

**Oregon Department of Transportation**  
**State Safety Oversight Agency**  
**Annual Report**

**Calendar Year 2018**



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## **A. Summary**

The State Safety Oversight Agency (SSOA), housed within the Oregon Department of Transportation (ODOT), is responsible for the safety and security oversight of the light rail, streetcar, and trolley systems in Oregon (hereinafter referred to as “Rail Fixed Guideway Public Transportation Systems” (RFGPTS). These systems are regulated separately and distinctly from heavy rail such as Amtrak or the WES Commuter Rail. Currently, there are two light rail systems that receive federal funding, placing them under federally-mandated state oversight as well as under state regulations. There are two smaller systems that do not receive federal funding, and therefore are subject only to state regulations. The Federal Transit Administration (FTA) provides funding to both the rail transit agencies and the SSOA, and has adopted new regulations requiring SSOAs in each state to provide a written report regarding their activities throughout the previous calendar year to the Governor of the state, and the boards or related positions at the rail transit agencies (RTA).

## **B. Overview**

ODOT’s Rail and Public Transit Division is the designated SSOA for the State of Oregon. Oregon is one of 31 states with a designated SSOA program. Through inspections, audits, investigations and document review, the SSOA program oversees the safety and security of RFGPTS for compliance with federal regulations, Oregon Revised Statutes, and Oregon Administrative Rules. The Tri-County Metropolitan Transportation District of Oregon (TriMet) light rail system, commonly referred to as MAX, and the Portland Streetcar (PSC), receive federal financial assistance, thereby placing them under both federal and state regulations. The Astoria Riverfront Trolley and the Willamette Shore Trolley in Lake Oswego do not receive federal financial assistance, yet are subject to state (but not federal) oversight. This report focuses on those systems subject to federal regulations, pursuant to 49 CFR 674.13(a)(7).

## **C. Program History**

Oversight of the RFGPTS in Oregon began in 1997, before FTA developed a formal oversight program. In 1998, after FTA developed regulations, Oregon submitted its program to FTA for review and approval. In 2005, FTA changed the regulations governing the SSOA program substantially. With that change FTA required entirely new submissions from all SSOAs to demonstrate compliance with the new regulations. Oregon’s submission was ultimately approved by FTA. Since that time, each SSOA submits an annual report to FTA detailing all reportable accidents, incidents, hazards, corrective actions, and investigations for the prior year. In 2012, pursuant to 49 U.S.C. 5329 (the Moving Ahead for Progress in the 21<sup>st</sup> Century Act, commonly referred to as “MAP-21”), the FTA was granted additional oversight authority and since that time has been in the process of promulgating federal regulations to define the program. SSOAs were again required to submit an application to be certified under the new federal requirements. In December 2015, MAP-21 was amended by the Fixing America’s Surface Transportation (FAST) Act. Most of the regulations associated with the authority granted by MAP-21 have been promulgated (e.g., 49 CFR 674, effective April 15, 2016; 49 CFR 673, effective July 19, 2019). The SSOA received its current certification in June 2018.

## **D. Authority**

The federal regulations governing the SSOA program are found in both 49 CFR Part 659 and Part 674. Subject states were required to obtain certification from FTA of its current SSOA program by April 15, 2019, three years after the promulgation of 49 CFR 674 (2016). During the intervening three years, the SSOAs were required to comply with existing regulations at 49 CFR 659, while working towards eventual compliance with 49 CFR 674. The initial path toward compliance with 49 CFR 674 was detailed in a certification work plan approved and tracked by FTA. Progress towards completion and, ultimately, compliance, positioned the SSOA to receive grant funds from FTA. As a result of the SSOA's progress toward compliance, Oregon has received four years of grant funding to date. The FTA grants cover 80% of the costs of the program; ODOT provides the other 20%. Upon completion of the certification requirements, SSOAs were required to submit to FTA a formal application for certification, including supporting documentation.

To enable state compliance with MAP-21 some state statutory changes were required; the Oregon Legislature made these statutory changes during the 2015 and 2017 legislative sessions. Administrative rule revisions were completed on September 27, 2017. ODOT's SSOA submitted its final documentation in April 2018, and achieved official certification in June 2018.

