

PRELIMINARY ALTERNATIVES BENEFITS From Opening Year to 2045

ALTERNATIVE	SAFETY	OPERATIONS	STOPS	FUEL	EMISSIONS
	NUMBER OF CRASHES REDUCED ¹	VEHICLE HOURS OF DELAY REDUCED ² (1000's OF HOURS)	REDUCTION IN STOPS ALONG THE CORRIDOR ² (1000's OF STOPS)	REDUCTION IN FUEL USAGE ² (1000's OF GALLONS)	REDUCTION IN CO, VOC, AND NOx EMISSIONS ² (kg)
4-LANE WITH BARRIER ALTERNATIVE	1,044	16,718	224,070	4,370	965,188
5-LANE WITH CENTER TURN LANE ALTERNATIVE	753	16,383	120,830	1,819	569,003

PRELIMINARY ALTERNATIVES MONETARY BENEFITS ³ From Opening Year to 2045

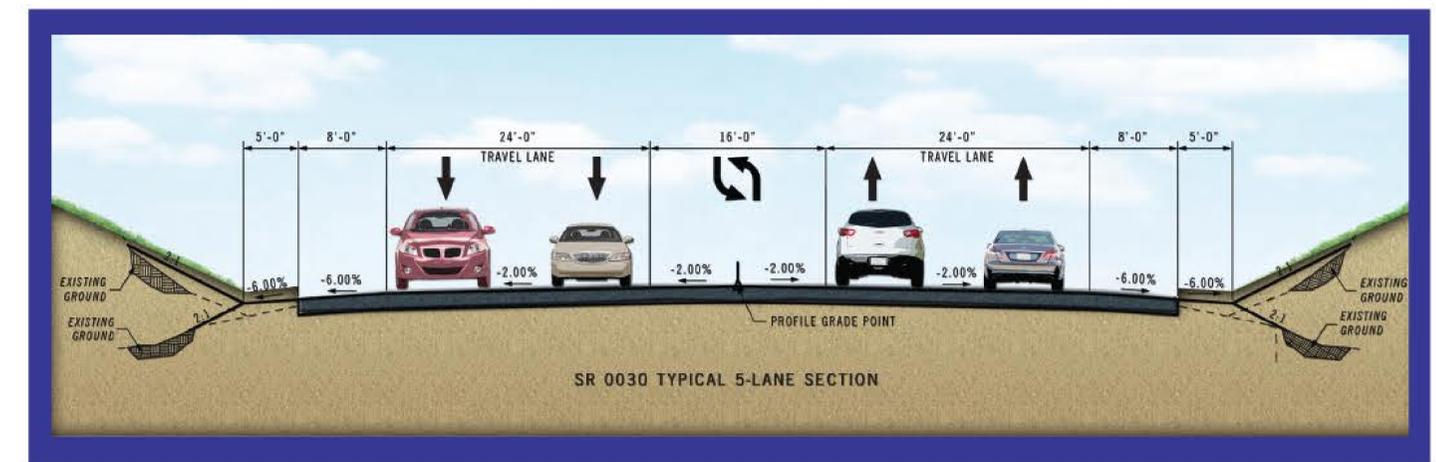
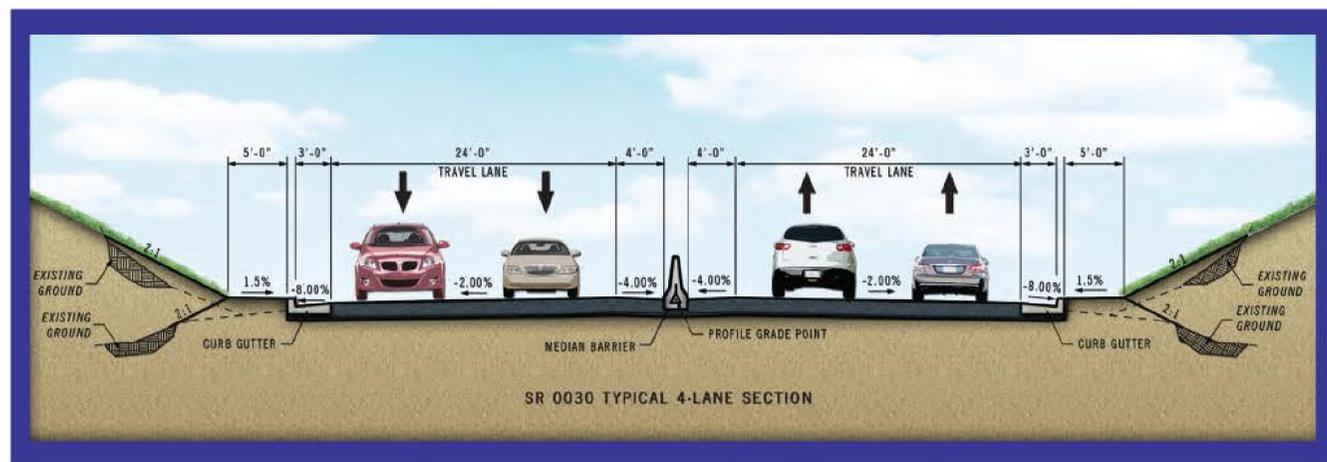
ALTERNATIVE	SAFETY	OPERATIONS	STOPS	FUEL	EMISSIONS
4-LANE WITH BARRIER ALTERNATIVE	\$34,920,957	\$72,708,328	\$906,049	\$12,591,191	\$97,719
5-LANE WITH CENTER TURN LANE ALTERNATIVE	\$21,608,448	\$71,990,470	\$545,443	\$863,623	\$5,801

TWO PRIMARY ALTERNATIVES AND THIRTY-NINE SECONDARY ALTERNATIVES WERE EVALUATED TO ADDRESS THE PROJECT PURPOSE AND NEED.

¹ Crash reductions were calculated following Highway Safety Manual (HSM) methodologies to screen and compare potential alternatives. The HSM is a tool to quantify safety performance in terms of the number of expected crashes based upon a roadway's characteristics, traffic volume, and the historical crash history of similar roadways using a statistically rigorous approach.

² Reductions in vehicle hours of delay, stops, fuel usage, and emissions (Measures of Effectiveness) are computed from Synchro and VISSIM traffic modeling software, which used base and design year traffic volumes with current and proposed roadway geometric alignments to determine the expected benefits at year 2045.

³ A 2017 unit cost in dollars was applied to each Measure of Effectiveness to link the benefits to a monetary value. A yearly 7% discount rate recommended by the US Department of Transportation was applied to bring the future yearly expected benefits to a 2017 monetary value.



