Gallatin County
Safe Streets For All
Action Plan

SUPPLEMENTAL PLANNING

DRAFT

Love Lane/East Valley Center Road Intersection Control Evaluation

The Love Lane/East Valley Center Road intersection was identified in both the *Greater Triangle Area Transportation Plan* (GTATP) and *Safe Streets for All (SS4A) Action Plan* as needing safety and operational improvements. Both plans recommended an intersection control evaluation (ICE) to determine the most effective and feasible reconstruction solution. For this supplemental planning effort, a sequential approach was used to identify, evaluate, and select a preferred alternative for the intersection. The approach was developed based on FHWA's *Intersection Control Evaluation (ICE)* process, a data-driven approach developed to objectively evaluate and screen alternatives to identify an optimal solution. The evaluation process involves the following key steps.

1. **Alternatives Identification**: Identify all possible alternatives that may address concerns at the intersection.
2. **Evaluation**: Evaluate each alternative to determine fatal flaws that warrant elimination from further consideration.
3. **Preferred Alternative**: Select the alternative that best addresses identified needs.

Alternatives Identification

An extensive list of potential improvement alternatives was developed. The alternatives include various improvements including changes to traffic control and intersection geometry. The alternatives were identified with the intent to address identified operational and safety concerns through traditional and innovative intersection designs. The alternatives are presented in the table below.

ALTERNATIVE	DESCRIPTION
ALT 0: No Action	• A "do nothing" approach • Used as a baseline for comparison against other alternatives
ALT 1: All-Way Stop	• Provide stop control along all approach legs • Maintain existing alignment and intersection geometrics
ALT 2: Turn Lanes	• Provide additional lanes to accommodate turning vehicles • Maintain existing minor leg stop control
ALT 3: Traffic Signal	• Use a traffic signal to direct and control traffic • Provide appropriate turn lanes and signal phasing
ALT 4: Roundabout	• Use a roundabout to direct and control traffic • Entering vehicles yield to circulating traffic
ALT 5: Continuous T	• Provide a channelized receiving lane for left-turning vehicles from the minor approach to merge onto the mainline

Evaluation Criteria

An evaluation was conducted to screen the identified alternatives and select a preferred alternative. Six screening criteria were selected for the analysis based on identified issues and concerns at the intersection. The table below lists the evaluation criteria and a description of the elements and evaluation methodology for each, including both qualitative and quantitative components.

CRITERIA	DESCRIPTION	METHODOLOGY
SAFETY	• Provide adequate visibility and sight distance • Reduce vehicle conflicts • Address identified crash trends	• Used the FHWA *Safety Performance for Intersection Control Evaluation* (SPICE) tool to understand how changes in traffic control and roadway configuration may affect safety • Compared to the crashes that occurred between 2018 and 2023 within 750 feet of each intersection
OPERATIONS	• Improve intersection performance • Reduce vehicle delay	• Used the FHWA *Capacity Analysis for Planning of Junctions* (Cap-X) tool which offers a planning-level assessment of the overall performance of various intersection configurations based on the volume to capacity (V/C) ratio • Assessed conditions under projected (2045) conditions using a 2.5% annual growth rate (as used in the *Greater Triangle Area Transportation Plan*) • Compared Cap-X results to a Level of Service (LOS) analysis performed in PTV's *Vistro* using traffic volumes collected during the Summer of 2025, including a projected conditions analysis • Performed a signal warrant analysis using existing traffic volumes
TRUCKS	• Accommodate truck traffic	• Qualitatively assessed the ability of each alternative to accommodate large trucks
NON-MOTORISTS	• Accommodate bicyclists and pedestrians	• Used the Cap-X tool to evaluate pedestrian and bicycle accommodations based on generalized information about traffic control and roadway configuration • Qualitatively assessed the ability of each alternative to accommodate non-motorists, including the provision and connectivity of dedicated facilities
IMPACTS	• Minimize impacts to the environment • Minimize impacts to adjacent land • Minimize construction impacts	• Qualitatively assessed the impact of each alternative to the environment and adjacent land uses including the potential acquisition of right-of-way or conversion of open space to developed land • Considered the constructability and traffic impacts that may be experienced during construction
IMPLEMENTATION	• Balance improvements benefits and cost • Reasonable project delivery timeframe • Applicable for available funding	• Performed a generalized analysis of project implementation and maintenance costs to perform a high-level benefit-cost analysis • Considered overall project cost as a potentially prohibitive factor. High-cost projects may take a longer time to implement while low-cost improvements are generally easier to implement in the short term • Assessed the potential for alternative funding sources