## **E. Program Function**

ODOT's SSOA program is structured to maximize RFGPTS safety and security and to fulfill all FTA requirements. ODOT developed and implemented a Program Standard that identifies the Rail Transit Agency (RTA) responsibilities for safety and security functions. The Program Standard is a combination of several procedures and OARs. ODOT's current Program Standard has been developed based on FTA's SSOA requirements, including:

- The development of a System Safety Program Plan (SSPP) or Agency Safety Plan (ASP), and Security and Emergency Preparedness Plan (SEPP) by the RTAs (or separate security plans – SSP – and emergency preparedness plans – EPP);
- ODOT review and approval of SSPPs and SEPPs;
- Investigation of certain types of accidents and hazards;
- Review, approval, and oversight of the development and implementation of corrective action plans (CAPs) related to accidents, hazards, internal rail transit system reviews, external reviews, etc.; and
- Regular and periodic on-site reviews of SSPP/ASP and SEPP implementation and compliance, including Three-Year Safety and Security Audits.

The previous Program Standard was approved by FTA in July 2013. Since then, the Program Standard has been updated to comply with new regulations and to capture additional authorities. The Program Standard includes procedures for corrective action approval, monitoring and review, hazard monitoring, auditing, and accident investigation, and it explains the statutory obligations of both ODOT and the RTAs, along with guidance and examples. The current Program Standard was approved by FTA at the time they approved ODOT's application for certification, in June 2018.

Each time the rules or statutes are updated or changed, the Program Standard must be revised and re-submitted to FTA for approval. Once approved, the new Program Standard is then provided to the RTAs. Pursuant to the new requirements in 49 CFR 674, the Program Standard must be sent to FTA annually for review, whether or not changes were made during the year. The SSOA works regularly with the RTAs to monitor and enforce compliance with the Program Standard and with the RTAs' SSPP and SEPP (which are required to align therewith).

The RTAs are subject to rules that require reporting of certain accidents and hazards. Most accidents must be reported immediately; hazards within 24 hours. They are reported via email or by phone, or in person if an SSOA staff member is on site.

The SSOA tracks accidents and hazards and reports them annually to FTA. Additionally, the SSOA may join with the RTA to investigate accidents or may conduct its own investigation when deemed necessary. Generally, SSOA makes its determination on whether it will conduct an independent investigation using these guidelines:

Any accident occurring on RTA controlled property:

- Resulting in three or more fatalities or serious injuries to passengers;
- Resulting in a serious injury to a rail transit agency employee;
- Resulting in damage to rail transit property in excess of \$100,000;
- Involving run-away equipment causing damage or injuries;
- Likely to have been caused by failure of a rail transit vehicle or any part thereof; or
- Likely to arouse considerable public interest.

A light rail vehicle (LRV) colliding with:

- A private passenger vehicle that results in the death or serious injury of three or more persons;
- A commercial vehicle, emergency vehicle, or school bus that results in a single fatality or multiple serious injuries to occupants in the vehicles involved; or
- Another light rail vehicle or any other rail transit equipment on or adjacent to the tracks.

The requirements of 49 U.S.C. 5329 include development by the RTAs of a new "Public Transportation Agency Safety Plan," (PTASP), as codified in 49 CFR 673. FTA has determined that such plans will be designed with a Safety Management System approach. The details of that approach are described in FTA's National Public Transportation Safety Program, codified as 49 CFR 670. SSOAs are responsible for overseeing safety at the RTA, establishing and maintaining training requirements for SSOA staff, and conducting audits and investigations of the RTA and its compliance with its PTASP and security plans. Federal law requires the SSOA to provide, at least annually, a status report on the safety of the RFGPTSS the SSOA oversees. This report must be provided to the Governor of the state, the boards of the RTAs, and to the FTA.

