






## MEMORANDUM

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**THROUGH:**  Galen Jones, P.E., Project Manager  
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**FROM:**  Steve Noble, P.E., Project Manager, DOWL  
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**DATE:** May 19, 2026

**PROJECT:** State/Federal Project Nos. CFHWY00909/0A31067  
Seward Hwy & Tudor Road Interchange Reconstruction

**SUBJECT:** Alternatives Analysis and Recommendations Memo

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### INTRODUCTION

On behalf of the State of Alaska Department of Transportation and Public Facilities (DOT&PF), DOWL, LLC performed alternatives analysis to support the Seward Highway and Tudor Road Interchange project in Anchorage (Figure 1). This memorandum provides a summary of the analysis conclusions for the purpose of advancing the environmental document.

The recommendations herein are:

- (1) preliminary and should not be considered final until environmental document approval; and
- (2) subject to change if significant impacts on environmental resources are identified.

The existing interchange was identified as a high-priority project in the Midtown Congestion Relief (MCR) Planning and Environmental Linkages (PEL) Study published in 2020. Tudor Road is a major east-west arterial route in the Anchorage roadway network, carrying roughly 33,000 vehicles per day within the project limits. This project does not intend to make changes for through-traffic operations on the Seward Highway.

The interchange exhibits safety and operational issues for both vehicular and non-motorized users. The existing compressed diamond configuration, built in 1976 and typical of its era, has ramp terminal spacing that makes signal coordination difficult and is inefficient for progressing traffic, resulting in longer queuing and delays. The angled ramp geometry creates relatively sharp turning movements for left-turning drivers, especially large trucks, contributing to operational inefficiencies for all users. The sidewalks and crosswalks do not meet current or future active transportation needs. The bridge is not wide enough to accommodate additional lanes (if determined by the Traffic and Safety Analysis), snow storage or safety buffers, or wider pedestrian facilities.

One of the primary catalysts for improving the interchange is the need to reconstruct the aging bridge, which has required repairs on multiple occasions due to bridge strikes caused by insufficient vertical clearance not meeting current standards. Replacing the bridge and raising the vertical clearance to a minimum of 18' provides a cost-effective opportunity to improve vehicle and non-motorized safety and operational performance for the foreseeable future.



Figure 1: Project Area

Primary objectives include:

- Meeting existing and forecasted capacity needs
- Updating interchange geometry to modern design standards that will improve safety, traffic flow, and visibility for motorized and non-motorized users
- Reducing crash risk and increasing comfort for all users
- Enhancing active transportation facilities and crossings along Tudor Road and on the overpass
- Improving traffic operations, quality of service, and mobility for all users
- Maintaining ramp-to-ramp movements across Tudor Road to accommodate oversized vehicles on the Seward Highway
- Reducing vehicle queueing and improving traffic-signal coordination along the Tudor Road corridor
- Making the Tudor Road Interchange forward-compatible with the 36th Avenue Interchange, currently in design
- Reducing, and improving efficiency of, future maintenance efforts

## EXISTING CONDITIONS

### ***Functional Classification***

A roadway's functional classification describes the type of service it provides, based on mobility, access needs, and traffic characteristics. The following classifications apply within the project area:

- Seward Highway – Interstate (principal regional mobility corridor)
- Tudor Road – Major Arterial (primary east-west urban arterial)

These roles are reinforced by their regional importance, daily traffic volumes, and their function within the Anchorage Bowl. Both Seward Highway and Tudor Road are on the National Highway System (NHS), while Seward Highway is on the NHS and Interstate Highway System.

### ***Motorized Traffic***

East-West traffic on Tudor Road dominates during peak hours, and excessive queueing occurs approaching the ramp terminal intersections. This is especially prevalent at the westbound-to-southbound left-turn pocket and at the northbound exit ramp, where queues frequently block northbound-to-westbound left-turn traffic and northbound through traffic.

The project focus is replacing an aging bridge and improving safety, operational performance, and usability for all travelers. By updating the interchange form with contemporary design practices, vehicular traffic operations will improve, reducing delay and queueing through a more efficient interchange design. Travel forecasting models predict little change in traffic demand compared to existing volumes.