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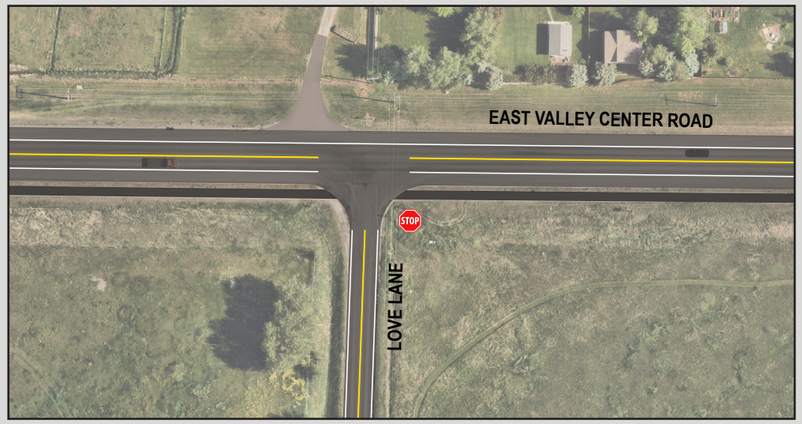
ALT-0: No Action



DESCRIPTION:

Under the No Action scenario, the existing intersection configuration would remain the same. The existing configuration includes the following characteristics:

- The intersection is currently configured as a three-legged two-way stop-controlled intersection with stop control on the southern approach (Love Lane).
- All legs allow all turning movements with no dedicated turn lanes.
- The speed limit on all three legs is 45 mph.
- A residential driveway intersects East Valley Center Road from the north, approximately 40 feet offset from the Love Lane approach.
- A shared use path runs parallel to the southern edge of East Valley Center Road.
- Privately-owned residential and agricultural properties surround the intersection.

SAFETY	OPS.	TRUCKS	NON-MOTO	IMPACTS	IMPLEMENT.
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This intersection operates with long delays, especially during the PM peak hour. Congestion at this intersection contributes to a history of rear-end crashes, with several turning related conflicts and many near-miss crashes due to inadequate gaps in traffic. Non-motorists and trucks are accommodated but experience operational and safety limitations. Keeping the existing configuration would not results in any impacts or costs beyond regular maintenance needs.

Recommended Action: **Baseline Comparison**

SAFETY:

High traffic volumes on East Valley Center Road can make it difficult for vehicles to safely execute turns through the intersection, especially during peak hours. Drivers have been observed swerving around waiting vehicles and turning into inadequate gaps. The 12 crashes that occurred at the Love Lane / East Valley Center Road intersection over the 5-year analysis period exhibited the following trends:

- **25%** of crashes were right angle or left-turn crashes; **42%** were rear-end crashes
- **33%** of crashes occurred in the dark with no street lighting present
- **17%** of crashes occurred on snowy, icy, or frost-covered roads
- **50%** of drivers involved in crashes were driving in a distracted, inattentive, or careless manner; **33%** ran off the roadway; **25%** failed to yield right-of-way; **25%** were following too closely
- **80%** of rear end crashes occurred on East Valley Center Road; **All** right angle crashes involved a northbound, left-turning vehicle colliding with an eastbound vehicle traveling straight ahead

32 Vehicle Conflict Points

OPERATIONS:

- The intersection currently operates at **LOS D in the AM** and **LOS F in the PM** peak hours. In the long-term, traffic volumes are expected to exceed available capacity with rapidly declining operations, resulting in **LOS F** during both peak hours.
- Vehicles on the northbound approach (Love Lane) currently experience about **29 seconds** of delay during the AM peak hour and **133 seconds** of delay during the PM peak hour and will continue to experience increasing amounts of delay (as much as to 10-28 minutes during peak hours!) as traffic volumes increase.

IMPACTS:

The no action option would not involve any improvements and therefore would not result in any impacts.

IMPLEMENTATION:

The no action option would not involve any improvements and therefore would not require any costs beyond any maintenance needs.

TRUCKS:

- Just over **4%** of vehicles traveling through the intersection were heavy vehicles including construction vehicles, farming equipment, buses, and other large trucks.
- Under stop control conditions, left-turning trucks from the minor approach require very large gaps to safely execute turning movements due to their size, weight, and acceleration abilities.

NON-MOTORISTS:

- There is an existing shared use path along the south side of East Valley Center Road.
- Over a 24 hour period, **7 pedestrians** and **23 bicyclists** were observed traveling through the intersection. Of the bicyclists, 6 were traveling on the roadway, while 17 were traveling on the shared use path.
- Non-motorized users must ensure all directions are clear before crossing Love Lane, watching for potential conflicts with right-turning or left-turning vehicles from the major roadway (East Valley Center Road), in addition to traffic from Love Lane.