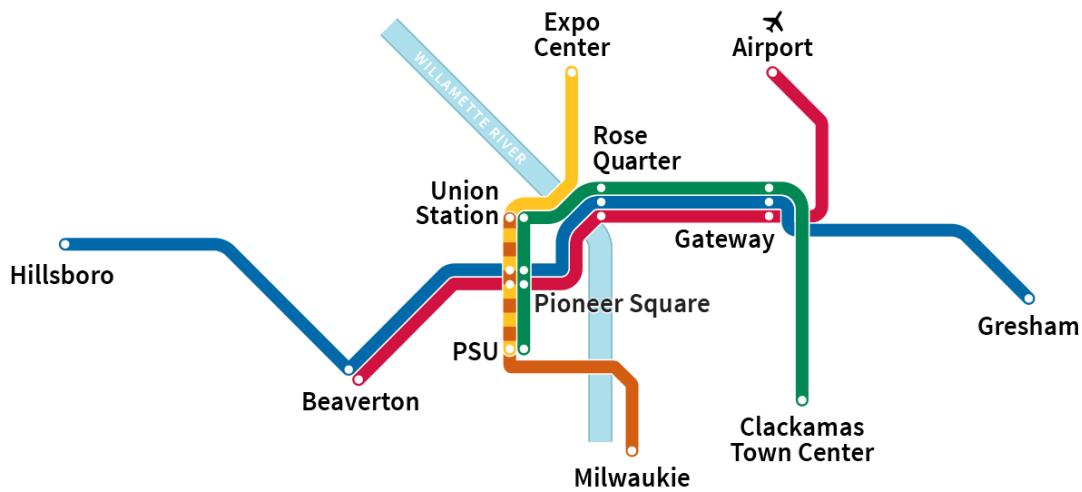
## F. SSOA Program Staffing

The program began with a manager and one staff member, and operated this way until it became clear that FTA was looking to increase both its authority and the SSOAs'. ODOT's SSOA added staff in anticipation of the additional mandates pursuant to 49 U.S.C. 5329, and now has three full-time staff members and a manager who contributes half-time to the program. The three staff members are further distinguished to act in various roles. One serves as the lead; one serves as an inspector/investigator, and one splits time between analyzing, filing hazards and incidents, and as an inspector/investigator. Much field time involves working with RTA staff in the field, conducting various system-wide inspections and audits, attending meetings, and conducting accident investigations.

## G. Rail Fixed Guideway Public Transportation Systems under SSOA Oversight

### 1. Tri-County Metropolitan Transportation District of Oregon (TriMet):

TriMet provides rail transit service in the Portland metropolitan area, which includes Clackamas, Multnomah, and Washington Counties. TriMet operates a light rail transit system called the Metropolitan Area Express, or MAX, which is subject to state safety oversight and is one focus of this review. MAX serves the downtown Portland area and west to Beaverton and Hillsboro (along the Blue Line), east to Gresham (Blue Line), north/east to Portland International Airport (Red Line), north to the Expo Center (Yellow Line), south/east to Clackamas Town Center (Green Line), and south to Milwaukie.



Trains on all lines consist of two Light Rail Vehicles (LRVs) from among a fleet of 145, including Type 1 Bombardier high-floor (non-wheelchair accessible) cars from the original rail line, and Types 2, 3, 4 and 5 Siemens low-floor (wheelchair access) cars. Due to accessibility requirements, trains always include at least one low-floor LRV.

All MAX LRVs are propelled by electric traction motors, which are powered via a roof-mounted pantograph that glides along the overhead catenary system. The trains run on a total of 59 miles of track and serve 97 stations. On a typical weekday, MAX trains travel approximately 11,600 miles, according to TriMet, which reported 38.9 million light rail boardings for fiscal year 2018.