### ***Non-Motorized and Transit Facilities***

Tudor Road is also a key east–west route for people walking and biking. Current non-motorized facility concerns include:

- Narrow sidewalks on the Tudor Road overpass offer limited space and no buffer from high-speed traffic, resulting in very uncomfortable conditions for users.
- Long Tudor Road crosswalks increase exposure and crash risk for pedestrians and bicyclists.
- Many curb ramps and adjacent facilities fail to meet Americans with Disabilities Act (ADA) standards, creating accessibility barriers for mobility-impaired users. Proposed improvements include median refuge areas to support safer, two-stage crossings along Tudor Road. Freeway ramps will remain 2-or-3-lane, single-stage crossings.
- Unmarked/uncontrolled crossings at MacInnes and Shelikof Streets make it difficult for non-motorized users to find acceptable gaps in traffic to comfortably cross Tudor Road at a location intuitive for drivers to yield.
- Visibility and personal security issues occur along sections of the south Tudor Road pathway west of the interchange where dense vegetation limits visibility.
- Absence of dedicated bicycle facilities results in many cyclists sharing vehicle lanes with high-speed traffic, or sharing the narrow sidewalk with pedestrians. On-street bicycle facilities, such as bike lanes, aren't appropriate on a 45 mph roadway. Existing conditions discourage active transportation and may increase crash risk.
- Transit stop placement is isolated, rather than located strategically at near-side or far-side positions, resulting in passengers frequently crossing Tudor Road midblock outside marked crosswalks.

- Connectivity between transit stops and surrounding non-motorized facilities is limited, with inadequate lighting, discontinuous or substandard walking routes, and missing ADA-compliant connections.

## ***Utilities***

Existing utilities are present throughout the interchange area and include both major transmission facilities and local distribution services. Major facilities include Anchorage Water and Wastewater Utility (AWWU) infrastructure such as a 20-inch water main and a 16-inch sewer main, along with telecommunications infrastructure from Alaska Communications Systems (ACS). Additional distribution utilities in the corridor include electric (Chugach Electric Association/Municipal Light & Power), natural gas (ENSTAR), and communications providers (ACS and GCI).

Utilities are generally located within or adjacent to existing roadway corridors and developed areas and will require coordination during design and construction. Based on planning-level evaluation, utility impacts are expected to be similar across the interchange alternatives.

## ***Environmental Resources***

The project is being advanced as a Categorical Exclusion under the National Environmental Policy Act. Environmental studies completed or underway indicate that the project area is largely developed and does not contain sensitive environmental resources that would constrain the interchange design.

Environmental review to date identifies no requirement for Endangered Species Act consultation and no known hazardous materials concerns. Wetland delineation has been completed, and any impacts are expected to be minor. Cultural resource fieldwork has been completed with reporting underway to address Section 106 requirements. Section 4(f) impacts are not anticipated. A noise analysis and hydraulic study are in progress to support project development.

Overall, environmental impacts are anticipated to be minimal and comparable across the alternatives considered.

## ***Safety Performance***

The focus of the safety performance evaluation was Tudor Road, east and west ramp terminal intersections, and the interchange ramps; however, the Old Seward and MacInnes intersections were also included. The evaluation did not consider Seward Highway mainline or other ancillary crashes that are not influenced by the interchange project.

Tudor Road crash data from 2014 through 2023 primarily shows rear-end collisions. The most serious issues are on Tudor Road between MacInnes Street and Old Seward Highway, where four fatal crashes occurred in ten years, including two involving non-motorized users. Another fatal non-motorized user crash happened in 2024 near MacInnes Street, outside the study timeframe. Since changes in the roadway geometry, access, or vehicle volumes haven't changed, crash patterns after 2023 are expected to be similar to the study period. Figure 2 shows crash locations and severities in the project area from 2014 to 2023.