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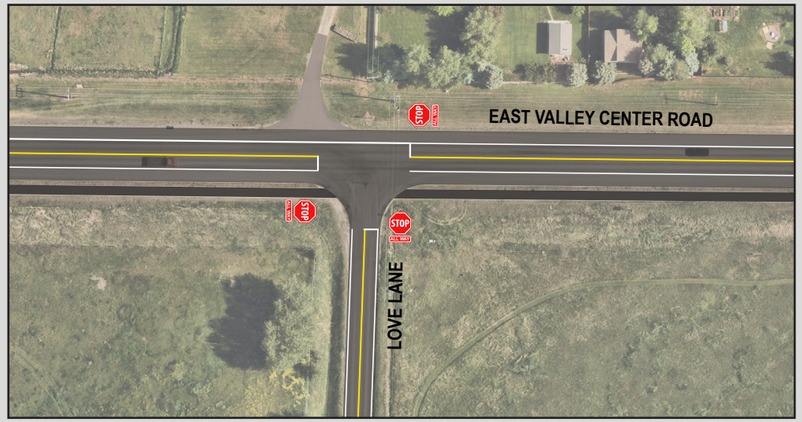
Love Lane/East Valley Center Road Intersection Control Evaluation

ALT-1: All-Way Stop Control



DESCRIPTION:

In Alt-1, the existing roadway configuration would remain the same, but stop signs would be installed on all legs. The configuration includes the following characteristics:

- All three legs are stop controlled. Enhanced warning devices could be installed to improve visibility of the intersection.
- A stop sign may be installed at the residential driveway intersecting East Valley Center Road from the north, if needed.
- All legs allow all turning movements with no dedicated turn lanes.
- The speed limit on all three legs is 45 mph.
- The shared use path would remain and crosswalks or additional adjoining non-motorized facilities could be installed.

SAFETY	OPS.	TRUCKS	NON-MOTO	IMPACTS	IMPLEMENT.
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This alternative produces marginal operational and safety benefits compared to the existing configuration with generally unacceptable operations over the long-term. The introduction of a stop sign on the major road, which is currently free-flow for more than 4.5 miles, is likely to be unexpected, contributing to safety concerns. Truck and non-motorist accommodations are improved over the existing configuration. Marginal impacts and implementation costs.

Recommended Action: DO NOT ADVANCE

SAFETY:

Installation of an all-way stop would help slow travel speeds through the intersection from all directions. However, the stop control on the major approaches (East Valley Center Road) can be unexpected, especially for drivers who are accustomed to the current two-way stop control configuration, potentially increasing the potential for rear-end conflicts or the probability of stop signs being ignored. The all-way stop also gives turning priority to one vehicle at a time, which could help reduce turning conflicts although the number of total vehicle conflict points remains the same. Consideration should be given to re-aligning the driveway on the north side of East Valley Center Road and installing a stop sign. This could help minimize confusion about turning priorities for vehicles exiting the driveway. Overall, the greatest number of crashes are predicted at the intersection with all-way stop control installed.

32 Vehicle Conflict Points

OPERATIONS:

- The capacity analysis shows that this option operates with the second highest overall V/C ratio in the long-term, operating with **V/C ratios over 1.0** during the AM and PM peak hours.
- Alt-1 would operate with similar overall delay to the existing configuration but would distribute the delay more evenly between all legs (increasing delay for vehicles on East Valley Center Road but decreasing delay for vehicles on Love Lane). Excessive delays and **LOS F** are expected to occur in the long-term during peak hours.

IMPACTS:

This option involves installation of new signage but otherwise would not involve any roadway improvements beyond maintenance. Potential impacts to the driveway on the north side of East Valley Center Road could occur if realignment is necessary. In general, the impacts of sign installation are negligible.

IMPLEMENTATION:

An all-way stop can be installed with little capital cost and essentially no construction time. However, East Valley Center Road is an MDT Urban Route and coordination with MDT would need to occur with any improvements made at this intersection. Additional investment in advanced warning signage and/or flashing beacons may be necessary, at least in the short-term, to alert drivers to the new traffic pattern.

TRUCKS:

- Requiring trucks to stop on all approaches can improve turning safety at the intersection but may increase delay, fuel use, and start-up time for heavy vehicles.
- All way stop control can make turning safer for large trucks because all approaches yield, reducing pressure to complete a turn in a small gap.
- All-way stop control lowers approach speeds and reduces speed differentials between movements.

NON-MOTORISTS:

- This option will perpetuate the shared use path along East Valley Center Road and additional non-motorized facilities could be accommodated with additional improvements if desired.
- The all-way stop would improve opportunities for both pedestrians and bicyclists to cross East Valley Center Road if additional facilities were ever installed on the north side of the roadway.
- All-way stop control improves safety for non-motorized users by requiring all approaches to stop, reducing vehicle speeds and increasing driver awareness. Users should still confirm all drivers have yielded before crossing to avoid conflicts from turning vehicles.

