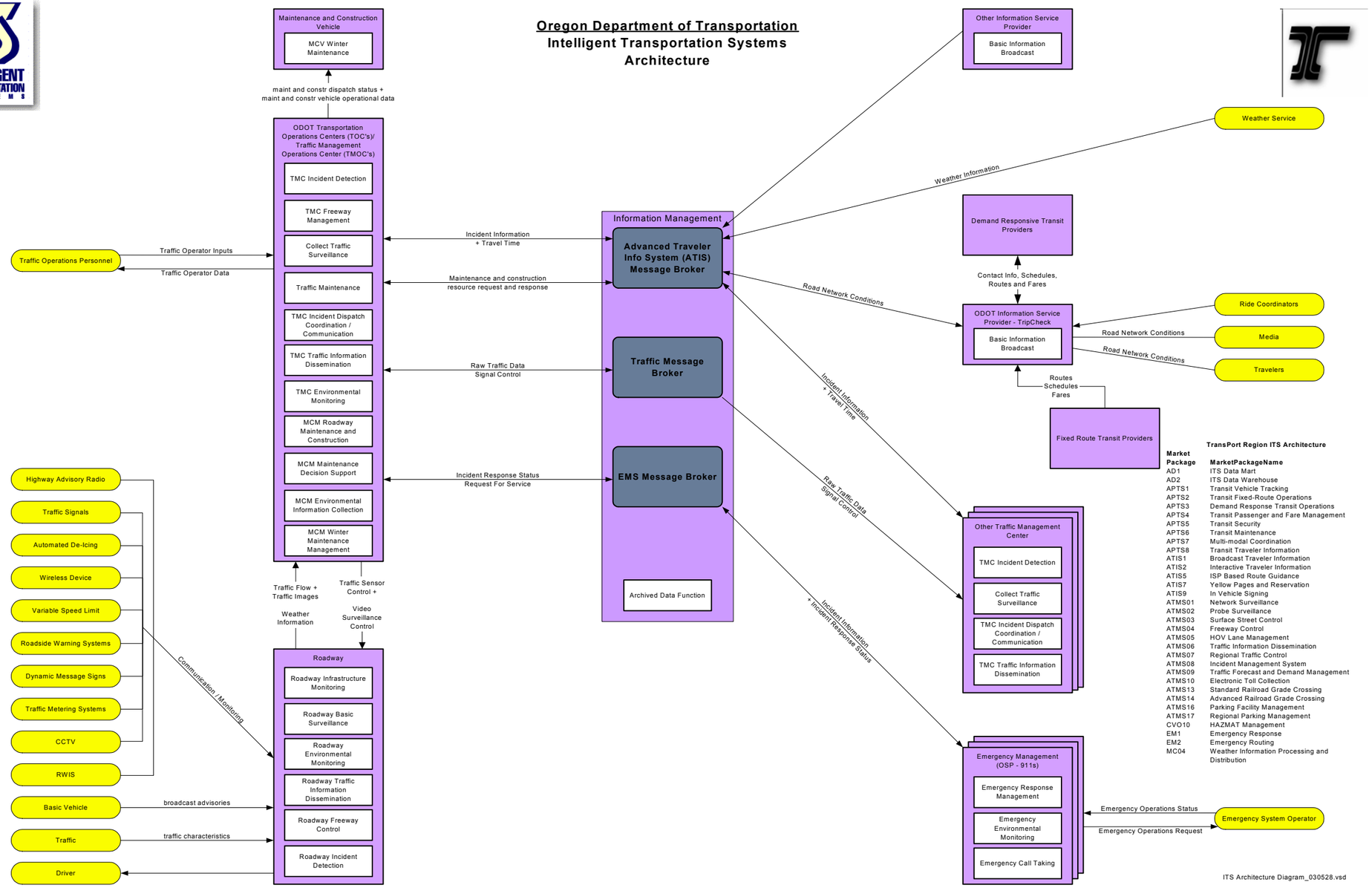

Figure 6-1. ODOT ITS Message Broker Architecture[4]