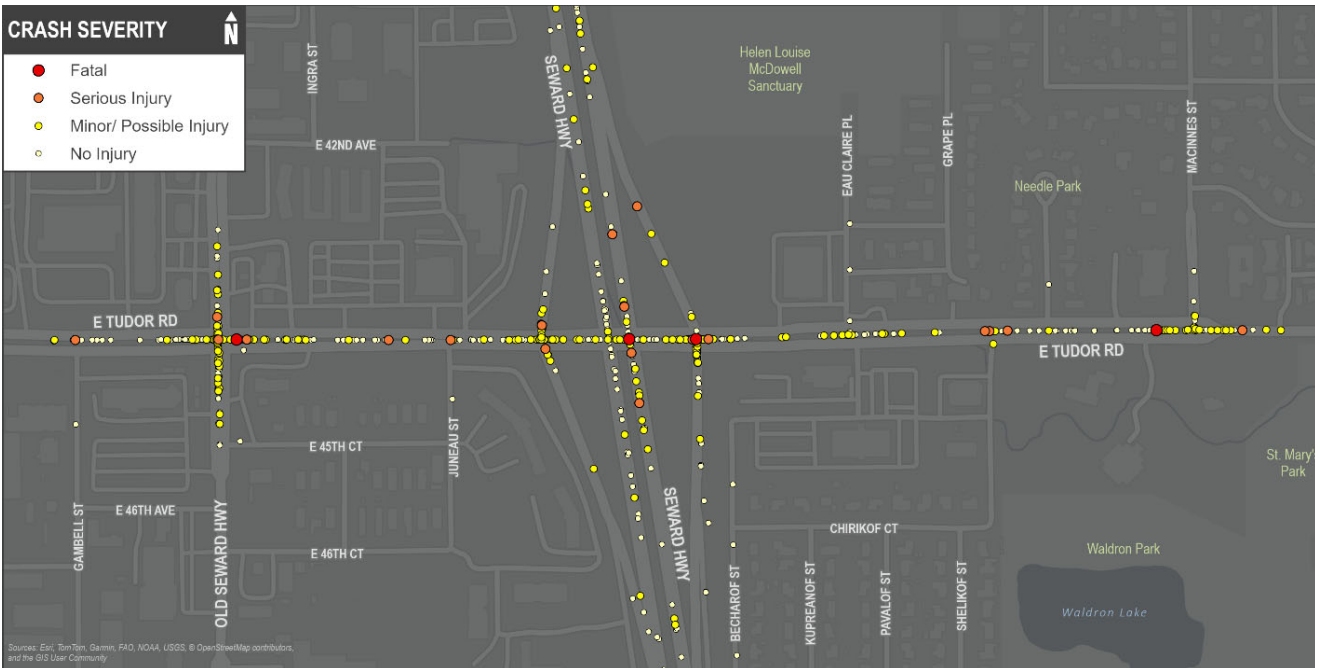


Figure 2: All Crashes (2014-2023)

## ALTERNATIVES OVERVIEW

Alternatives development began with coordination with stakeholders and field visit and discussion on specific problems and needs. With that information and coordination, the team identified potential solutions that aligned with the project's goals and objectives. Interchange forms with loop ramps were not considered due to the constrained right-of-way around the existing diamond interchange footprint and the impact they would have on the urban land uses surrounding the project area.

Thus, the team considered high-capacity diamond forms that retain the general diamond interchange layout. Contemporary high-capacity diamond forms can improve efficiency through optimized lane configurations, signal timing, and geometry, and better integrate multimodal quality-of-service needs. Contemporary interchange forms will integrate multimodal quality of service and safety performance considerations that will serve existing and future active transportation users.

Initial concepts were shared with community and agency stakeholders during an Interchange Planning Workshop on November 12, 2025. The following provides an overview of the interchange forms considered:

### **Alternative 1 – No Build**

The existing conditions and operational and safety performance of the current interchange represent the base conditions from which other alternatives are compared.

### **Alternative 2 – Tight Diamond Interchange**

A tight diamond interchange brings the ramp terminal intersections closer together (300 feet vs. 500 feet), improving signal coordination and smoothing traffic flow. It increases distances to adjacent intersections and adds left-turn lanes on Tudor Road. It preserves ramp-to-ramp movements and is relatively easy to construct.

Pedestrian and bicyclist elements would be upgraded, and the ramp terminal intersections modified to reduce turning radii, create median refuge areas, and include enhanced pedestrian and bicyclist crossing treatments to increase quality of service and reduce crash risk compared to the existing interchange. This alternative is shown in Figure 3.