PREFERRED ALTERNATIVES BENEFITS From Opening Year to 2045

ALTERNATIVE	SAFETY	OPERATIONS	STOPS	FUEL	EMISSIONS
	NUMBER OF CRASHES REDUCED ¹	VEHICLE HOURS OF DELAY REDUCED ² (1000's OF HOURS)	REDUCTION IN STOPS ALONG THE CORRIDOR ² (1000's OF STOPS)	REDUCTION IN FUEL USAGE ² (1000's OF GALLONS)	REDUCTION IN CO, VOC, AND NOx EMISSIONS ² (kg)
PRELIMINARY PROPOSED ALTERNATIVE	1,174	16,718	224,070	4,370	965,188

PRELIMINARY ALTERNATIVES MONETARY BENEFITS ³ From Opening Year to 2045

ALTERNATIVE	SAFETY	OPERATIONS	STOPS	FUEL	EMISSIONS
PRELIMINARY PROPOSED ALTERNATIVE	\$38,293,518	\$72,708,328	\$906,049	\$12,591,191	\$97,719

¹ Crash reductions were calculated following Highway Safety Manual (HSM) methodologies to screen and compare potential alternatives. The HSM is a tool to quantify safety performance in terms of the number of expected crashes based upon a roadway's characteristics, traffic volume, and the historical crash history of similar roadways using a statistically rigorous approach.

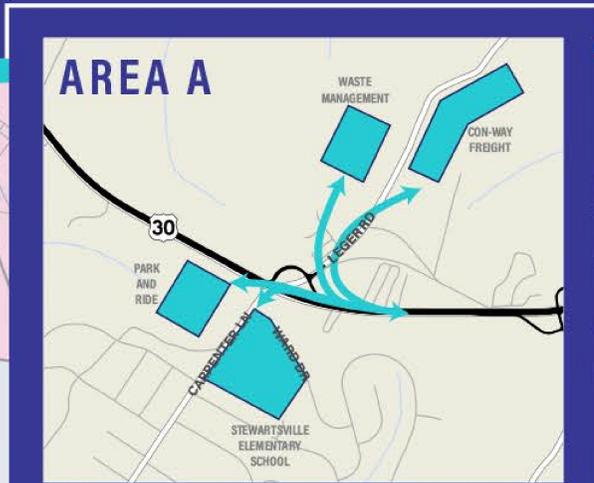
² Reductions in vehicle hours of delay, stops, fuel usage, and emissions (Measures of Effectiveness) are computed from Synchro and VISSIM traffic modeling software, which used base and design year traffic volumes with current and proposed roadway geometric alignments to determine the expected benefits at year 2045.

³ A 2017 unit cost in dollars was applied to each Measure of Effectiveness to link the benefits to a monetary value. A yearly 7% discount rate recommended by the US Department of Transportation was applied to bring the future yearly expected benefits to a 2017 monetary value.

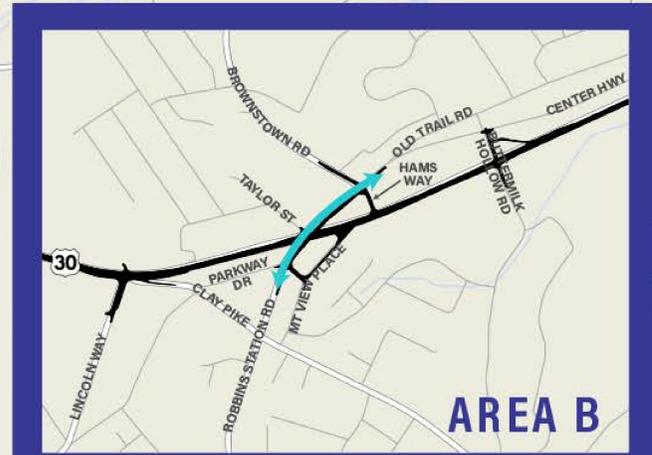
The Preliminary Proposed Alternative includes refinements to the original 4-Lane with Barrier Alternatives to improve safety. In addition, it:

- Improves Drainage
- Improves Pavement Quality
- Reduces Peak Travel Time by 50% When Compared to the No-Build Conditions
- Uses State of the Art Traffic Signal System

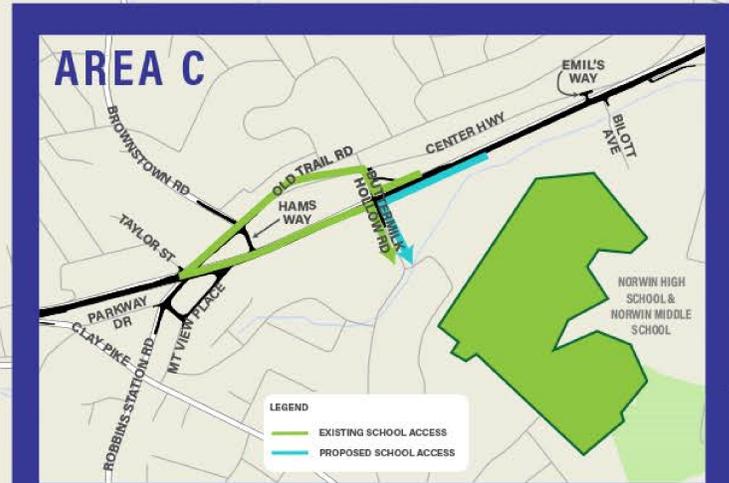
PRELIMINARY IMPROVED CONNECTIONS



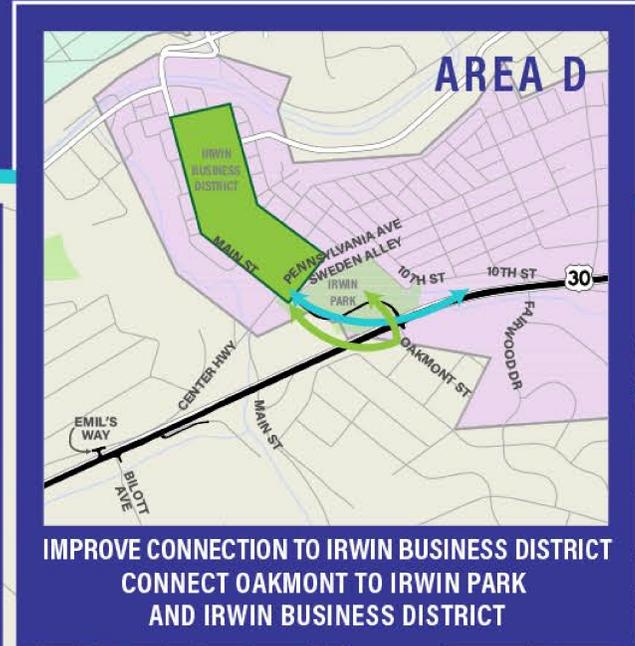
AREA A
IMPROVE ACCESS AT PARK AND RIDE LOT, STEWARTSVILLE ELEMENTARY SCHOOL, WASTE MANAGEMENT, AND CON-WAY FREIGHT