[4] MCM: Maintenance & Construction Management

6.5.5 Limited Existing or Near-Term ITS Infrastructure

Besides traffic signals, there is a limited amount of intelligent transportation systems (ITS) equipment deployed in the Eugene-Springfield metropolitan area. Deployment of ITS in the entire region includes:

- One (1) existing ODOT dynamic message sign
- Two (2) planned ODOT dynamic message signs
- Four (4) existing CCTV cameras in Eugene
- Two (2) planned ODOT CCTV camera installations
- Two (2) existing dynamic speed sign flashers in Eugene
- Several system detectors

The limited ITS infrastructure deployment results in limited ability to respond to traffic events in a regional manner. At the moment, funds available to the agencies to purchase additional ITS equipment is limited.

The ITS Deployment Plan described in Chapter 7 includes the installation of several new ITS devices over the years to come, which will in turn increase the requirement for device operation and management, as well as maintenance of the devices themselves. It is recommended that the Steering Committee review this requirement in the future once more devices have been installed throughout the region.

6.5.6 Limited Near-Term Requirement for Closer Multi-Agency Signal Coordination and Integration

Because of the physical topography and the roadway layout of the Eugene-Springfield metropolitan area, there is little potential benefit to regional signal timing plans. These coordinated plans are most effective when bordering jurisdictions operate traffic signals in close vicinity of each other and where coordination of the signals could provide for more efficient operation of a corridor through both jurisdictions. Although the Cities of Eugene and Springfield share a border, they are physically separated by Interstate-5, with large separation between signalized intersections on the primary corridors (as illustrated in Figure 6-2). Therefore, there is little benefit to coordinated signal timing plans at this time.

The primary corridor that was identified as a potential multi-agency signal timing opportunity was River Road (also indicated in Figure 6-2), but the same benefit may be achieved more easily by having the City of Eugene simply operate some or all of the County's signals on this corridor. Because of annexation over the years, this road runs between the City of Eugene jurisdiction and Lane County jurisdiction at a number of points.

6.5.7 Limited Existing Staff and Funding Resources

All of the transportation agencies in the Eugene-Springfield metropolitan area are battling with the issue of increased workloads and unchanging staffing levels. Existing staff are fully loaded with current traffic management duties and are unable to take on new/additional duties without off-loading some of their existing responsibilities.

