Midtown
CONGESTION RELIEF

Planning and Environmental Linkages Study Report

IRIS Project No. CSHWY00298



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ACRONYMS AND ABBREVIATIONS

2035 MTP ..... 2035 Metropolitan Transportation Plan Update
AADT ..... Annual Average Daily Traffic
AAG ..... Agency Advisory Group
ACS ..... Alaska Communications Systems
ACWA ..... laska Clean Water Actions
ADA ..... Americans with Disabilities Act
ADNR ..... Alaska Department of Natural Resources
ADF&G ..... Alaska Department of Fish and Game
AKEPIC ..... Alaska Exotic Plants Information Clearinghouse
AMC ..... Anchorage Municipal Code
AMATS ..... Anchorage Metropolitan Area Transportation Solutions
APDES ..... Alaska Pollutant Discharge Elimination System
APE ..... Area of Potential Effect
ASATP ..... Alaska Statewide Active Transportation Master Plan
AWWU ..... Anchorage Water and Wastewater Utility
BAG ..... Business Advisory Group
bgs ..... below ground surface
BTEX ..... Benzene, Toluene, Ethlybenzene, three isomers of Xylene
CAA ..... Clean Air Act
CAG ..... Citizens Advisory Group
CE ..... Categorical Exclusion
CEA ..... Chugach Electric Association
CFR ..... Code of Federal Regulations
CMAQ ..... Congestion Mitigation and Air Quality Improvement Program
CO ..... Carbon Monoxide
COA ..... Class of Action
CWA ..... Clean Water Act
DEC ..... Department of Environmental Conservation
DOT&PF ..... Department of Transportation and Public Facilities
DRO ..... Diesel Range Organics
EA ..... Environmental Assessment
EIS ..... Environmental Impact Statement
EPA ..... Environmental Protection Agency
ESA ..... Endangered Species Act
FAST ..... Fixing America's Surface Transportation Act
FEMA ..... Federal Emergency Management Agency
FHWA ..... Federal Highway Administration
FLMA ..... Federal Land Management Agency
FONSI ..... Finding of No Significant Impact
FTA ..... Federal Transit Administration
GCI ..... General Communications, Inc
GRO ..... Gasoline Range Organics
HOV ..... High Occupancy Vehicle
HSIP ..... Highway Safety Improvement Program
IC ..... Institutional Controls
LMP ..... Limited Maintenance Plan
LOS ..... Level of Service
LRTP ..... Long Range Transportation Plan
LWCF ..... Land and Water Conservation Fund

MCR.....Midtown Congestion Relief
ML&P ..... Municipal Light and Power
MOA .....Municipality of Anchorage
MOU.....Memorandum of Understanding
mph .....miles per hour
MTP.....Metropolitan Transportation Plan
NAC ..... Noise Abatement Criteria
NEPA .....National Environmental Policy Act
NHS ..... National Highway System
NHPP ..... National Highway Performance Program
NRHP ..... National Register of Historic Places
OSHP .....Official Streets and Highways Plan
PAIP..... Public and Agency Involvement Plan
parclo .....Partial Cloverleaf Interchange
PEL..... Planning and Environmental Linkages
QR .....Quick Response
RIRO ..... Right-in-right-out
ROW .....Right of Way
SEO.....Statewide Environmental Office
SHPO .....State Historic Preservation Office
STIP ..... Statewide Transportation Improvement Program
STP .....Surface Transportation Program
SWPPP.....Storm Water Pollution Prevention Plan
TA..... Transportation Alternatives Program
TDM ..... Travel Demand Management
TIP .....Transportation Improvement Program
TMDL.....Total Maximum Daily Loads
UMED.....University-Medical District
Uniform Act..... Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970
U.S. .....United States
USACE..... United States Army Corps of Engineers
USDOT.....United States Department of Transportation
UST .....Underground Storage Tank

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EXECUTIVE SUMMARY

Planning and Environmental Linkages (PEL) is a collaborative approach that incorporates information developed during project planning in the National Environmental Policy Act process. It is intended to reduce duplication between the planning and environmental processes and save costs by enabling faster project decisions that incorporate planning and environmental efforts, enable transparency from planning through to project delivery, and create opportunities for stakeholders to work together and be involved in a coordinated manner[1]. The objectives of this PEL study are to:

- Identify cost-effective corridor-wide improvements to address transportation issues
- Conduct a preliminary assessment of environmental effects from proposed improvements
- Involve the public and agencies throughout the planning process
- Document the planning process and decisions to support future project-level environmental reviews
- Streamline implementation of recommended projects.

The Midtown Congestion Relief project corridor is defined as the Seward Highway from the Tudor Road interchange to approximately the 20th Avenue intersection through Midtown Anchorage. The State of Alaska Department of Transportation and Public Facilities is seeking to extend the controlled access portion of the Seward Highway through some of the busiest intersections in the state, including 36th Avenue, Benson Boulevard, Northern Lights Boulevard, and Fireweed Lane (Figure ES-1).



Figure ES- 1: PEL Study Area and MCR Corridor

[1] https://www.environment.fhwa.dot.gov/env_initiatives/pel/corridor_nepa_guidance.pdf, accessed 8/19/19.

The population of Anchorage and the Matanuska-Susitna Borough has grown steadily over the last several years, with an average growth rate of between 1.3 percent and 2.3 percent respectively each year between 1997 and 2013[2]. This has created corresponding increases in levels of traffic on surface transportation facilities, particularly the Glenn Highway and Seward Highway. The Municipality of Anchorage's (MOA) Anchorage 2040 Land Use Plan envisions continued population growth in the Anchorage Bowl, with a healthy yet moderate forecast annual average population growth rate of 0.8 percent, and an employment growth rate of 0.9 percent envisioned between 2015 and 2040[3]. This forecast would yield as many as 47,000 additional people and 21,000 additional households in the Anchorage Bowl. It would result in an increase of approximately 15-20 percent more traffic on Anchorage's arterial street network, which is already strained with congestion along several network segments and intersections during peak periods.

To better accommodate the existing traffic and forecasted growth, the MOA 2035 Metropolitan Transportation Plan update (2035 MTP) envisions road improvements to connect the Glenn and Seward Highways[4]. The MOA is currently developing a year 2040 MTP update, which in its draft list of projects again provides for connecting the Glenn and Seward Highways as a needed capacity improvement for surface transportation in the Anchorage Bowl. The Glenn to Seward connection will result in traffic moving from other congested roads in the Anchorage network, and will double the volume of traffic on the Seward Highway in the next 20 to 30 years. Failure to complete this connection would require much more expensive and disruptive impacts/improvements to the alternative corridors.

Congestion at the intersection of Seward Highway and 36th Avenue creates approximately 250 driver hours of delay every weekday afternoon, particularly at the signalized intersections of 36th Avenue, Benson Boulevard, Northern Lights Boulevard and Fireweed Lane. Between 2016 and 2018, the study area had three of the top eight highest volume intersections in the Anchorage Bowl[5].

Safety is a key consideration along this corridor. Between 2016 and 2018, the study area had three of the top ten most accident-prone intersections, and three of the top ten highest severity crash intersections[6]. In addition to roadway characteristics, the facilities for non-motorized transportation (walking and bicycling) are inadequate in the study area. Facilities are undersized, in relatively poor condition, and not compliant with the Americans with Disabilities Act of 1990 (ADA) requirements. In particular, the north/south pedestrian corridors are not continuous, all pedestrian crossings are at-grade with traffic and require the use of signalized crossings, and traffic crossings are 7-9 lanes wide.

The PEL study considers solutions to improve traffic operations, motorized and non-motorized facilities, with a goal of eliminating at-grade turning conflicts and greatly improving safety on this corridor.

The project contributes to the State of Alaska Department of Transportation and Public Facilities' Mission to *"Keep Alaska moving through service and infrastructure"* by reducing injuries and property damage and by improving the mobility of people and goods.

[2] https://www.muni.org/Departments/OCPD/Planning/AMATS/Documents/CMP/2016/Status_of_System_22216.pdf, Accessed 8/23/19.

[3] http://www.muni.org/Departments/OCPD/Planning/Publications/Documents/Anchorage%202040%20Land%20Use%20Plan/Anchorage%202040%20LUP-Section1.pdf, Accessed 8/23/19.

[4] https://www.muni.org/Departments/OCPD/Planning/AMATS/2035%20MTP/2035_MTP.pdf, Accessed 8/23/19.

[5] Municipality of Anchorage Annual Traffic Report, 2016, 2017, and 2018.

[6] Ibid.

Vision and Goals

The study vision articulates a shared aspiration for corridor function and operations. The goals describe how the corridor vision will be achieved and reference the problems the study intends to address. The study vision is:

> "Improve safety and mobility for all users on the Seward Highway while enhancing east-west multimodal, safety, connectivity, and access for Midtown Anchorage."

The vision is visually depicted in Figure ES-2, with key elements being:

For Midtown:

- Increase access to adjoining land uses and connectivity between commercial and residential areas
- Increase multimodal (walking and bicycling) connections along and across the Seward Highway corridor

For the Seward Highway:

- Increase mobility
- Decrease direct access to the Highway from adjacent land uses

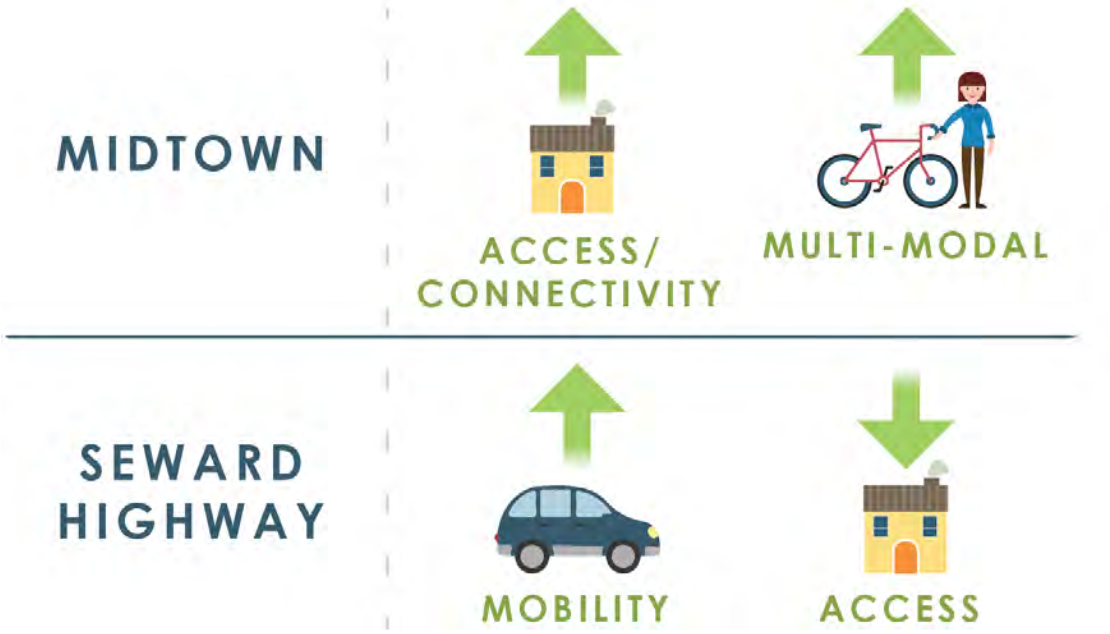


Figure ES- 2: Vision Statement Illustration

The study's vision will be achieved by identifying individual projects for construction that will accomplish the following goals:

Safety

- Improve safety for all users by reducing the frequency and severity of crashes, particularly at intersections

Access

- Maintain access to adjacent land uses and improve access across the corridor for all travel modes

Environmental

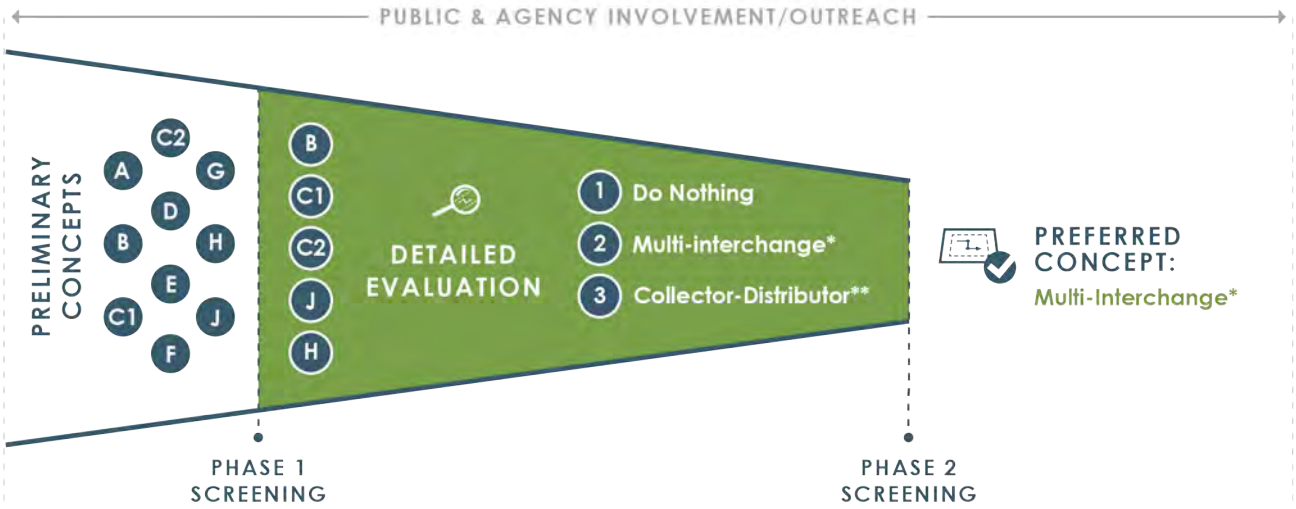
- Minimize impacts to residents, businesses, other stakeholders and the natural environment

Mobility and Connectivity

- Reduce traffic congestion on the Seward Highway and cross streets
- Improve connections for motorized and non-motorized users along and across the Seward Highway corridor

Improvement Concepts

The concept development process is summarized in Figure ES-3. A total of ten alternative improvement concepts, including one intermediate concept that could provide a staged approach to the larger concepts were considered as part of the PEL study. These concepts were the subject of Phase 1 screening, which resulted in five concepts being dismissed. Following several stakeholder and public meetings, four concepts (including the intermediate concept) were advanced and were further refined, and three concepts forwarded to Phase 2 screening. The concepts considered were the Multi-Interchange concept (two variants), and the Collector-Distributor concept. A "No Build" alternative was also considered in Phase 2 screening.



* *Two variants; formerly Concepts B & C2*
** *Formerly Concept J*

Figure ES- 3: Concept Development Process

Preferred Concepts

The **Multi-Interchange Concept (with two variants, Variant 1 – Median U-Turn, and Variant 2 – Loop Ramp)** was determined to most effectively deliver the vision and goals for the study area and corridor. It provides the greatest improvements to local access, through traffic mobility, safety, and congestion issues for motorized traffic and freight, and improves facilities for walking and bicycling along and across the Seward Highway corridor.

The Multi-Interchange Concept can be implemented using six individual projects, each with independent utility and logical termini.

Recommendations and Implementation

Table ES-1 summarizes the proposed improvements, and provides information on the logical termini, timeframe for improvements, and costs.

Table ES-1: Proposed Improvements

Recommended Project	Start	End	Project Area Description	Indicative Project Start Timeframe
Complete Streets, Aesthetic Improvements and Community Placemaking	Milepost (MP) 124.4	MP 126.4	City center placemaking initiatives throughout the Midtown Congestion Relief study area corridor, including activating covers proposed as part of Projects D and E.	Short Term (1-3 years)
Project A: Tudor Road Interchange Reconstruction	MP 124.4	MP 124.9	Tudor Road interchange with Seward Highway and extending south for approximately 1,500 feet, and north to approximately 1,400 feet south of the intersection with 36th Avenue.	Short Term (1-3 years)
Project B: Seward Highway/ 36th Avenue Intersection Improvements	MP 124.8	MP 125.6	North side of Tudor Road interchange and extending to the intersection of Seward Highway and Benson Boulevard.	Short Term (1-3 years)
Project C: Seward Highway/ Benson Boulevard, Northern Lights Boulevard and Fireweed Lane Intersection Improvements	MP 125.6	MP 126.4	Commencing from the north side of Benson Boulevard and extending to approximately 800 feet north of 20th Avenue, to tie in with the existing Ingra-Gambell couplet.	Short Term (1-3 years)
Project D: Seward Highway/ 36th Avenue Interchange	MP 124.6	MP 125.6	Approximately 650 feet south of the Tudor Road interchange and extending north to tie in with the frontage road network immediately south of the intersection of Seward Highway and Benson Boulevard. Placemaking initiatives identified by the Community Taskforce.	Medium Term (3-8 years)
Project E: Seward Highway/ Benson Boulevard to 20th Avenue Access Improvements	MP 125.2	MP 126.4	Commencing at the intersection of Seward Highway and Benson Boulevard, and extending north to tie in with the existing Ingra-Gambell couplet. Placemaking initiatives identified by the Community Taskforce.	Medium Term (3-8 years)

Rendering illustrations of improvements are shown on Figures ES-4 to ES-7.

Figure ES-4 shows the Multi-Interchange Concept – Variant 1 (Median U-Turn) looking south-east with a future covers shown over the depressed freeway section.



Figure ES-4: Multi-Interchange Concept – Variant 1(Median U-Turn) looking east with a cover over the depressed freeway section

Figure ES-5 shows the Multi-Interchange Concept – Variant 1 (Median U-Turn) looking south, with covers shown over the depressed freeway section.



Figure ES-5: Multi-Interchange Concept – Variant 1 (Median U-Turn) looking south with covers over the depressed freeway section

Figure ES-6 shows the Multi-Interchange Concept – Variant 2 (Loop Ramp) looking east.



Figure ES-6: Multi-Interchange Concept – Variant 2 (Loop Ramp) looking east

Figure ES-7 shows the Multi-Interchange Concept – Variant 2 (Loop Ramp) looking south, with covers shown over the depressed freeway section.



Figure ES-7: Multi-Interchange Concept – Variant 2 (Loop Ramp) looking south with covers over the depressed freeway section

The State of Alaska Department of Transportation and Public Facilities Statewide Environmental Office has developed an Interim PEL Questionnaire to support the review of the PEL study. This questionnaire has been used as guide throughout the planning process. The DOT&PF PEL Questionnaire is attached to this report as Appendix 1.