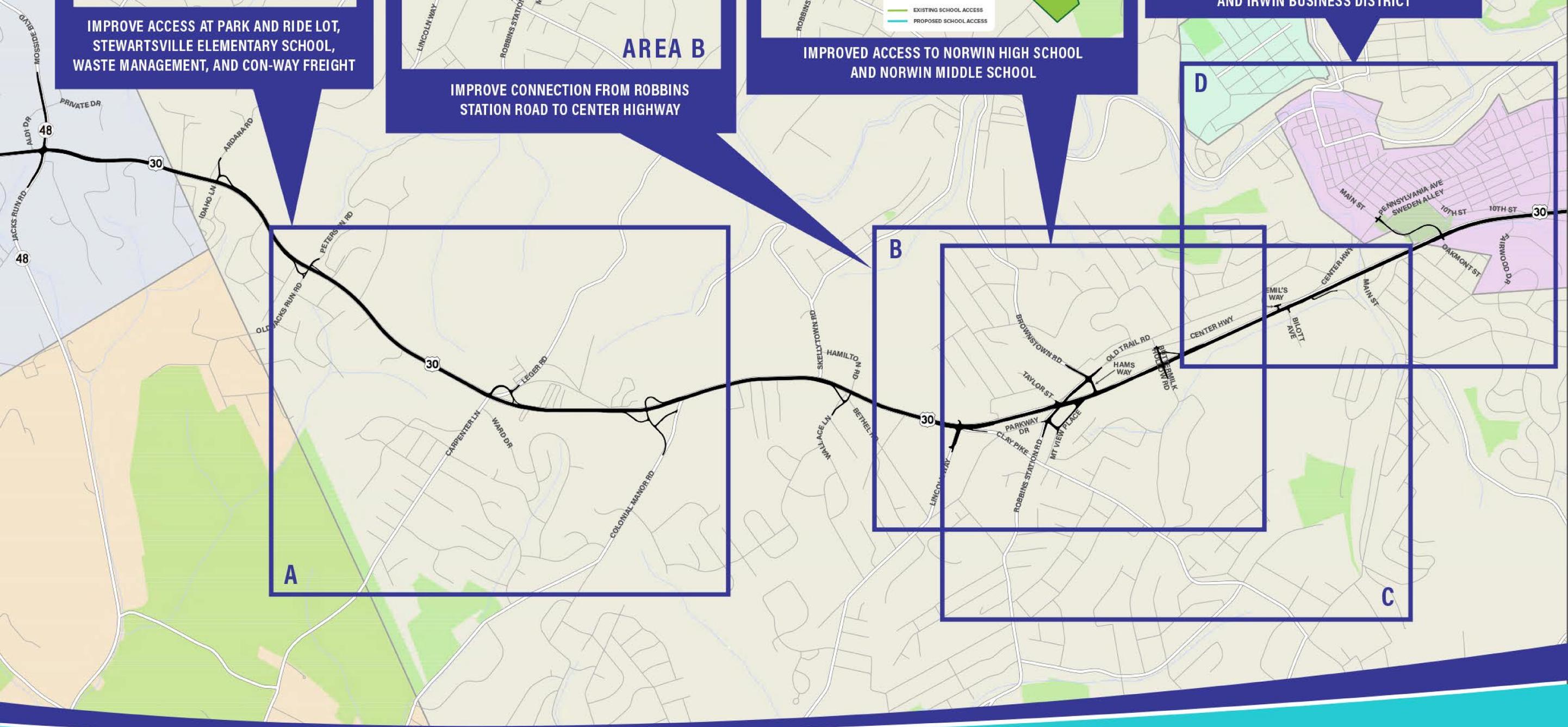
AREA B
IMPROVE CONNECTION FROM ROBBINS STATION ROAD TO CENTER HIGHWAY