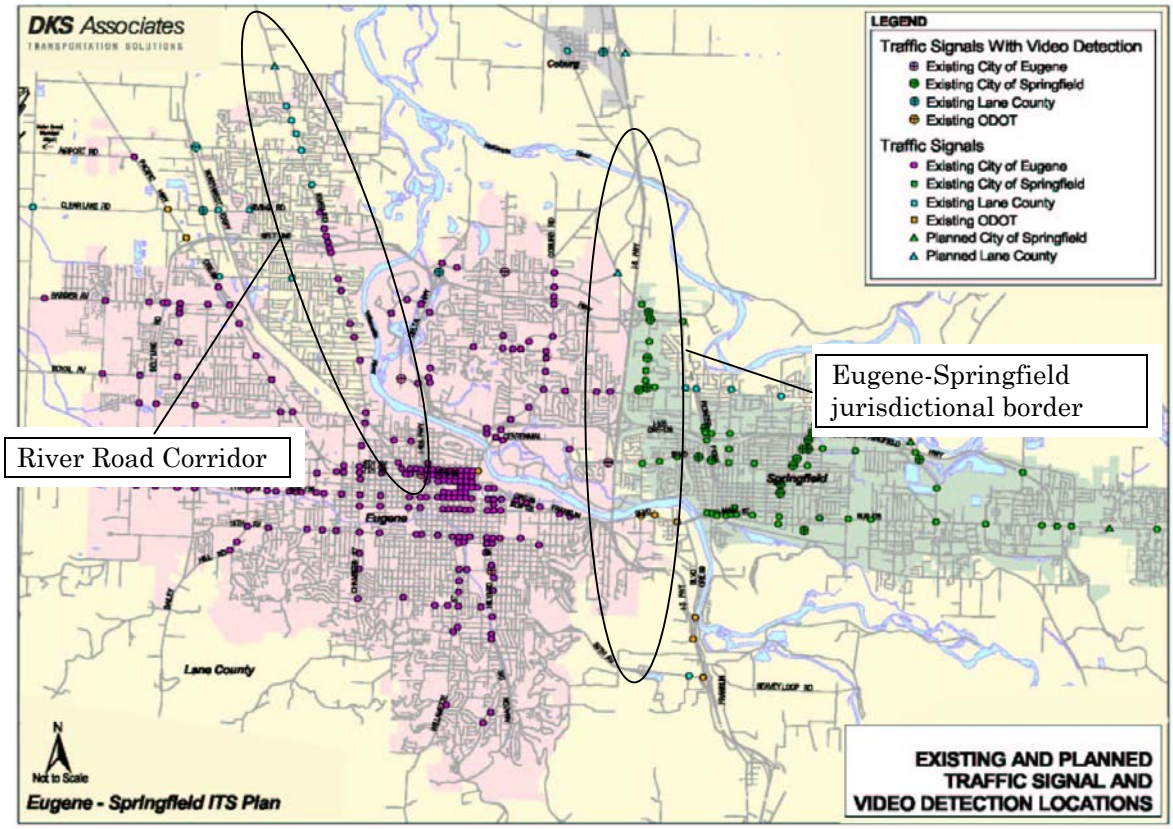

Figure 6-2. Signalized Corridors and Jurisdictional Boundaries

6.6 TOC VISION FOR THE EUGENE-SPRINGFIELD METROPOLITAN AREA

This section describes how a virtual TOC concept could be employed in the Eugene-Springfield metropolitan area and some of the functions that a virtual TOC could support. Where applicable, specific deployment projects (detailed in Chapter 7) have been referenced.

6.6.1 Agency Roles

The development of a Virtual TOC needs a champion to coordinate efforts and ensure that the virtual TOC is developed in an efficient and cost-effective manner and that the final product meets the agencies' expectations and needs. The Virtual TOC "champion" would provide the following functions:

- Facilitate discussions to determine agency needs and expectations.
- Coordinate the development of interagency agreements, memoranda of understanding and contractual documentation.
- Coordinate the development of the Virtual TOC integration modules to ensure that software is consistent and compatible.
- Coordinate and drive the developments of a shared fiber network (PAN, EWEB, SUB, fiber consortiums, local agencies).

The role of the Virtual TOC champion could be taken on by ODOT, since the Northwest TOC deploys the most comprehensive set of ITS systems. In this role, ODOT could help set the guidelines for interagency integration.

The other participating agencies (City of Eugene, City of Springfield, Lane County, Lane Transit District, and expanded stakeholders) will need to participate actively in the development of the Virtual TOC – from the concept development through to implementation. Each participating agency will need to identify information that they are willing to share and information that is of interest to them. Additionally the agencies should identify ways in which regionally coordinated operation could benefit their constituents. It is suggested that a multi-agency committee is created to develop operational procedures to share information about road conditions, incidents and planned events. This committee would identify what physical links need to be established and what information (or control) would be shared over those links. This committee could also be charged with discussing potential region-wide response plans using available infrastructure (e.g. signal timing, HAR and DMS messages).

This regional ITS Architecture and Deployment Plan is the first step in the effort to facilitate discussions between local agencies to identify needs and expectations. As such, it lays the foundation for detailed definition of requirements and system implementation. The Architecture and Concept of Operations Chapters detail the types of information flows that will be required between agencies over the long term, as the various projects are implemented. However, on-going coordination between the agencies will be required to identify the existing and near-term information flows to begin development of the Virtual TOC. The deployment project ES-TM-01: Regional Virtual Transportation Operations Center was developed to produce the detailed requirements and phased implementation plan of the overall regional TOC concept.