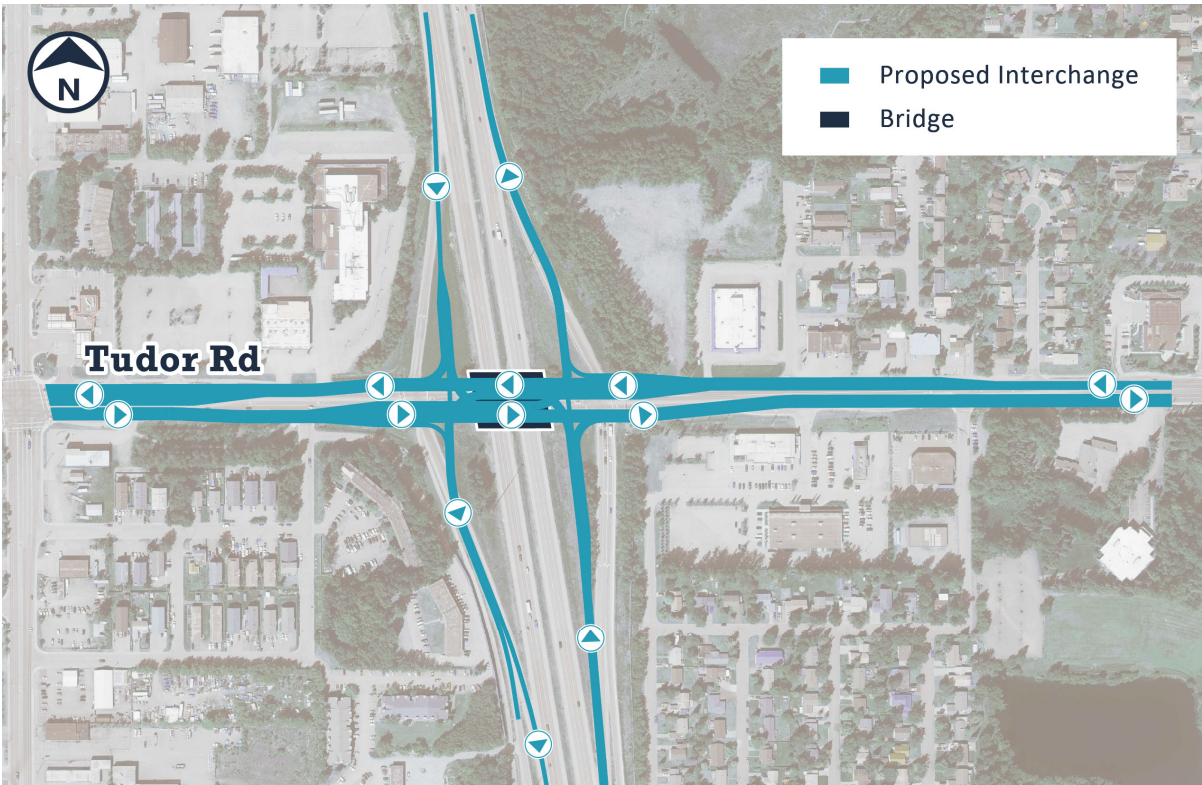


Figure 3: Tight Diamond Interchange (Alternative 2)

### Benefits of Alternative 2

- Conventional diamond interchange that replicates but enhances the familiar existing configuration
- Closer ramp signal spacing allows intersections to operate more efficiently (two signals operating as one) and reduces traffic queues and delays during peak periods
- Ramp-to-ramp movements can readily be served
- Updated crosswalks in combination with decreased radii, where possible, at ramp terminal intersections increase user comfort and reduce crash risk by slowing vehicle speeds and improving vehicle yield compliance
- Increased intersection spacing between proposed ramp terminals and adjacent Tudor Road intersections improves traffic operations
- Reduced ramp terminal spacing supports traffic maintenance during construction
- Smaller footprint supports potential Tudor Road realignments to facilitate bridge reconstruction and increase separation from adjacent land use
- Compatible with future 36th Avenue Interchange geometry

### Drawbacks of Alternative 2

- Adding left-turn lanes on the overcrossing increases pedestrian crossing distances across Tudor Road compared to existing conditions and may result in two-stage crossings; however, the additional turn lane will provide the opportunity for a substantially wider median that could be used as a comfortable pedestrian refuge between east- and west-bound traffic.

### Alternative 3 – Single Point Interchange

A single point interchange consolidates movements into one central signal at the bridge, which can improve overall vehicle flow and accommodate higher traffic volumes. The interchange would have similar lane numbers and arrangements as Alternative 2 - Tight Diamond Interchange, but it does not readily accommodate ramp-to-ramp movements and is typically more challenging and expensive to construct, primarily due to the large bridge needed to accommodate the curvature entering and exiting the single intersection.

Pedestrian and bicyclist elements would be upgraded to contemporary configurations. The ramp terminal intersections would be modified to create median refuge areas and include enhanced pedestrian and bicyclist crossing treatments compared to the existing interchange. This alternative is shown in Figure 4.

