

Executive Summary

In 2006, the Idaho Transportation Board (IT Board) considered closing the unsignalized median crossings along US-95 from Interstate 90 (I-90) through State Highway 53 (SH-53). Before taking action, the IT Board asked the Kootenai Metropolitan Planning Organization (KMPO) to evaluate the impacts of median closures and look for ways to improve mobility on US-95. The IT Board also asked that the evaluation take into consideration the diverse group of stakeholders with interests in the US-95 corridor.

The KMPO policy board took action on this request and formulated a plan to develop the US-95 Access Study. KMPO's vision was that the endeavor would take on a system approach recognizing that US-95 is not an island in its context. This vision necessitated the inclusion of off-system (not on the ITD transportation system) transportation infrastructure when considering the affects of median closures or other solutions arising from the study process. Furthermore, KMPO desired that all highway users be considered including both through travelers and local users. A Steering Committee comprised of multiple local jurisdictions and elected officials developed study goals that complimented the IT Board request for evaluating US-95 mobility as follows:

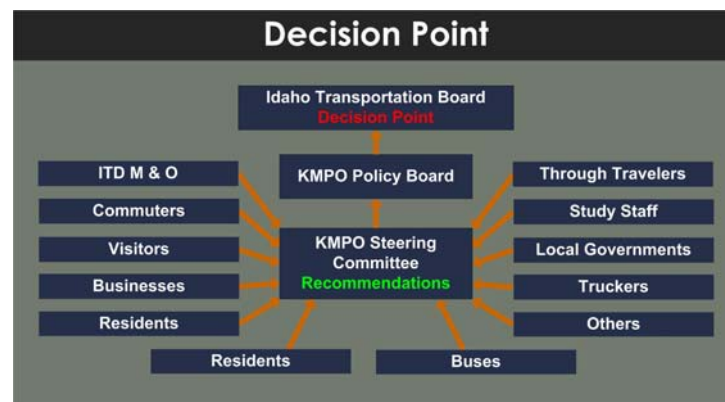
- Find practical, low cost ideas to improve US-95 operations
- Manage and balance safety and mobility on US-95 while providing essential community access to and from the highway

A partnership with the Coeur d'Alene Chamber of Commerce provided a significant opportunity for KMPO to engage the business community along the corridor with regard to perceived needs and evaluation of potential solutions. The Chamber provided guidance to KMPO and the consultant team in not only developing concepts but in the identification of key stakeholders as well.

A public outreach program was developed to engage business owners, residents and other key stakeholders during consideration of the multiple ideas that were derived as the Steering Committee proceeded with the planning process. Two public outreach meetings were held during the course of the study along with discussions with the Kootenai County Area Transportation Team (KCAAT) and the KMPO Policy Board.

Ownership of Decisions

With the inclusion of such a diverse group of stakeholders and jurisdictional members, it becomes apparent that at some point, someone has to ultimately be responsible for making decisions regarding study recommendations. The graphic below illustrates the dynamic stakeholders interests involved with the study and identifies the IT Board as the ultimate *Decision Point*.



Final Improvement Strategy

In addition to answering the IT Board's question concerning median closure impacts, the evaluation process that the Steering Committee followed, based on traffic analysis, public input and steering committee involvement, identified 35 specific improvements totaling just over \$6.7 million. The improvements ranged in cost from \$10,000 to \$518,000 as shown in the Implementation Plan (Table E-1). The final Improvement Strategy is shown in Figure E-1 (near the end of this Executive Summary).

Highlights of the overall effectiveness of the final Improvement strategy are as follows:

- Reduces total system delay
- Reduces total northbound US-95 delay
- Slightly increases total southbound US-95 delay
- Reduces unsignalized cross-street delay (by eliminating movements and rerouting traffic)
- Reduces signalized cross-street delay (in the more urban section of the corridor)
- Reduces intersection crossing points
- Slightly increases system VMT
- Provides great potential for efficient use of the corridor green-band
- Reduces northbound travel time by nearly one minute
- Slightly increases southbound travel time.

Implementation Plan

To assist each jurisdiction in implementing the Improvement Strategy for US-95, the improvements were grouped into two primary categories: *Mutually Exclusive* projects and *Project Groups*. Mutually exclusive projects are those that can be constructed at any time without significant adverse impacts to adjacent facilities (upstream or downstream) or the corridor as a whole. Project Groups are combinations of improvements that need to be constructed simultaneously to maintain acceptable traffic and access conditions. As shown in the Implementation Plan (see Table E-1 and Figure E-2), many of the mutually exclusive projects are included in project groups. These can be implemented as stand-alone projects but become required when other projects within the project group are constructed.