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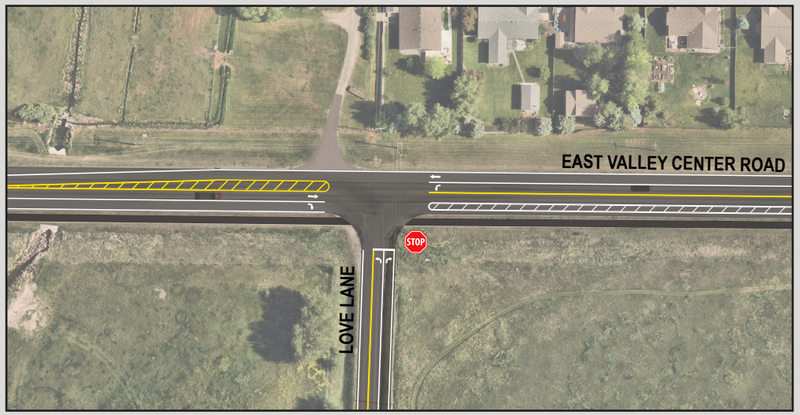
Love Lane/East Valley Center Road Intersection Control Evaluation

ALT-2: Turn Lanes



DESCRIPTION:

In Alt-2, the existing traffic control would remain the same, but additional turn bays would be installed to increase capacity of the intersection. This alternative includes:

- The Love Lane approach is stop controlled while the East Valley Center Road approaches are allowed free-flow movements. Enhanced warning devices could be installed to improve visibility of the intersection.
- The eastbound approach has a dedicated right turn lane, the westbound approach as a dedicated left-turn lane, and the northbound approach has dedicated left- and right-turn lanes.
- The speed limit on all three legs is 45 mph.
- The shared use path would remain and crosswalks or additional adjoining non-motorized facilities could be installed.

SAFETY	OPS.	TRUCKS	NON-MOTO	IMPACTS	IMPLEMENT.
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Alt-2 provides some short-term operational relief by improving storage and channelization, offering incremental safety gains and slightly better conditions for mainline trucks. However, heavy mainline demand continues to create difficult gap acceptance and long delays on Love Lane, and crossing/turning conflicts persist. While costs and impacts are moderate, the benefits are limited and do not address long-term operational or safety needs.

Recommended Action: **ADVANCE** *for short-term consideration*

SAFETY:

Installation of additional turn bays would not change the number of total vehicle conflict points at the intersection. However, dedicated turn lanes help separate turning vehicles from through traffic which can reduce the likelihood of crashes.

32 Vehicle Conflict Points

Turn lanes could help reduce rear end and sideswipe conflicts on East Valley Center Road that occur when through vehicles collide with stopped vehicles waiting to make a turn. Inclusion of enhanced warning devices could also help improve safety by increasing driver awareness on the upcoming intersection and associated configuration. Dedicated left and right turn bays on the minor approach could be confusing for residents accessing the driveway on the north side of the intersection from Love Lane.

OPERATIONS:

- The addition of turn lanes is anticipated to increase capacity of the intersection in the short-term, but the intersection will quickly exceed capacity without additional traffic control.
- Alt-2 provides improved operations compared to the existing configuration but results in higher delays and V/C ratios compared to Alt-1.
- The provision of turn lanes would reduce overall delay in the short-term by separating turning movements so mainline vehicles can proceed through the intersection without waiting for turning vehicles to find adequate gaps in traffic. Lengthy delays (2-4 minutes) are projected in the long-term with two-way stop control in place, resulting in **LOS F** during future peak hours.

IMPACTS:

This option involves installing turn bays on each approach leg. On East Valley Center Road, the turn lanes can be accommodated within the existing pavement width, requiring only restriping and no reconstruction or right-of-way impacts. However, simple restriping, without reconstruction and added pavement width would require the existing 8' shoulders to be reallocated to turn lanes. Reconstruction efforts would be limited to the Love Lane approach, where widening will be necessary to provide dedicated left- and right- turn bays.

IMPLEMENTATION:

By restriping East Valley Center Road to accommodate turn bays, the cost of this option is minimal compared to reconstruction. This option could help add capacity in the short-term, but the lack of substantial safety and operational benefits in the long-term decreases its effectiveness as a long-term solution. Coordination with MDT would be required.

TRUCKS:

- Added turn lanes provide more storage and dedicated space for truck turning movements, reducing blockage of through traffic and improving operational flow.
- Two way stop control retains a continuous flow advantage for major-road trucks but requires minor-road trucks to find adequate gaps in higher-speed traffic, which can be challenging during peak volumes. With the addition of turn lanes, trucks have to contend with more lanes of traffic when executing turning movements.

NON-MOTORISTS:

- This option will perpetuate the shared use path along East Valley Center Road and additional non-motorized facilities could be accommodated with additional improvements if desired.
- The addition of turn lanes would have little impact on bicyclists but would increase pedestrian crossing distances.
- Non-motorists must still check for traffic from multiple conflict points, including right-turning eastbound vehicles and left-turning westbound vehicles on East Valley Center Road, in addition to northbound approach traffic on Love Lane.