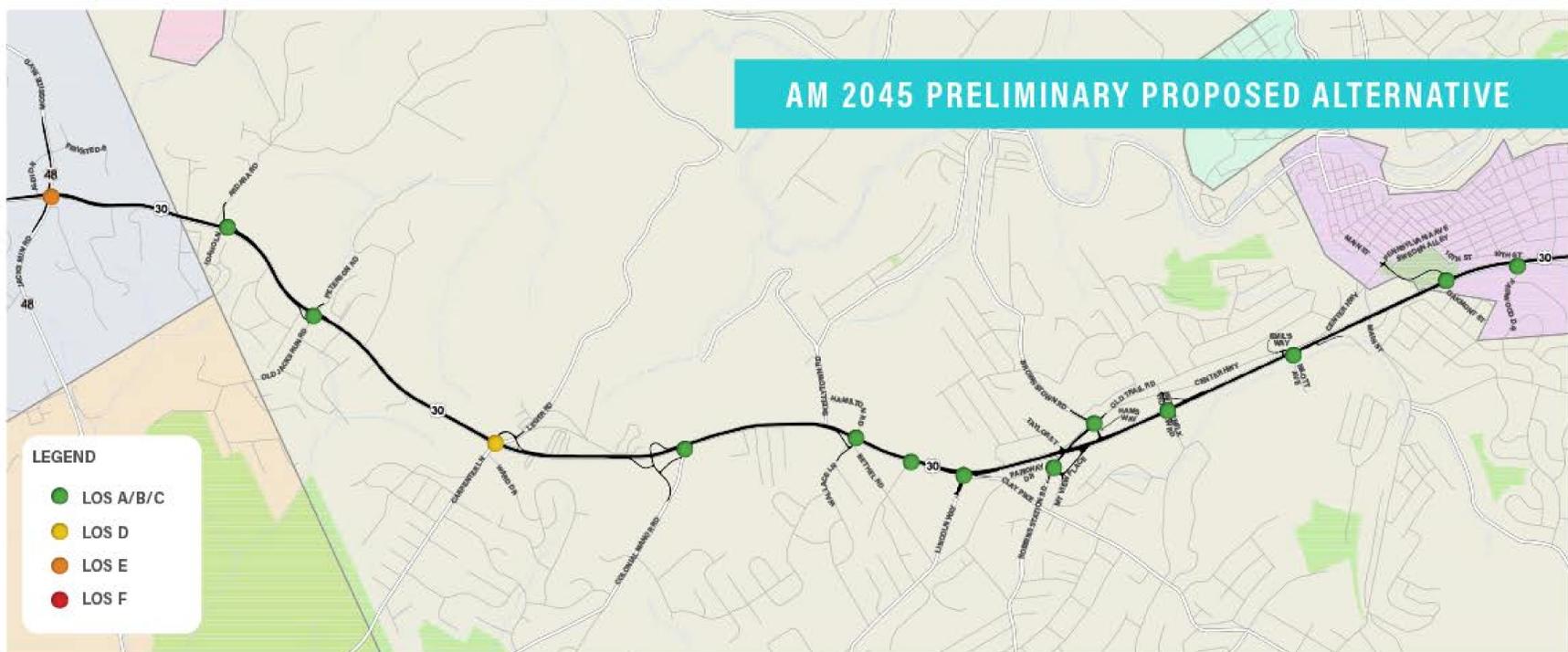
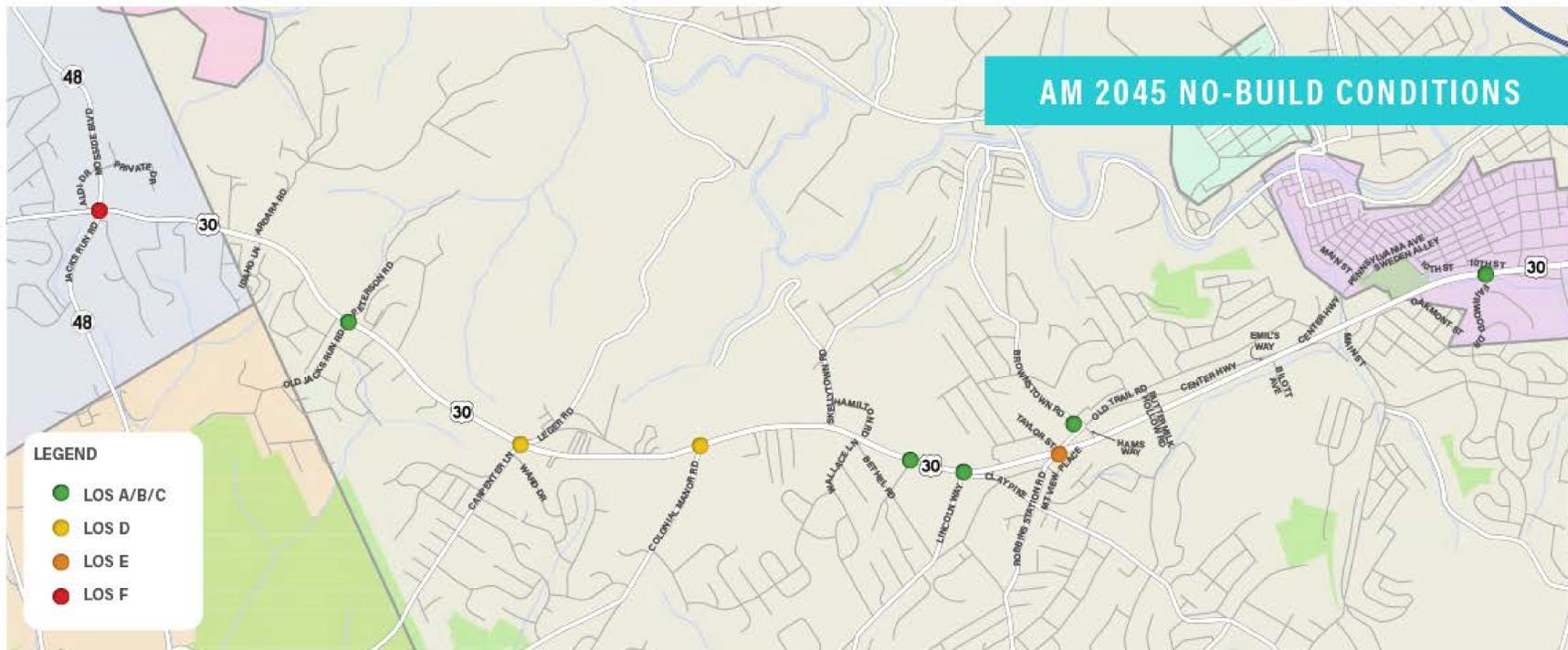
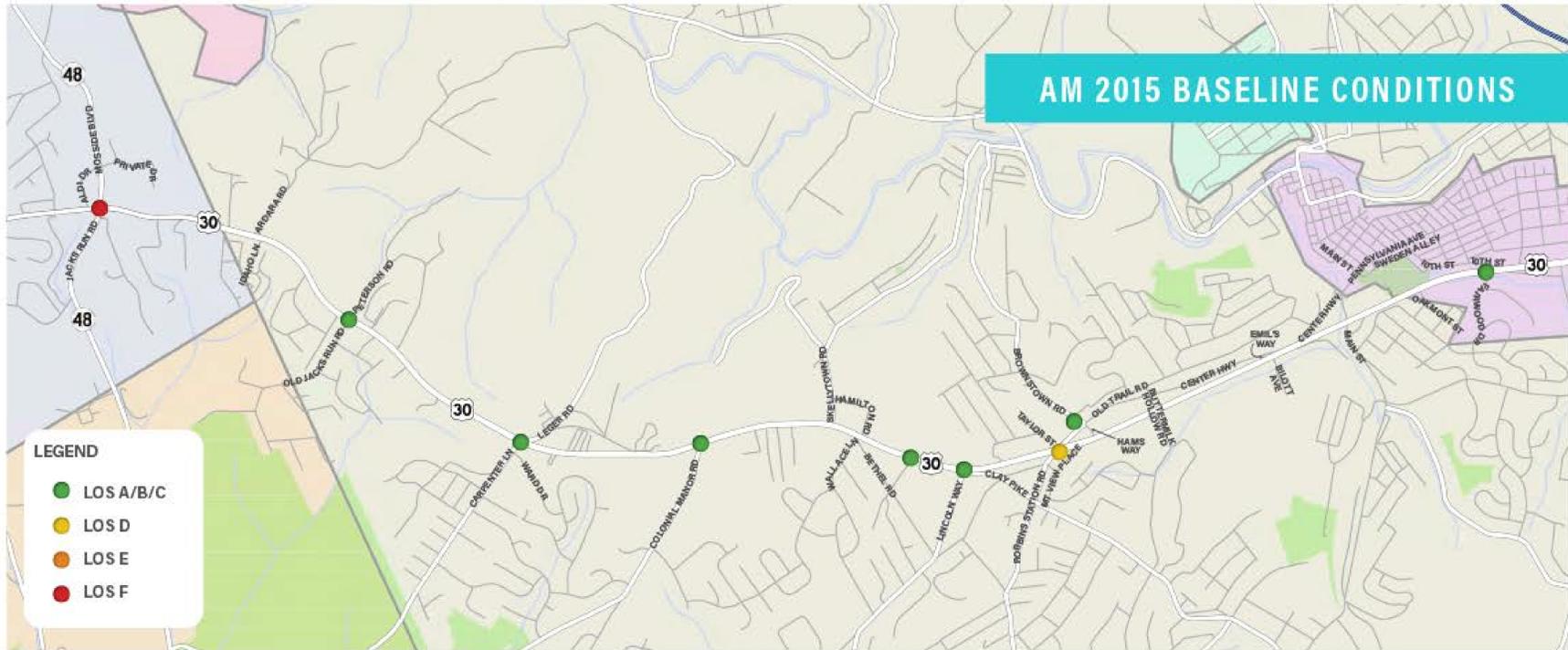