6.6.2 External Interfaces

There is a significant amount of traffic information that could be of benefit to emergency operations agencies, 911 centers and event coordination centers (such as the UO SOS Center), as well as the media. It is important to note that this exchange of information needs to go "both ways", as all of these external agencies are also important sources of information that can support more efficient and effective management of the transportation system.

In the event of a regional emergency, responding staff in an EOC require information that impacts their ability to respond to an emergency situation in a timely manner, such as planned events (e.g., construction, road closures, parades) or other events that impact traffic. EOC's can also benefit from having access to CCTV camera images to determine the severity of incidents – to help dispatch the correct vehicles and emergency response services to the area.

Both EOC's and traffic management centers are interested in finding out about unscheduled events like accidents and stalled vehicles, so that each agency can respond accordingly, (e.g. address any safety issues, remove the obstruction and mitigate traffic problems).

911 centers require this same sort of static and real-time information on a day-to-day basis, as they are responsible for dispatching police, fire and other public safety vehicles to incidents, accidents and emergencies.

The UO SOS Center could also benefit substantially from access to CCTV camera images (from ODOT, Eugene and Springfield) to assist in traffic management functions during UO football games.

EOC's, 911 centers and the UO SOS center should be included in discussions of a Virtual TOC. These agencies have much to benefit from participation, and can provide critical information to the transportation agencies.

Interfaces to local and regional broadcast media need to be developed as well, as the media is an extremely important resource for dissemination of traveler information. Print media (newspapers and local magazines) can disseminate pre-planned information, such as construction and road closure information. Radio and television can disseminate more real-time and near real-time traveler information, including congestion and incident information. Television stations can also supply video images that can be used by ODOT and local agencies to help respond to incidents. Interfaces to the media, should be defined as part of the regional Advanced Traveler Information System (ATIS) plan.

Relevant Deployment Projects	
Project Number	**Title**
ES-TM-11	Integrate Regional Virtual TOC with UO SOS Room
ES-TM-13	I-5 Bridge Security System
ES-TM-20	Advanced Parking Management and Information System
ES-TM-23	Integrate Freeway Management Systems with Central Signal Systems, Transit Systems and Emergency Management Systems
ES-TM-24	Integrate Central Signal System with Transit Systems and Emergency Management Systems
ES-TM-25	Special Event Management Systems
ES-EM-01	Provide Interface Between Traffic/Transit Management Systems and Emergency Dispatch Centers
ES-EM-02	Provide Interface Between Traffic Management Systems and Emergency Operations Centers (EOC's)
ES-EM-03	Traffic Adaptive Emergency Response
ES-MC-03	Maintenance, Construction and Special Event Coordination System

6.6.3 Regional Traveler Information and Integration with ODOT (TripCheck Web Site and 511)

The region should begin discussions pertaining to the development of a regional traveler information web site or expansion of the existing ODOT TripCheck web site. As discussed earlier in this chapter, ODOT is currently developing enhancements to TripCheck for the Portland metropolitan area, under the TATII project, which will include traveler information from the City of Portland, TriMet and the Portland International Airport. This model may be appropriate for the Eugene-Springfield area for enhanced, regional traveler information.

Many agencies have also identified the need for a common data warehouse (including GIS data). The establishment of a common data warehouse would provide the foundation for a regional traveler information system.

Relevant Deployment Projects	
Project Number	**Title**
ES-TM-16	Integrate Traveler Information with TripCheck, 511 and Highway Advisory Radio
ES-IM-01	Regional Data Management System
ES-IM-02	Integrate Transportation Information with GIS Centerline Project

6.6.4 Detour Routes

Figure 1-10 in Chapter 1 indicates the alternate routes, which were developed by a multiple-agency effort, in the event of a major incident on I-5. Each of these alternate routes directs traffic off of ODOT freeways and onto City of Eugene, City of Springfield or Lane County roads. Some or all of these alternate route choices may be further optimized through coordinated incident management plans, which could include the use of special signal timing plans or DMS or trailblazer signs offering travel information.