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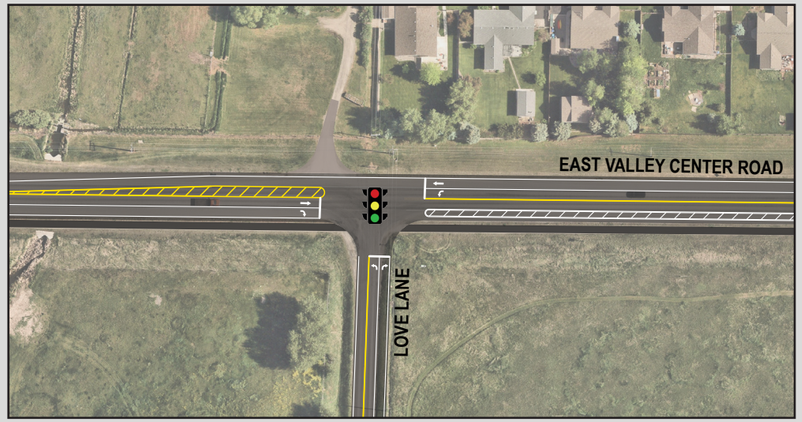
Love Lane/East Valley Center Road Intersection Control Evaluation

ALT-3: Traffic Signal



DESCRIPTION:

The lane configuration in Alt-3 is the same as in Alt-2, however, in this option a traffic signal would be installed at the intersection to control traffic. This option includes the following characteristics:

- The eastbound approach has a dedicated right turn lane, the westbound approach as a dedicated left-turn lane, and the northbound approach has dedicated left- and right-turn lanes.
- The intersection is signalized.
- The speed limit on all three legs is 45 mph.
- The shared use path would remain and crosswalks or additional adjoining non-motorized facilities could be installed. Pedestrian signals could also be included.

SAFETY	OPS.	TRUCKS	NON-MOTO	IMPACTS	IMPLEMENT.
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Signalization improves safety by replacing angle/gap-acceptance conflicts, especially for large trucks, with controlled movements and can achieve acceptable long-term V/C and LOS with proper timing/coordination. Non-motorists gain defined/protected crossing intervals albeit with added wait. Signals are known to increase rear-end and red-light-running risks. Moderate capital/long-term maintenance costs with a balanced performance that materially addresses key issues.

Recommended Action: ADVANCE

SAFETY:

Installation of a traffic signal is predicted to result in a slightly higher crash and injury frequency compared to Alt-2 which has the same lane configuration. By prioritizing one direction of traffic at a time, a traffic signal could help reduce the frequency of right-angle crashes at the intersection, especially if protected left-turn phases are incorporated into the signal timing plan. However, signals can also increase red light running behaviors, which often result in higher injury severities. In congested areas, signals may also contribute to increased frequencies of rear-end crashes. In order to ensure predictable turning movements, the driveway on the north side of the intersection should be integrated into the signal.

32 Vehicle Conflict Points

OPERATIONS:

- Traffic volumes at the intersection meet signal warrants under both existing and projected conditions. The traffic signal is shown to operate with one of the **lowest V/C** ratios in the future peak hours.
- Signalizing the intersection is expected to improve intersection operations and decrease delay overall, resulting in **LOS B** during both future peak hours.
- Induced delay can occur on the major approaches (East Valley Center Road) which are currently free-flow.
- Integrating the driveway on the north side of the intersection would require integration of the fourth leg into the signal timing plan. However, the driveway could be served on call only, with phase skipping is short green times to minimize delays and V/C impacts.

IMPACTS:

Although the lane configuration for this option is the same as Alt-2, it is expected that reconstruction would occur, widening East Valley Center Road to accommodate the turn bays while maintaining wide shoulders. With reconstruction, impacts to irrigation canals/Hyalite Creek may occur on the west leg, depending on the required lengths of turnbays, and widening my require the potential acquisition of right-of-way. The driveway on the north side of the intersection should be integrated into the signal to allow for predictable turning movements. Installation of utilities would be required and erection of a signal and possible associated lighting could have undesirable visual and environmental impacts.

IMPLEMENTATION:

Alt-3 costs more than Alt-2 but offers similar safety benefits and significantly more operational benefits, especially in the longer-term. Signalized intersections involve ongoing maintenance of signal heads, controllers, detection systems, and power supply, resulting in higher annual costs and the need for regular inspections. Coordination with MDT would need to occur.

TRUCKS:

- Dedicated turn lanes and signal phasing improve truck turning opportunities and reduce conflicts with through traffic.
- Signalized control eliminates the need for gap acceptance from the major road, reducing difficulty for trucks entering East Valley Center Road.
- The intersection design will require wider turning paths and adequate curb radii to accommodate truck off-tracking without encroaching into opposing lanes or pedestrian space.

NON-MOTORISTS:

- This option will perpetuate the shared use path along East Valley Center Road and additional non-motorized facilities could be accommodated with additional improvements if desired.
- Signal control provides dedicated crossing phases, reducing exposure to high-speed traffic and minimizing the need for gap acceptance. However, multiple lanes increase crossing distance and may require additional clearance time for pedestrian intervals.
- Turn lanes help channelize traffic, improving predictability of vehicle paths. However, right-turn-on-red movements may pose conflicts to non-motorists.
- Crossing non-motorists will need to wait for the WALK signal, which may increase crossing delay compared to unsignalized or stop-controlled configurations.