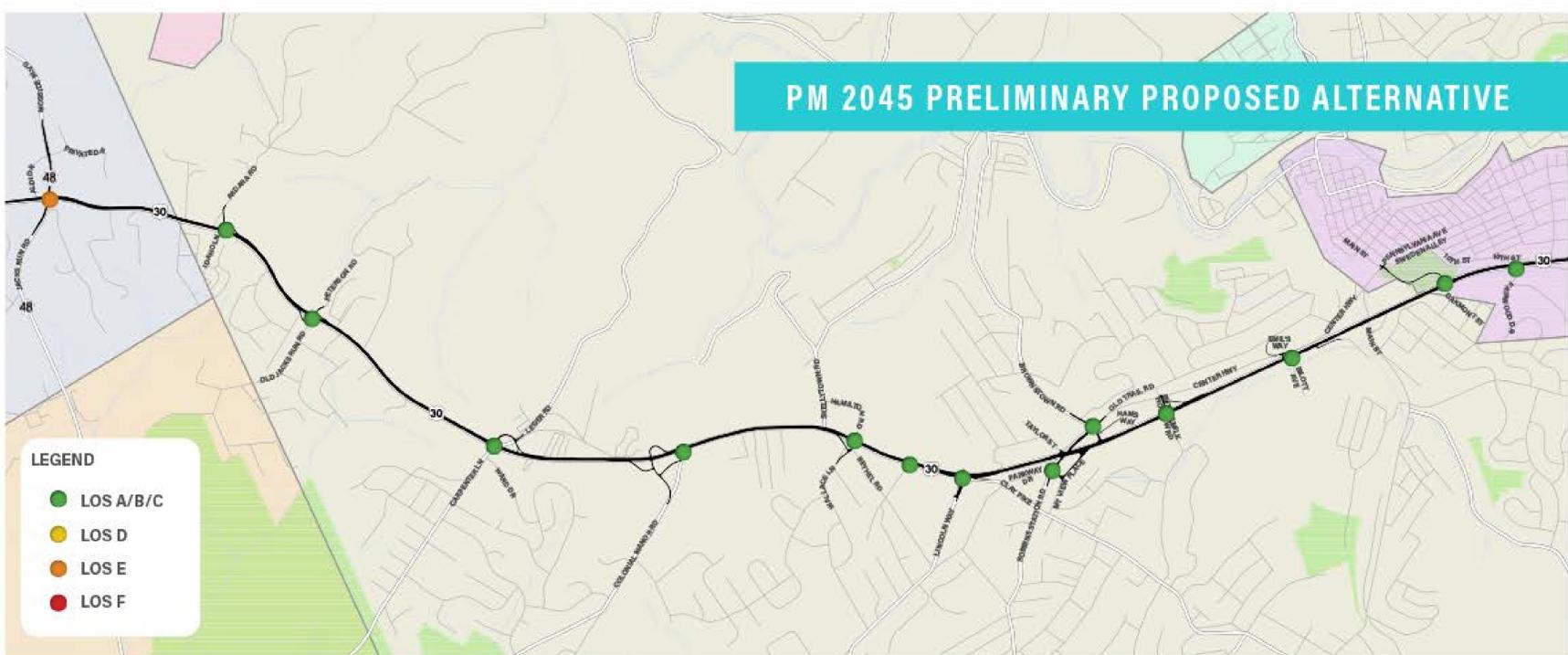
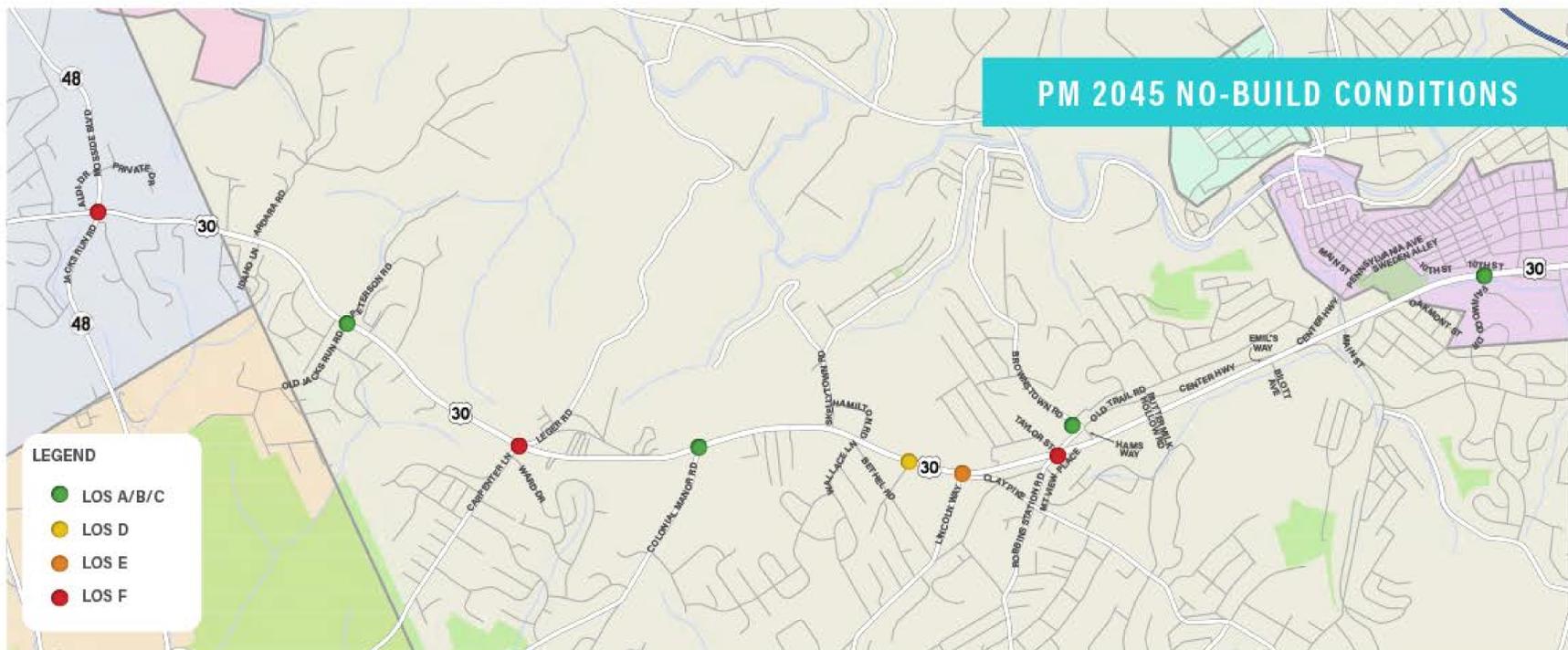
