

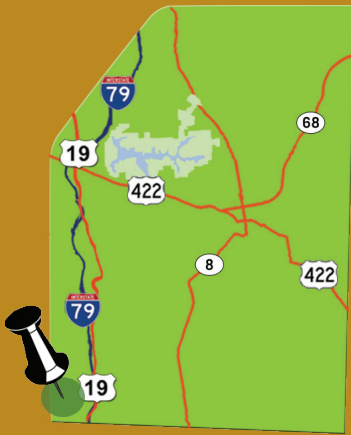


Cranberry Twp, Seven Fields Borough and Adams Twp Freedom Road / SR 228 (SINC-UP) Project Summary

REGIONAL TRAFFIC SIGNAL PROGRAM CYCLE 3

PROJECT LOCATION

Butler County



SOUTHWESTERN PENNSYLVANIA COMMISSION

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PROJECT PARTNERS

Federal Highway Administration
Pennsylvania Department of
Transportation, District 10-0
Butler County
Cranberry Township
Seven Fields Borough
Adams 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, Seven Fields Borough and Adams 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 the Freedom Road and SR 228 corridor while considering all users of the intersections. [See map below for project area].



- | | |
|---|---|
| 1 Freedom Rd & Powell Rd | 11 SR 228 & I-79 SB Ramps |
| 2 Freedom Rd & Valley Forge Dr/Parkwood Dr | 12 SR 228 & I-79 NB Ramps |
| 3 Freedom Rd & Laporte Dr/Haine School Rd | 13 SR 228 & Cranberry Woods Dr/Cranberry Springs Dr |
| 4 Freedom Rd & Thorn Hill Rd | 14 SR 228 & Cranberry Commons Dr |
| 5 Freedom Rd & Haldeman Dr | 15 SR 228 & Kristoffer Dr/Cranberry Woods Dr |
| 6 Freedom Rd & Commonwealth Dr/McIntyre Rd | 16 SR 228 & Franklin Rd |
| 7 Freedom Rd & Executive Dr/Cranberry Mall | 17 SR 228 & High Point Dr/Castle Creek Dr West |
| 8 Freedom Rd & Cranberry Mall/Sheetz Driveway | 18 SR 228 & High Point Dr/Castle Creek Dr East |
| 9 Freedom Rd & Connector St | 19 SR 228 & Seven Fields Blvd |
| 10 Freedom Rd/SR 228 & SR 19 | 20 SR 228 & Adams Ridge Blvd |
| | 21 SR 228 & Heritage Creek Dr |

Corridor Length: Approx. 5.5 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



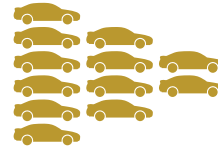
This project included the installation of Ethernet Radio systems to improve communications back to Cranberry Traffic Management Center. In addition, new LED pedestrian countdown signals and emergency vehicle preemption systems were install at some intersections to improve safety and improve emergency response times. Improvements have prepared the corridor for future responsive or adaptive signal operations.



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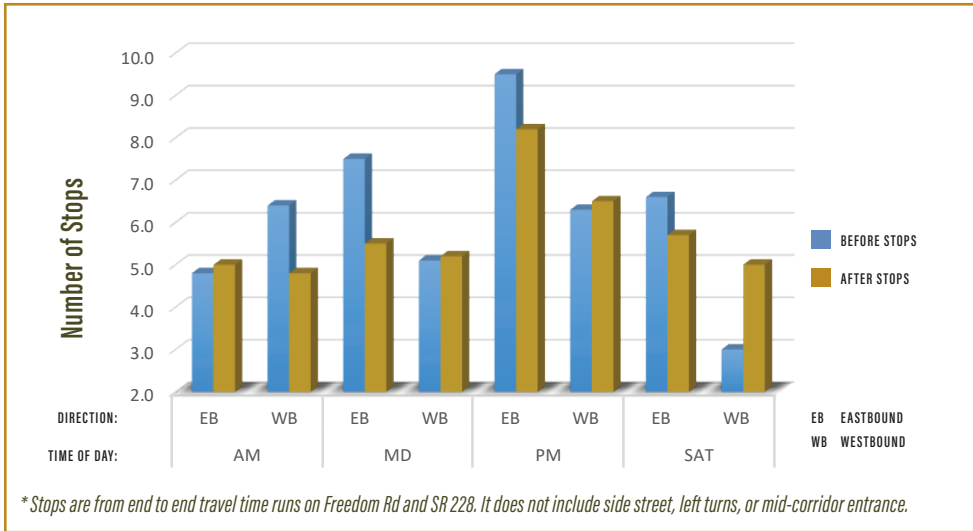
Travel Improvements:

The results show that the peak travel times in both directions were, on average, reduced by 8%. Westbound travel time was reduced by 16%. There was a combined 16% reduction of delay for all users during the peak periods.

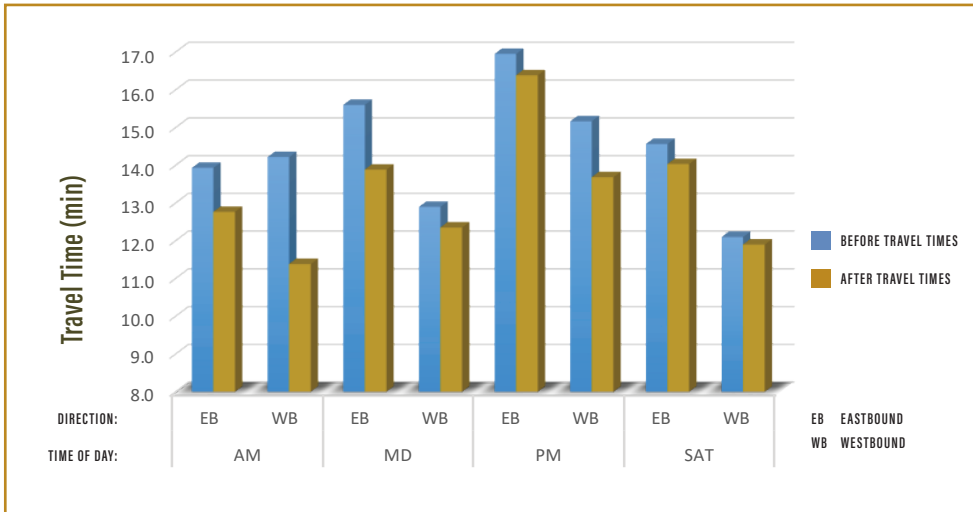


27,000 to 34,600 vehicles travel this corridor on an average day

Number of Stops*: Before and After Comparison



Travel Time: Before and After Comparison



This the third time in eight years that this corridor was optimized under the SPC Signal Program. This iteration of optimization focused on reducing the cycle lengths across the peaks provide more timing plans that accounted for Friday and Sunday peak traffic, and to utilize 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. Varying the phasing sequences by time of day allowed for peak specific two-way progression.

Summary of First Year Benefits**

**Weekday Midday/PM Peaks and Saturday Peak

222,956



Reduced Vehicle Hours of Travel

67,587 gallons



Reduced Fuel Consumption

6,714 kg



Reduced Total Pollutant Emissions

Total Benefit***

\$4,079,307

***reduced travel time, emissions & fuel consumption

Benefit Cost Ratio

24:1