1.0 INTRODUCTION

1.1 Study Objectives

This study report documents the transportation issues, public and agency outreach efforts, the development of improvement concepts, and the evaluation of improvement concepts for the study area.

The Midtown Congestion Relief (MCR) project corridor is defined as the Seward Highway from the Tudor Road interchange to approximately the 20th Avenue intersection through Midtown Anchorage. The State of Alaska Department of Transportation and Public Facilities (DOT&PF) is seeking to extend the controlled access portion of the Seward Highway through some of the busiest intersections in the state, including 36th Avenue, Benson Boulevard, Northern Lights Boulevard, and Fireweed Lane. The PEL Study evaluates how to achieve this, whilst making safety improvements at the localized intersections and enhancing non-motorized facilities.

The population of Anchorage and the Matanuska-Susitna Borough has grown steadily over the last several years, with an average growth rate of between 1.3 percent and 2.3 percent respectively each year between 1997 and 2013[7]. This has created corresponding increases in levels of traffic on surface transportation facilities, particularly, the Glenn Highway and Seward Highway. The Municipality of Anchorage's (MOA) Anchorage 2040 Land Use Plan envisions continued population growth in the Anchorage Bowl, with a healthy yet moderate forecast annual average population growth rate of 0.8 percent, and an employment growth rate of 0.9 percent envisioned between 2015 and 2040[8]. This forecast would yield as many as 47,000 additional people and 21,000 additional households in the Anchorage Bowl. It would result in an increase of approximately 15-20 percent more traffic on Anchorage's arterial street network, which is already strained with congestion along several network segments and intersections during peak periods.

To better accommodate the existing traffic and forecasted growth, the MOA 2035 Metropolitan Transportation Plan update (2035 MTP) envisions road improvements to connect the Glenn and Seward Highways[9]. The MOA is currently developing a year 2040 MTP update, which in its draft list of projects again provides for connecting the Glenn and Seward Highways as a needed capacity improvement for surface transportation in the Anchorage Bowl. The Glenn to Seward connection will result in traffic moving from other congested roads in the Anchorage network, and will double the volume of traffic on the Seward Highway in the next 20 to 30 years. Failure to complete this connection would require much more expensive and disruptive impacts/improvements to the alternative corridors.

Congestion at the intersection of Seward Highway and 36th Avenue creates approximately 250 driver hours of delay every weekday afternoon, particularly at the signalized intersections of 36th Avenue, Benson Boulevard, Northern Lights Boulevard and Fireweed Lane. Between 2016 and 2018, the study area had three of the top eight highest volume intersections in the Anchorage Bowl[10].

Safety is a key consideration along this corridor. Between 2016 and 2018, the study area had three of the top ten most accident-prone intersections, and three of the top ten highest severity crash

[7] https://www.muni.org/Departments/OCPD/Planning/AMATS/Documents/CMP/2016/Status_of_System_22216.pdf, Accessed 8/23/19.

[8] http://www.muni.org/Departments/OCPD/Planning/Publications/Documents/Anchorage%202040%20Land%20Use%20Plan/Anchorage%202040%20LUP-Section1.pdf, Accessed 8/23/19.

[9] https://www.muni.org/Departments/OCPD/Planning/AMATS/2035%20MTP/2035_MTP.pdf, Accessed 8/23/19.

[10] Municipality of Anchorage Annual Traffic Report, 2016, 2017, and 2018.

intersections[11]. In addition to roadway characteristics, the facilities for non-motorized transportation (walking and bicycling) are inadequate in the study area. Facilities are undersized, in relatively poor condition, and not compliant with the Americans with Disabilities Act of 1990 (ADA) requirements. In particular, north/south pedestrian corridors are not continuous, all pedestrian crossings are at-grade with traffic and require the use of signalized crossings, and traffic crossings are 7-9 lanes wide.

The Planning and Environmental Linkages (PEL) study considers solutions to improve traffic operations, motorized and non-motorized facilities, with a goal of eliminating at-grade turning conflicts and greatly improving safety on this corridor.

This project contributes to DOT&PF's Mission to *"Keep Alaska moving through service and infrastructure"* by reducing injuries and property damage and by improving the mobility of people and goods.

The MCR PEL Study established a shared corridor vision and goals, garnered public and agency concurrence on the scope of individual projects, and identified environmental concerns in anticipation of environmental documentation efforts. The outcome of the PEL study is a planning document that identifies a corridor vision with several distinct projects to accomplish that vision, each project having a defined purpose and need, logical termini, and independent utility. This effort is state funded, but follows the federal process in anticipation of federal funding for project implementation. Following completion of the corridor study, DOT&PF will initiate the implementation of the highest priority project(s) recommended by the study.

1.2 PEL Study Process and Intent

The PEL process is a collaborative and integrated approach to transportation planning and project implementation. The Federal Highway Administration (FHWA) emphasizes the value of PEL for creating efficiency in transportation project development and supporting agencies to accelerate project delivery, and the flexibility of the process means that practitioners can implement PEL in a way that meets their individual needs.[12] The purpose of this PEL study was to improve planning-level and project-level decision making, expand the public outreach to improve consensus on plan recommendations, minimize duplication of effort during project-level environmental compliance efforts, and streamline project delivery timeframes. The PEL process achieved this by incorporating consideration of the natural and human environment, coordination with resource agencies and the public, and clear documentation of decisions and rationales into the planning process. The planning process will be linked through incorporation of planning information, analysis, and products into future project-level environmental reviews.

The FHWA outlines the following transportation planning factors to be considered in the transportation planning process[13]:

A. Support the economic vitality of the United States, the States, nonmetropolitan areas, and metropolitan areas, especially by enabling global competitiveness, productivity, and efficiency

B. Increase the safety of the transportation system for motorized and non-motorized users

C. Increase the security of the transportation system for motorized and non-motorized users

D. Increase the accessibility and mobility of people and freight

[11] Ibid.

[12] https://www.environment.fhwa.dot.gov/env_initiatives/pel/pel_fact_sheet.pdf.

[13] 23 U.S.C. 135(d)(1).

E. Protect and enhance the environment, promote energy conservation, improve the quality of life, and promote consistency between transportation improvements and state and local planned growth and economic development patterns

F. Enhance the integration and connectivity of the transportation system, across and between modes throughout the state, for people and freight

G. Promote efficient system management and operation

H. Emphasize the preservation of the existing transportation system

I. Improve the resiliency and reliability of the transportation system and reduce or mitigate stormwater impacts of surface transportation

J. Enhance travel and tourism

The transportation planning process typically looks at transportation planning networks at the broader system level and identifies transportation issues and needs to be addressed. Final Rule, 81 FR 34049, updates transportation planning legislation to further clarify and encourage the use of planning products in project development. It notes that FHWA and Federal Transit Administration (FTA) have long supported the use of planning products and decisions during the environmental review process through PEL, and that federal agencies are able to use and rely on planning analyses, studies, decisions, or other information for the project development and environmental review of transportation projects. The final rule explicitly recognizes a variety of PEL methods that may be used to integrate planning with environmental reviews.

For example, a PEL study evaluates a spectrum of potential improvements that work together to improve operations throughout a corridor or study area. Recommendations from the PEL study are then incorporated into the Statewide Transportation Improvement Program (STIP) or Metropolitan Transportation Plan (MTP), often as individual projects. As each project moves forward for implementation, it enters the environmental review process required under the National Environmental Policy Act (NEPA). Findings from this study will be used to make preliminary determinations regarding the appropriate level of NEPA documentation required for future projects (i.e., categorical exclusion [CE], environmental assessment [EA], or environmental impact statement [EIS]).

Under a Memorandum of Understanding (MOU) between FHWA and DOT&PF, DOT&PF has assumed FHWA's environmental responsibilities for federal-aid projects in Alaska effective November 10, 2017. Pursuant to 23 Code of Federal Regulations (CFR) 327(a)(2)(A), FHWA assigned and DOT&PF assumed all the United States Department of Transportation Secretary's responsibilities for compliance with NEPA, 42 U.S.C 4321, et seq., with respect to highway projects. This included statutory provisions, regulations, policies, and guidance related to the implementation of NEPA for federal-aid highway projects.

The FHWA guidance on the PEL approach identifies several products developed during the transportation planning process that overlap with elements of the project-level NEPA review. The planning document can provide the basis for several NEPA elements as shown in Figure 1.



Figure 1: Planning Document Elements

This PEL study identified the purpose and need (vision and goals) for needed improvements in the corridor by analyzing existing conditions (including environmental, transportation and community issues) and through extensive stakeholder and public engagement. The study identified potential solutions to address the deficiencies as well as provided a preliminary analysis of their potential environmental effects. Recommendations for specific improvements were developed based on that evaluation. While the planning process evaluated alternatives at a more conceptual level, it can provide basic information to support the project-level NEPA review analysis.

Because the planning process included opportunities for agency and public involvement and clearly documented the process used and rationale for decision making, these elements will be transferable from the planning process into future NEPA processes. Incorporation of these planning products into the project-level NEPA reviews enables project definitions/scopes that avoid issues that will cause delays, and provides information that leads to a better decisions with regard to the appropriate level of NEPA documentation for each project. This will result in a more efficient and streamlined project-level NEPA review. The PEL study for the MCR study area on the Seward Highway corridor develops and screens the preliminary concepts, thereby simplifying the project-level NEPA efforts.

1.3 PEL Study Elements

The MCR PEL study includes the following elements:

- Documentation of environmental baselines
- Identification of concerns and issues to be addressed (purpose and need, expressed as vision and goals)
- Public and agency involvement
- Identification of potential improvements to address concerns and issues (concepts)
- Screening and evaluation of concepts
- Evaluation of potential environmental effects.

This report documents the study process, summarizes the findings of the corridor analyses and the evaluation of the planning-level improvement concepts, estimates costs of individual projects, documents the preliminary environmental effects review for proposed improvements, and recommends a plan for implementation of the preferred corridor concept.

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2.0 STUDY AREA AND CORRIDOR

2.1 Study Area and Corridor

The MCR study area is broadly focused on Midtown Anchorage, and specifically the area bordered by approximately 20th Avenue to the north, Tudor Road to the south, Lake Otis Parkway to the east, and the A Street/C Street couplet to the west. Seward Highway is the study area corridor, which runs approximately north-south through the middle of the study area. The study area and corridor are illustrated in Figure 2:



Figure 2: Study Area and Corridor

2.2 Regional History and Context

Anchorage was founded in 1915 as a headquarters for the Alaska Railroad and incorporated in 1920. The city grew rapidly during World War II as the headquarters for the Alaska Defense Command of the U.S. Army, and Elmendorf Field and Fort Richardson were built during the war. The population grew from 3,000 in 1940 to 47,000 in 1951. In the 1950s, the Seward Highway, which links Anchorage to Seward was completed, opening the Kenai Peninsula to motor vehicles[14]. Anchorage became the 49th State in the United States in 1959.

On March 27,1964, the Good Friday Earthquake devastated much of downtown Anchorage, but the area was rapidly rebuilt. When oil was discovered at Prudhoe Bay on Alaska's North Slope, Anchorage again experienced an era of rapid growth as oil companies located their headquarters in the city. By the end of the 1970s, the greater Anchorage area was home to half the population of the state. To create better government efficiency, the city of Anchorage merged with the surrounding Greater Anchorage borough to form the Municipality of Anchorage in 1975[15,16].

The city of Anchorage has experienced organic growth from downtown to surrounding areas since it was first settled. Midtown Anchorage initially started being developed in the 1960s, and experienced rapid growth through the 1970s and 1980s onwards as the population of Anchorage increased with the oil boom. Midtown has grown significantly over the last 20 years, with the construction of offices, hotels, restaurants, shopping, and other amenities. Key focal points in Midtown include the Z.J. Loussac Library, concentrations of professional offices, and its draw as a regional employment center[17]. The development pattern of Midtown is characterized by primarily commercial uses on the east side of the Seward Highway, and commercial uses that quickly transition to older residential suburbs on the western side of the Highway.

The Seward Highway was constructed along the alignment of the Old Seward Highway through Midtown in 1951. Beginning in 1976, the state of Alaska designated three projects to reroute a large portion of the Seward Highway between Potter Valley and Midtown. The new Seward Highway through Midtown has been in its current location through Midtown since the late 1970s. East-west arterial roads through Midtown, including Tudor Road, 36th Avenue, Benson Boulevard and Northern Lights Boulevard connect Midtown to the University-Medical (UMED) district, downtown and locations south.

The *Anchorage Bowl 2025 Long Range Transportation Plan (2027 Revisions*) states the Seward Highway "is the dominant north-south traffic corridor in the Anchorage Bowl. Congestion brings north-south traffic to a standstill and creates a barricade for east-west traffic. Drivers move to alternative routes to avoid getting caught in the gridlock[18]."

[14] https://www.u-s-history.com/pages/h2370.html, accessed 8/16/19.

[15] Ibid.

[16] http://www.muni.org/Departments/OCPD/Planning/Documents/f2020_introduction.pdf, Accessed 8/16/19.

[17] http://www.muni.org/Departments/OCPD/Planning/Publications/Documents/Anchorage%202040%20Land%20Use%20Plan/Anchorage%202040%20LUP-Section2.pdf, accessed 8/18/19.

[18] http://www.muni.org/Departments/OCPD/Planning/AMATS/2025LRTP/2025_2027Chapter7.pdf, accessed 8/18/19.

2.3 Corridor Users

2.3.1 Non-motorized Transportation

The Seward Highway corridor between Tudor Road and 20th Avenue is not a heavily used corridor for non-motorized traffic, but it is an important interface between the predominantly residential areas to the east and the commercial areas to the west. Multi-use pathways are not continuous for north/south movements with significant gaps particularly between 36th Avenue and Tudor Road. Non-motorized facilities consist of an 8 to 10 feet wide pathway that is partially separated on the east side of the road between 36th and 15th Avenues, and a 6 to 10 feet wide, mostly roadside pathway on the west side of the road between 30th and 20th Avenues. Where gaps in the trail system exist, non-motorized users must use the roadside shoulders (e. g. commuter and recreational cyclists) or alternate routes along secondary streets. Alternate routes require significant out-of-direction travel. Non-motorized users cross the streets predominantly at signalized intersections with the only grade-separated crossings located at Tudor Road on the south and at the Chester Creek Trail on the north. Long cycle lengths (160+/- seconds) and wide intersections (crossing 6 to 8 lanes on each leg) are typical in the study area. Overall, the large intersections, lack of continuous and separated pathways, and high traffic volumes all combine to make the Seward Highway corridor unappealing for non-motorized users. Generally, pedestrians and bicyclists are trying to get across the corridor as quickly as possible and make their way to other more appealing north/south routes located along Lake Otis Parkway or the A/C couplet. Figure 3 illustrates the locations of pathways in the corridor with approximate daily count data for the primary movements.

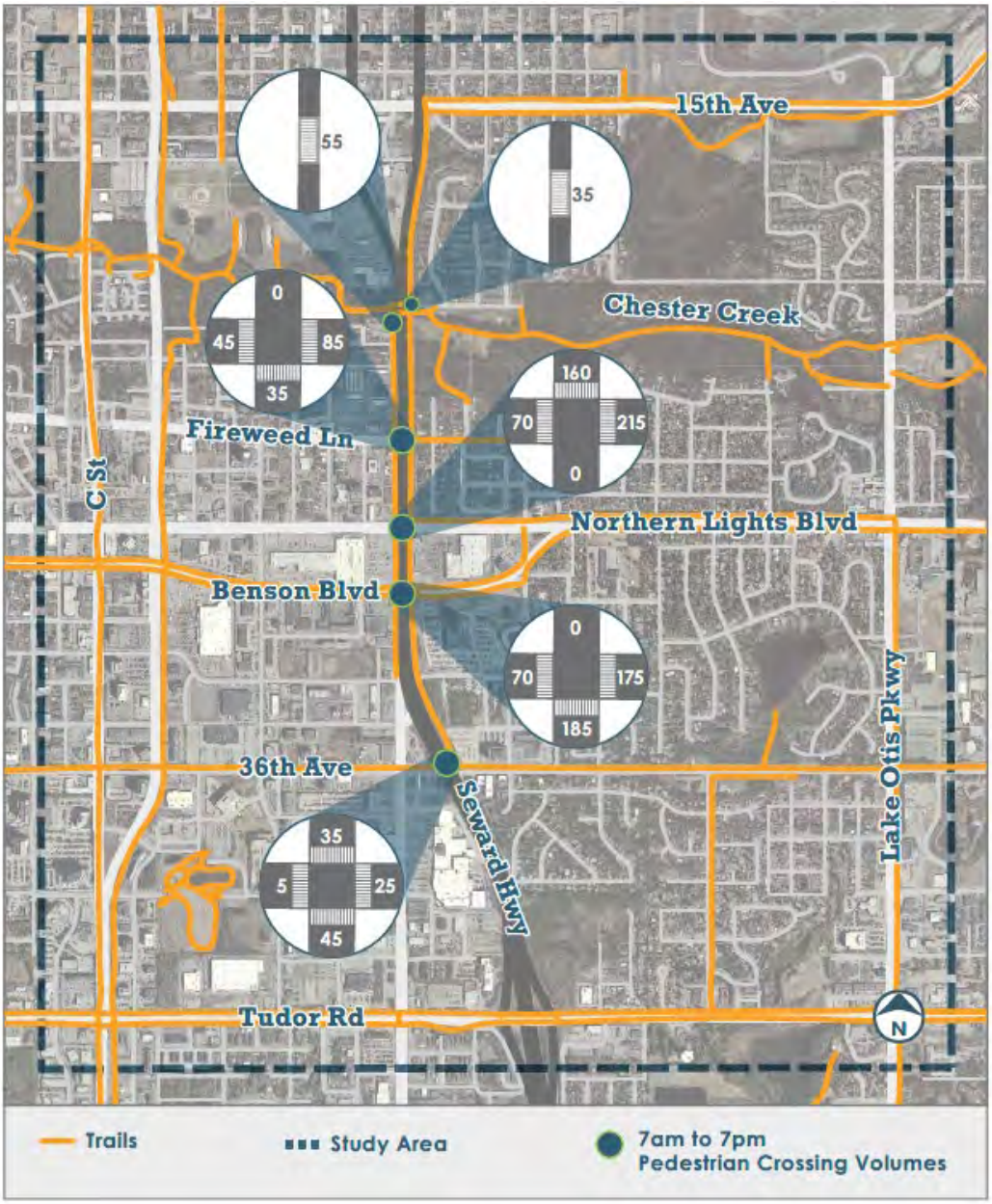


Figure 3: Pedestrian Routes and Crossing Volumes

2.3.2 Motorized Transportation

The Seward Highway corridor is the primary north/south corridor in Anchorage with annual average daily traffic (AADT) volumes of about 54,000 vehicles per day. It is functionally classified as an Interstate and in combination with the Glenn Highway has long been envisioned to provide a future freeway type facility in the Anchorage Bowl. Seward Highway is a freeway facility south of the Tudor Road interchange and transitions to a 45 mph signalized expressway approximately 1,000 feet south of the Seward Highway/36th Avenue intersection. Seward Highway is used by the full spectrum of motorized users in Anchorage. With between three and four travel lanes in each direction, it is designated as a freight corridor and is generally the fastest route between downtown and south Anchorage. Signalized crossings occur at four major/minor arterial intersections with 36th Avenue, Benson Boulevard, Northern Lights Boulevard, and Fireweed Lane over a short one-and-a-half mile length of highway.