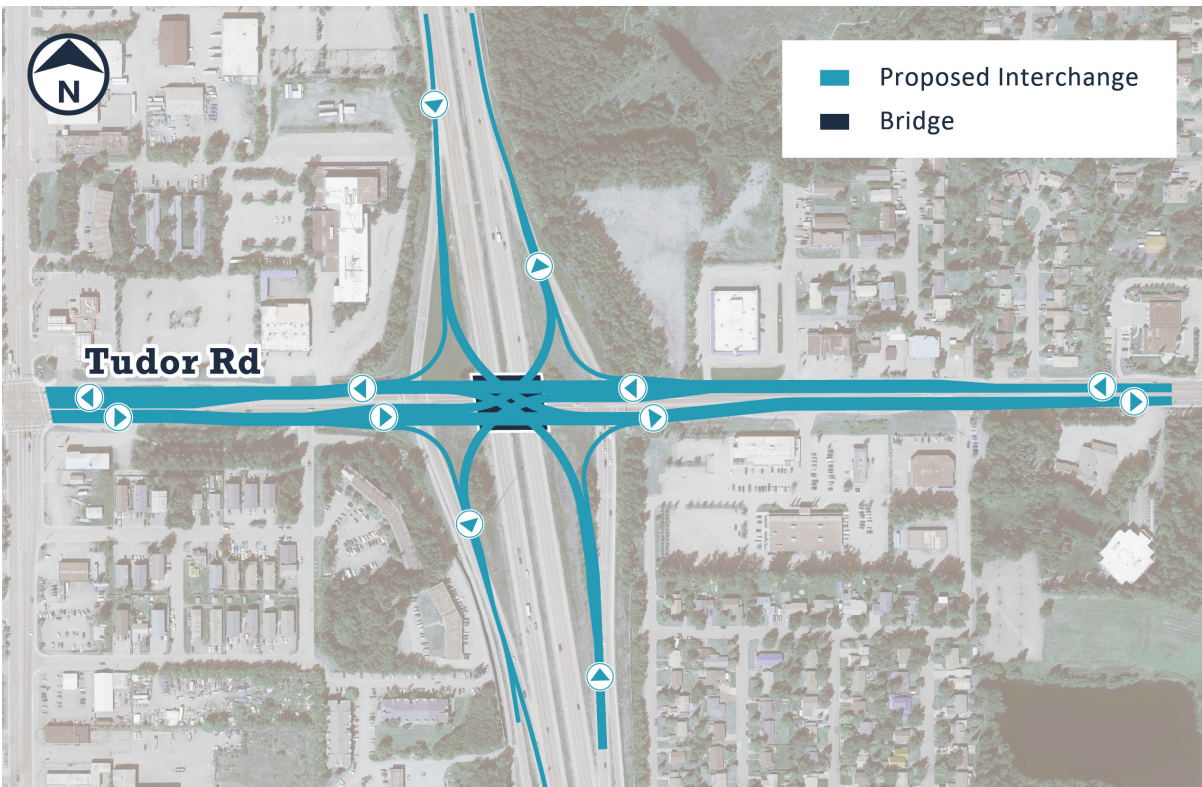


Figure 4: Single Point Interchange (Alternative 3)

## **Benefits of Alternative 3**

- Similar diamond ramp configurations and generally similar motorist movements (through a single traffic signal) as the existing interchange
- Updated crosswalks at ramp terminal intersections increase user comfort
- Increased spacing from the single ramp terminal intersection to adjacent Tudor Road intersections improves traffic operations
- Smaller footprint can support potential Tudor Road realignments to facilitate bridge reconstruction
- High capacity, efficient operations that would have reduced queue lengths and reduced average delay

## **Drawbacks of Alternative 3**

- Ramp-to-ramp movements cannot be readily served
- Adding left-turn lanes increases non-motorized crossing distances across Tudor Road compared to existing conditions, which may require two-stage pedestrian crossings; however, the additional turn lane will provide the opportunity for a substantially wider median that could be used as a comfortable pedestrian refuge between east- and west-bound traffic.
- Larger turning radii to and from the interchange ramps result in multiple pedestrian crossing locations with higher vehicle speeds and less intuitive crossings compared to Alternatives 1 and 2
- Larger turning radii onto the northbound entrance ramp extends the merging point on the ramp and reduces distance to future 36th Avenue Interchange geometry compared to Alternatives 1 and 2; would require modifications to the ramp configurations planned at 36th Avenue
- Unique bridges and retaining walls increase construction complexity and cost; large (wide) bridge would be required

## ***Alternative 4 – Diverging Diamond Interchange***

The diverging diamond interchange transposes traffic flow via crossovers at the ramp terminal intersections. The interchange would have a larger footprint than Alternatives 2 and 3 due to wider spacing and a wider median approaching the crossovers. This alternative does not support ramp-to-ramp movements required to support frontage road access south of Tudor Rd, and is more complex to construct than Alternative 2. It does have the advantage of accommodating heavy left-turn volumes (e.g., westbound left at the west ramp node) and the new bridges could be constructed while traffic is maintained on the existing structure.

Pedestrian and bicyclist elements would be upgraded to contemporary configurations. The ramp terminal intersections would be modified to create median refuge areas and include enhanced pedestrian and bicyclist crossing treatments compared to the existing interchange. This alternative is shown in Figure 5.

