

Streetlights & Signals

Program Description & Goals

The Streetlights & Signals (SSL) program is responsible for the planning, design, operations, and maintenance of traffic control and lighting infrastructure. Traffic signals and street lighting (and the maintenance of this infrastructure) are integral to shaping our livable city. Our emphasis is on creating and maintaining streets that keep Portland a walkable, bikeable, and a mobile livable city.

Asset management is at the heart of the work that we do to track the program. Declining operations and maintenance funding for the program has resulted in fewer than two traffic signals being maintained each year, which would require the traffic signals to last more than 400 years. Previous asset management reports had the lifespan estimated at 30 years. The lack of a full replacement of the existing traffic signals results in higher ongoing maintenance costs, which further reduces the preventive maintenance that can be conducted by City staff.

Over the past year, PBOT engaged in a rigorous exercise to establish a new performance measure set for FY 2019-20. The purpose of this effort was to enhance transparency and provide increased insight into programmatic performance across our bureau. The measures that were defined for this program area are reflected below. Where measures are newly established, historical data is not currently present.

Measure Title	PM 2016-17 Actuals	PM 2017-18 Actuals	PM 2018-19 Target	PM 2019-20 Target	Strategic Target
Percentage of the High Crash Network that meets PBOT's pedestrian spacing crossing guidelines	N/A	N/A	N/A	10%	0

Explanation of Services

Traffic signals are vital to the mobility of society. They result in the safe crossing of people walking across many of our streets and help people travel distances by bicycle, scooter, and other vehicles. Thousands of people use each traffic signal every day.

SSL staff design, operate, and maintain traffic signals, beacons, and street lighting systems. The implementation of various equipment has included: Smart City sensors, the City's communications infrastructure, the TriMet traffic signal priority equipment, and traffic signal system monitoring equipment. These systems are integrated in a way that maintains the performance of the transportation system.

The occurrence of outages in the Portland traffic signal system is alarming. After hours responses are numerous due to the failure of equipment in the field as it lasts long past its useful life.

Emergency repairs can result in higher costs and poor coordination between partners.

Our staff are directly responsible for customer engagement, receiving numerous calls per day complaining about the traffic signal operations and street lighting outages that occur throughout Portland. We have a special relationship with the accessibility community and receive requests directly from members with disabilities and mobility needs. These citizens are engaged directly in the work of the traffic SSL Division. Both citizens that are blind and those that use wheelchairs for mobility need accommodations at signalized intersections.

Equity Impacts

The Signals, Street Lighting, ITS, & Electrical Maintenance Division places a strong emphasis on equity and supports Portland's Citywide Racial Equity Goals. The recent Civil Rights Education and Enforcement Center (CREEC) settlement has raised the awareness of the City as to the needs of these communities. The Oregon Blind Commission has helped prioritize the installation of accessible pedestrian signals and other crossing improvements by providing direct input and requests for upgrades to the existing infrastructure. People with mobility devices and people that need additional time at traffic signals also can directly request service and changes to the traffic signal timing that increase the safety of people on the streets. The bureau does collect information about whether complaints or requests are related to the Americans with Disabilities Act (ADA).

The Signals & Street Lighting Division has conducted some efforts to quantify the efforts of the Electrical Maintenance Section on Communities of Color within the City. Our efforts have focused on the response time related to Electrical Maintenance functions at traffic signals within the various geographic districts of the City and their corresponding score on the Equity Matrix. The hypothesis is that the geographic boundary created many years ago to organize work may not result in response rates that are commensurate with our newer equity goals. This redistribution of geographic boundaries was postponed as staffing for this equity evaluation of the Section was a lower priority than immediate safety response, project support, and other initiatives when engineering staff workload was a concern for the bureau.

The equity analysis completed as a part of the Street Lighting relamping project has served the SSL Division very well. Staff continue to use the City's Equity Matrix to identify priorities for limited funding for improvements to the street lighting system. The impact of the changes includes more rapid response to requests from the community and have resulted in improvements centered around areas where communities of color and people with disabilities regularly use the infrastructure (SE Division Street).

Changes to Program

The program has also been impacted by the significant additional infrastructure implemented by the Vision Zero efforts. This initiative has resulted in the addition of nearly 80 Rectangular Rapid Flashing Beacons (RRFB) which will also require maintenance and have increased our installations by nearly 8%.

- The increase in traffic signal equipment and lighting does not appear to be waning. In fact, the Interties for the Division has increased 200% in the past three years. This has resulted in the Division maximizing the use of consultants to complete projects both through flexible services contracts that are in control of the Division and that of others (including Civil Design).
- The City has experienced a number of lawsuits in the past year that has required a considerable amount of time from staff to support the City Attorney's office.
- The other large increase for service that has occurred was the installation of Smart City sensors. The Mayor's Office directed staff to install 200 new facilities with devices to measure volume on the SE Division, SE Hawthorne, and SE 122nd Avenue corridors. This increase in equipment has come with challenges related to the equipment, of which the impacts to staff time are unknown at this time.
- The organizational structure has changed in the past year to include more robust management of both the Electrical Maintenance Team and the addition of a new section to handle Asset Management, Inspections, and Small Cell sites. This has resulted in significant more collaboration and communication within the organization.

Program Budget

	FY 2016-17 Actuals	2017-18 Actuals	2018-19 Revised	2019-20 Adopted
Bureau Expense				
Capital Outlay	22,193	760	0	0
External Materials and Services	2,958,071	2,979,314	5,550,726	4,505,366
Internal Materials and Services	1,118,650	1,500,553	986,070	738,500
Personnel	4,982,777	5,264,424	6,073,767	6,559,394
Fund Expense				
Contingency	0	0	2,655,862	12,061,500
Sum:	9,081,691	9,745,051	15,266,425	23,864,760
	FTE	31.58	34	44.72
			44.72	44.72

Resources: This program is funded by General Transportation Revenue and by federal and state grants, System Development Charges, Fixing Our Street revenues, HB 2017.

Expenses: The primary expenditures include personnel, consultants, materials, Fleet costs, and equipment for planning, design, and construction projects.

Historical expense and FTE figures may show large discrepancies due to recent changes in the bureau's program structure in response to the City's transition to program offer budgeting.

Staffing: The program has 24 electricians, four auto equipment operators, 24 engineers and engineering technicians, one GIS tech, one signal and street lighting technician, one management analyst, one electrical supervisor, three managers overseeing the program, one management analyst and one communication engineer.

Assets and Liabilities: Once the projects are constructed, the City mostly own the assets which includes signalized intersections, beacons, variable message signs, street lighting, and other infrastructure.

Program Information

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