To gain a better understanding of the types of trips occurring in the Seward Highway corridor, Bluetooth data was collected at strategic locations to understand the origin and destination of Seward Highway motorists. The primary finding of this data collection effort is that most users who enter and leave the study area, are motorists that are destined for or originated by the Midtown area (Figures 4 and 5). Depending on the time of day, the trips generated by the Midtown area represent 60 to 80 percent of the motorists on Seward Highway. This data sends a strong message that convenient access to/from the Seward Highway is essential to meet the needs of Midtown users.

Seward Highway as currently configured is trying to meet the needs of all users – through traffic commuters, commercial and residential access, freight, and short and long trips. To meet these needs, the signal progression in the corridor favors the higher volume north/south through traffic with single and double auxiliary lanes at all signalized intersections to separate out turning movements from the higher speed through traffic. Reduced green time for the cross-streets generally results in lower LOS for the cross-streets. Benson Boulevard and Northern Lights Boulevard have been configured as a one-way couplet that extends just east of Seward Highway and enables the signals to operate more efficiently without dedicated phases for east/west turning movements. Several commercial driveways and lower volume approach roads are located on each side of Seward Highway between 36th and 20th Avenues. A continuous raised median limits access to right-in, right-out (RIRO) at all unsignalized approaches.

The lane configurations on Seward Highway result in large, wide intersections that are daunting for pedestrians to cross on a single signal phase, but the medians are too narrow to accommodate a refuge area to stage the crossing. As a result, pedestrian green time is often a limiting factor for cycle length and precludes a more efficient signal timing plan for motorists.

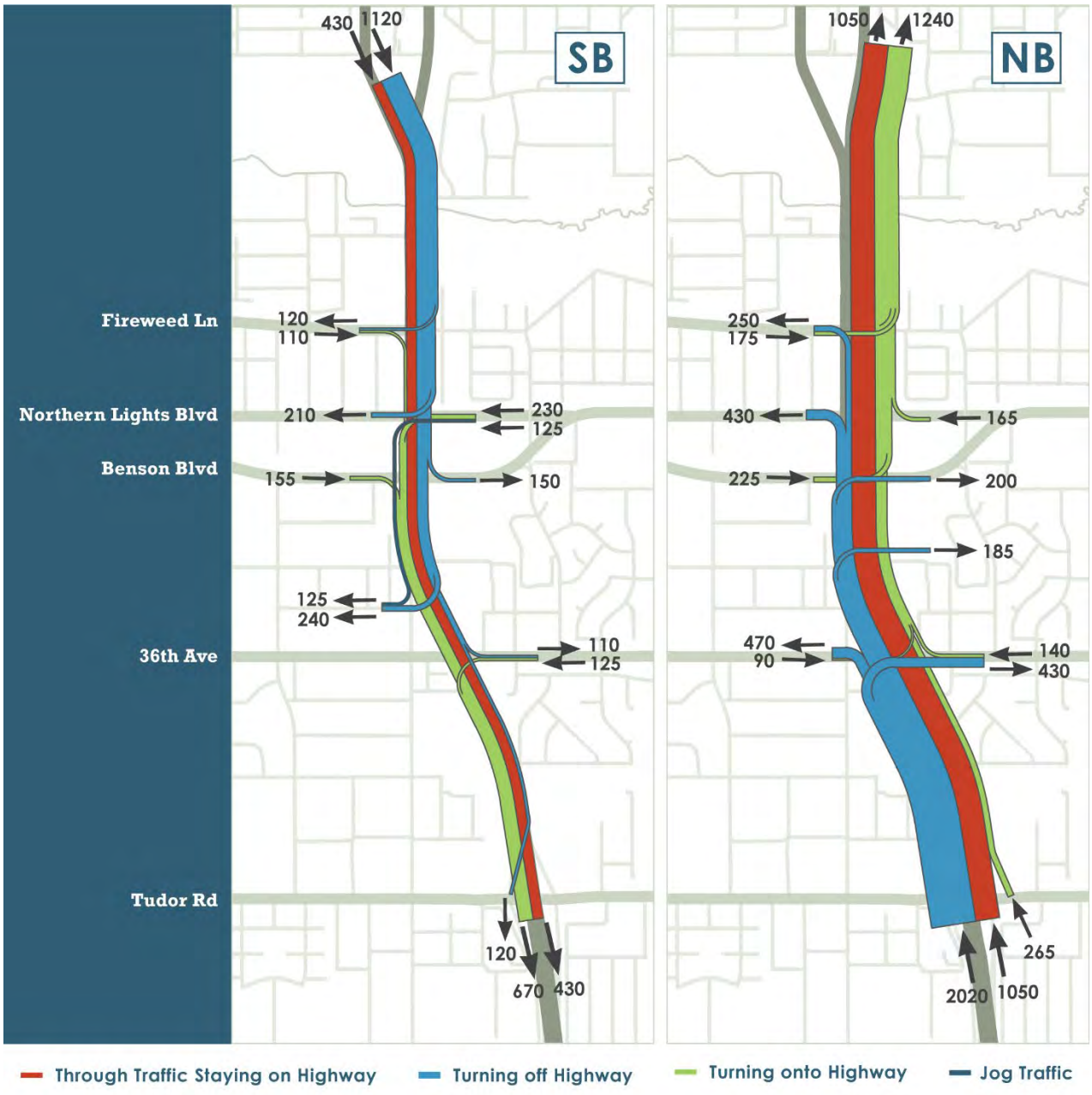


Figure 4: Origin and Destination of Traffic from Bluetooth Data – AM Traffic

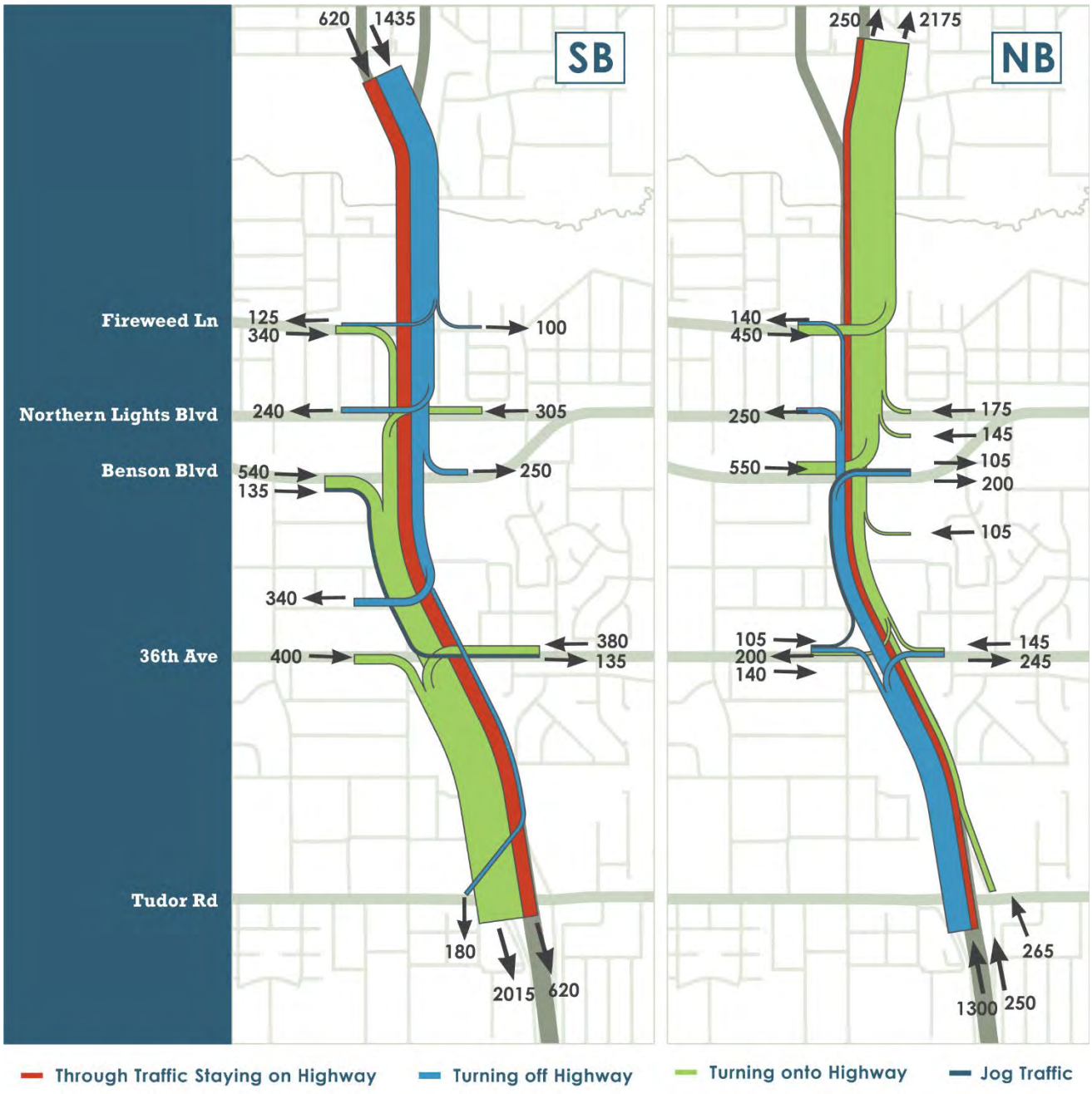


Figure 5: Origin and Destination of Traffic from Bluetooth Data – PM Traffic

2.3.3 Land Uses Along Seward Highway Corridor

The Municipality of Anchorage 2040 Land Use Plan was adopted in 2017, and it sets out different land use designations to represent future intensity and distribution of land uses. The majority of the area surrounding and to the west of the Seward Highway corridor is designated as a City Center. Additional corridor designations in the area include a commercial corridor along Tudor Road west of the Seward Highway and extending slightly east of the Tudor Road interchange, a main street corridor along Fireweed Lane east of Seward Highway, and a small area of commercial corridor near the corner of 36th Avenue and LaTouche Street. Neighborhood designations within the study area include a significant swathe of single-family and two-family neighborhood on the east side of Seward Highway, and small

areas of urban residential - high density and compact mixed residential – low density interspersed throughout the study area. In addition, a traditional neighborhood design growth-supporting feature is shown in the northern part of the study area, covering the area from Northern Lights Boulevard north on both sides of the Seward Highway. A second traditional neighborhood design growth-supporting feature is located near the corner of Tudor Road and Lake Otis Parkway. A greenway-supported development growth supporting feature is shown generally along the alignment of Fish Creek, through the Helen Louise McDowell Sanctuary and extending west across the Seward Highway and approximately following the alignment of 40th Avenue (Figure 6). The meaning of these land use designations is described in further detail in section 2.4.3 of the report.

The land use designations in the Land Use Plan largely align with existing land uses in the study area. The Midtown City Center is a regional employment center that has been growing rapidly over the past 20 years. The area includes extensive medium to large office buildings and a variety of large and small retailers that is second only in density to downtown Anchorage. Key retail businesses in the area include large format retail, three grocery stores, the Midtown Mall, and numerous smaller footprint businesses that are either local or national brands. Midtown is a major employment center for a broad range of businesses that are located in office buildings throughout Midtown City Center. Civic land uses include the Z.J. Loussac public library, and Cuddy Family Midtown Park. Residential land uses include large areas of single and two-family housing, and some of the oldest neighborhoods in Anchorage are within the study area. These include Geneva Woods, College Village, and Rogers Park. Other residential areas are more dispersed throughout Midtown, and include a mix of single and two-family housing, as well as higher density housing types.

The Seward Highway traversed through Midtown long prior to the growth of Midtown as a regional employment center. It was constructed on its current alignment in the 1970s, and Midtown has grown around the highway and placed increasing pressure on it as a key transportation facility for access to and from Midtown land uses for both residents and workers. Numerous attempts have been made to provide for a grade-separated freeway facility, but none of these have been successful to date.

The City Center designation encourages continued medium-to-high density development, walkable streets with wider sidewalks and pedestrian amenities, mixed use residential development, and strong connectivity to residential neighborhoods. The existing land uses, forecast growth, and City Center designation reinforce the need for improved connectivity across the Seward Highway corridor for non-motorized and motorized users and emphasizes the need for convenient, safe, and high capacity access to the arterial and freeway network. Further detail on the implications of the Land Use Plan designations for future land uses and transportation needs is described in section 2.4.3 of this report.

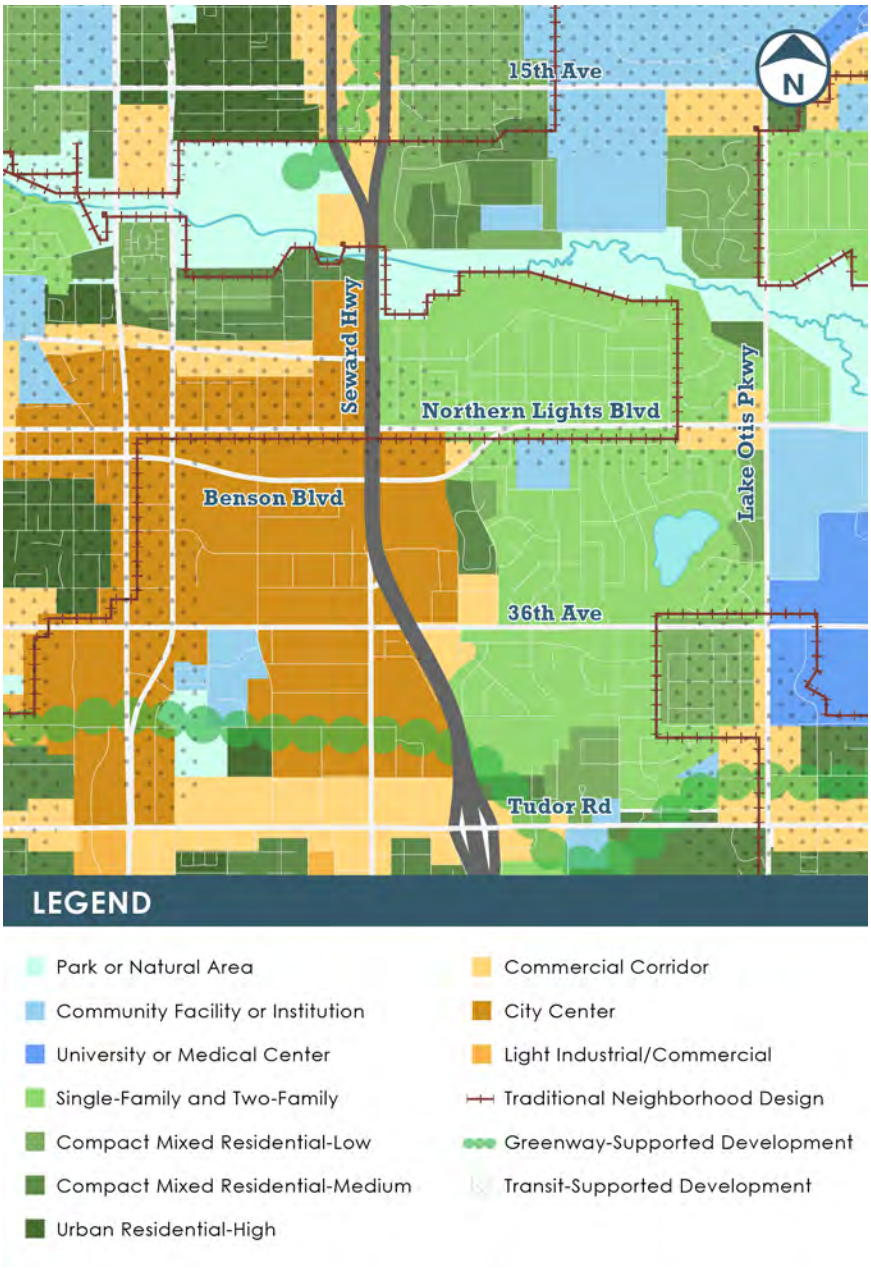


Figure 6: Land Use Plan Enlargement of Study Area

2.4 Planning and Policy Framework

The following section details the planning and policy framework applicable to the MCR PEL study. The framework starts at a high level, considering statewide plans, and then moves to more detailed plans as prepared by Anchorage Metropolitan Area Transportation Solutions (AMATS) and MOA. Each of these plans provides strategic context to the study area, with the local plans providing more granular information on the transportation network and surrounding land uses in Midtown.

2.4.1 Statewide Plans

Alaska Statewide Long-Range Transportation Plan "Let's Keep Moving 2036" (2016)

The Alaska Statewide Long-Range Transportation Plan "Let's Keep Moving 2036" (LRTP) is a system-level transportation plan that addresses all modes, and identifies policy priorities. It does not list projects and identify local transportation priorities. The 2036 vision for the transportation system is *"to provide a network that enables a robust and growing economy and meets the mobility needs of the state's residents."* The LRTP sets a policy framework, including prioritizing investments that increase productivity and reliability and reduces safety risks, focuses investment on the National Highway System (NHS), increased pedestrian and bicycle facilities in urban areas through corridor plans, ensures freight corridors are retained and improved, and addresses corridor preservation and access management in corridor plans.