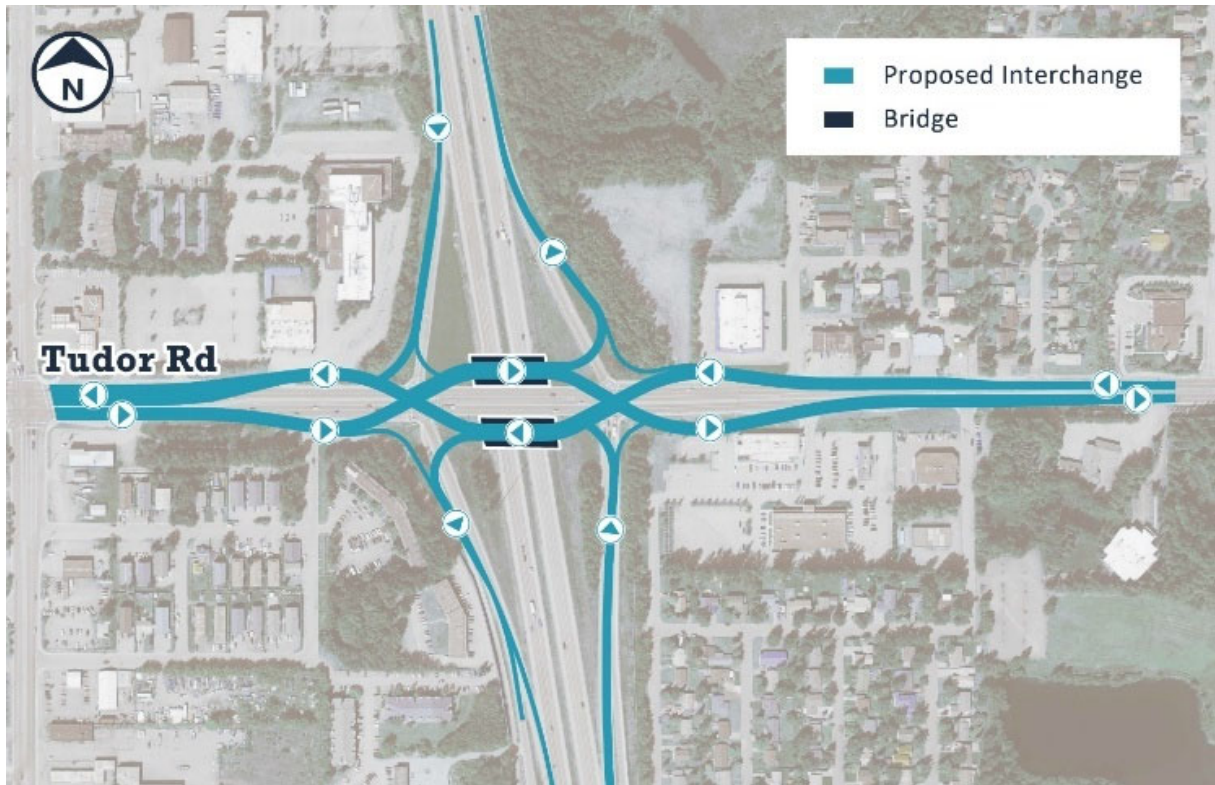


Figure 5: Diverging Diamond (Alternative 4)

#### Benefits of Alternative 4

- Updating crosswalks at ramp terminal intersections increases user comfort
- Reduces left-turning vehicle conflicts points compared to Alternative 1, 2, and 3
- Performs well when heavy left-turn volumes (e.g., westbound left at the west ramp node) are present
- A two-bridge configuration simplifies traffic maintenance during construction by preserving the existing alignment while the new bridges are constructed