The Implementation Plan also includes an *AMS rating* based on an average of *access*, *mobility* and *safety* benefits. Some of the projects have more or less benefit to one or more of these ratings than others depending on the nature of the improvement. Although based on the analyses within this study, this rating is non-scientific.

Access

The access rating is related to community access to and from US-95. When this access is enhanced, in terms of access opportunities or reduction in wait time (to and/or from the highway), the access rating is high.

Mobility

The mobility rating is related to corridor traffic operations. A project specifically related to enhancement of US-95 corridor in terms of reduction of corridor travel time or reduction of driver delay was assigned a higher rating.

Safety

The safety rating is related to the overall reduction in potential vehicle crossing conflict points. Elimination of crossing conflicts (e.g. restriction of turning movements, installation of a signal to provide a protected turning phase) earns the project a higher rating.

Each rating is designated using a symbol as follows:

- Minimal benefit for category
- ◐ Moderate benefit for category
- Significant benefit for category

In the *AMS Intensity* column, the symbol was given a color to assist in quickly identifying the most beneficial projects among the total group. Red was assigned to full circles (as the most significant benefit), blue was assigned to partially filled circles and green was assigned to open circles.

It should be noted that all of the projects work together to facilitate balanced optimization of all three rating categories. As explained in further detail within the analysis, the practical and relatively low cost projects included in the final Improvement Strategy work in unison to manage and balance safety and mobility on US-95 while providing essential community access to and from the highway.

Table E-1. Implementation Plan

IMPROVEMENT GROUPING		LOCATION	IMPROVEMENT DESCRIPTION	ESTIMATED SUB-PART COST	ESTIMATED TOTAL COST	ACCESS	MOBILITY	SAFETY	AMS Rating
ME	ME-0	US-95 at Cherry Lane	Install Turn Restrictions	\$40,000	\$40,000	○	◐	●	◐
	ME-1	US-95 at Haycraft	Install Turn Restrictions	\$40,000	\$40,000	○	◐	●	◐
	ME-2	US-95 at Wilbur	Install Turn Restrictions	\$40,000	\$40,000	○	◐	●	◐
	ME-3	US-95 at Aqua	Install Turn Restrictions	\$40,000	\$40,000	○	◐	●	◐
	ME-4	US-95 at Bentz	Restrict to Right-in/Right-out ¹	\$10,000	\$10,000	○	◐	●	◐
	ME-5	US-95 at Boekel	Install Turn Restrictions	\$40,000	\$40,000	○	◐	●	◐
	ME-6	US-95 at Murphy	Restrict to Right-in/Right-out ¹	\$10,000	\$10,000	○	◐	●	◐
	ME-7	US-95 at Prairie	Add EB Right Turn Lane	\$470,000	\$708,000	●	◐	○	◐
	ME-8	US-95 at Prairie	Add WB Right Turn Lane	\$238,000		●	◐	○	◐
	ME-9	US-95 at Neider	Add WB Right Turn Lane	\$263,000	\$263,000	●	◐	○	◐
	ME-10	US-95 at Dalton	Add WB Right Turn Lane	\$100,000	\$100,000	●	◐	○	◐
	ME-11	US-95 at Miles	Install Traffic Signal (Z-Structure)	\$325,000	\$815,000	●	◐	●	●
		US-95 at Miles	Add two lanes to EB approach for exclusive left and right turn lanes.	\$225,000		●	◐	○	◐
		US-95 at Miles	Add two lanes to WB approach for exclusive left and right turn lanes.	\$265,000		●	◐	○	◐
	ME-12	US-95 at Wyoming	Install Traffic Signal (Z-structure)	\$325,000	\$805,000	●	◐	●	●
		US-95 at Wyoming	Add two lanes to EB approach for exclusive left and right turn lanes.	\$215,000		●	◐	○	◐
		US-95 at Wyoming	Add two lanes to WB approach for exclusive left and right turn lanes.	\$265,000		●	◐	○	◐
	ME-13	US-95 at Prairie	Add 2nd SB Left Turn Lane	\$55,000	\$55,000	●	●	○	●
	ME-14	US-95 at Kathleen	Add 2nd SB Left Turn Lane	\$55,000	\$55,000	●	●	○	●