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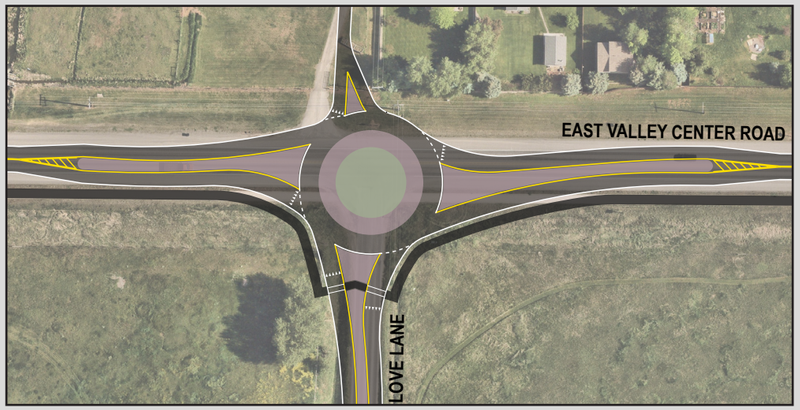
Love Lane/East Valley Center Road Intersection Control Evaluation

ALT-4: Roundabout



DESCRIPTION:

In Alt-4, a single-lane roundabout would be installed at the intersection. Drivers would yield at entry to traffic in the roundabout, then enter the intersection traveling counterclockwise around the center island then exiting at their desired street. The configuration includes the following characteristics:

- All vehicles entering the roundabout must yield to traffic in the roundabout.
- All legs allow all turning movements with no dedicated turn lanes.
- Traffic calming measures could be incorporated to lower approach speeds into the roundabout to <20 mph.
- The shared use path would remain although some change to the alignment may be necessary. Crosswalks or additional adjoining non-motorized facilities could also be installed.

SAFETY	OPS.	TRUCKS	NON-MOTO	IMPACTS	IMPLEMENT.
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A roundabout offers the highest safety performance (fewest/lowest-severity conflicts) with strong multimodal accommodation and good truck operations when designed for the appropriate vehicle type/size. Operations are competitive during off-peak peak hours and provide acceptable delay overall, though heavy, unbalanced mainline flows can constrain minor-street entry during peak hours. High capital costs and large overall footprint balanced with comprehensive benefits.

Recommended Action: **ADVANCE**

SAFETY:

A roundabout is shown to have the best overall safety performance of all potential alternatives. Compared to traditional stop- or signal-controlled intersections, a single-lane roundabout has only eight vehicle conflict points (versus thirty-two), eliminating all crossing conflicts and retaining only low-speed merging and diverging interactions. The geometry naturally reduces approach and circulating speeds to 15–25 mph, substantially lowering crash severity when collisions occur. This lower-speed environment is particularly effective in reducing the likelihood of severe injury or fatal crashes.

8 Vehicle Conflict Points

OPERATIONS:

- This option is shown to operate with **V/C ratios less than 1.0** during both the future AM and PM peak hours, yet demonstrate higher V/C ratios compared to Alt-3 and Alt-5.
- Operational analysis shows that a roundabout would operate at **LOS B & C** under future AM and PM peak hours, respectively.
- At roundabouts, entering traffic yields to vehicles already circulating, promoting a continuous flow of traffic, reducing stop delay, and improving operational performance. Heavy mainline traffic flows may make it difficult for vehicles on the minor approach (Love Lane) to enter the intersection during peak hours.
- Roundabouts enable U-turns and consolidate left-turning movements, reducing stop-and-go conditions and discouraging cut-through traffic on neighboring streets to avoid the congested intersection.

IMPACTS:

The footprint of a single-lane roundabout would be slightly larger than the footprint of Alt-2 and Alt-3 with potential impacts to the irrigation ditch. Landowner coordination will need to occur to tie the driveway on the north side of the intersection into the roundabout. Some right-of-way may be required at the intersection, depending on the size and layout of the roundabout. Less widening would need to occur further from the intersection due to the need for only a single entry lane. Lighting is required at roundabouts which will require utilities and could have potentially undesirable visual and environmental effects.

IMPLEMENTATION:

Roundabouts typically have high benefit-cost ratios when used to address safety concerns and the operational benefits are also significant. The favorable benefit-cost ratio of Alt-4 could support the opportunity for competitive funding programs. Roundabouts generally require low long-term maintenance but require periodic upkeep of signage, pavement markings, lighting, and landscaping within the central island. Snow removal in roundabouts can be more challenging than conventional intersections. Coordination with MDT would need to occur.

TRUCKS:

- Roundabouts can be designed for large trucks using features such as wider entry and exit lanes, mountable curbing for vehicles with a wide and/or long wheelbase, and curvature designed to allow trucks to easily make turning movements.
- Entry deflection and circulating curvature should be designed to balance truck maneuverability with the need to maintain low operating speeds for safety.
- Heavy truck percentages can influence circulating speeds and gap creation for entering vehicles, potentially affecting operations.