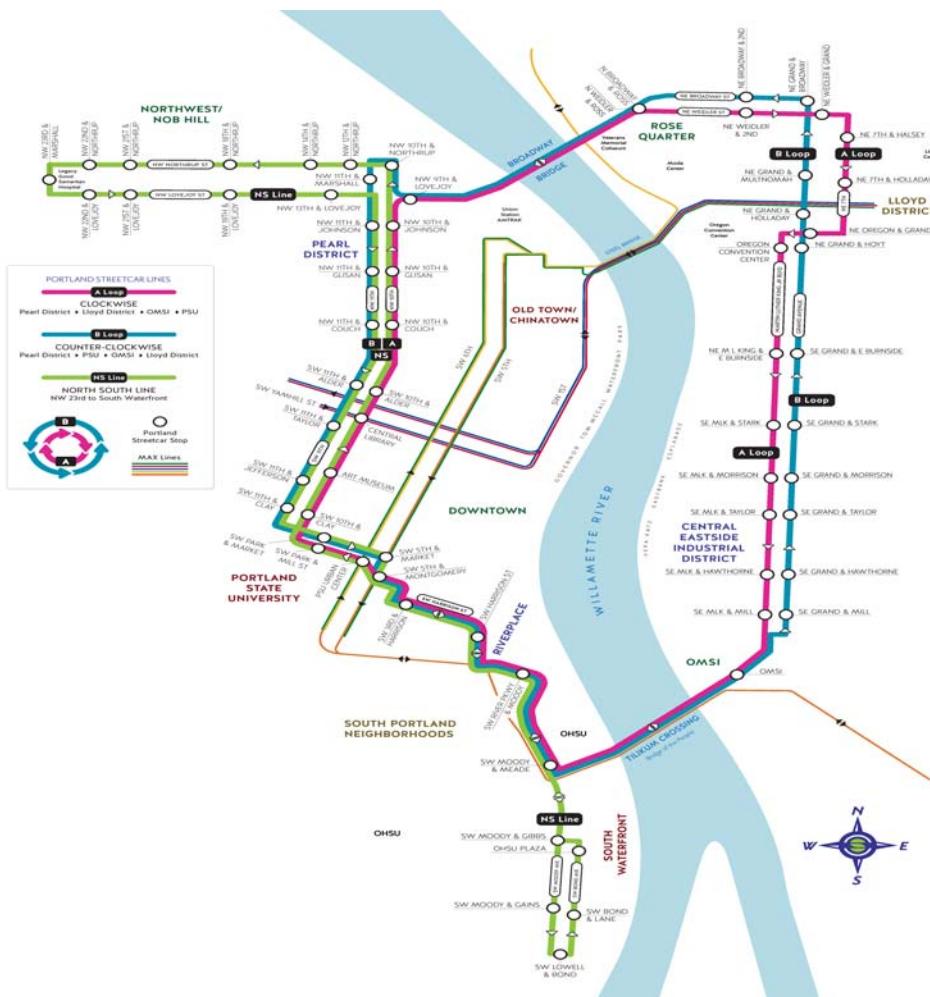
TriMet is funded primarily through payroll taxes in the tri-county area serviced by the system (Multnomah, Clackamas and Washington Counties). Additional funding is received from passenger revenues and federal formula grant funds.

## 2. Portland Streetcar:

Portland Streetcar (PSC) is owned and operated by the City of Portland in partnership with TriMet, which contributes a portion of the operating funding. TriMet also provides operational and maintenance support. The City of Portland contracts with Portland Streetcar, Inc. (PSI), to construct and promote the Streetcar system. PSI is a private, non-profit corporation. Thus, PSC is staffed by a combination of City of Portland employees, TriMet employees, and PSI personnel.

PSC is managed by the Portland Bureau of Transportation (PBOT), under the direction of the Commissioner-in-Charge of Transportation. The Commissioner-in-Charge of Transportation has appointed a Citizen Advisory Committee to advise the Commissioner, City Council, and Streetcar management on matters involving planning, design, and operation of the system.

In July 2001, PSC began revenue service following over ten years of planning, construction, and testing. The PSC currently has 72 stops, and on a typical weekday travels an average of 1,289 revenue miles. The total number of miles traveled in 2016 was 409,675; revenue miles were 408,694.



### **3. The Astoria Riverfront Trolley:**

The Astoria Riverfront Trolley (ART) is a heritage trolley located in Astoria, Oregon. The track, right-of-way, and trolley barn are owned by the City of Astoria. The Riverfront Trolley Association, Inc., is a nonprofit organization that owns and operates ART under the umbrella of the City of Astoria and the authority of the City Council. The city reserves the decision-making authority for right-of-way and track design and configuration, through its City Manager. The City Manager has assigned responsibility for these items to the Public Works Director of the City of Astoria.

The ART provides service along Astoria's Riverfront from the trolley barn located near Hamburg Street, to the East End Mooring Basin near 39<sup>th</sup> Street. Current schedules call for operations in either three or three and one-half hour volunteer shifts seven days per week during Spring Break (late March timeframe), and from Memorial Day to late October. The ART typically operates only on weekends in November, and may operate in December. The ART also operates charter trips at other times.

Operations are subject to weather conditions and Operations and Safety Committee determination. Currently, until the track has been fully rehabilitated, the trolley operates from noon to 6:00 p.m. Friday through Sunday. The Riverfront Trolley Association has a Board of Directors responsible for policy guidelines, financial decisions, and general oversight of operations. An Operations and Safety Committee oversees the day-to-day operations of the system. The committee meets monthly. The Board appoints a member of the Operations and Safety Committee to be the Board Liaison.

The ART is a volunteer organization with the exception of three paid positions: a trainer, a scheduler, and a bookkeeper. Volunteers include motormen, conductors, maintenance, advertising, and merchandising positions. The ART is self-supporting; it does not receive funding for operations from the city. Its revenues include fares, advertising, charter fees, donations, and sales of trolley memorabilia. It receives a small matching grant from the urban renewal district for capital items.