¹ From ITD US-95, Wyoming to Ohio Match preliminary project plans

IMPROVEMENT GROUPING		LOCATION	IMPROVEMENT DESCRIPTION	ESTIMATED SUB-PART COST	ESTIMATED TOTAL COST	ACCESS	MOBILITY	SAFETY	AMS Rating
	ME-15	US-95 at Honeysuckle	EB Right Turn Lane Addition Add 2nd NB Left Turn Lane	\$500,000	\$500,000	●	●	○	●
PG-1		US-95 at Orchard	Install Turn Restrictions	\$40,000	\$1,332,000	○	●	●	●
		US-95 at Dakota	Install Turn Restrictions	\$40,000		○	●	●	●
		US-95 at Lacey	Install Turn Restrictions	\$40,000		○	●	●	●
	ME-16	US-95 at Lancaster	Add EB Right Turn Lane Lengthen Existing Left Turn Lane	\$185,000		●	●	○	●
		US-95 at Lancaster	Add WB Left Turn Lane Lengthen Existing Right Turn Lane	\$185,000		●	●	○	●
		US-95 at Lancaster	Install Traffic Signal (Z-structure)	\$325,000		●	●	●	●
	ME-17	US-95 at Hayden	Add EB Right Turn Lane and 2nd Thru Lane.	\$517,000		●	●	○	●
PG-2 ²		US-95 at Bosanko	Remove Existing Signal. Install Turn Restrictions. Connect Howard Road and extend Neider.	\$100,000	\$766,000	○	●	●	●
	ME-18	US-95 at Kathleen	Add WB Right Turn Lane	\$283,000		●	●	○	●
	ME-19	US-95 at Kathleen	Add EB Right Turn Lane	\$383,000		●	●	○	●
PG-3 ³		US-95 at Canfield	Remove Existing Signal. Install Turn Restrictions	\$100,000	\$1,115,000	○	●	●	●
		US-95 at Wilbur	Widen EB Approach to create left, thru & right turn lanes. Add signal. Extend Wilbur to Gov't Way and connect extended Wilbur south to Canfield.	\$518,000		●	●	●	●
	ME-20	US-95 at Hanley	Convert Existing WB right turn to thru lane Widen for Relocated Right Turn Lane	\$245,000		●	●	○	●
	ME-21	US-95 at Hanley	Add EB Right Turn Lane and 2nd Thru lane	\$252,000		●	●	○	●
PG-4		Corridor	Signal Re-timing	\$35,000	\$35,000	○	●	○	●
Total Improvements					\$6,769,000				

ME: Mutually Exclusive, PG: Project Group

Note: Cost estimates include provisions for R/W acquisition, engineering and contingencies

² Costs do not include connection of Howard Road from Bosanko to Neider or extension of Neider to Howard connection as shown on the Implementation Plan (Figure E-2).

³ Costs do not include connection from US-95 to Government Way or the south link between the extended Wilbur to Canfield as shown on the Implementation Plan (Figure E-2).

Project Group Explanations

Project Group 1 (Lancaster / Hayden)

The final improvement strategy (see Figure E-1) identified infrastructure improvements at each of the intersections included in this project group. It is potentially feasible to install any one of the turn restrictions at Orchard, Dakota or Lacey by themselves (mutually exclusively) but it is more likely that these three intersections will have turn restrictions installed simultaneously; however, it is recommended that the signal warrants be evaluated at Miles and Wyoming prior to the restriction of turning movements at Dakota or Lacey. Furthermore, installation of these turn restrictions contributes to a significant re-routing of traffic to the Hayden and Lancaster intersections. This additional re-routed traffic will add a fair amount of delay for US-95 and cross-street traffic at Hayden and Lancaster. Therefore, the improvements shown at these two intersections need to be installed as a group upon implementation of the turn restrictions.

Project Group 2 (Bosanko)

Although two of the infrastructure improvements (right turn lanes on Kathleen) in this group can be installed as mutually exclusive, the third component of this group, removing the signal at Bosanko and adding turn restrictions, re-routes enough traffic to Kathleen that the mutually exclusive components become required components of the project group. A mutually exclusive connection of Howard Road from Bosanko to Neider will enhance connectivity and circulation between the signalized intersections at Neider and Kathleen.

Project Group 3 (Canfield)

The final improvement strategy identifies the removal of the Canfield signal and replacement with turn restrictions while installing a new signal at Wilbur. The signal installation at Wilbur and maintenance of community access requires that a new connection be made from US-95 to Government Way (as an extension of Wilbur). This connection is coupled with another access link from Wilbur south to Canfield (see Figure E-1). Upon making the signalization change at Canfield, a significant amount of traffic will be rerouted to the adjacent signalized intersection to the south (Hanley), requiring the mutually exclusive projects shown (at Hanley) to become required. Prior to the signal changes at Wilbur and Canfield, the Hanley improvements can be installed as mutually exclusive.