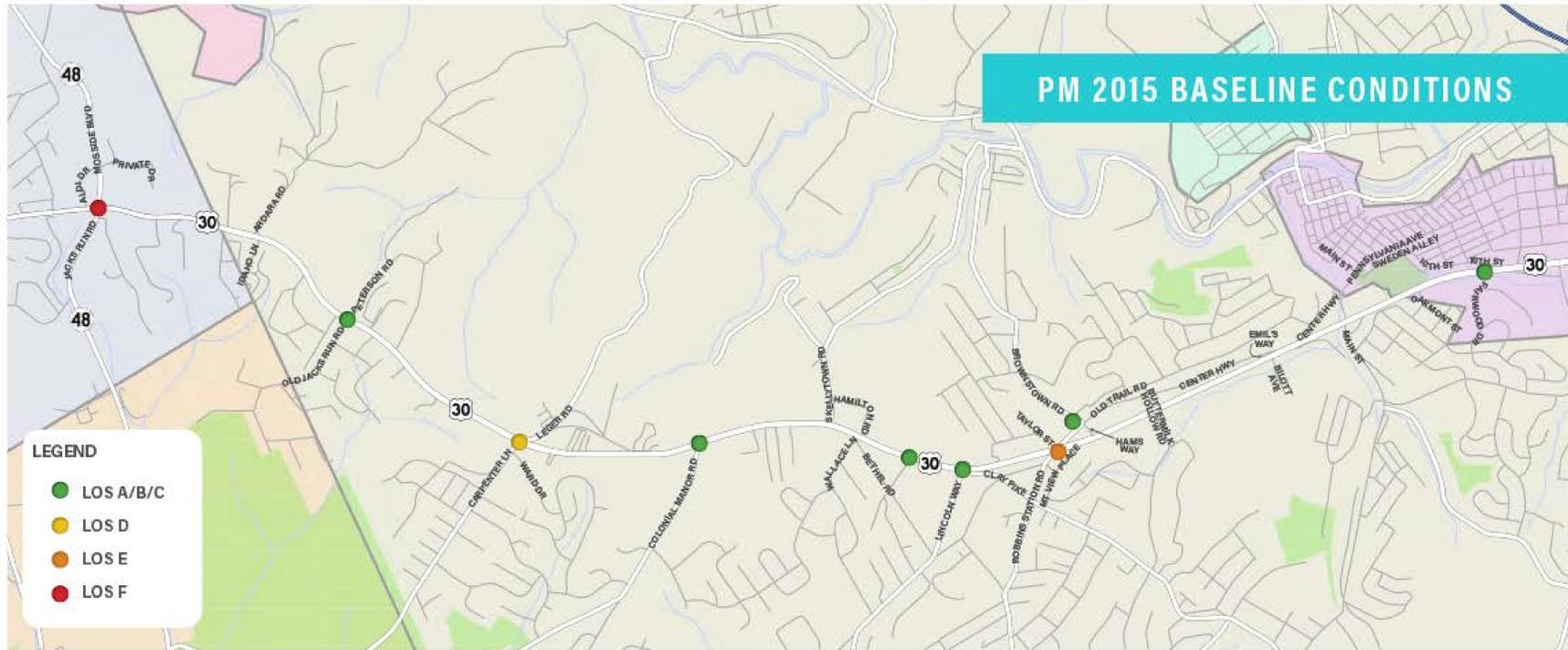
AREA C
IMPROVED ACCESS TO NORWIN HIGH SCHOOL AND NORWIN MIDDLE SCHOOL