NON-MOTORISTS:

- This option will perpetuate the shared use path along East Valley Center Road and additional non-motorized facilities could be accommodated with additional improvements if desired.
- Splitter islands allow for two-stage pedestrian crossings. The crosswalks are set back from the circulation lane to improve gap availability.
- For bicyclists, the low-speed environment allows confident riders to circulate in the travel lane, while the shared-use path provides a more comfortable alternative for less experienced riders.

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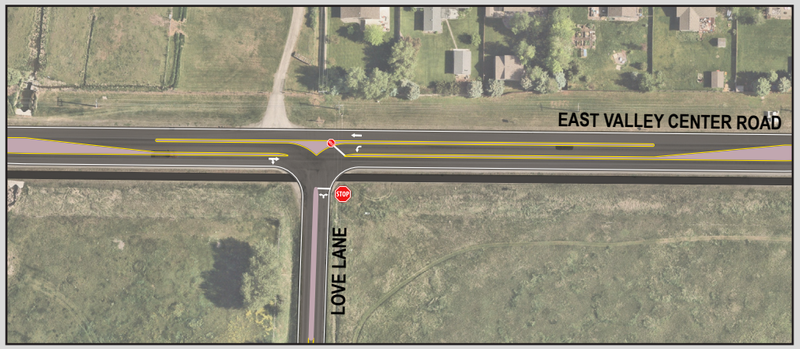
ALT-5: Continuous T Intersection



DESCRIPTION:

Alt-5 features a Continuous T configuration at the intersection. This layout is used for three-legged intersections and allows traffic on the top part of the 'T' to maintain continuous, uninterrupted flow. The configuration includes the following features:

- Drivers on the minor approach (Love Lane) use a channelized lane to merge onto the major street.
- From the major street (East Valley Center Road), vehicles navigate the Continuous T like a conventional intersection. An eastbound right-turn lane would be provided.
- The speed limit on all three legs could remain 45 mph.
- Stop control is provided on the minor approach (Love Lane) with future signalization possible, if warranted.
- The shared use path would remain although some change to the alignment may be necessary. Crosswalks or additional adjoining non-motorized facilities could also be installed.

SAFETY	OPS.	TRUCKS	NON-MOTO	IMPACTS	IMPLEMENT.
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Although the Continuous T configuration delivers strong mainline operations via channelization, the configuration requires elimination of the driveway on the north side of the intersection, inhibiting the landowner's right to reasonable access. Provides improved safety at some merge/diverge points, yet the configuration is unfamiliar to most drivers and can be difficult for non-motorists and trucks to navigate. Moderate impacts/costs.

Recommended Action: **DO NOT ADVANCE**

SAFETY:

The Continuous T intersection generally yields a similar safety performance to signalized intersections in terms of crash frequency, though with a slightly higher risk of side-impact collisions due to the traffic merge from the left, which may be unfamiliar to many drivers. The main advantage of this design is the reduced conflict points, as traffic on the continuous road (mainline) does not need to stop, which can help reduce the likelihood of rear-end crashes. However, when unsignalized, side street drivers must rely on gaps in traffic to safely enter or cross the mainline, which can lead to judgment errors, especially under high traffic volumes.

7 Vehicle Conflict Points

OPERATIONS:

- This option is shown to operate with the **lowest V/C ratios** in long-term. Since a signal is warranted at the intersection, a signalized (Continuous Green T) configuration could be explored to further improve operations and extend the life of the treatment.
- Current traffic analyses are unable to calculate LOS for this control type.
- Unsignalized Continuous Ts promote continuous flow for mainline traffic. Side street traffic may experience delays during peak periods, particularly when there is heavy traffic on the mainline. High left-turn demands from the side street may warrant the need for signalization to reduce delays.
- Closure of the driveway on the north side of the intersection is required, increasing travel time and delay for residents if the driveway is rerouted.

IMPACTS:

The Continuous T (unsignalized) intersection requires relatively modest changes to existing infrastructure including some widening along East Valley Center Road to accommodate the additional width needed for turn bays , a left-turn merge lane, and medians for channelization. The existing right-of-way would likely be sufficient. The residential driveway on the north leg would need to be closed and re-routed away from East Valley Center Road as there would not be a safe entry point on the north side of the intersection with a Continuous T design. Impacts to irrigation ditches or utilities may occur depending on final median and turn bay design. Concrete medians would need to be accompanied by street lighting, which would require utilities and may have undesirable visual or environmental effects.

IMPLEMENTATION:

Continuous T intersections are implemented to improve traffic flow and reduce delay at three-legged intersections, particularly where side street volumes are low to moderate and mainline flow is prioritized. While implementation costs can vary based on site-specific conditions, Continuous T intersections are often regarded as a practical mid-range investment that balances performance and cost. Maintenance demands are typically lower than signals, though channelization and lane markings must be monitored and maintained to ensure clarity and effectiveness and to prevent buildup during winter months. Coordination with MDT would be required.

TRUCKS:

- Continuous T intersections can be easily navigated by large trucks with appropriately designed lane widths and turning paths.
- Although the channelized left-turn lane helps, large trucks may still face difficulty in finding large enough gaps to merge into traffic safely.