Alaska Statewide Active Transportation Master Plan (2019)

The Alaska Statewide Active Transportation Master Plan (ASATP) is a modal plan focusing on walking and bicycling to improve safety, increase accessibility, promote healthy lifestyles, and develop a safer and more efficient active transportation network and infrastructure. The plan has a vision that *"people in Alaska will enjoy equitable, accessible, safer walking and bicycling opportunities as an integral part of daily life."* The plan does not list specific projects, but sets out goal areas, objectives and recommended actions to improve active transportation in Alaska.

2.4.2 Anchorage Metropolitan Area Transportation Solutions (AMATS) Plans

Anchorage Bowl 2025 LRTP with 2027 Revisions (AMATS 2007)

The Anchorage Bowl 2025 LRTP outlines how the MOA can improve the transportation system to make Anchorage a better place to live, work, and raise future generations of Alaskans. It complements the vision mapped for the community in the Anchorage 2020 Comprehensive Plan. The LRTP notes that Anchorage needs a balanced transportation system that includes a connected highway network, robust transit system, integrated trails, and other elements to make the current system more efficient. It identifies the need to build missing links in the road, sidewalk, and trail systems, and do a better job of maintaining them throughout the year. The overarching goal to guide development of the LRTP is:

> "Develop a balanced multimodal transportation system based on Anchorage 2020 guidance (goals, policies, strategies, and maps) that serves as a catalyst to enhance the quality of life enjoyed by the current and future residents of Anchorage."

The overarching goal is supported by specific goal statements and objectives addressing significant transportation issues including safety and health; building, operating, and maintaining quality, affordable, and attractive improvements; economic vitality; optimizing community connectivity; improving mobility and access in Anchorage and the region; promoting transportation choices; and preserving and enhancing the natural and developed environment.

The LRTP identifies the following programs to achieve the LRTP's vision:

- Developing a new highway connection between the New Seward and Glenn Highways
- Providing better year-round maintenance of existing and future roads, sidewalks, and trails
- Developing an effective Express Bus Transit and High Occupancy Vehicle (HOV) strategy for the Glenn Highway Corridor
- Significantly expanding People Mover and other forms of transit
- Investing in pedestrian and bicycle improvements in key areas as a way to support alternative modes of transportation
- Developing new road connections where significant out-of-direction travel is occurring and impacting more people.

Metropolitan Transportation Plan 2035 Update/ 2040 Metropolitan Transportation Plan

The 2035 MTP update for the Anchorage Bowl and Chugiak-Eagle River is the comprehensive, multimodal blueprint for transportation systems aimed at meeting the current needs of the growing community. It is an interim plan, creating a guiding document while the MTP 2040 update is being prepared. The MTP 2040 plan development process commenced in 2017, and it will identify transportation needs that reflect the regions changing population and demand for housing, land use, and transportation choices. It will identify transportation and mobility needs, opportunities, policies and strategies needed to support the multimodal transportation system. It is expected that the 2040 MTP will be approved in late 2019. Relevant goals of the 2035 Interim MTP include:

- **Goal 1:** Ensure development of a balanced transportation network for people, goods, and services that provides an acceptable LOS, maximizes safety, minimizes environmental impacts, provides a variety of transportation choices, and supports planned land use patterns.
- **Goal 2:** Provide a transportation system that moves people and goods safely and securely throughout the community.
- **Goal 3:** Develop an attractive and efficient transportation network that considers the costs of building, operating, and maintaining the system; the equity of all users; public health impacts; community values; and social justice.
- **Goal 4**: Develop a transportation system that supports a thriving, sustainable, broad-based economy by locating and using transportation infrastructure and facilities to enhance community development.
- **Goal 5**: Establish community connectivity with safe, convenient, year-round automobile and non-automobile travel routes within and between neighborhoods, commercial centers, and public facilities.
- **Goal 6:** Improve access to goods, jobs, services, housing, and other destinations while providing mobility for people and goods in a safe, affordable, efficient, and convenient manner.
- **Goal 7:** Provide a transportation system that provides viable transportation choices among various modes.

- **Goal 8:** Design and maintain a transportation system that respects the integrity of the community's natural and built environment and protects scenic vistas.

A key element of the MTP is the travel demand model (TDM) for the MOA urbanized area. The TDM is the primary tool of AMATS in its analysis and development of the MTP. The MCR PEL study uses the TDM to forecast the how improvement concepts perform over the planning horizon of the PEL study (2028 for the intermediate year; and 2048 for the forecast year).

Anchorage Bicycle Plan

The purpose of the Anchorage Bicycle Plan is to expand bicycle infrastructure and the use of bicycles for transportation. Other integral parts of the plan include programs to improve enforcement, safety, education, and support facilities, such as bicycle parking and signage. The plan considers existing conditions and issues, and recommends a bicycle network for the Anchorage Bowl. Within the study area, the Seward Highway, Lake Otis Parkway and C Street, and the Northern Lights Boulevard/Benson Boulevard couplet are part of the core bicycle network, and Midtown is identified as a major employment center. The plan sets out a proposed bicycle network for the Anchorage Bowl, which includes key features within the study area as shown in Figure 7.

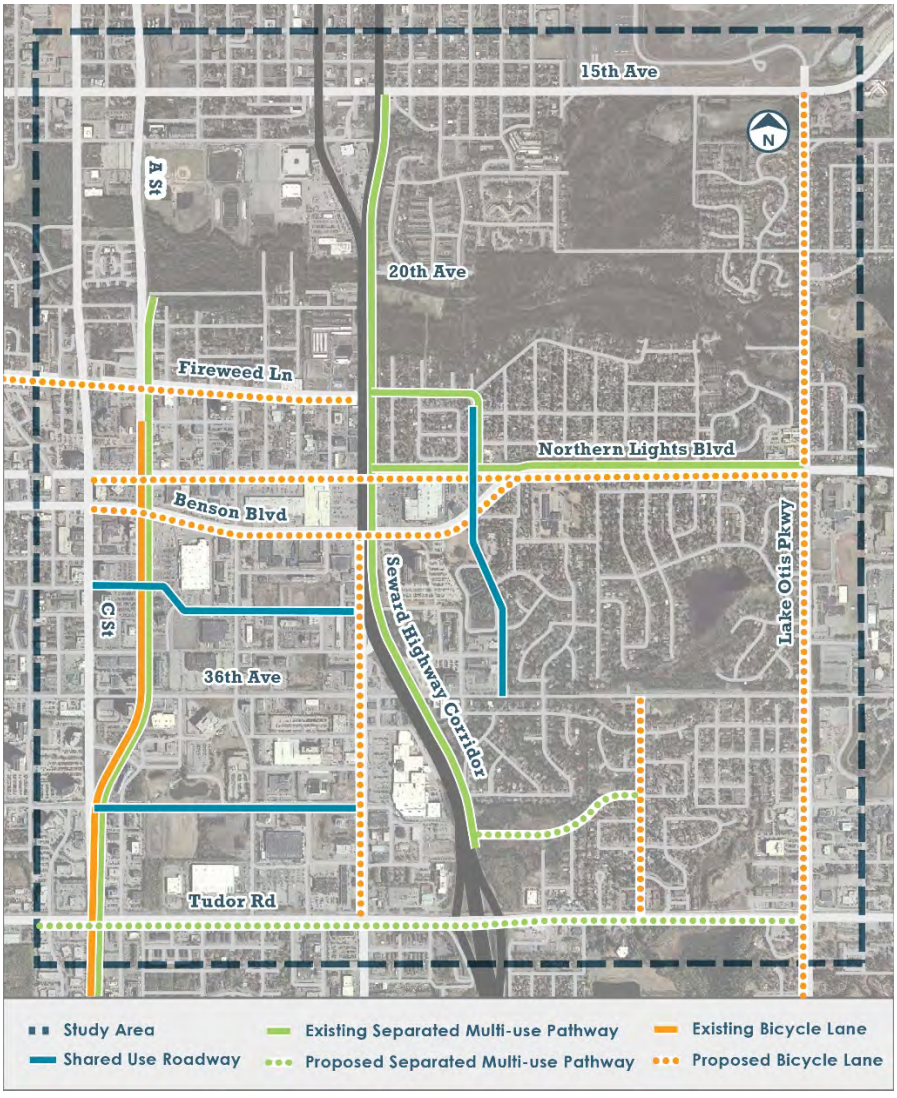


Figure 7: Key Features for Bicycle Transportation from Anchorage Bicycle Plan

Anchorage Pedestrian Plan (2007)

The purpose of the Anchorage Pedestrian Plan is to establish a 20-year framework for improvements that will enhance the pedestrian environment and increase opportunities to choose walking as a mode of transportation. The plan focuses on pedestrian facilities adjacent to streets and roadways as well as walkways to connect adjacent subdivisions and schools. It documents existing sidewalks in Anchorage and existing conditions for walking. Figure 8 illustrates project priorities identified in the study area.



Figure 8: Project Priorities Identified in Anchorage Pedestrian Plan

AMATS is currently preparing an Anchorage Non-motorized Transportation Plan, which is intended to supersede the Anchorage Pedestrian Plan.

2.4.3 Municipality of Anchorage Plans

Anchorage Bowl Comprehensive Plan 2020

The Anchorage Bowl Comprehensive Plan 2020 was prepared to guide policy decisions regarding future land use and plans to accommodate an increase in population within the Anchorage Bowl. The plan states that traffic congestion is the biggest issue associated with automobile travel. The Anchorage 2020 goal for Land Use and Transportation is to address the designation of land for various private and public uses, and how they are connected. One of the main issues that will influence future growth is the downtown and Midtown areas, which create the most congested and busiest transportation corridors (Issue 1). Issue 4 notes the overall need for transportation improvements, including that safe, efficient movement of people and goods throughout the town is vital to the quality of life and overall economy. Chapter 5, Plan Implementation includes the following policies:

- 1. The Land Use Policy Map shall guide land use decisions until other strategies are adopted that provide more specific guidance (see transportation-specific plans).
- 29. The plan's goals, policies, strategies, and maps shall guide development of the LRTP for the location of road improvements and new alignments.
- 30. Transportation and land use policies and programs shall include (amongst other things) congestion management and roadway improvements.
- 32. Congestion management techniques shall be applied to maximize efficient use of the existing road system.

Anchorage 2040 Land Use Plan

The Anchorage 2040 Land Use Plan is a targeted update to the Anchorage 2020 – Anchorage Bowl Comprehensive Plan. It updates population and economic forecasts for city growth and land needs through the year 2040 and includes a Land Use Plan map to provide the blueprint for how Anchorage will accommodate economic growth and meet the forecast housing needs of the city. The following elements are identified in the Land Use Plan map (see Figure 9):

- Midtown on the western side of Seward Highway is a City Center.
- Fireweed Lane west of the Seward Highway is a Main Street Corridor.
- Tudor Road is a commercial corridor west of the Seward Highway (Tudor Road interchange), and extending east for a short distance past the interchange.
- A small commercial corridor exists on the eastern side of 36th Avenue near the intersection of LaTouche Road.
- Fireweed Lane, both east and west of the Seward Highway corridor, is identified as having Traditional Neighborhood design, a growth-supporting feature.
- A second Traditional Neighborhood Design growth-supporting feature extends from the area near the corner of Tudor Road and Lake Otis Parkway eastward primarily along Tudor Road.

- There is a band of greenway-supported development traversing the Seward Highway from the Helen Louise McDowell Sanctuary and moving westward along approximately the alignment of 40th Avenue, which was the former alignment of Fish Creek.
- There area surrounding the Z.J. Loussac public library is designated Community Facility or Institution.
- There are small pockets of open space land throughout the study area that are designated Park or Natural Area, or Other Open Space. The most notable park is the study area is the Cuddy Family Midtown Park.
- The remainder of the study area is designated Residential, and includes Single-Family and Two Family, Compact Mixed Residential-Low, Compact Mixed Residential-Medium, and Urban Residential-High.

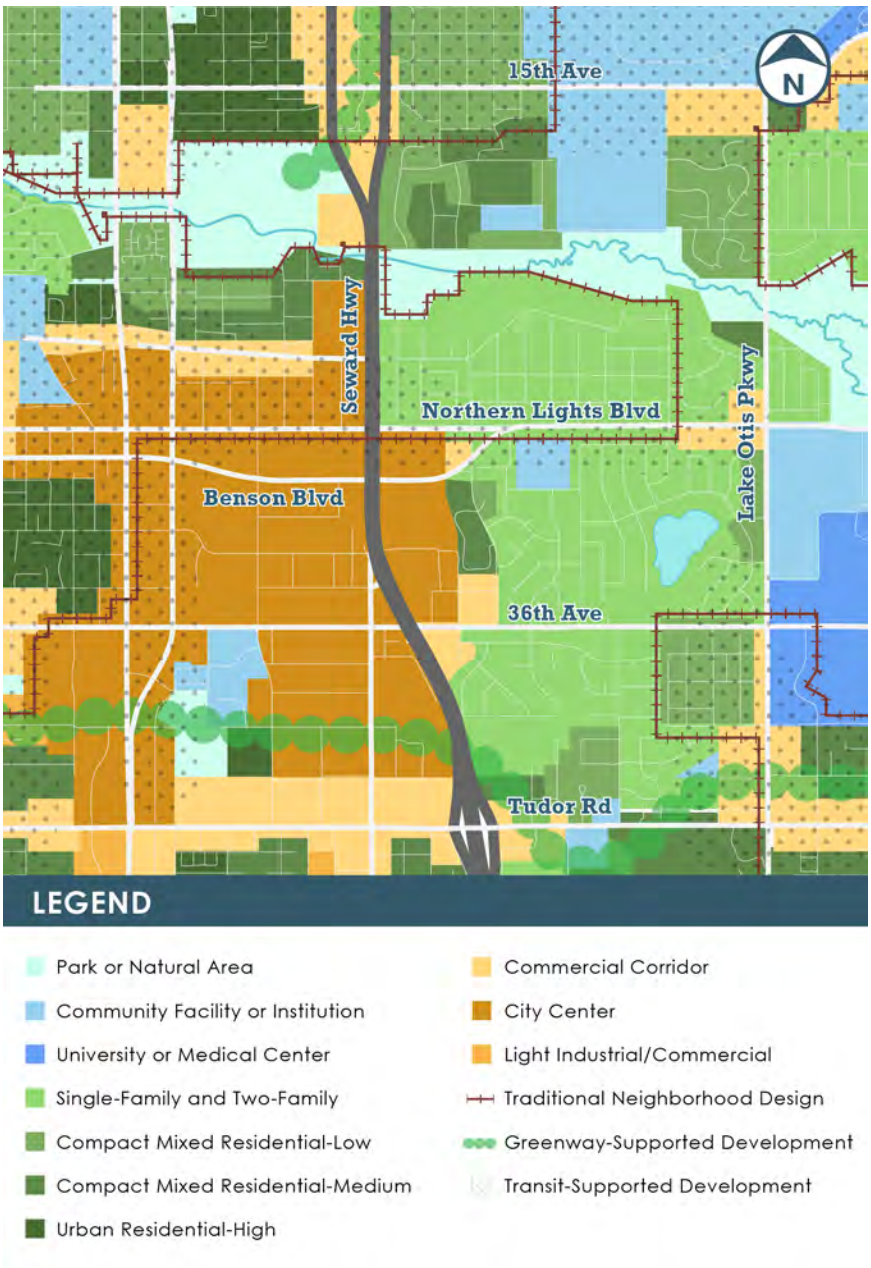


Figure 9: Anchorage 2040 Land Use Plan Features

A brief overview of designations in the study area is provided below. An understanding of the designations present in the study area helps to provide an understanding of the future mix of land uses anticipated. The future land uses will impact the expected traffic volumes, origin and destination of traffic, multimodal transportation needs, and travel demand management anticipated to support effective access to future land uses.

- **Centers**

  Centers are focal points for locating community and civic activity, and government, commercial, entertainment, cultural, and residential uses. They exhibit the highest degree of interaction between different land uses. They are intended to evolve to a more compact, pedestrian and transit-oriented pattern of development. Centers also allow housing within commercial projects, or stand-alone residential projects at densities that support nearby businesses.

  More than just fulfilling growth targets, centers are intended to be attractive places in which to live, work, and play. To address the needs of growth in these locations, the 2040 Land Use Plan recommends investment in infrastructure, services, and activities such as libraries, public safety, public spaces, trails, and transit. Midtown City Center is the largest single land use designation in the study area.

  - **City Center:** This designation applies to Downtown and Midtown. It provides for the highest concentration and diversity of employment, civic and cultural institutions, and regional commercial uses. Urban housing and residential mixed-use is encouraged. Midtown has seen substantial growth over the last 20 years in new construction of offices, hotels, restaurants, shopping, and other amenities. Midtown receives focus due to the Z.J. Loussac Library, concentrations of professional offices, its potential for adjacent neighborhood redevelopment, and its draw as a regional employment center.

- **Corridors**

  Corridors connect centers, employment hubs, and neighborhoods. Corridors include a growing mix of uses to support a range of shopping, retail, medical and professional services, and low- to moderate-intensity employment. Some corridors are automobile-dependent and characterized by low-rise, stand-alone retail buildings or multi-tenant strip malls. Other corridors are designated to focus more on accommodating pedestrians and transit-oriented development. These corridors often feature older buildings, smaller-lot development patterns, more frequent transit service, and are well positioned for infill and redevelopment. Development in corridors adjacent to established neighborhoods will transition from higher-intensity uses to lower intensities on the edges of these corridor areas to be compatible with the adjacent residential neighborhoods. The corridor designations describe future land use activities and patterns of development in commercial areas along important streets.

  - **Commercial Corridor:** This land use designation applies to auto-oriented, low-intensity retail, office, and commercial services along arterial corridors, which support surrounding suburban residential neighborhoods. Most commercial corridors are envisioned to evolve through infill commercial and housing development, and investment in streetscape and pedestrian enhancements. Revitalization of commercial properties will promote economic vitality and enhance shopping activities by trending toward a mix of uses.
  - **Main Street Corridor:** This designation provides for commercial and mixed-uses within urban neighborhoods that can evolve as pedestrian-oriented, transit-served “main street”

development. Main streets feature transit access, wider sidewalks, pedestrian amenities, street tree landscaping, and relocation of utility poles and boxes and other impediments to a safe, comfortable pedestrian environment. Compared with Commercial Corridors, many of these areas feature street grids, smaller lot development patterns, greater building lot coverage, limited front and side yard setbacks, and a network of frequent street and sidewalk connections into adjacent neighborhoods along the corridor. The close proximity of neighborhoods to the corridor has a strong impact on the character of development. In many cases, redevelopment will be more compact, with a greater variety of smaller buildings. Small businesses, live/work spaces, and new infill housing will be established through redevelopment and reuse of existing buildings.