### **4. Willamette Shore Trolley:**

The Willamette Shore Trolley (WST) has been providing scenic trolley rides on a six-mile section of historic rail line between Lake Oswego and Portland, Oregon, since 1987, and is operated by volunteer members of the Oregon Electric Railway Historical Society (OERHS, a not-for-profit Oregon Corporation, 501c3).

Two Vintage Trolley vehicles run on the line. The line parallels the Willamette River and passes stately mansions, crosses over a bridge and four trestles and through the 1,400 foot Elk Rock Tunnel. The line ends at Bancroft Street in southwest Portland. For several years, the line stopped prior to the Sellwood Bridge as the bridge was undergoing rebuilding. Now that the refurbishment of the bridge is complete, the line now continues into southwest Portland.

Because neither ART nor WST system receives funding from FTA, they are not subject to the federal regulations, only to the state regulations.

## **H. SSOA Activities Undertaken and Completed in 2018 include:**

### *SSOA Program Certification Activities:*

Certification activities culminated in 2018 with the submission of ODOT's application to the FTA for review and approval. The application was submitted in April and ODOT was officially certified by the FTA in June 2018, before the mandatory mid-2019 deadline.

### *SSOA Investigations:*

The SSOA requires the RTAs to conduct investigations into accidents that occur on their systems. The SSOA reserves the right to conduct independent investigations. The RTAs must provide to the SSOA a written report of their investigation, which includes causal and contributing factors. These are then reviewed and, if appropriate, approved by SSOA staff. Sometimes, SSOA staff participates in or conducts their own investigations. During 2018, SSOA staff participated in three separate investigations, all involving PSC.

In May 2018, PSC was involved with a runaway streetcar that derailed. There had been a defect in one piece of equipment that controls acceleration and deceleration. As a result, the streetcar itself could not be stopped quickly enough to prevent impact with other vehicles. The impacts to other vehicles resulted in a domino-like effect, when the streetcar hit another car, which then hit a utility truck. The truck driver was transported from the scene. One other driver suggested he may get treatment, but was not transported from the scene.

In September 2018, a utility truck trying to cut across traffic collided with the streetcar and resulted in a derailment. This incident resulted in damage to both the utility truck and the streetcar, but no injuries requiring hospital transport.

In November 2018, the streetcar encountered a perennial issue in the fall in the Pacific Northwest: leaves. When the leaves have almost all fallen, the rails are in a constant state of slickness, sometimes resulting in a derailment. In this instance, the derailment happened at the edge of the campus of Portland State University, which is downtown and operates as a single-track area at times. Because this section of track is crucial to all lines provided by the streetcar, any derailment or other issue in this location can be debilitating to streetcar's schedule. Fortunately, there were no injuries.

### *Hours of Service Audit:*

ODOT's SSOA and Federal Railroad Administration (FRA) program staff reviewed records of safety-sensitive employees to verify hours worked were not excessive, in an effort to identify fatigue issues. An audit was conducted on Rail Control employees for the time period from November 2017, through April 2018, resulting in 537 total records reviewed and 7 non-complying conditions (defects) found.

### *Rule Violations:*

Pursuant to 49 CFR Part 674, there is a strong emphasis on hazard management and mitigation. Rule violations are a major source of hazards for both TriMet and Portland Streetcar. In an ongoing effort, SSOA staff diligently monitors the rule violations reported by each RTA. This allows analysis of the violations on a regular (at least quarterly) basis to determine which rules are most often violated and what action may need to occur in order to mitigate the issue. Examples of the types of rule violations

seen include failure to call a signal, failure to contact Control when required, opening doors on the wrong side of the train, exceeding the limit on Hours of Service, etc.

#### *Competency Management Systems (CMS):*

Verification that RTA employees are safely performing their duties and complying with all required policies, rules, and regulations is an important function of the oversight agency. Management at both PSC and TriMet recognize such a benefit and have begun to implement systems in order to provide managers with this information. In 2018, TriMet established a Competency Management System (CMS) to test employees on a variety of different things to determine if they are following the established operating rules correctly. In turn, SSOA staff regularly accompanies TriMet managers while they conduct their tests to determine if they are carrying out their testing procedures correctly. This will continue as an ongoing task moving forward. PSC is in the process of developing a similar program and SSOA staff will accompany their managers and supervisors when conducting similar tests.