NON-MOTORISTS:

- This option will perpetuate the shared use path along East Valley Center Road and additional non-motorized facilities could be accommodated with additional improvements if desired.
- Pedestrian and bicycle accommodations depend heavily on design, but Continuous T intersections, especially those that are unsignalized, tend to be less intuitive than conventional intersections for non-motorists.

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Love Lane/East Valley Center Road Intersection Control Evaluation

Scoring Summary

Based on the ICE screening, Alt 4 (Roundabout) is the preferred configuration under current conditions, offering the strongest safety performance with robust multimodal and truck accommodation and acceptable operations. Alt 3 (Traffic Signal) remains a viable secondary option if right-of-way, footprint, or access constraints limit the feasibility of a roundabout. Alt 3 (Traffic Signal) remains a viable secondary option if right-of-way, footprint, or access constraints limit the feasibility of a roundabout. Alt 2 (Turn Lanes) could serve as a short-term, bridge solution—particularly if a signalized intersection (Alt 3) is ultimately pursued—by providing modest operational relief and added capacity at relatively low cost through restriping until more substantial reconstruction can be completed. ALT 1 (All-Way Stop) and ALT 5 (Continuous T) do not advance due to limited safety/operational benefit or feasibility constraints, and ALT 0 (No Action) was retained solely as a baseline for comparison purposes.

ALTERNATIVE	LONG-TERM						SUMMARY	
	SAFETY	OPS.	TRUCKS	NON-MOTO	IMPACTS	IMPLEMENT.		
ALT 0: No Action	⌄⌄	⌄⌄	⌄	⌄	⌃⌃	⌃⌃	**Baseline Comparison**	This intersection operates with long delays, especially during the PM peak hour. Congestion at this intersection contributes to a history of rear-end crashes, with several turning related conflicts and many near-miss crashes due to inadequate gaps in traffic. Non-motorists and trucks are accommodated but experience operational and safety limitations. Keeping the existing configuration would not results in any impacts or costs beyond regular maintenance needs.
ALT 1: All-Way Stop	⌄	⌄	—	—	⌃⌃	⌃⌃	**DO NOT ADVANCE**	This alternative produces marginal operational and safety benefits compared to the existing configuration with generally unacceptable operations over the long-term. The introduction of a stop sign on the major road, which is currently free-flow for more than 4.5 miles, is likely to be unexpected, contributing to safety concerns. Truck and non-motorist accommodations are improved over the existing configuration. Marginal impacts and implementation costs.
ALT 2: Turn Lanes	—	⌄	⌄	⌄⌄	⌃	⌃	**ADVANCE** *for short-term consideration*	Alt-2 provides some short-term operational relief by improving storage and channelization, offering incremental safety gains and slightly better conditions for mainline trucks. However, heavy mainline demand continues to create difficult gap acceptance and long delays on Love Lane, and crossing/turning conflicts persist. While costs and impacts are moderate, the benefits are limited and do not address long-term operational or safety needs.
ALT 3: Traffic Signal	—	⌃⌃	⌃⌃	⌃	⌃	—	**ADVANCE** *for further consideration*	Signalization improves safety by replacing angle/gap-acceptance conflicts, especially for large trucks, with controlled movements and can achieve acceptable long-term V/C and LOS with proper timing/coordination. Non-motorists gain defined/ protected crossing intervals albeit with added wait. Signals are known to increase rear-end and red-light-running risks. Moderate capital/long-term maintenance costs with a balanced performance that materially addresses key issues.
ALT 4: Roundabout	⌃⌃	⌃	⌃	⌃⌃	⌃	⌃⌃	**ADVANCE** *Preferred Configuration*	A roundabout offers the highest safety performance (fewest/lowest-severity conflicts) with strong multimodal accommodation and good truck operations when designed for the appropriate vehicle type/size. Operations are competitive during off-peak peak hours and provide acceptable delay overall, though heavy, unbalanced mainline flows can constrain minor-street entry during peak hours. High capital costs and large overall footprint balanced with comprehensive benefits.
ALT 5: Continuous T	—	⌃⌃	—	⌄	⌄	⌄	**DO NOT ADVANCE**	Although the Continuous T configuration delivers strong mainline operations via channelization, the configuration requires elimination of the driveway on the north side of the intersection, inhibiting the landowner's right to reasonable access. Provides improved safety at some merge/diverge points, yet the configuration is unfamiliar to most drivers and can be difficult for non-motorists and trucks to navigate. Moderate impacts/costs.

Next Steps

Given the results of this analysis, it is recommended that the county proceed with preliminary design of a roundabout at the Love Lane/East Valley Center Road intersection. Coordination with MDT should occur early on in the process to confirm access management requirements and ensure agreement on the preferred configuration. If it will be several years before this intersection is advanced to preliminary design, the county should plan to collect updated traffic counts, forecasts, and crash data, to confirm the preferred alternative under potentially changed conditions, including development activities.