- **Growth-Supporting Features**

  Growth-supporting features have been identified to support resilient growth. They catalyze and enhance development by: reducing traffic congestion; lowering household travel costs; reducing road infrastructure and maintenance costs; and using less land for parking. They include enhancements to neighborhood design and natural resources. Such development meets the demand for walkable neighborhoods and connections to businesses. Each of these features is gaining interest and public support because they enhance property values. Each growth-supporting feature modifies an area's underlying land use designation by introducing development concepts that otherwise might not exist at the site.

  - **Transit-Supportive Development:** Transit-supportive development (TSD) identifies corridors where expanded public transit service will support a compact, walkable pattern of commercial, residential, and/or mixed-use development. Over time, compact development can create ridership demand to support more frequent bus service. It will give Anchorage's households more choices in how to get to work and other destinations. It also provides more opportunities to live in a walkable, accessible, and affordable neighborhood environment. TSD could affect the design of streets, pedestrian facilities, and property developments for up to a quarter mile or a 5- to 15-minute walk from the transit route. Northern Lights/Benson Boulevard is identified as a TSD corridor.
  - **Greenway-Supported Development:** Greenway-Supported development (GSD) identifies where new development will incorporate natural open spaces, creek corridors, and pedestrian routes. GSDs are a concept that focuses on catalyzing new infill and redevelopment projects, based on a creek or greenway restoration. Future development projects have the potential to interface with revitalized urban creeks, wetlands, wildlife habitats, public spaces or multi-use trails. A typical GSD development pattern would extend for up to a quarter mile or a 5- to 15-minute walk from the creek corridor or trail greenway. GSDs would enhance new construction and property values by attracting more uses, housing, businesses, and employment. Commuter trails within greenways improve travel alternatives between centers and surrounding neighborhoods. New development projects benefit from trail access with decreased parking requirements and lower traffic volumes, as well as a higher quality urban environment. GSDs are a powerful place-making feature within any redevelopment area. Daylighting Fish Creek, currently piped under Midtown, to a surface drainage with a parallel trail system, from west of Minnesota Drive to east of Seward Highway, is identified as the highest priority GSD in the Anchorage Bowl. The plan notes that GSDs are not a regulation or zoning district. Implementation will come through partnerships, agreements, and small area implementation plans.

- **Traditional Neighborhood Design:** This growth-supporting feature enhances existing urban patterns of development. These older urban neighborhoods and district have a more highly interconnected street system, smaller block sizes, greater connectivity, and sidewalks. For an evolving market, traditional urban neighborhoods and the characteristics associated with them are desirable and expected to be sought-after in the future. The Traditional Neighborhood Design recognized in the study area encompasses Rogers Park, which is noted in the plan as having a more relaxed and irregular street grid/alley pattern. Traditional Neighborhood Design facilitates compact development that reinforces those characteristics. It promotes policies, guidelines, and incentives to allow for and encourage new development and infrastructure (streets, sidewalks) to capitalize on this urban form. Changes may include alternative parking and driveway standards, and new overlay districts or form-based codes.

- **Facilities and Institutions**

  Facilities and institutions comprise a wide range of uses, such as schools, civic institutions, public works maintenance years, and utility facilities.

  - **Community Facility or Institution:** This designation provides for public or institutional facilities on public or institutional lands. These institutions and facilities are integrated with the neighborhoods and provide a community service or focus for the area or wider community. Public institutions and facilities help define their community because of their permanence, civic design, and public service function.

- **Open Spaces**

  Anchorage's beauty and livability is due in large part to its parks, trails, and natural open space system. Natural open spaces sustain Anchorage's urban developments and support its economic growth. Natural open spaces including lakes, streams, and greenbelts provide fish and wildlife habitat. Open spaces can also include hazardous areas, such as places with very high earthquake-induced ground failure susceptibility. Open space is depicted as "Park or Natural Area", which depicts existing and planned municipal open spaces; and "Other Open Space", which comprises other areas that are expected to retain open space functions, such as wetlands, habitat, visual buffering, or recreation.

  - **Park or Natural Area:** This designation provides for active and passive outdoor recreation needs, conservation of natural areas and greenbelts, and trail connections. It includes neighborhood, community, natural resource use parks, special use parks, golf courses, greenbelts, and other municipal open spaces dedicated or designated by an adopted plan.
  - **Other Open Space:** This designation applies to non-municipal open public and private open spaces that function as part of the Anchorage Bowl's system of parks, open spaces, outdoor recreational facilities, and natural preservation areas. It includes state and federal lands currently used or designated by an adopted plan as park or natural resource use or that are environmentally unsuitable for development. It also includes private lands that will continue to function as open space. Some open spaces in this designation are not intended to provide public recreation access.

- **Neighborhoods**

  Neighborhood land use designations have been used to reflect the diversity of housing and neighborhood characteristics found in the Anchorage Bowl. Four designations are present in the study area.

  - **Single Family and Two-Family:** This designation provides for a variety of low-density urban/suburban residential neighborhoods. Most areas have well-developed infrastructure, public water and sewer, and municipal services.
  - **Compact Mixed Use Residential-Low:** This designation provides for a compatible, diverse range of single-family, attached, and smaller-scale apartment housing choices in the same neighborhood.
  - **Compact Mixed Use Residential-Medium:** This designation provides for multi-unit apartment and townhouse living and a mix of compact single-family and attached housing in a cohesive neighborhood. It makes efficient use of residential land near services, shopping, jobs, and commercial mixed-use centers.
  - **Urban Residential – High:** This designation provides for urban living opportunities close to major employment centers – Downtown, Midtown, UMED – and contributes to the vitality of City Centers by concentrating new housing nearby.

Anchorage Municipal Code Title 21 Land Use Code

The Anchorage Municipal Code (AMC) Title 21, identifies the Official Streets and Highways Plan as an adopted element of the Comprehensive Plan for Anchorage (AMC 21.01.080). Transportation and Connectivity (AMC 21.07.060) is intended to support the creation of a safe and highly connected transportation system within the municipality in order to provide choices for all users and transportation modes, increase effectiveness of municipal service delivery, promote walking and bicycling, connect neighborhoods to each other and to local destinations, reduce vehicle miles of travel and travel times, improve air quality, reduce emergency response times, support the pattern of designated land uses, mitigate the traffic impacts of new development, create road and trail connectivity to free up arterial capacity while protecting neighborhood identity and safety, and in high-volume traffic corridors, maintain an adequate degree of crossings for local circulation and minimize road and traffic impacts on adjacent uses.

Official Streets and Highways Plan 2014

The Official Streets and Highways Plan (OSHP) enables the community to prepare for future development and growth by establishing the location, classification, and minimum right-of-way (ROW) requirements of streets and highways required to accommodate future transportation needs of the community. The plan designates the Seward Highway as a Freeway, street class V, which requires a minimum 150-foot ROW to accommodate the AADT of more than 40,000.

The OSHP notes that freeways are limited access, high-speed roadways with grade-separated interchanges whose only function is to carry traffic. They are highly efficient transporters of goods and people, but they are major barriers separating land uses and communities. The OSHP outlines the following general guidelines that should be followed in planning for and phasing freeway construction in Anchorage:

- Freeways should either connect or provide easy access to major traffic generators throughout the urban area. They should also be designed to handle through traffic, although this should be given secondary consideration due to the small percentage of local trips that are classified as through trips within the urban area.
- Freeway locations should not bisect communities, neighborhoods, or other areas whose function would be impaired by such construction, nor should they erect a barrier between populated areas and recreation areas. Where such an area is bisected, provision should be made for access across the freeway, particularly at those locations where non-motorized movement can be expected in the future.
- Construction of freeways should only be considered when the arterial system cannot meet the demand placed upon it. Traffic volumes must be well in excess of the design capacity of major arterials before freeway construction is considered. The total cost of freeway construction, including socio-economic costs must be determined to insure the best route is selected. Provisions for landscaping, in order to provide a buffer, improve aesthetics, and to serve as a major entrance to and through the community, should also be considered.

Roads that cross the Seward Highway within the study area are classified as follows:

- **Tudor Road:** Major Arterial (Class IIIA – Over 20,000 AADT)
- **36th Avenue:** Minor Arterial (Class II – 10,000-20,000 AADT)
- **Benson Boulevard:** Major Arterial (Class III – Over 20,000 AADT)
- **Northern Lights Boulevard:** Major Arterial (Class III – Over 20,000 AADT)
- **Fireweed Lane:** Minor Arterial (Class II – 10,000-20,000 AADT) west of Seward Highway, Collector (Class IC – 2,000-10,000 AADT) east of Seward Highway

The functional classification of the roadway reflects its primary use, supports land use objectives and provides for improved traffic circulation. It also outlines the expected number of lanes each roadway will have, expected AADT, and minimum ROW width.

The PEL study seeks to create grade separated intersections at each of the roads that cross the Seward Highway, to fully implement the freeway designation applied to the Seward Highway.

2.4.4 Other Plans

Anchorage Water Master Plan 2012

The Anchorage Water and Wastewater Utility's (AWWU) 2012 Water Master Plan is a 20-year plan with major review occurring approximately every five to seven years. The objective of this plan is to provide a guide for future expansion of the water system as outlined through a list of future planned projects or updates within AWWU's water system. One water rehabilitation and repair projects is identified within the study corridor:

- Seward Highway Northern Lights Boulevard to 33rd Avenue Rehabilitation and Repair

Anchorage Wastewater Master Plan 2014

The AWWU 2014 Wastewater Master Plan is a 20-year plan that addresses sewage collection, treatment, and disposal and is updated every five to seven years. No sewer projects were identified within the study area.

Chester Creek Watershed Plan

The Chester Creek Watershed Plan addresses the issues in the Chester Creek Watershed from development to support decisions to reverse water quality decline and enhance resources. A major area of focus is to restore fish passage and replace several undersized culverts that freeze, clog, and flood certain areas. Culverts at Lake Otis Parkway (approximately 15th Avenue to Tudor Road) and Seward Highway (approximately 15th Avenue to Tudor Road) are within the study area. The Seward Highway culvert will be replaced as part of a future project forwarded from the PEL study.

2.5 Utilities and Drainage

2.5.1 Utilities

Existing utilities in the study area were summarized in Section 3 of the Existing Conditions Summary and Data Collection Analysis Report (refer to Appendix 2). A variety of public and private entities provide telecommunications, water, wastewater, electrical and natural gas utility services within the study area. Additionally, MOA and DOT&PF provide storm drain, street lighting, and traffic signalization. Known utility operations include:

- Alaska Communication Systems (ACS) and General Communications Inc (GCI) provides telecommunications services
- AWWU provides sanitary sewer services and water services
- Chugach Electric Association (CEA) and Municipal Light and Power (ML&P) provides electricity services
- ENSTAR Natural Gas Company provides natural gas services.

2.5.2 Drainage

Drainage within the study area flows into existing storm drain systems within the Fish Creek and Chester Creek watersheds. These are managed by DOT&PF, MOA, and private entities. DOT&PF manages approximately 6,800 feet of trunk line collecting stormwater runoff north of Benson Boulevard along the Seward Highway corridor that discharges into Chester Creek via an outfall west of Seward Highway. An additional 2,000 feet of trunk line collects stormwater runoff south of 40th Avenue, which discharges into Fish Creek. There is no stormwater infrastructure along the Seward Highway between Benson Boulevard and 34th Avenue. Runoff throughout the corridor is directed toward grassed medians, vegetated swales, and open vegetated areas east of the highway for infiltration. The study area also includes numerous local collector storm drains.

Drainage infrastructure exists at the major intersections along the Seward Highway and the existing drainage patterns could be maintained such that all runoff would be pre-treated in the grassed median or adjacent vegetated areas before either infiltrating or discharging to the storm drain system. Urban run-off is a source of contamination and all projects will need to consider Storm Water Pollution Prevention Plan (SWPPP) procedures and guidelines for proper stormwater treatment. As previously discussed, the

Seward Highway corridor traverses both Chester Creek and Fish Creek, which are impaired waterbodies due to elevated levels of fecal coliforms. The proposed concepts are not likely to increase this impairment because highway runoff does not typically contain fecal coliforms.

Sumps with pumps may be required if permeability and elevation differences are insufficient for passive gravity grains in the depressed roadway sections. Additional stormwater infrastructure may be required in the area between Benson Boulevard and 34th Avenue to accommodate flow from depressed roadway sections.

2.6 Geotechnical Conditions

DOWL's geotechnical library has been reviewed for historical data in the project vicinity. Historical reports range in dates from 1962 to 2011 and are for various developments including roads, buildings, sign bases, pathways, and parking lots. Data from these reports is typically limited to about 20 feet in depth. A preliminary geotechnical exploration plan that will obtain data specific to the current concepts has been approved by DOT&PF, which includes eight holes drilling to depths of 50 feet to characterize the soils. Up to four boreholes have been selected for direct imaging/hydraulic profiling to depths of 30 feet to obtain hydraulic conductivity data. Preliminary fieldwork is complete, and data will be used in the design of projects forwarded from the PEL Study.

Historical reports indicate the subsurface conditions consist of about five- to ten-feet of surficial peat over 10 to 20 feet of medium dense sand with silt and gravel over very dense glacial till prior to development. Geologically, the project corridor is mapped as alluvium (sand with gravel) of the Anchorage plain, with glaciolacustrine (silt and sand) deposits between 36th Avenue and Tudor Road. Development in the area has removed and replaced most of the peat and organics with fill, however, in some locations fill has been placed over the peat.

The water table was observed as shallow as five feet and as deep as 20 feet below the ground surface with an average of seven to 12 feet. Groundwater varies depending on the time of year and depending on geology, utility trench construction, and weather. In general, the depth to groundwater increases and groundwater elevation decreases from north to south.

The high groundwater table will pose a challenge for below-grade structures. Data regarding the flow rate and seasonal fluctuations of the groundwater will need to be obtained so retaining walls can be designed to resist the water pressure and frost action. Remaining surficial peat will need to be removed within the structural section of at-grade roadways and below utility lines; peat that has fill placed on it has likely consolidated and may not need to be removed depending on project element requirements.

3.0 STAKEHOLDER AND PUBLIC INVOLVEMENT

3.1 Stakeholder and Public Involvement Overview

The PEL process provides an opportunity for coordination with the public and local, state and federal agencies in a transparent and collaborative environment. This section summarizes the public and stakeholder involvement process. Specific feedback received through the stakeholder and public involvement process is documented in the Public Involvement Summary in Appendix 3. Public involvement in the MCR PEL study was guided by a Public and Agency Involvement Plan (PAIP), which detailed the proposed methods for communicating information with agencies, organizations, and the public. The PAIP is part of the public involvement summary in Appendix 3.

As part of preparing the PAIP, consideration was given to the guidance set out in Sections 510.1 (Public Involvement Program) and 510.2 (Participants) of the Alaska Highway Preconstruction Manual, and applicable sections of the Environmental Procedures Manual. The study team also incorporated public involvement guidelines and recommendations of Section 168 (23 U.S. Code 168), which defines the process for integrating planning and environmental review. Public involvement methods and techniques were crafted with other laws and orders (NEPA, environmental justice) in mind to streamline future efforts in the corridor.

The study team recognizes that extensive public outreach was conducted as part of prior DOT&PF projects (e.g., Highway to Highway, 36th Avenue/Seward Highway Intersection improvements). Information gathered as part of those projects was evaluated at the beginning of the PEL study to better understand stakeholder concerns and provide a foundation for new public engagement conducted as part of the study.

The following methods were used to reach agencies and stakeholders with study information:

- **Mailing List and Email:** A mailing list of interested agencies, organizations, and individuals, including all residents, business owners, organizations, and property owners adjacent to the study corridor was developed and maintained for the duration of the study. This list included both postal and email addresses that were used to provide meeting and milestone notices to stakeholders.
- **Website with Interactive Mapping and Comment Features:** A project website was established at www.midtowncongestionrelief.com. The website contains background information on the study, a schedule, meeting information, links, documents, and contact information for the study team. It was updated throughout the duration of the study. The website also used an interactive mapping and comment feature to enable real-time public engagement about the corridor, study area, and associated issues. An email address: MCR@dowl.com, was established and listed on all communication materials, which linked to a distribution list that included DOT&PF and other team members.
- **Social Media:** The study team worked with the DOT&PF public information team to craft and schedule study-specific content for the DOT&PF Facebook page, Twitter feed, and Instagram accounts. Social media advertising campaigns were initiated in advance of the public open house meetings.

- Stakeholder Coordination:
  - **Agency and Leadership Meetings:** The study team conducted several workshops with key internal and external stakeholders to establish a shared message of the study vision and goals, review steps in the PEL process, confirm a shared approach, and describe the preferred concept.
  - **Stakeholder Advisory Groups:** An Agency Advisory Group (AAG) was formed to provide ongoing input to the study team. In addition, a Citizens Advisory Group (CAG) and Business Advisory Group (BAG), composed of representative residents and business owners from within the study area, was established to enable more in-depth engagement, workshop ideas, gather feedback and build consensus on the PEL study process, concepts and recommendations. Further information on the stakeholder advisory groups is provided in Sections 3.4, 3.5, and 3.6.
  - **MOA and AMATS:** As well as participating in the AAG, presentations were made to the AMATS Technical and Policy Committees and the Freight Advisory Group. Meetings were also held with MOA planning staff to discuss the project and receive feedback on the concepts.
  - **Anchorage Assembly:** Two briefings were provided to the Anchorage Assembly. The first briefing provided an overview of the PEL study, vision and goals, and the preferred concept. The second briefing focused on a draft Resolution of the Assembly, and sought to clarify certain elements of the preferred concept and mitigation to be determined as recommended projects progress through design and environmental documentation.
  - **Community Councils:** Regular project updates to the seven Community Councils within and adjoining the study area were provided over the duration of the PEL study. The Community Councils are: Airport Heights, Campbell Park, Fairview, Midtown, North Star, Rogers Park, and Tudor Area. A presentation on the project was also given to the Federation of Community Councils at the commencement of the PEL study.
- **Public Open Houses:** Three open house style public meetings were scheduled to gather feedback from members of the public about existing conditions and needs, the concept development and evaluation process, and the preferred concept and individual projects that implement the preferred concept. The public meetings are further summarized in Section 3.7.
- **Transportation Fair:** The project team hosted a booth at the Anchorage Transportation Fair in 2018 and 2019 to provide information about the project and receive feedback from the public.
- **Postcards/E-Notices:** A postcard was mailed out to announce each of the three public open house meetings and an electronic version of the postcard was emailed to the contact list. The postcard contained graphics and text explaining the study and asked for public input. A reminder e-notice was sent to the mailing list immediately prior to each open house, and a thank you e-notice was sent following each public meeting.
- **Advertising:** In addition to postcards and e-notices, public meetings were advertised through the Anchorage Daily News, on the statewide DOT&PF website, through social medial, email notices to the contact list, on the State of Alaska Online Public Notice system, on the MOA calendar, and using radio advertising on KSKA.