#### *TriMet Track Audit:*

In the third quarter of 2018, the SSOA conducted a track audit, encompassing two of TriMet's alignments. These included the Red Line from Gateway Transit Center to Portland Airport, and the Blue Line from the 197<sup>th</sup> platform to Cleveland, from Gateway Transit Center to Rose Quarter, and from Beaverton Transit Center to Goose Hollow. As a result of this audit, 31 track-related defects were noted as well as 2 roadway worker protection (RWP) defects. All CAPs associated with these defects are tracked and monitored to completion. SSOA inspects the entire track over a 3-year time period.

#### *2018 Triennial Audit(s):*

In December, 2018, the SSOA conducted a triennial audit of both TriMet and Portland Streetcar. Final versions of the report(s) were sent to each RTA. TriMet's audit resulted in 10 findings, and PSC's audit resulted in 13 findings. For each finding of non-compliance, the RTAs are required to determine what is necessary to correct the deficiency and then provide SSOA with a description of that action, the person responsible for implementation, and the proposed date of completion. SSOA staff review those actions for approval and, once approved, track them until completion of the corrective action is verified.

### **I. SSOA Planned Activities: 2019**

In addition to daily oversight, additional audits and system inspections take place throughout the year. Planned activities for 2019 include, but are not limited to:

- TriMet Hours of Service Audits:
  - Operations Control Center (OCC)
  - Signals
  - Rail Equipment Maintenance (REM)
- TriMet Track Audits
- TriMet Quarterly Rule Violations Review
- TriMet Joint Operations Observations (such as CMS testing)

## J. SSOA Reporting by the Numbers:

Below are the reported numbers for events involving the RTAs during the calendar years indicated:

| 2017   | Collisions | Fatalities | Derailments* <sup>1</sup> | Pedestrian Incidents | Inspections | Defects |
|--------|------------|------------|---------------------------|----------------------|-------------|---------|
| TriMet | 46         | 7          | 3                         | 16                   | 267         | 152     |
| PSC    | 19         | 0          | 1                         | 2                    | 27          | 4       |
| ART    | 0          | 0          | 0                         | 0                    | 3           | 0       |
| WST    | 0          | 0          | 0                         | 0                    | 35          | 30      |
| 2018   | Collisions | Fatalities | Derailments               | Pedestrian Incidents | Inspections | Defects |
| TriMet | 56         | 3          | 0                         | 16                   | 302         | 146     |
| PSC    | 33         | 0          | 3                         | 1                    | 94          | 3       |
| ART    | 1          | 0          | 0                         | 1                    | 3           | 0       |
| WST    | 0          | 0          | 0                         | 0                    | 1           | 1       |

<sup>1</sup> FTA regulations require that the precipitating event be listed as the primary cause of an incident, followed by the result. In two cases, a collision preceded a derailment, so those derailments are counted as collisions. Only one of the derailments in 2018 was caused by malfunctioning equipment, which was the precipitating event resulting in derailment. In that case, the primary incident was the derail. Until certification in June, 2018, only mainline derailments were reportable. Once an SSOA is certified, all derailments – regardless of location – are reportable.

## Appendix A: Acronyms

|         |  |
|---------|--|
| CAP     | Corrective Action Plan   |
| CFR     | Code of Federal Regulations                                    |
| FAST    | Fixing America's Surface Transportation                        |
| FRA     | Federal Railroad Administration                                |
| FTA     | Federal Transit Administration                                 |
| HOS     | Hours of service   |
| LRV     | Light rail vehicle   |
| OAR     | Oregon Administrative Rules                                    |
| ODOT    | Oregon Department of Transportation                            |
| ORS     | Oregon Revised Statutes  |
| PBOT    | Portland Bureau of Transportation                              |
| PSC     | Portland Streetcar   |
| PSI     | Portland Streetcar, Inc.                                       |
| Pub. L. | Public Law   |
| RFGPTS  | Rail Fixed Guideway Public Transportation System               |
| RTA     | Rail Transit Agency  |
| SB      | Senate Bill  |
| SEPP    | Security and Emergency Preparedness Plan                       |
| SMS     | Safety Management System                                       |
| SOP     | Standard Operating Procedure                                   |
| SSOA    | State Safety Oversight Agency                                  |
| SSPP    | System Safety Program Plan                                     |
| TriMet  | Tri-County Metropolitan Transportation District of Oregon      |
| TSSP    | Transit Safety Institute's Transit Safety and Security Program |
| TPP     | Technical Training Plan  |
| USC     | United States Code   |

## Appendix B – Org Chart