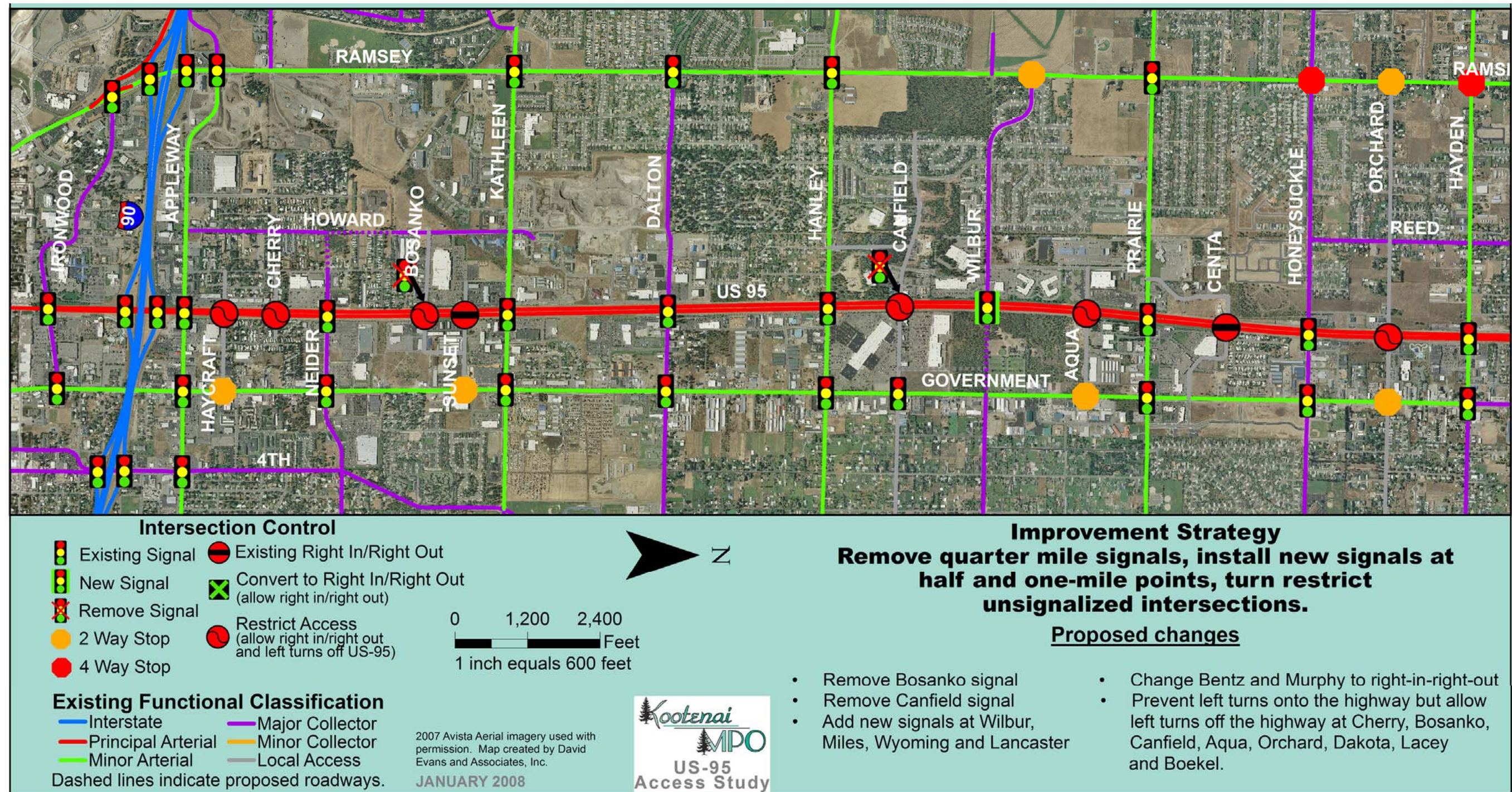
Project Group 4 (Signal Re-timing)