Figure 10 shows the timeline for public involvement activities throughout the PEL study.

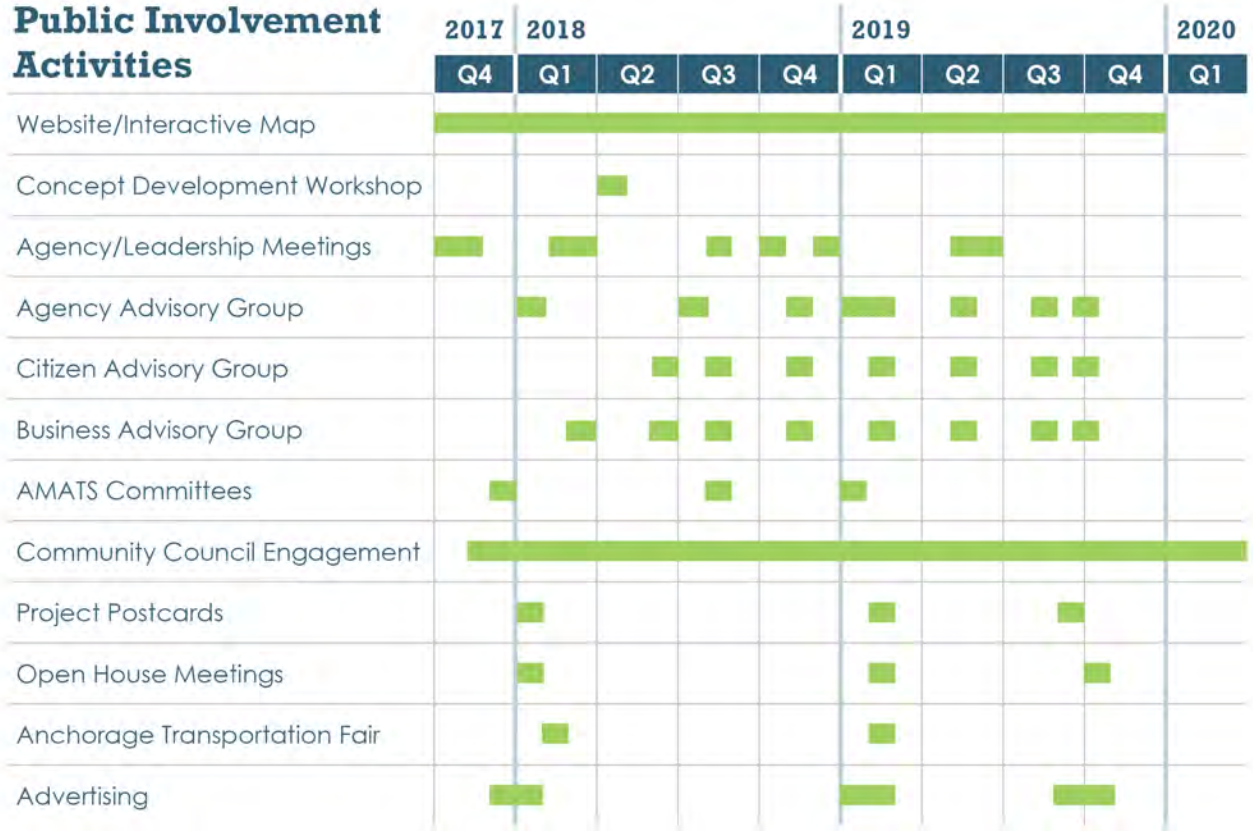


Figure 10: Timeline of Public Involvement Activities

3.2 Agency Scoping

An Agency Scoping meeting was held on January 22, 2018. The following organizations were invited to participate in the agency scoping meeting:

- DOT&PF
- FHWA
- MOA
- AMATS
- United States Army Corps of Engineers (USACE)
- United States Environmental Protection Agency (EPA)
- Alaska Department of Fish & Game (ADF&G)
- Department of Environmental Conservation (DEC)
- State Historic Preservation Office (SHPO)

Twelve participants attended the meeting, representing DOT&PF, FHWA, AMATS, MOA and DEC. The meeting provided an overview of the MCR study area, PEL study approach and process, key issues to be addressed in the PEL study, draft goals of the PEL study, a definition of success, existing conditions discussion, and plans for public and agency involvement. Initially the team desired to establish an MOU between the agencies involved in the PEL study to document:

- The agencies' commitment to participate in the PEL study process
- Agreement to use this PEL to streamline future projects
- Considering using this PEL as a template for state or regional application.

The agencies were provided with a copy of a draft MOU for consideration. Ultimately, FHWA declined to sign the MOU owing to DOT&PF Statewide Environmental Office assuming responsibilities under NEPA and all or part of FHWA's responsibilities for environmental review, consultation, or other actions required under any Federal environmental law with respect to one or more Federal Highway projects within Alaska. DOT&PF signed the MOU, and signatures were not obtained from other parties due to difficulties identifying who would be able to sign on behalf of each agency. The need for the MOU was superseded by FHWA Final Rule 81 FR34049, which eliminated the need for duplicative approval of agencies and replaced it with demonstrating that the planning product (PEL study) was conducted pursuant to Federal law.

Representatives that attended the Agency Scoping meeting were invited to participate in the AAG and have continued to advise on the PEL study.

3.3 Concept Development Workshop

A two-day Concept Development Workshop was held April 30 – May 1, 2018 at DOWL's offices. The purpose of the workshop was to engage with internal and external stakeholders, share information about the existing conditions within the corridor, and generate concepts to address the issues and needs identified in the project corridor. The workshop included presentations covering:

- Project background
- Existing conditions and needs
- PEL approach
- Draft vision and goals
- Interchange/corridor planning and aspirations
- Schedule/next steps.

On the first day of the workshop a sketch planning session was held, and the participants divided into three working groups to identify concepts that addressed access, multimodal routes, and corridor layout/configuration. At the end of the sketch planning session each working group presented their concept ideas. On the second day of the workshop the group sketch planning session continued with participants dividing into two working groups. Five corridor concepts were explored, with a focus on interchange configurations, multimodal routes, project definition and priority, and construction phasing. Both groups then presented the two concepts they felt had the greatest potential for advancement. General observations from the two-day discussion included:

- The group discussion format fostered more creative thinking in the generation of concepts than would have been developed by individuals working alone
- All concepts under consideration required ROW acquisition, including full and partial property acquisitions
- Project definition and the identification of manageable individual projects was challenging
- Elevating the Seward Highway was more effective but likely to be unacceptable to the public
- The Tudor Road interchange is at the end of its design life and is requires improvement

- Most concepts closed through access on Fireweed Lane
- The frontage road network would provide access to most/all of the cross streets in the corridor
- Improvements to the secondary road network are needed
- Consider converting the Northern Lights Boulevard/Benson Boulevard couplet to become two-way roads with Benson Boulevard focusing on providing local access
- Consider improved north-south and east-west multimodal connections. One option to achieve this could be to provide a crossing point at 33rd/34th Avenue and improving connections to the Chester Creek and Campbell Creek trail networks.



Photo 1: The Project Team and Stakeholders Participating in a Corridor Sketch Planning Session

A Concept Development Workshop summary presentation was made to DOT&PF leadership on May 2, 2018. The presentation focused on the concept development process and next steps. The concept ideas were used as a basis for initial concept development, which included seven one-way and three two-way frontage road concepts, as well as an intermediate concept providing for short term improvements in advance of a full freeway build-out.

3.4 Agency Advisory Group

Refer to Section 3.2 for information on the formation of the AAG and the first meeting. The AAG met four times over the course of the PEL study and participated in the Concept Development Workshop.

3.4.1 Meeting 2

The second AAG meeting was held on July 24, 2018, with 19 participants from DOT&PF, MOA, AMATS, and the project team in attendance. This meeting provided an opportunity update the AAG on the

formation of the CAG and BAG, traffic volumes and analysis, concept development and screening. The focus of the meeting was on detailing the various elements of the improvement concepts, answering questions and receiving feedback. Feedback included:

- Concern about ensuring conflict points for walking and bicycling are clearly understood and considered for each concept and in particular for concepts proposing a lot of right-hand turn movements
- General reservations about the two-way frontage road concepts due to the risk of driver uncertainty and confusion, as well as the impression of increased rather than decreased vehicular traffic volumes
- The potential to develop an educational video to demonstrate the intermediate concept (Concept H), and how a median u-turn is performed
- Request to be conservative when estimating ROW acquisition requirements, ensuring that drainage, utilities and other elements were considered when estimating how much space was needed to implement concepts to avoid shortfalls in the future when constructing interchanges.



Photo 2: Agency Advisory Group Members Participating in Agency Meeting #2

3.4.2 Check-in Meeting

A check-in meeting was held on November 27, 2019 for all advisory groups. The purpose of the check-in meeting was an informal opportunity for participants of the advisory groups to drop in and ask questions about the concept development process. One participant of the AAG attended the check-in meeting.

3.4.3 Meeting 3

The third AAG meeting was held on January 23, 2019 and was attended by 13 participants from DOT&PF, MOA, AMATS, and the project team. The meeting focused on providing an update on the

concept development and screening process, and recommendations to dismiss concepts following the Phase 1 screening. Feedback included:

- Ensure concept graphics are as clear as possible for communication to members of the public, including avoiding the use of colors that are challenging for people who are colorblind.
- Explain how the PEL Study is influenced by the broader transportation planning context in the Alaska and Anchorage. Create graphics to demonstrate the interlinkage between planning processes, and how projects that have a broader context (i.e., light trail, Anchorage bypass, etc), were considered as part of higher level transportation planning studies. This will also assist to explain why this PEL study is providing for future 2048 traffic volumes as anticipated in the Anchorage traffic model.
- Provide more detail on concept screening to demonstrate how the different concept alternatives have been considered and how the screening approach harks back to the PEL study vision and goals.
- Concept A appears to perform poorly from a non-motorized perspective, and the two-way frontage road concepts (E, F and G) created significant challenges for congestion, safety, traffic operations, and non-motorized travel.
- If transit was to be implemented on the Seward Highway, it would be focused on commuter traffic connecting downtown Anchorage to the UMED district, connections to the Mat-Su Borough, etc. From a local (Midtown) perspective, crossings over the Seward Highway are important.
- There was general concurrence to move forward with Concepts B and C2 (with Intermediate Concept H).

3.4.4 Question & Answer Session

Owing to the amount of questions received at the Advisory Group meetings, an additional Question and Answer session was scheduled on February 12, 2019. This session again provided an overview of the concept development and screening process, as presented at Meeting 3.

3.4.5 Meeting 4

The fourth AAG meeting took place on May 21, 2019 and was attended by 20 participants from DOT&PF, MOA, AMATS, and the study team. The study team provided updates on the concept development process, with a focus on concept refinement, alignment, elevation, costs and ROW considerations. Feedback received included:

- A desire for continued access between 36th Avenue and the Seward Highway
- Questions about residential and commercial property acquisition
- Concerns about highway conditions along frontage roads and the need to better communicate to the public the reduced speed limits being proposed and non-highway conditions
- Need to ensure non-motorized improvements occur across the east-west network

- One attendee enquired about the potential for the one-way frontage roads to be transitioned to a two-way frontage road system at the northern end of the study area, as this was important for the Fairview community
- One attendee questioned whether the loop ramp element of Concept C2 could accommodate the volume of traffic expected without resulting in queueing on 36th Avenue
- One attendee enquired whether a ramp variant could be considered to provide direct access to/from Fireweed Lane
- One attendee raised a concern that Concept C2 provided less opportunity to cover the freeway through Midtown due to the multiple access points proposed
- Several attendees sought clarification about the height of an elevated freeway section over 36th Avenue
- There was consensus on the intermediate Concept H, as it enabled early ROW acquisition and the delivery of immediate transportation and safety benefits through the creation of two-phase signals and pedestrian/bicycle facility improvements
- Concept H was also viewed as being a more financially feasible way of delivering improvements to the Midtown corridor over an extended time period
- Concept H was considered to generate positive effects by improving access to businesses
- One attendee enquired about the enforceability of a 35 miles per hour (mph) speed limit, and whether the speed limit should be increased to 40 or 45 mph. Concern was expressed about the effectiveness of the intermediate concept for an extended time period (10 or more years) with a 35-mph speed limit
- Ensure access to 20th Avenue is retained
- One attendee noted the green shading on the center median could be misinterpreted as public use recreation space, and a different shade should be used to better manage community expectations over the use of this space.

3.4.6 Meeting 5

A fifth AAG meeting was held on September 9, 2019 and was attended by 24 participants from DOT&PF, MOA, AMATS, and the study team. The presentation outlined that a draft preferred concept has been selected, and projects to implement the preferred concept have been detailed in the PEL Study report. Feedback received included:

- Questions about traffic volumes, and how these would be accommodated between the freeway section and the proposed frontage road network
- Suggestions about using three-dimensional imagery to communicate the concepts to the public, as they can be difficult to understand
- Feedback about the timeline for project implementation identified, and a recommendation that this be clarified as indicative project start dates
- A recommendation to rename the suggested placemaking project

- A query about whether stakeholder and agency buy-in to the recommendations is required to enable the PEL study to proceed
- A request to review further graphics for the Collector-Distributor concept to understand how it will look
- Questions about how much of the freeway section can be covered, and what the challenges are associated with covering the freeway section
- A request to understand the top concerns expressed by the public, articulated as funding, non-motorized facilities, and ROW concerns
- Concern was voiced over the intersection improvement projects, and whether the full build would proceed
- A request to capture that at just about every meeting that has been held, elevating the freeway north of 36th Avenue is unacceptable from a community perspective, and the only acceptable option is a depressed freeway
- Clarification on the number of environmental documents to implement the preferred concept
- A participant noted a perceived lack of emphasis on east-west non-motorized crossings. It was clarified that these are important and have been provided, and the colors used on graphics will be revisited to ensure crossings are clearly understood.

3.5 Citizens Advisory Group

The CAG was established early in the study process and met five times over the duration of the PEL study. The CAG encompassed a broad cross-section of individuals who could represent both their personal views and those of the greater community while working with the PEL study team on development of concepts and concept selection. The group was intended to promote the understanding of a range of perspectives, facilitate an effective communication channel, and augment the public process. It was also intended to enable a smaller group of community representatives to work with the study team and engage in a more focused dialogue.

Specific duties and responsibilities of the CAG were:

- Review materials and information provided about the study
- Discuss the study with representative organizations, community councils, or agencies
- Discuss issues and rationale for decisions with representative organizations, community councils, or agencies and bring input from them to CAG meetings
- Act in an advisory capacity to the PEL study team.

Advisory group members were encouraged to provide input that represents their personal views, while considering the interests of the local community, MOA, and the State of Alaska.

Agendas, meeting notes, presentation materials, and sign-in sheets from each CAG are included in Appendix 3.

3.5.1 Meeting 1

The first CAG meeting was held on June 20, 2018. The meeting was attended by 11 people representing at least five community councils within the study area, and the Geneva Woods Homeowners Association. The purpose of this meeting was to present an overview of the PEL study process and discuss preliminary concepts under consideration. Questions and feedback raised during the meeting included:

- Availability of public comments received
- Guidance on the role of CAG in PEL studies
- Funding for project construction
- Noise impacts and how they will be considered in the PEL study
- Traffic modeling
- Request for clarification about why the study corridor ends at 20th Avenue rather than proceed north to the Seward Highway/Glenn Highway connection
- ROW and property acquisition impacts
- Changes to traffic signals
- Pedestrian and bicycle facilities
- Potential for increased traffic on LaTouche Street
- Homeless population

3.5.2 Meeting 2

The second CAG meeting was held on August 16, 2018. Ten participants attended, representing five community councils and the Geneva Woods Homeowners Association. The purpose of this meeting was to update participants on the status of concepts under consideration and receive input to assist in refining potential concepts. Feedback on the concepts included:

- A preference for a pedestrian overpass versus an underpass at 33rd Avenue for safety reasons
- The concept should support development in the MCR corridor that promotes the area as a city center, encouraging additional housing, mixed-use areas, and multi-modal functionality, and concern about roads removing housing
- Questions about ROW valuation methods and impacts
- How access would be provided to and from the Seward Highway from Midtown
- Consider the impacts of cut-through traffic to the Rogers Park neighborhood
- Consider the opportunity to remedy a missing link in the active transportation network along LaTouche Street
- Traffic modeling sensitivity and Bluetooth data collection
- Concern about the height of the possible braided ramps at Benson Boulevard and Northern Lights Boulevard and whether they would be confusing for users
- Safety concerns associated with traffic weaving

- The frontage road does not need to and should not go all the way to 20th Avenue at the northern end of the corridor
- Potential impacts on adjoining businesses and intersections with cross streets
- Access to Rogers Park neighborhood for residents and emergency vehicles
- Concept D would be difficult to navigate and costly to alter in the future
- The frontage road should be on a cover over the freeway
- Concerns were raised about the expansion of Old Seward Highway to seven lanes as the main arterial road through Midtown would create challenges for east-west non-motorized crossings
- One participant enquired about winter bicycle and pedestrian use within the corridor and whether this would be considered as part of the design process
- One participant noted concerns about using median u-turns based on previous experience, and noted concerns about the ability for large or long vehicles to navigate the median u-turn
- Several participants expressed support for a depressed freeway, because it would provide greater opportunity in the future for covers over the freeway and potentially buildings, parks, and other facilities
- There was significant concern expressed about the potential for an elevated freeway
- One participant raised concerns about left-turn access from 36th Avenue into the Geneva Woods neighborhood
- One participant asked about how access would be retained to 20th Avenue, and the need for compatibility with the future Fairview PEL study
- Several participants enquired whether there was the ability to avoid adding as many additional lanes of traffic through Midtown
- One participant asked whether the intermediate concept was able to be developed independently, or whether a full concept will need to be determined prior to the development of the intermediate concept
- Several participants raised concerns about the potential for noise impacts associated with the expanded road network and removal of trees
- Noise barriers were identified as a way to address potential noise impacts, but some participants noted that businesses would probably not be in favor of having them installed as they reduce the visibility of businesses
- One participant enquired about whether there would be an opportunity to consider the impacts of changes to the public transit network including ceasing service on 36th Avenue and increasing headways on other routes.