#### Drawbacks of Alternative 4

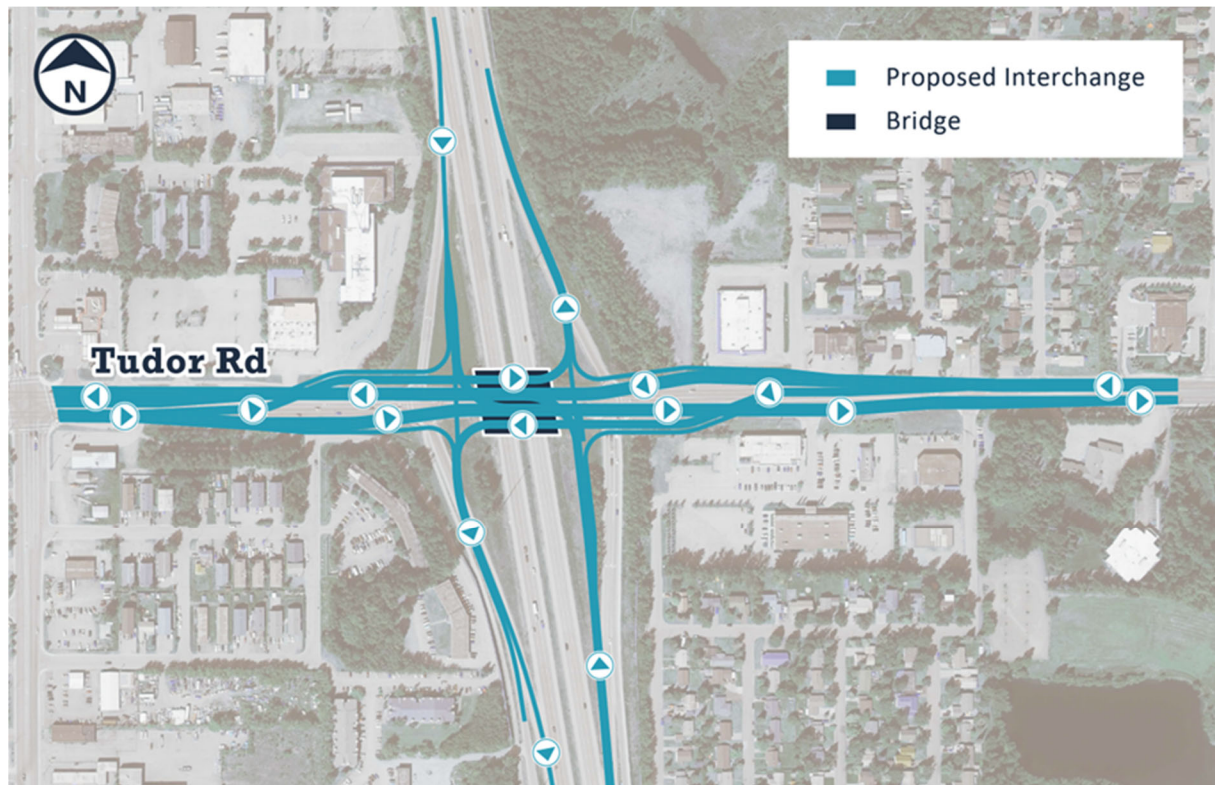
- Ramp-to-ramp movements needed to access frontage roads south of Tudor Rd and oversized vehicle cannot be easily served
- Tudor Road's horizontal alignment to and from the crossovers moves the geometric influence area of the reconstructed interchange closer to adjacent Tudor Road intersections compared to Alternatives 1, 2, and 3; could have a negative effect on traffic operations at driveways and intersections in the influence area
- Pedestrian crossings have more challenging, longer crossing locations that are potentially less intuitive to drivers and to pedestrians compared to Alternatives 1 and 2
- Larger turning radii onto the northbound entrance ramp extends the merging point on the ramp and reduces distance to future 36th Avenue Interchange geometry compared to Alternatives 1 and 2; would require modifications to the ramp configurations planned at 36<sup>th</sup> Avenue
- Placing the crossovers at existing ramp terminal locations complicates traffic maintenance during construction

- Additional bridge and retaining wall structure construction and maintenance costs compared to other alternatives
- Larger footprint increases right-of-way impacts to surrounding properties, particularly at the approaches to the cross-overs where existing structures are closer to the roadway

### ***Alternative 5 – Displaced Left-Turn Interchange***

A displaced left-turn interchange is a diamond form that uses upstream traffic signals to shift left-turning traffic to the outside of opposing lanes in advance of the signalized ramp terminal intersections. Left-turning traffic onto the freeway entrance ramps travels on the outside of opposing traffic, rather than in between opposing through lanes as in a typical diamond interchange. The purpose is to increase traffic efficiency and reduce left-turn crashes. This signalized crossover reduces distances to each adjacent intersection on Tudor Rd. It preserves ramp-to-ramp movements but has some of the most extensive and complex construction of any alternative.

Pedestrian and bicyclist elements would be upgraded to contemporary configurations, and the ramp terminal intersections would be modified to reduce turning radii, create median refuge areas, and include enhanced non-motorized crossing treatments to increase quality of service and reduce crash risk compared to the existing interchange. This alternative is shown in Figure 6.



*Figure 6: Displaced Left-Turn (Alternative 5)*

The displaced left-turn interchange allows more efficient signal timing while removing left-turn conflicts compared to conventional diamond interchange left turns. While it supports efficient ramp-to-ramp movements, it requires four signalized intersections, has a large footprint, and is not intuitive for pedestrians. With limited space near Old Seward Highway, Shelkof Street, and MacInnes Street, it would be challenging to fit this interchange form in the project corridor.

## Benefits of Alternative 5

- Ramp-to-ramp movements can be readily served
- Updating crosswalks at the ramp terminal intersections to contemporary features and configurations increases user comfort
- The displaced left-turn configuration reduces left-turning vehicle crash conflicts compared to Alternatives 1, 2, and 3
- Maximizes the distance between the Tudor Road ramp terminal intersections and ramp geometry associated with the future 36th Avenue Interchange construction

## Drawbacks of Alternative 5

- Most complex diamond ramp configuration for all users; requires four signalized intersections, increasing long-term maintenance and operation costs; and has the largest footprint of the considered alternatives
- Requires the highest number of roadways (lane miles) and most complex pedestrian and bicyclist crossings across Tudor Road compared to other alternatives, increasing maintenance costs for snow removal
- Horizontal alignment of Tudor Road to and from the crossovers could impact driveways and intersections in the influence area
- The crossovers, ramp terminal intersections, and number of roadways complicate traffic maintenance during construction
- Larger bridge configurations could increase construction complexity and result in higher costs compared to some alternatives

## COMPARATIVE ASSESSMENT

A comparative assessment is a means of evaluating, ranking, and screening alternatives by considering how each alternative performs relative to others across a defined range of performance metrics. Absolute quantitative performance metrics are not needed at this stage; instead, comparing how each alternative serves prioritized metrics makes ranking and screening more straightforward.