Relevant Deployment Projects	
Project Number	**Title**
ES-TM-07	Incident Management Operational Plans
ES-TM-27	Develop Evacuation Route Plan

6.6.5 Multi-Jurisdictional Corridors

Some of the key regional corridors, such as Pacific Highway (OR 99) and parts of Beltline Hwy, have different network elements that are operated and maintained by different agencies. For example, both of these highways have signals that are operated by the City of Eugene, while the roads themselves are maintained by ODOT. In these cases, if an incident were to happen on either roadway, ODOT would dispatch their Incident Response vehicles, while the City of Eugene would be responsible for any changes to signal timing plans. To support both requirements, each agency would likely require access to any future CCTV camera images and detection data available on these roads.

Relevant Deployment Projects	
Project Number	**Title**
ES-TM-02 (A-E)	Regional Freeway Surveillance and Management
ES-TM-03 (A-I)	Regional Arterial Surveillance and Management
ES-TM-04	Reversible Lange Management on MLK/Centennial Boulevard
ES-TM-05	Gateway Area Traffic Responsive Signal Timing

6.6.6 Center-to-Center Information Exchange Requirements

Table 6-4 indicates example center-to-center information exchange requirements for the local agencies to support the types of projects and applications listed in the previous subsections. The right hand column—"Type of Interface"—indicates examples of the type of communication interface that might be utilized to support the information sharing between agencies. This may include utilizing the Public Agency Network (PAN), using the Internet, building agency owned fiber between buildings and/or utilizing dial-up or leased line service.

These center-to-center information exchanges are more defined in the Architecture and Concept of Operations Chapters (Chapters 3 and 4), for the various subsystems and technologies. The physical infrastructure connections between centers are further defined in the Communications Requirements Chapter (Chapter 5.)

Table 6-4. Center-to-Center Information Exchange

Agency	Agency	Shared Information/Control	Type of Interface
Springfield Traffic	Springfield EOC	▪ Incident information ▪ Traffic conditions ▪ Video ▪ Traffic signal system	▪ PAN ▪ Internet ▪ Telephone
	Central Lane Communications	▪ Incident information ▪ Traffic conditions ▪ Video	▪ PAN ▪ Internet ▪ Telephone
	UO SOS	▪ Incident information ▪ Traffic conditions ▪ Video	▪ PAN ▪ Internet ▪ Telephone
	NWTOC	See Below	
Eugene Traffic	Eugene EOC	▪ Incident information ▪ Traffic conditions ▪ Video	▪ Possible future fiber link ▪ PAN ▪ Telephone
	Central Lane Communications	▪ Incident information ▪ Traffic conditions ▪ Video	▪ PAN ▪ Internet ▪ Telephone
	UO SOS	▪ Incident information ▪ Traffic conditions ▪ Video	▪ PAN ▪ Internet ▪ Telephone
	NWTOC	See Below	
NWTOC	ODOT District 5	▪ Road conditions, incidents and planned events ▪ NWTOC to have ability to control District 5 devices ▪ Traffic conditions ▪ Video	▪ Fiber
	Lane County EOC	▪ Incident information ▪ Traffic conditions ▪ Video	▪ PAN ▪ Internet
	ODOT District 5 EOC	▪ Incident information ▪ Traffic conditions ▪ Video	▪ Fiber
	Eugene Traffic	▪ Road conditions, incidents and planned events ▪ Traffic conditions	▪ PAN ▪ Internet
	Springfield Traffic	▪ Road conditions, incidents and planned events	▪ PAN ▪ Internet
	Incident Response Dispatch	▪ Incidents ▪ "On-the-ground" activities ▪ Traffic conditions	▪ Radio
	UO SOS	▪ Incident information ▪ Traffic conditions	▪ PAN ▪ Internet ▪ Telephone