3.5.3 Check-In Meeting

A check-in meeting was held on November 27, 2018 for all advisory groups. The purpose of the check-in meeting was an informal opportunity for participants of the advisory groups to drop in and ask questions about the concept development process. A total of 26 people attended the check-in meeting.

3.5.4 Meeting 3

The third CAG meeting was held on February 4, 2019, which was attended by 18 people including representatives from the project team. The purpose of the meeting was to update participants on progress with concept development since the second meeting, including refinements to the concepts and results of the first stage of concept screening. The meeting provided an opportunity to answer questions and obtain consensus on which concepts would be dismissed from further consideration. Feedback included:

- Support for a concept that would provide a depressed freeway with a cap/cover over it
- A comment about a long-time safety issue with the off-ramp to Old Seward Highway at 34th Avenue, and a request for the resolution of this safety issue as part of the study and resulting projects
- A question about whether a viaduct (elevated freeway) would be considered for the Seward Highway
- Reference to a recent Washington Post article (reproduced in the Anchorage Daily News) addressing the Alaska Highway removal in Seattle as context regarding the importance of spending money upfront to complete improvements once and do them right
- A comment that the two-way frontage road concepts appear to be a duplication of existing issues while actually reducing access, which is contrary to the project vision
- A comment that evaluation of the intermediate concept needs to consider that it could be in place for several years
- Concern was raised whether the implementation of the intermediate concept might be viewed as the final solution, and no further improvements would occur
- Concern about how signing and striping of the median u-turn would work during snow conditions
- Concern about the provision of non-motorized facilities on the two-way concepts and a recommendation that two-way concepts not be selected
- The intermediate concept was recognized as providing an opportunity to avoid inverse condemnation, which is a key land use benefit of the concept
- Concerns about the potential impacts to recreation lands (Section 4(f)) properties
- Support for the intermediate concept as it would eventually enable the freeway to be constructed as a depressed freeway
- A desire to see Fish Creek daylit from its headwaters, and a question about how concepts that propose to depress the freeway would interact with the 50-inch pipe that contains Fish Creek
- Questions about the traffic modeling and data collection used to forecast the number of lanes needed for the Seward Highway/frontage roads
- Concern was expressed about property impacts to the Geneva Woods neighborhood and Helen Louise McDowell Sanctuary. To offset the impact to the Sanctuary, additional land should be acquired as close to the Sanctuary as possible.

- One participant enquired whether the concepts were being developed to address congestion concerns for one-hour each of morning and evening peak commute traffic. This was viewed as a concern.
- One participant asked for confirmation the Seward to Glenn connection being improved is an underlying assumption of the PEL study.

3.5.5 Meeting 4

The fourth CAG meeting was held on May 22, 2019 and was attended by 14 people including representatives from the project team. The purpose of this meeting was to update participants on concept development and refinement, preliminary impacts, design elements, and costs. The project team discussed the recent decision to dismiss the two-way frontage road concepts, and that resolving the issues at the intersections of 36th Avenue, Seward Highway and Old Seward Highway was a priority in the selection of a preferred concept. Three remaining one-way frontage road concepts remain for further evaluation, as well as an intermediate build-out for each concept. Feedback included:

- A comment encouraging the project team to consider whether funding can be sought from other groups (i.e., native corporations, tribal groups, the MOA) that could create community ownership, especially with covers over the freeway
- Questions regarding bicycle paths along the frontage roads and the impact of driveway and intersection crossings on continuous travel routes for non-motorized users
- A question about whether the frontage road will improve access for the construction of additional housing in Midtown in the future
- Questions about impacts to specific properties adjacent to the corridor
- Concerns about how to construct Concept B in a phased manner because of the depressed freeway
- Concern about the acquisition of houses owned by older residents to enable the construction of concepts
- Property owners who could have their homes acquired need to know soon as some may be holding off on needed home improvements/repairs
- The greenspace created by the intermediate concept is surrounded by arterial roadways, which means it will not be attractive for recreational use
- Concern about traffic operations at the intersections of 36th Avenue and Old Seward Highway, and 34th Avenue and Old Seward Highway need to be addressed
- Concern about noise mitigation between Tudor Road and 36th Avenue, particularly because the existing fence along the Seward Highway is not a noise fence
- Consider groundwater contamination when digging up two gas stations and near the culvert adjacent to the Chester Creek trail
- Raised highway concepts are not palatable, but there was a general acceptance of elevating the freeway over 36th Avenue
- A depressed freeway is preferred by the public.



Photo 3: Members of the CAG Participating in Meeting #4

3.5.6 Meeting 5

A fifth CAG meeting was held on September 10, 2019 and was attended by 12 participants. The presentation outlined that a draft preferred concept has been selected, and projects to implement the preferred concept have been detailed in the PEL Study report. The discussion focused specifically on the recommended Complete Streets/Placemaking initiative, and what means to have a city center in Midtown. Participants noted the importance of being able to walk and bicycle, ensuring that land use was supportive of mixed-use development, that the area is a pleasant place to live and people do not need to travel too far to get what they need were all elements they would like to see in a city center. The discussion then moved to what could be done with MCR that would support the city center concept. Feedback received included:

- Ensuring safe access
- Enabling people to get to/from home safely, especially east/west movements
- Ensuring the improvements do not make the existing transportation network worse
- Providing a lower-speed transportation network
- Focusing on creating something that could actually improve property values.

The discussion then moved to the draft preferred concept. Feedback included:

- Clarification on the number of lanes on the freeway and frontage road, and how that would accommodate forecast traffic especially given that most of the traffic is either originating from, or destined for Midtown
- Clarification about whether it is possible to acquire land from both the east and west side of the roadway to support ROW needs. The project team clarified the analysis undertaken to support the identified preliminary ROW needs

- Questions about sound barriers, including a request to ensure they are effective
- A request to ensure that cut-through traffic is carefully considered and avoided
- Clarification about the Complete Streets/Placemaking initiative, and how this group would move forward
- Concern about the implementation projects, especially the possibility that a depressed freeway may not be constructed for several years. The importance of doing something with the land between the frontage road couplet in the interim was emphasized to ensure the land is not a blight on Midtown
- Questions about whether the intersection improvement projects will be an improvement on the existing road network, and the importance of communicating the benefits of these projects
- A request to consider depressing the freeway for the entire length of the study area, or potentially depressing the road slightly in the vicinity of the 36th Avenue intersection
- Several participants sought clarifications on the differences between the variants of the multi-interchange concept, and the associated impacts from the different intersection designs proposed at 36th Avenue and Fireweed Lane.

3.6 Business Advisory Group

The BAG was established to represent the views of commercial businesses along the Seward Highway corridor. Every business property owner and tenant along the length of the study area corridor was contacted and invited to attend a BAG information session, with the goal of identifying 15 to 20 business owner representatives to participate in the BAG.

Like the CAG, the BAG was designed to promote an understanding of a range of perspectives, facilitate an effective information channel, to augment the public process and engage in a more focused dialogue with a small group of businesses.

Agendas, meeting notes, presentation materials and sign-in sheets from each CAG are included in Appendix 3.

3.6.1 Information Meeting

Two information meetings about the BAG were held on March 29, 2018, and a total of 16 business owners attended the sessions. The meeting was an opportunity share information with business owners about the purpose of the BAG, the PEL study, and set the stage for ongoing participation in the BAG.

After the information session, nine business owners indicated a desire to participate in the BAG. Following the meetings, phone calls were made to several key businesses along the corridor to invite representatives to participate in the BAG.

3.6.2 Meeting 1

The first BAG meeting was held on June 18, 2018 and was attended by 14 people including representatives from the project team. The meeting included an update on the PEL study and a discussion of existing conditions, preliminary concepts, and additional opportunities. Specific feedback included:

- Questions about seasonal traffic variations
- Questions about availability of vacant development land for commercial and residential growth
- The effectiveness of one-way frontage road concepts will depend on the access across the Seward Highway
- Cars may be less prevalent in the transportation network in the future due to ride sharing, non-motorized transportation, and autonomous vehicles
- An increased population in Anchorage will lead to more density of development. We need to consider the impact this will have in our traffic modeling
- There are more bicycle lanes on the roads elsewhere in the U.S. Why does Alaska seem to be focused on building separate trails instead?
- Consider impacts of one-way frontage road concepts on visibility and access to businesses
- Concerns expressed regarding ROW acquisitions, property impacts, pedestrian provisions, and the feasibility of a median u-turn in snow and ice conditions
- The one-way frontage road concepts promote future connection to Brayton and Homer Drives
- Need to consider the impacts of the two-way frontage road concepts on the homeless population in the area.



Photo 4: Members of the BAG Participating in Meeting #1

3.6.3 Meeting 2

The second BAG was held on August 15, 2018 and was attended by 14 people including representatives from the project team. The purpose of this meeting was to update the group on progress since the first meeting and present refined concepts for discussion and feedback. Specific feedback included:

- Support for an active transportation connection between the eastern and western sides of the Seward Highway at approximately 33rd Avenue
- An elevated or depressed freeway creates access issues for Midtown and associated impacts on businesses
- Concern about whether the two-way frontage road Concept E would enable local traffic access to Midtown
- Concerns about two-way frontage road Concepts F and G for non-motorized traffic, and in particular east-west crossing points
- Concerns regarding ROW impacts and potential property acquisition.

3.6.4 Check-in Meeting

A check-in meeting was held on November 27, 2019 for all advisory groups. The purpose of the check-in meeting was an informal opportunity for participants of the advisory groups to drop in and ask questions about the concept development process. A total of 26 people attended the check-in meeting, including representatives from the project team.

3.6.5 Meeting 3

The third BAG meeting was held on February 4, 2019 and was attended by 17 people including representatives from the project team. The purpose of the meeting was to update participants on progress with concept development since the second meeting, including refinements to the concepts and results of the first stage of concept screening. Preliminary analysis indicated that Concepts A and B have flaws associated with ROW and environmental effects, and the two-way frontage road concepts (Concepts E, F and G) have flaws from an active transportation and traffic perspective. The meeting provided an opportunity to answer questions and obtain consensus on which concepts would be dismissed from further consideration. Feedback included:

- A question about whether issues such as stormwater management would be considered in the design of concepts.
- A question about whether any consideration has been given to Bus Rapid Transit/travel demand strategies as part of concept development.

In addition to the discussion, feedback forms were circulated at the meeting to give participants the opportunity to provide feedback on their preferred concepts. The returned forms indicated that most participants supported one-way frontage road concepts (Concepts B, C1, and C2) and the intermediate Concept H. Respondents were not supportive of the two-way frontage road concepts, and the one-way frontage road Concept A. Concerns were also raised about potential ROW impacts.

3.6.6 Meeting 4

The fourth BAG meeting was held on May 22, 2019, which was attended by 18 people, including representatives from the project team. The purpose of this meeting was to update participants on concept development and refinement, preliminary impacts, design elements and costs. Two one-way frontage road concepts (Concept B and C2) remained under consideration, and a new one-way frontage road concept (Concept J) was developed following the second public open house and third round of advisory group meetings. Concept C1 was recommended for dismissal as it was unable to resolve

congestion issues at 36th Avenue. The revised concepts (B, C2, and J) and the intermediate concept were discussed. Feedback included:

- Questions about the accuracy of the traffic modeling
- Questions about the size and capacity of the frontage road network
- Questions about the plan for green space in the interim concept
- Questions about the timeline between implementation of the intermediate concepts and the final concept builds
- Questions about property acquisition if a resident was ready and willing to sell their property
- A question about how the economic impacts on businesses will be addressed, including nearby businesses that are not immediately adjacent to the ROW.

3.6.7 Meeting 5

A fifth BAG meeting was held on September 10, 2019 and was attended by 14 participants. The presentation outlined that a draft preferred concept has been selected, and projects to implement the preferred concept have been detailed in the PEL Study report. The discussion focused specifically on the key issues in the corridor, including that it experiences some of the highest crash rates, including fatalities, and the highest traffic delays, and it is a barrier for active transportation and a visual barrier. The project team presented the key features of the preferred concept, and differences between the concepts. Feedback received included:

- Questions about whether there is enough capacity to accommodate forecast traffic volumes between the signalized intersections as part of the intersection improvement projects
- Clarification of how turning phases will work at Benson Boulevard and Northern Lights Boulevard, given the one-way, couplet formation of these streets
- Clarification of how the two-phase signals will work to facilitate turn movements at key intersections
- A question about when the Tudor Road interchange, 36th Avenue intersection improvement and Benson Boulevard, Northern Lights Boulevard and Fireweed Lane intersection improvement projects would start
- A question about how the projects would be funded, and in particular the balance between federal funds and state funding match
- Questions about ROW impacts, and the expected level of ROW acquisition needed.

3.7 Public Open House Meetings

Three public open house meetings were held over the course of the PEL study, which are summarized in the following sections.

3.7.1 Public Open House 1

The first public open house and presentation was held on January 30, 2018 at the Z.J. Loussac Library in Anchorage. Print, radio, and online advertising occurred over the two weeks preceding the meeting,

and the meeting was also advertised through the State of Alaska public notice system, DOT&PF's Facebook, Instagram, and Twitter feeds, and on the DOT&PF events website. Additionally, direct mail to 7,529 area residents and businesses was used to notify stakeholders and encourage participation. The direct mailer was followed by targeted email notices to individuals who had signed up for project notifications via the project website. A total of 92 people signed into the meeting, and several additional attendees declined to sign in or participated in a "drop-in" as they were visiting the library at the same time as the open house.

The open house included two presentations on the PEL study in the Wilda Marston Theater, and a display in the adjacent atrium on the existing conditions in the study area. Display stands addressed:

- What is a PEL study?
- Mobility study area
- Key issues
- Traffic: AADT and Functional classification
- Motorized facilities: intersection crash rates
- Non-motorized facilities: paths and trails
- Transit
- Environmental considerations
- Public feedback – What are they key issues that should be addressed? What do you think?



Photo 5: Members of the Public Meet with Project Team at Public Open House 1

A large canvas banner showing an aerial photograph of the MCR study area was placed on the ground in the atrium. Attendees were encouraged to "walk" through the corridor and share their thoughts and experiences with members of the PEL team. The study team used handheld tablets and laptop

computers to record specific comments on the PEL study online interactive map. Hard copy comment forms and fact sheets were provided as well.

The following comments and questions were received over the course of the open house and presentations:

- Questions about the traffic data and the methodology used for traffic counts and collisions
- Request for more information on environmental and wildlife impacts
- Study timeline and construction of the first and subsequent projects
- Traffic signal suggestions and solutions
- Request to improve sidewalk maintenance considerations
- Volunteers to participate in the citizens and business advisory groups
- Paths and trails – suggestions for improvements, designs for new paths/trails on future projects
- Suggestions for improved/new interchanges, underground road concepts along the corridor.

3.7.2 Public Open House 2

The second public open house was held on February 28, 2019 at the Z.J. Loussac Library in Anchorage. The event was attended by approximately 120 people. Like the first open house, a presentation was given twice in the Wilda Marston Theater, and project information was displayed in the adjacent atrium. The open house was an opportunity to present concepts to the public following initial concept development and preliminary completion of the Phase 1 screening. Concepts presented were:

- One-way frontage road concepts (Concepts A, B, C1, and C2)
- Two-way frontage road concepts (Concepts E, F, and G)
- Median u-turn concept/intermediate concept (Concept H).

The results of the concept screening indicated the two-way frontage road concepts, and Concept A performed poorly against the screening criteria. The results of the screening was presented to the public, together with the recommendation to advance the one-way frontage road concepts B, C1, and C2, and the interim concept H to more detailed concept development. Ideas to be considered in more detailed concept development, including the elevation of improvements, ramping options and alignment were presented to the public to enable discussion and feedback. Feedback included:

- Questions about how the highest priority project would be determined
- A question regarding the impact of the intermediate concept (Concept H) change from four-phase to two-phase signals, and how this would impact pedestrian crossing times
- Questions about federal and state funding, and the potential cost of implementing all the identified improvements
- Concerns about the volume of traffic cutting through the Rogers Park neighborhood
- Questions about the effectiveness of additional lanes to ease congestion
- Concerns regarding the removal of taxable property within the MOA, reductions in property value, and property owner's ability to enjoy their property
- Interest in opportunities for parks on covered sections of the freeway

- Questions about east-west versus north-south traffic congestion and how the study's recommendations will address this
- A question about the impact of taking no action
- A question about how much ROW will be required to implement the concepts.

3.7.3 Public Open House 3

A third public open house was held on November 12, 2019 at the Z.J. Loussac Library in Anchorage. The event was attended by approximately 160 people. Like the first two open houses, a presentation was given twice in the Wilda Marston Theater, and project information was displayed in the adjacent atrium. The project information display included a simulated video moving through the corridor showing the full build of the preferred concept. The video was also shown as part of the presentations.

The open house was an opportunity to present the draft preferred concept, how the concept can be delivered using several separate projects with independent utility and logical termini. Information presented included:

- Boards detailing:
  - The study's vision and goals
  - Non-motorized crash locations
  - Annual average daily traffic on major roadways within the study area
  - A summary of most frequently heard comments from public outreach complete to date
  - A typical cross-section of the proposed concepts showing frontage roads and the depressed highway
  - The proposed network of pedestrian and bicycle facilities
  - The proposed Chester Creek crossing improvements
  - A request for feedback on the recommended projects
- Transparency sheet books showing conceptual plans of each of the recommended projects, and how they work together to deliver the preferred concept
- Preferred concept fly-through video.