Because accommodating forecast traffic growth is not the primary purpose of the interchange study, and each alternative is capable of providing adequate capacity and improving traffic operations over existing conditions, the team focused on differentiating considerations and metrics. The descriptions and features in the Alternatives Overview help characterize the benefits and drawbacks of each alternative.

The comparative assessment results presented in Table 1 provide a way to understand how each interchange alternative addresses the priority criteria relative to one another. These planning-level assessments support screening and prioritizing alternatives, leading to our recommendations for more detailed engineering and environmental evaluations.

Table 1: Compatibility Assessment

		Diamond Forms			
		Tight Diamond	Single Point	Diverging Diamond	Displaced Left
Considerations	Capacity	●	●	●	●
	Footprint	●	●	●	●
	Active Transportation Suitability	●	●	●	●
	Allows ramp-to-ramp Movements	●	●	●	●
	Compatible with 36th Avenue Interchange	●	●	●	●
	Constructability	●	●	●	●
	M&O	●	●	●	●
		● Optimal ● Fair ● Lowest			

## FINDINGS

The following summarizes the alternatives analysis findings:

- All interchange forms meet traffic operational needs for forecasted traffic volumes
- The footprint of the Diverging Diamond and Displaced Left-Turn interchanges would result in substantial impacts to private property and buildings, including increased right-of-way needs and negative effects on adjacent intersections and driveways
- The Single Point and Diverging Diamond interchanges do not readily accommodate ramp-to-ramp movements
- The Tight Diamond interchange performs well for active transportation users relative to other alternatives due to familiar and easy-to-understand features for both drivers and non-motorized users. Specifically, tighter radii, shorter crossing distances, ladder crosswalks will enhance driver yield compliance at marked crossings, reduce crash risk and improve quality of service for pedestrians and bicyclists
- The Tight Diamond interchange is compatible with the future 36th Avenue interchange project
- The Tight Diamond interchange is readily constructable, and traffic can be maintained (with possible reduced lane configurations) during construction
- The Tight Diamond interchange is a common and straightforward interchange form that provides a favorable balance of safety and operational improvements while minimizing the need for additional bridges and signals, large ROW acquisitions, business relocations, increased construction complexity, and higher overall costs associated with other alternatives
- The Tight Diamond interchange is compatible with complementary treatments surrounding the interchange, including access management, active transportation elements along and across Tudor Road at adjacent intersections, and transit stop enhancements or relocations

## RECOMMENDED ALTERNATIVE FOR FURTHER STUDY

The project team recommends advancing Alternative 2 – Tight Diamond Interchange for further evaluation in the project’s Categorical Exclusion (CE) environmental document. This recommendation reflects the comparative assessment and findings summarized above and is not a final preferred alternative under NEPA. The ultimate selection will be confirmed through the environmental review process.

## PUBLIC/STAKEHOLDER INPUT

### *Open House No. 1 Overriding Themes*

- Improve and add biking and pedestrian facilities to increase safety and streamline connections
- Address non-motorized access and crossings to transit stops near MacInnes Street
- Address high vehicle speeds on highway off-ramps to improve merging with frontage roads
- Reevaluate turn lanes and intersection movements to improve safety and usability
- Improve neighborhood environments by adding and repairing lighting and noise barriers

### *Interchange Workshop Overall Guidance*

- Add and improve pedestrian crossings and multimodal connectivity.
- Capitalize on existing space by considering side-street improvements instead of expanding the interchange footprint
- Consider long-term maintenance needs, including access for repairs, replacements, snow removal, visibility, and safety
- Improve neighborhood access and reduce delay by redesigning neighborhood intersections

### *Recommended Alternative Presentations*

The recommended alternative was presented to the following parties:

- Municipality of Anchorage (MOA) Planning and Zoning Commission (Concept Report approved)
- Anchorage Metropolitan Area Transportation Solutions (AMATS) Policy Committee
- AMATS Technical Advisory Committee
- AMATS Community Advisory Committee
- U-Med / Tudor Area Community Council (CC)
- Midtown CC
- Campbell Park CC
- Geneva Woods Homeowners Association
- Assembly Member Baldwin-Day
- Anchorage Transportation Fair

The project team was scheduled to present at the AMATS Freight Advisory Committee meeting on May 13, 2026, but due to a lack of quorum, the presentation was postponed to August 2026.

No opposition to the recommended alternative (Tight Diamond interchange form) was expressed.

Cc:

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