



Cranberry Twp and Marshall Twp US 19 (SINC-UP) Project Summary

REGIONAL TRAFFIC SIGNAL PROGRAM CYCLE 3

PROJECT LOCATION

Allegheny & Butler Counties



SOUTHWESTERN PENNSYLVANIA COMMISSION

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PROJECT PARTNERS

Federal Highway Administration

Pennsylvania Department of Transportation, District 10-0 & 11-0

Allegheny County

Butler County

Cranberry Township

Marshall Township

Whitman, Requardt & Associates, LLP

The Southwestern Pennsylvania Commission's (SPC) Regional Traffic Signal Program was established to assist local municipalities with improving traffic signal operations by optimizing signal timings and upgrading existing signal equipment. **The Cranberry Township and Marshall Township Signals In Coordination with Equipment Upgrades (SINC-UP) Project** is a signal equipment upgrade and retiming project with a goal of optimizing signal operations at intersections along US 19. [See map below for project area].

- 1 SR 19 & Old Route 19/Victory Drive
- 2 SR 19 & Ehrman Road
- 3 SR 19 & North Boundary Road/Glen Eden Road
- 4 SR 19 & Rowan Road/Ogle View Road
- 5 SR 19 & Rochester Road/Wisconsin Avenue
- 6 SR 19 & American Way
- 7 SR 19 & Dutilh Road/Brandt Road
- 8 SR 19 & Cranberry Square Drive/Hartners Drive
- 9 SR 19 & Walmart Drive/Short Street
- 10 SR 19 & SR 228/Freedom Road
- 11 SR 19 & St. Francis Way/Cranberry Mall
- 12 SR 19 & I-76 Turnpike Connector Ramps
- 13 SR 19 & Freeport Road/Emeryville Road
- 14 SR 19 & Thorn Hill Road
- 15 Commonwealth Dr & Thorn Hill Road

Corridor Length: Approx. 5 miles



Traffic Signal Coordination:

- Improves safety because vehicles stop less often, which reduces the probability for rear-end crashes
- Benefits the environment by reducing vehicle emissions
- Reduces travel costs by reducing the amount of time stopped at red lights
- Saves money at the gas station by reducing fuel consumption



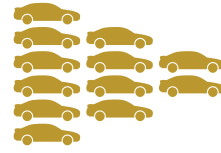
As part of this project, Broadband Ethernet Radio systems were installed along the two Thorn Hill Road intersections to allow the intersection of Thorn Hill Road and Commonwealth Drive to communicate to the US 19 signals. Cranberry Township also implemented a fully protected northbound left phase at Ehrman Road. The three northern Cranberry Township signals were added to the township's coordination system.



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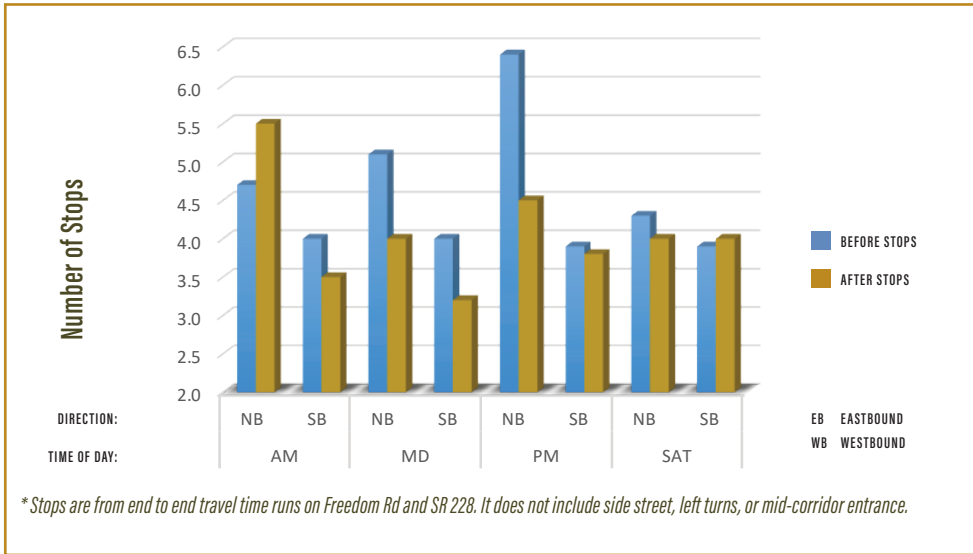
Travel Improvements:

The results showed that the peak travel times were on average reduced by nearly 7% and a 19% reduction in delay for all users.

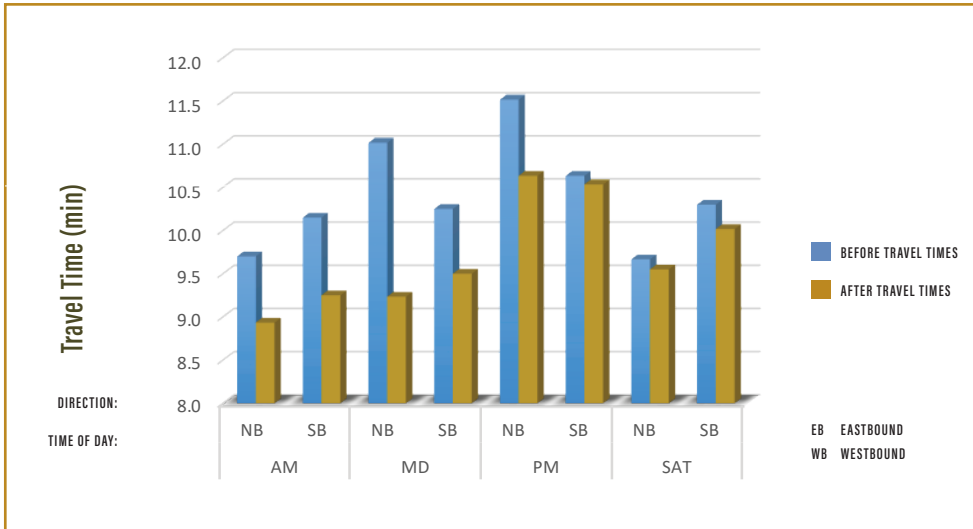


26,400 to 34,700 vehicles travel this corridor on an average day

Number of Stops*: Before and After Comparison



Travel Time: Before and After Comparison



This iteration of optimization focused on reducing the cycle lengths across the peaks and utilizing different phasing sequences by time of day for a handful of intersections. The shorter cycles allowed for users on the side street and left turn to have less delay. The implementation of varying sequence phases by time of day allowed for peak specific two-way progression.

Summary of First Year Benefits**

**Weekday Midday/PM Peaks and Saturday Peak

233,487



Reduced Vehicle Hours of Travel

178,313 gallons



Reduced Fuel Consumption

17,782 kg



Reduced Total Pollutant Emissions

1,185,187



Reduced Number of Stops

Total Benefit***

\$4,680,606

***reduced travel time, emissions, stops & fuel consumption

Benefit Cost Ratio

41:1