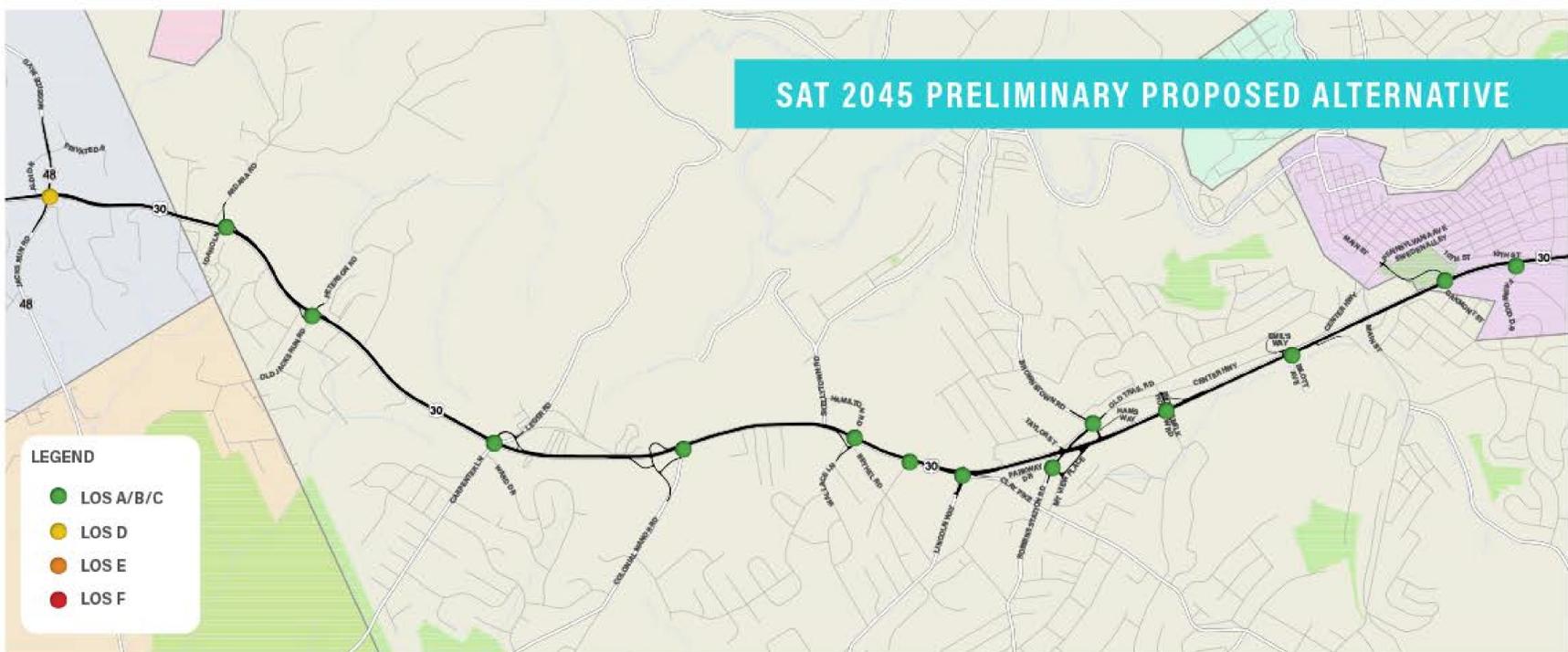
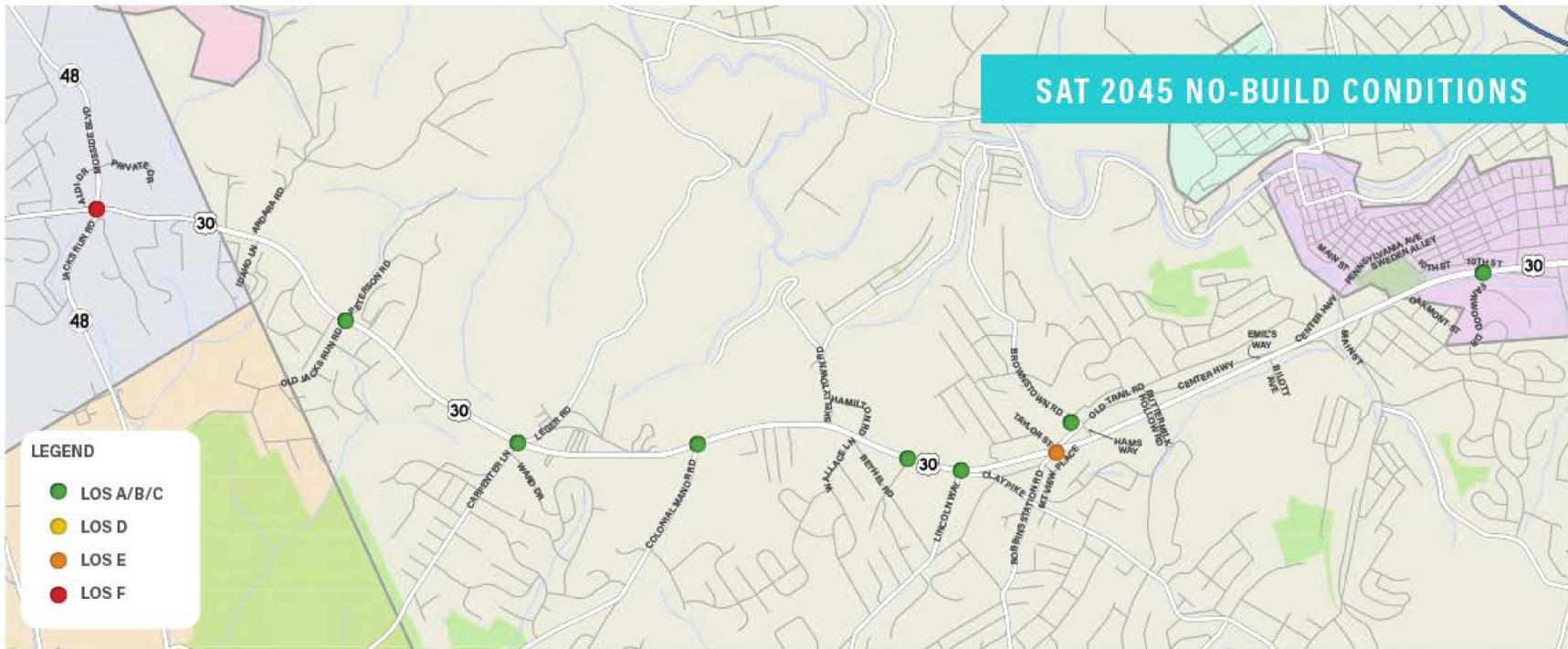
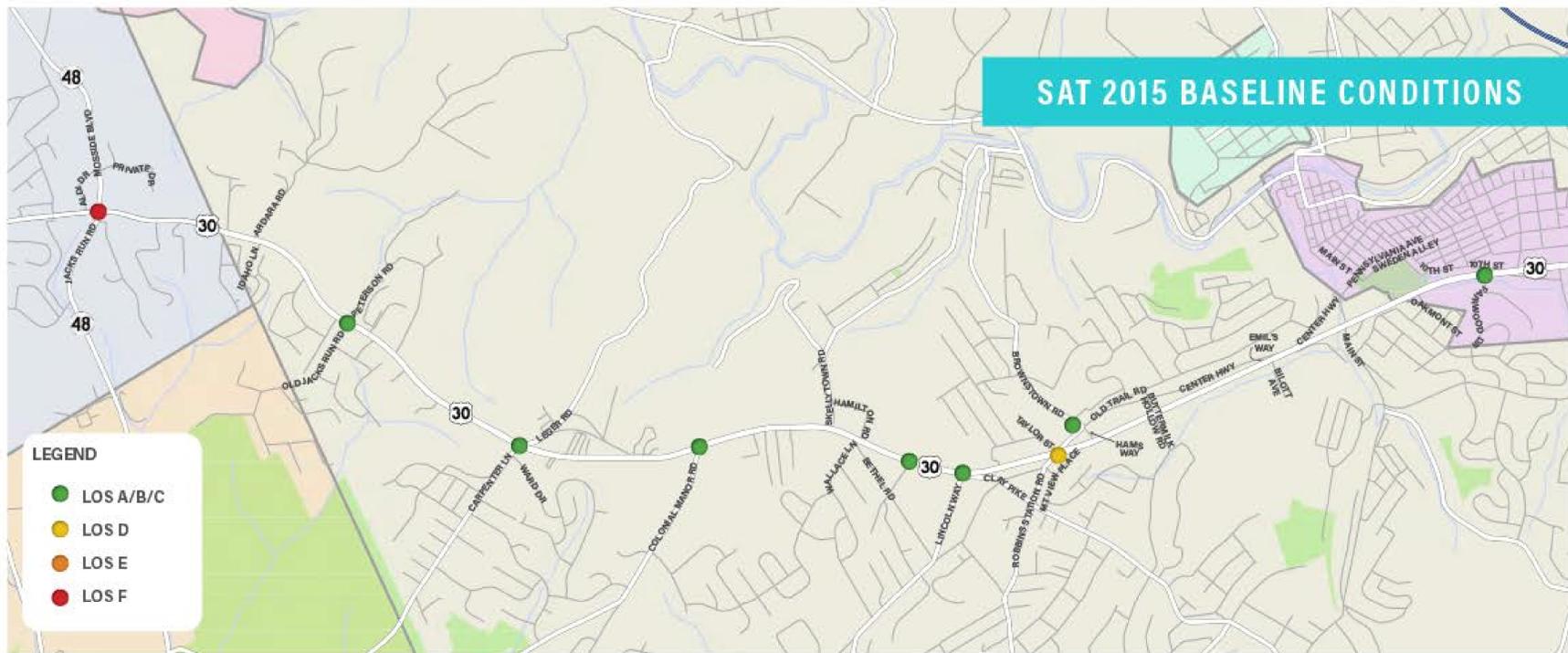