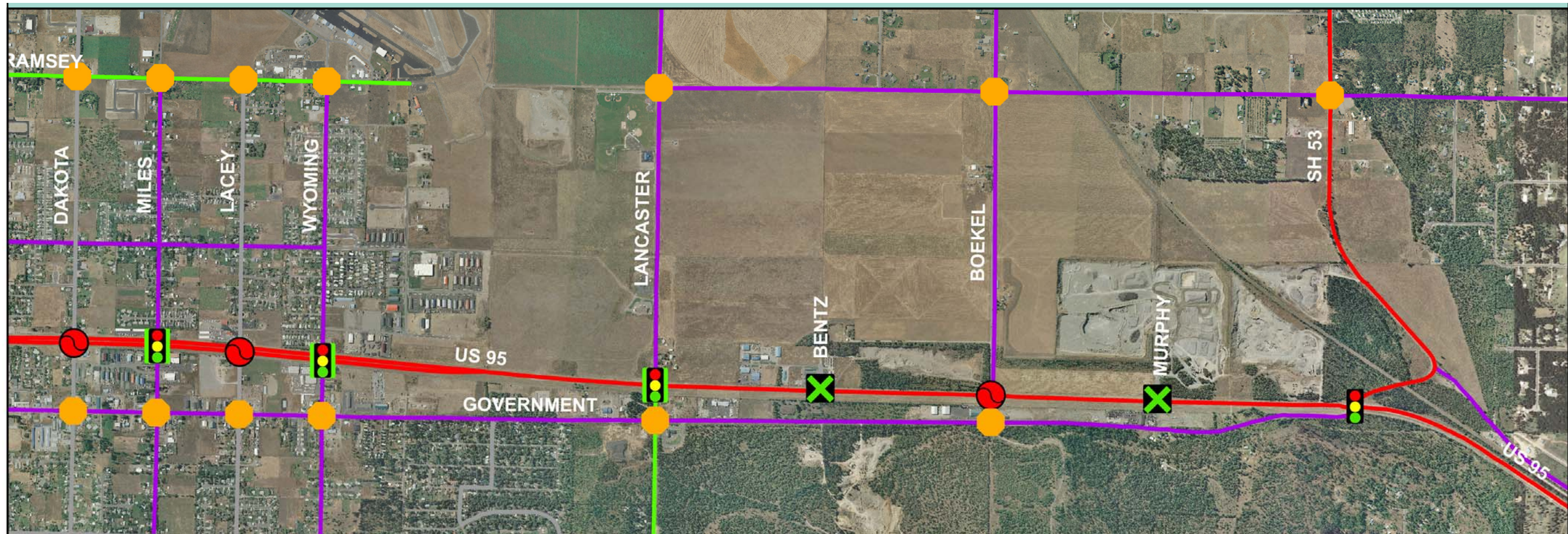
As improvements are installed, signal timing adjustments will become necessary to maintain optimum intersection and corridor mobility. Prior to the installation of the project groups, cycle times may require adjustment because of re-routed traffic. After the installation of the project groups, it is likely that the total coordinated signal timing will need adjusted to take advantage of the normalized signal spacing intervals. It is assumed that this group is ongoing but will be finalized upon installation of all improvements. It should be noted that ITD is investigating the implementation of an adaptive signal controller system along the corridor which will compliment the improvements identified through this analysis.

Project Funding

It is anticipated that funding the improvements identified through this effort will involve much ingenuity and close attention to strategic finance opportunities. An ongoing partnership among involved jurisdictions will ensure a coordinated approach to financing the improvements. Opportunities for developer associated funding will likely arise as time progresses, allowing for independent developer financing as well as public/private partnerships and/or mitigative requirements. In some cases, development proposals will need to include elements of project groups to assist with carrying out this plan. In other cases, the jurisdictions may pursue installation of a particular improvement independently.

Figure E-1. Improvement Strategy





Mitigated System Results

SAFETY

- Safety is improved at existing unsignalized intersections.
- Reduces intersection crossing points, thus reducing the number of potential accident locations.
- Traffic wishing to turn left onto or travel across the highway is forced to signals. Additional traffic at the signals may increase the number of collisions there.
- New signals may reduce severity of collisions, but may increase the number of collisions.

US95 MOBILITY

- Southbound US-95 travel time is increased slightly by 16.1 seconds.
- Northbound US-95 travel time is reduced by 48.5 seconds.
- Reduces total northbound US-95 delay.
- Slightly increases total southbound US-95 delay.

SYSTEMWIDE IMPACTS

- Total hours of driver delay for the entire study area is reduced.
- Unsignalized cross-street delay is reduced (by eliminating movements and rerouting traffic).
- Signalized cross-street delay in the urban section of the corridor is reduced.
- Better signal coordination is possible due to evenly spaced signals on half-mile and one-mile points.
- Total system-wide vehicle miles traveled (VMT) is slightly increased.

Figure E-2. Implementation Plan

