

# Main Street and Columbia Street Fiber Optic Project

## W 6<sup>th</sup> Street to E 45<sup>th</sup> Street

### Project Goal:

- Improve transportation communications.
- Provide redundant fiber network.
- Connect traffic signals to central system
- Provide fiber connection to WSDOT Maintenance facility.
- Facilitate improved signal coordination and integration.

### Project Outcome

- Expand City fiber optic communication network.
- Improve efficiency of staff time.
- Improve traffic flow.

### Project Information

**Federal Funding Program:** CMAQ  
**RTC Awarded Funding:** \$917,000  
**Total Project Cost:** \$1,284,279  
**Project Type:** TSMO  
**Project Length:** 2 miles  
**Function Classification:** Principal Arterial  
**Daily Traffic Volume:** 5200 ADT

### Project Description

This project was intended to expand the reliability of the regional communications network by installing fiber optic cable on Columbia Street and Main Street between W 6<sup>th</sup> Street and E 45<sup>th</sup> Street. The project also improves the operational efficiency of the traffic signals along the corridors by upgrading the traffic signal controllers. The project allows all of the traffic signals in downtown Vancouver to communicate over fiber optic cable back to the Trafficware central traffic signal system server. The upgraded controllers and communications network improve the City’s ability to remotely access, manage, and maintain the traffic signals in the downtown core and along Columbia Street and Main Street up to the WSDOT Maintenance facility on Main Street. The project facilitated improved signal coordination and integration and gives the City the ability to review and adjust timings in real time and use staff time more efficiently.

### Project Funding

Phase	Year	Federal Funds	Other Funds	Total
PE	2014	\$ 62,000	\$ 9,700	\$ 71,700
ROW	N/A	\$ 0	\$ 0	\$ 0
CN	2017	\$ 855,000	\$ 357,579	\$ 1,212,579
<b>Total</b>		<b>\$ 917,000</b>	<b>\$ 367,279</b>	<b>\$ 1,284,279</b>

### Project Outcome Details

The project successfully provided fiber optic communication and upgraded signal controllers to facilitate improved signal coordination and integration of all traffic signals in downtown Vancouver. The new fiber creates a redundant path

between the central signal system server and the traffic signals in the field. A redundant path reduces the risk of losing communications to the traffic signals by providing an alternate route.

The new traffic signal controllers improve the intersection efficiency by providing more features and flexibility for programming.

With all of the traffic signals now connected into and communicating back to the central system, maintenance and operations personnel can monitor and manage traffic signal coordination. City staff can observe the operation of the traffic signals without going out in the field. By remotely monitoring the traffic signals, staff can troubleshoot issues (determine if there is a detection issues or a timing issue) prior to dispatching maintenance staff to the intersection. This saves time and money.

The traffic signal timings along Main Street between E 39<sup>th</sup> Street and NE 45<sup>th</sup> Street were updated to include coordinated signal timing plans. The coordinated timings improved the north/south flow and reduced the delay, stops and fuel consumption within the network. Based on the Synchro network output, the new timings provided the following daily benefits:

- Delay reduced by 11%
- Stops reduced by 17%
- Fuel Consumption reduced by 8%

Metric (daily)	Before	After	Savings
Delay (veh-hours)	312	277	35
Stops (number)	31535	26140	5395
Fuel Consumption (gal)	686	631	55

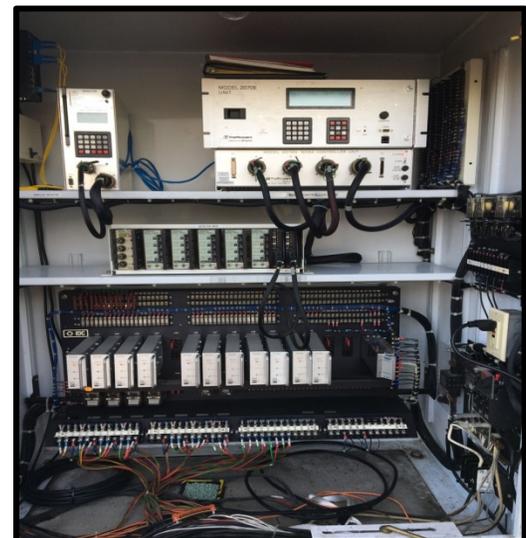
The City will be able to remotely monitor the traffic signal operations and make adjustments as needed.

## Project Pictures

Traffic Signal Cabinet Electronics Before



Traffic Signal Cabinet Electronics After



# Site Map