AREA D
IMPROVE CONNECTION TO IRWIN BUSINESS DISTRICT
CONNECT OAKMONT TO IRWIN PARK AND IRWIN BUSINESS DISTRICT









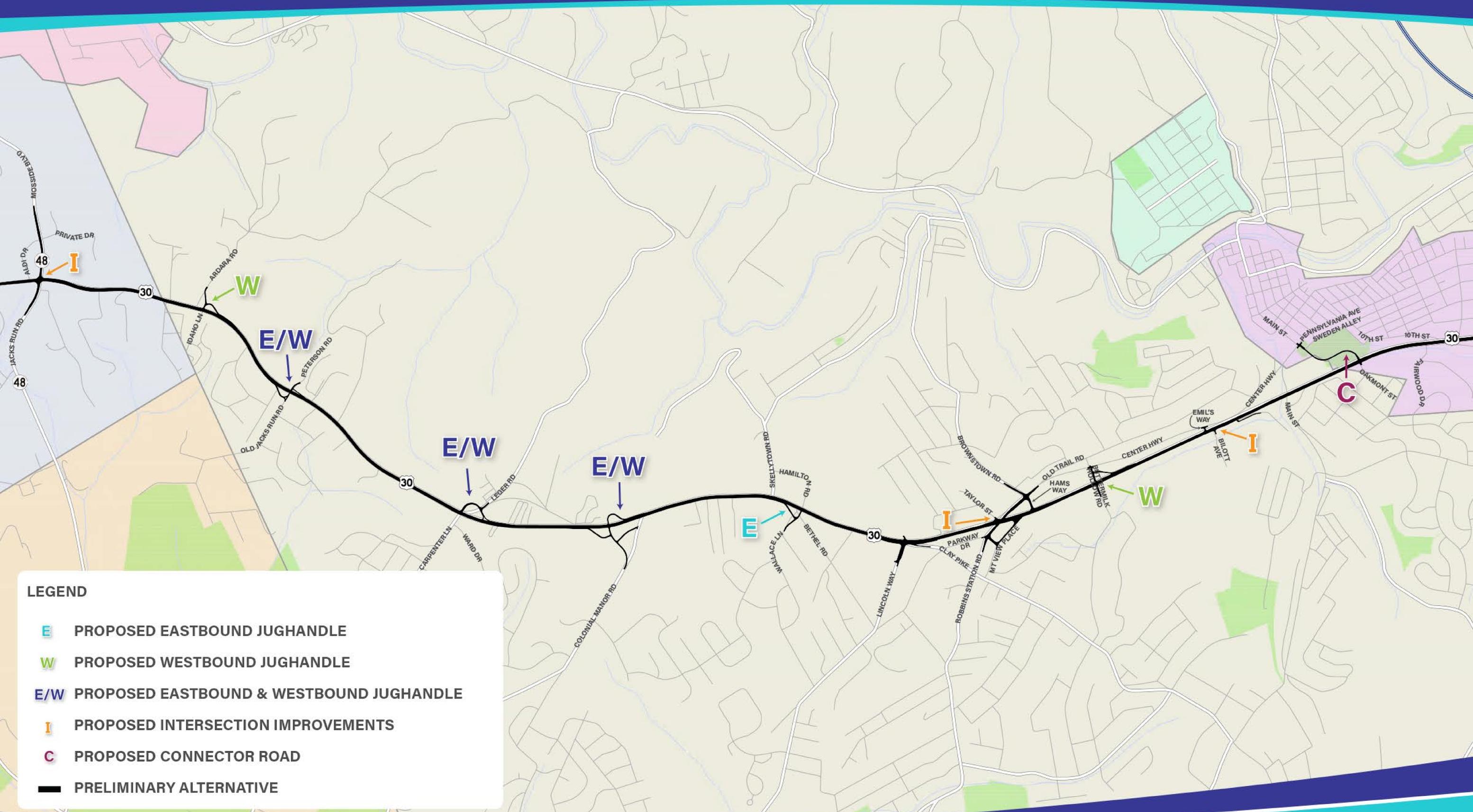
Level of Service Criteria for Signalized Intersections

LEVEL OF SERVICE	AVERAGE DELAY (SECONDS PER VEHICLE)
A	LESS THAN 10
B	10 TO 20
C	20 TO 35
D	25 TO 55
E	55 TO 80
F	GREATER THAN 80

The traffic operations along the corridor were evaluated using a level of service (LOS) analysis, which is an estimation of the delay experienced by motorists as they travel through the signalized intersections along the corridor.

Level of service is evaluated on a scale from A to F. Similar to grades in school, an A is excellent, and an F is considered failing. On a corridor like this stretch of US 30, an A through D rating is typically considered acceptable, and an E or F is considered unacceptable.

By 2045, only two out of the eleven intersections on the corridor are expected to receive a passing grade during all peak periods. After the proposed improvements, ten out of the eleven intersections will receive a passing grade during all peak periods.



LEGEND

- E** PROPOSED EASTBOUND JUGHANDLE
- W** PROPOSED WESTBOUND JUGHANDLE
- E/W** PROPOSED EASTBOUND & WESTBOUND JUGHANDLE
- I** PROPOSED INTERSECTION IMPROVEMENTS
- C** PROPOSED CONNECTOR ROAD
- PRELIMINARY ALTERNATIVE



LEGEND

- E PROPOSED EASTBOUND JUGHANDLE
- W PROPOSED WESTBOUND JUGHANDLE
- E/W PROPOSED EASTBOUND & WESTBOUND JUGHANDLE
- I PROPOSED INTERSECTION IMPROVEMENTS
- C PROPOSED CONNECTOR ROAD
- PRELIMINARY ALTERNATIVE
- SEGMENT 1: MALTS LANE TO US 30/SR 48 INTERSECTION



LEGEND

- E PROPOSED EASTBOUND JUGHANDLE
- W PROPOSED WESTBOUND JUGHANDLE
- E/W PROPOSED EASTBOUND & WESTBOUND JUGHANDLE
- I PROPOSED INTERSECTION IMPROVEMENTS
- C PROPOSED CONNECTOR ROAD
- PRELIMINARY ALTERNATIVE
- SEGMENT 2: 10TH STREET EXTENSION TO MALTS LANE