Feedback received at the open house included:

- Several participants sought to understand the traffic modeling that was used in the concepts, and in particular where the traffic volumes would come from given low population growth over the last few years
- Clearly show the future projected traffic with and without the project
- Clarification sought for non-motorized improvements proposed as part of the concepts
- Concern was voiced about potential noise impacts and associated mitigation
- Concern was voiced about potential ROW impacts and associated mitigation, especially in the vicinity of Ingra Street in Rogers Park

- Concern was raised about bridges above the depressed freeway and their performance during an earthquake, particularly ensuring that connections can be maintained to nearby hospitals in the event of an earthquake
- Request to reconsider the Seward Highway being constructed above 36th Avenue, and whether the highway could be depressed below 36th Avenue or 36th Avenue slightly depressed below the Highway to reduce visual, noise and glare impacts on the nearby Geneva Woods neighborhood
- Consider mixed-use development on lids over the depressed highway through public-private partnership with the MOA as lead
- Keep in mind the ingress and egress to the Bancroft subdivision at the south-east corner of Tudor Road and New Seward Highway, which needs to retain access to the frontage road to go west on Tudor Road but not allow for easier commercial access to the neighborhood
- Several participants sought clarification on the implementation timeline, particularly for the short-term and medium-term projects
- Concern was voiced in relation to the short-term projects, how long these might be in place, and what would happen to the median space while the short-term projects were in place
- Request for clarification about how the projects would be funded
- Comment that concepts and projects only focus on automobile traffic
- Consider the use of HOV lanes and bus lanes
- Consider an economic incentive to drivers to use other transportation modes
- The traffic signal at 36th Avenue needs to be coordinated with other traffic signals in the area to alleviate congestion on the Seward Highway
- Incorporate an extension of the Fairview Greenway, which is part of the Anchorage Land Use Plan in the Gambell Street area of Fairview by creating a Midtown Greenway to link the Chester Creek trail with the Campbell Creek trail and via the Fairview Greenway to the Ship Creek Trail
- Request to make Fireweed Lane a dead-end on the Rogers Park side to eliminate commuter cut-through traffic
- Skepticism was expressed about the enforcement of lower speed limits along the frontage (local access) roads
- Request to decrease the pedestrian and bicycle facility width to provide an access lane for driving access to businesses along the frontage roads
- Request to prohibit right-hand turn on red signals to protect pedestrians and bicyclists, and to provide automatic walk signals like the downtown business district.

The meeting confirmed the timeline for providing feedback on the draft PEL study, and cards were distributed at the open house with the project website and a Quick Response (QR) Code link to the draft PEL study. Participants were reminded that public comment would need to be provided by December 30, 2020.



Photo 6: Members of the Public Meet with Project Team at Public Open House 3

3.8 Other Public and Stakeholder Involvement

3.8.1 Community Council Meetings

Community councils are private, nonprofit, voluntary, self-governing associations comprised of residents, property owners, and representatives from other entities located within geographical areas designated by the Anchorage Assembly. Community councils serve an advisory function to the Assembly in the local government process, and their purpose is to provide a direct and continuing means of citizen participation in government and local affairs. Community councils generally meet once a month, and together with their local government function they also provide an opportunity to engage with residents about upcoming projects of interest, to receive feedback and to answer questions. The MCR team has maintained active engagement with community councils throughout the PEL study as one of the most valuable means of continuously engaging with the public and receiving feedback.

The following community councils are located within or immediately adjacent to the MCR study area:

- Airport Heights Community Council
- Campbell Park Community Council
- Fairview Community Council
- Midtown Community Council
- North Star Community Council
- Rogers Park Community Council
- Tudor Area Community Council

The study team visited all the community councils within the study area at least once a year, and all the community councils have at least one participant on the CAG. Figure 11 documents engagement with the community councils throughout the study. The Rogers Park Community Council, Midtown Community Council, Airport Heights Community Council and Fairview Community Council have been more actively involved in the project; therefore, staff have attended their meetings more frequently than other community councils in the study area.



Figure 11: Community Council Participation

3.8.2 Landscape Vision Ideas Discussion

Members of the Advisory Groups were invited to a working lunch meeting on May 23, 2019 to brainstorm ideas for how the transportation concepts envisioned by the PEL study might fit within Midtown. Fourteen people participated in this meeting including representatives of the project team. The focus of the discussion was on landscape themes, ideas and vision, and the meeting sought feedback from participants about how they viewed Midtown currently, their vision for the future, and what it is about Midtown, Anchorage and their local neighborhoods that make the City unique and that should be considered as part of a landscape theme for this PEL study.

Feedback included working to ensure spaces within the corridor were activated as much as possible to avoid issues associated with loitering and occupation. Attendees focused on the project as an opportunity to support and create change in Midtown, specifically supporting the MOA's vision for a city center with more mixed-use development in the Midtown area. Attendees requested that landscape features consider the character and history of the area and adjoining neighborhoods, but noted that care would be needed with features and materials to ensure maintenance is minimized and wildlife is not attracted to the corridor.

3.8.3 Anchorage Assembly

The study team attended two Anchorage Assembly work sessions over the PEL study. Copies of the presentations are included in Appendix 3.

- **Work Session 1:** On November 1, 2019 an information briefing was provided to the Assembly. The briefing addressed the problems that were being addressed through the PEL study, why the PEL approach has been selected, and how this is different from projects that have been advanced in the corridor previously. A summary of the project vision was provided, and the public outreach approach. Focus then shifted to what has been heard through public involvement, and how this has informed the development of improvement concepts and screening. The presentation then outlined the preferred concept, the projects recommended to implement the preferred concept, and the community placemaking project that is being advanced to continue engagement with the advisory committees established as part of the PEL study. The presentation concluded by providing conceptual renderings of the improvements following construction, including a birds-eye view of the project area, and the Chester Creek crossing. Questions included how the projects would be funded, and what the potential ROW impacts would be. The Assembly also asked whether any specific action, such as a Resolution was sought, and the Project Manager confirmed a resolution would be appreciated.

In early February 2020, Rep. Felix Rivera contacted the study team as he and Rep. Christopher Constant were developing a draft Resolution in relation to the PEL study. Rep. Rivera provided the draft Resolution to the study team, and sought comment on its content. The study team requested an Assembly work session to discuss the draft Resolution, and provided tracked change revisions to clarify various elements of the draft Resolution, particularly in relation to the safety benefits of Projects B and C. A memorandum was also prepared to outline the reasons why some changes were sought. The draft Resolution was opened for hearing at the February 25th Anchorage Assembly meeting, and then tabled to enable the Assembly work session.

- **Work Session 2:** On February 28th, 2020 the project team attended a second Assembly Work Session. The session started with a presentation, where the project team outlined the safety benefits of the proposed projects, and in particular Projects B and C, provided details on safety statistics on the Seward Highway through Midtown between 2017 and 2019, and reminded the Assembly of the vision for the study. Details were provided on public involvement completed during the study, the five projects recommended and their estimated cost. Details were also provided of the community placemaking advisory group to be established to identify civic improvements to complement the transportation projects, and how this would be incorporated with the Creative Placemaking Leadership Summit that was scheduled to be held in Anchorage in May 2020. The presentation then turned to the resolutions received from Airport Heights, Fairview, Rogers Park, and Tudor Area Community Councils, areas of consistency with the draft Assembly Resolution, and whether these are included in the PEL study recommendations. Discussion then turned to three key changes sought to the Assembly resolution, being in relation to the traffic model, removal of mature trees on the east side of Seward Highway, and home values along Ingra Street. Following the presentation there was a discussion on the resolution and revisions sought.

Following the Work Session, the Assembly Resolution was revised and presented to the Assembly meeting on February 25, 2020. Following public testimony, the Resolution was adopted. The Resolution is discussed in further detail in section 3.9.

3.8.4 AMATS

The study team made presentations to several committees of AMATS over the PEL study. Meeting agendas, presentations and notes are included in Appendix 3. Presentations included:

- **AMATS Technical Committee:** On December 7, 2017 the study team presented an overview of the PEL study. Feedback received supported the decision to engage with the business community. Other discussion centered around the PEL process, previous Alaska experience with PEL studies, project funding and timeline, and the need to consider the Denali Street/36th Avenue improvements project in the study.
- **AMATS Policy Committee:** On December 21, 2017 the study team presented an overview of the PEL study. The presentation provided an overview of the PEL process, the study area, project funding and timeline. In addition, on September 26, 2019 a further presentation was made to the AMATS Policy Committee, which outlined the draft outcomes of the PEL study and the recommended projects to implement the preferred concept.
- **AMATS Freight Advisory Committee:** On May 9, 2018 the study team provided an update on the PEL Study. Specific elements discussed included the results of the traffic analysis including origin and destination data, and the one- and two-way frontage road concept ideas discussed at the concept development workshop. The Committee requested a further update later in the study when a preferred concept or concepts were identified.
- **AMATS Joint Work Session:** On January 22, 2019 the study team held a joint work session with all the AMATS Committees and staff to present the preliminary results of Phase 1 screening and recommendations to dismiss specific concepts. Feedback received supported the approach of eliminating the two-way frontage road concepts and focusing detailed concept development on one-way frontage road concepts. Attendees were also interested to ensure that concepts

provided positive options for non-motorized transportation across and along the Seward Highway corridor.

3.8.5 Anchorage Transportation Fair

Study staff hosted a booth at the annual Anchorage Transportation Fair in February 2018 and February 2019. Materials presented at the Transportation Fairs mimicked information presented at the project Open Houses and study staff were available to discuss the project with members of the public and answer questions.



Photo 7: Members of the Public Meet with the Project Team at the 2019 Anchorage Transportation Fair

3.8.6 Other Meetings

Study staff have invited members of the public, stakeholders and agencies to one-on-one meetings to discuss the project as needed. Meetings were held with community leaders, business and property owners, and residents within the study area. Meetings included:

- Alaska State Senator Elvi Gray-Jackson, and Representatives Zack Fields, Andy Josephson, Harriet Drummond, and Geran Tarr
- Assembly Representatives Chris Constant, Pete Peterson, Felix Rivera, John Weddleton, and Meg Zaletel
- First National Bank of Alaska
- Geneva Woods Medical Center
- Best Western Golden Lion Hotel
- Fred Meyer
- Big Rays Great Alaskan Outfitters
- Carr-Gottstein Properties
- Calais Company
- Guardian Security
- BP
- Wendy's Restaurant
- Furniture Enterprises
- Mooses Tooth Pizza Restaurant
- Bike Anchorage
- Private residents
- Ingra Street residents

3.8.7 Other Presentations

Presentations have been made to organizations and forums during the study to inform members of the public and receive feedback. Presentations included:

- **Anchorage Chamber of Commerce "Make It Monday" Forum:** On October 29, 2018 the study team presented to the "Make It Monday" Forum and hosted a mini-open house to present concepts and receive feedback.
- **Society for Women in Engineering (SWE) Greatland Region:** One January 9, 2019 a project representative presented to the society's monthly lunch meeting.
- **American Planning Association Alaska Chapter Annual Conference:** A plenary session about the PEL study was held at the annual conference in Anchorage on January 15, 2019.
- **Anchorage Housing, Homeless and Neighborhood Development (HHAND) Commission:** On June 5, 2019 a project representative presented to the HHAND monthly meeting.

3.8.8 Other Events

In addition to attending meetings with stakeholders and making presentations, project staff have also attended other organizations' open houses to understand the impacts of their projects and plans. Other events attended include:

- Anchorage 2040 Land Use Plan Progress Open House
- Anchorage Talks Transit
- Transit Advisory Board

- 36th Avenue and Denali Street Improvements Project
- 33rd and 34th Avenue Improvements Project.

3.9 Feedback on Draft PEL Study Report

Feedback was invited on the draft PEL study report for a period commencing on Friday, February 1 2019, and concluding on Friday, December 20 2019. The comment period was extended for Community Councils to enable the Resolution development process to occur, and comments were invited until the end of January, 2020. Comments were received from:

- The Municipality of Anchorage
- Three private residents

Resolutions were received from the following Community Councils:

- Airport Heights Community Council
- Fairview Community Council
- Rogers Park Community Council
- Tudor Area Community Council

A resolution was also received from the Anchorage Assembly.

The contents of these comments and resolutions, responses, and recommended revisions to the PEL Study Report are summarized in Appendix 10. Revisions have subsequently been made to the final PEL Study Report.

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4.0 TRANSPORTATION CONTEXT

4.1 Transportation Conditions

Seward Highway is a six to eight lane urban arterial highway that traverses the east side of Midtown Anchorage and is the primary north/south corridor for motorized traffic with AADT that range from 51,500 to 57,000 in the study area. Immediately south of the study area, the highway transitions to a freeway with one-way frontage roads and controlled access. The closely-spaced intersections along this 1.5-mile section of the Seward Highway have some of the highest volumes, longest delays, and highest crash rates in Alaska. All intersections are at-grade with the only grade-separated crossing being the Chester Creek Trail undercrossing at the north end of the corridor. The posted speed is 45 mph, signal cycle lengths are about 160 seconds, and a raised median restricts turning movements except at the signalized intersections. Several commercial driveways directly access the highway north of 36th Avenue. The Seward Highway is relatively flat with few vertical curves, with the exception of the significant drop in elevation near Chester Creek and 20th Avenue.

Based on the Metropolitan Transportation Plan, corridor traffic is expected to roughly double over the next 20 to 30 years due to the combination of regional growth and the planned Seward Highway to Glenn Highway connection project that will attract traffic to the Seward Highway corridor from alternative arterial routes. To accommodate this growth, significant improvements are needed to create a freeway type facility that will meet capacity and access needs in Midtown. Without these improvements, congestion will continue to get worse in Midtown and significant investments will be needed on the alternative corridors.

Pedestrian and bicycle facilities are provided along and across the Seward Highway, primarily as sidewalks and trails, however there are significant north-south gaps, particularly between Tudor Road and 36th Avenue. Figure 12 shows the study area trails. Other paths are provided heading east-west across the Seward Highway. Chester Creek Park provides a network of trails known as the Lanie Fleischer Chester Creek Trail, which crosses under the Seward Highway and accommodates both pedestrians and bicyclists.

Tudor Road and Benson Boulevard both have paved multiuse trails along the north and south sides of the roadway, while 36th Avenue has one paved trail along the north side. The Seward Highway has segments of pathway for north/south travel, but the nearest continuous multi-use pathway is at A Street on the west and Lake Otis Parkway on the east.

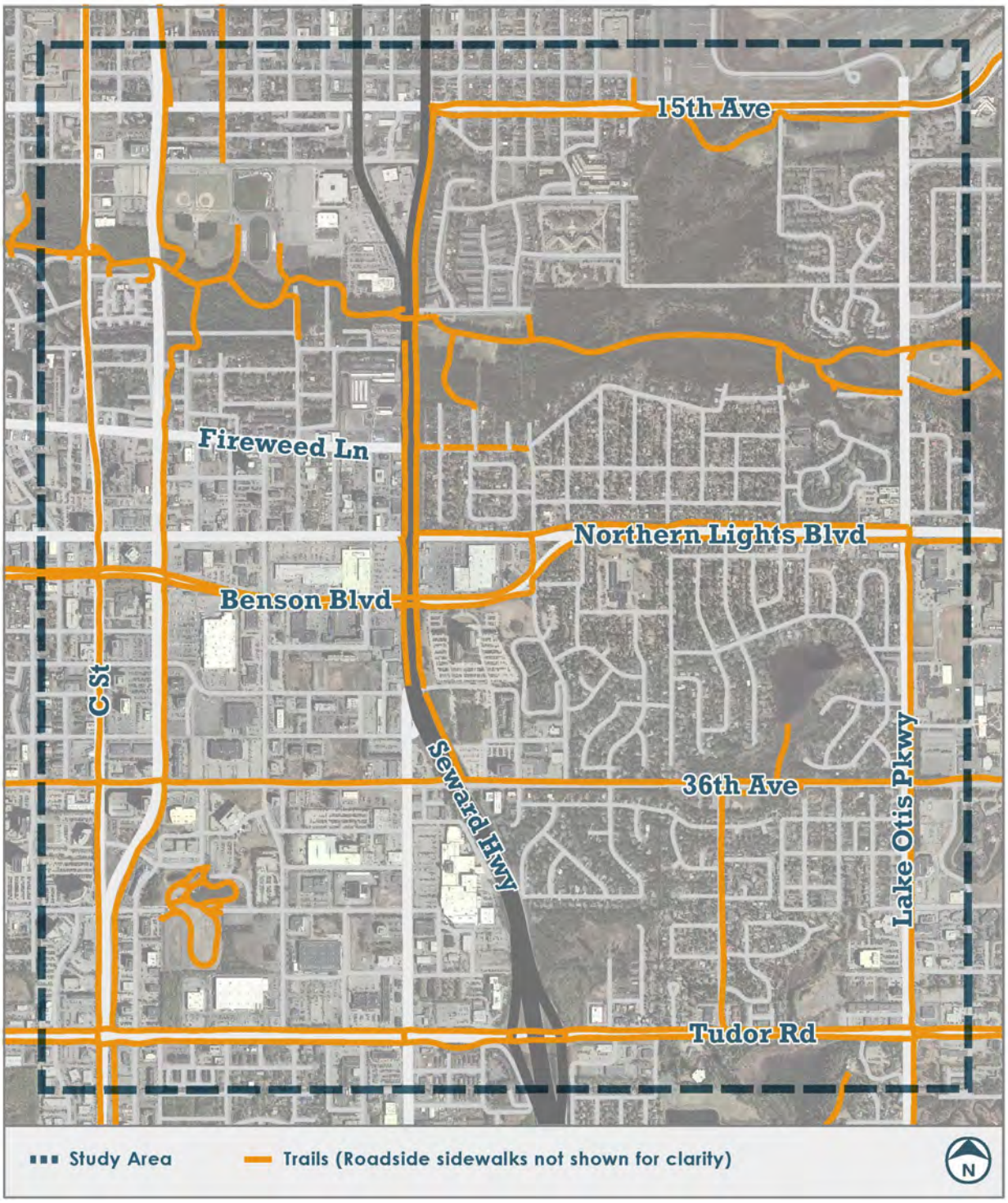


Figure 12: Trails

A Bicycle and Pedestrian Analysis Memorandum was prepared to evaluate conditions for non-motorized users, and is included in Appendix 6. Pedestrian and bicycle crossing volumes were collected in conjunction with motor vehicle counts in October 2017 (Figure 13). The crossing volumes cover the 12-hour period from 7 a.m. to 7 p.m., and the figure shows the sum of the pedestrian and bicycle crossings at all intersection legs. Given the cooler weather and reduced daylight hours in October, it is expected

that pedestrian and bicycle volumes would be higher during the summer months. The intersections with the highest pedestrian and bicycle activity (i.e., total number of pedestrian and bicycle crossings at intersection crosswalks) are located along Northern Lights Boulevard and Benson Boulevard between C Street and the Seward Highway. These intersections had between 300 and 450 pedestrian and bicycle crossings during the 12-hour count period (averaging 25 to 38 crossings per hour).

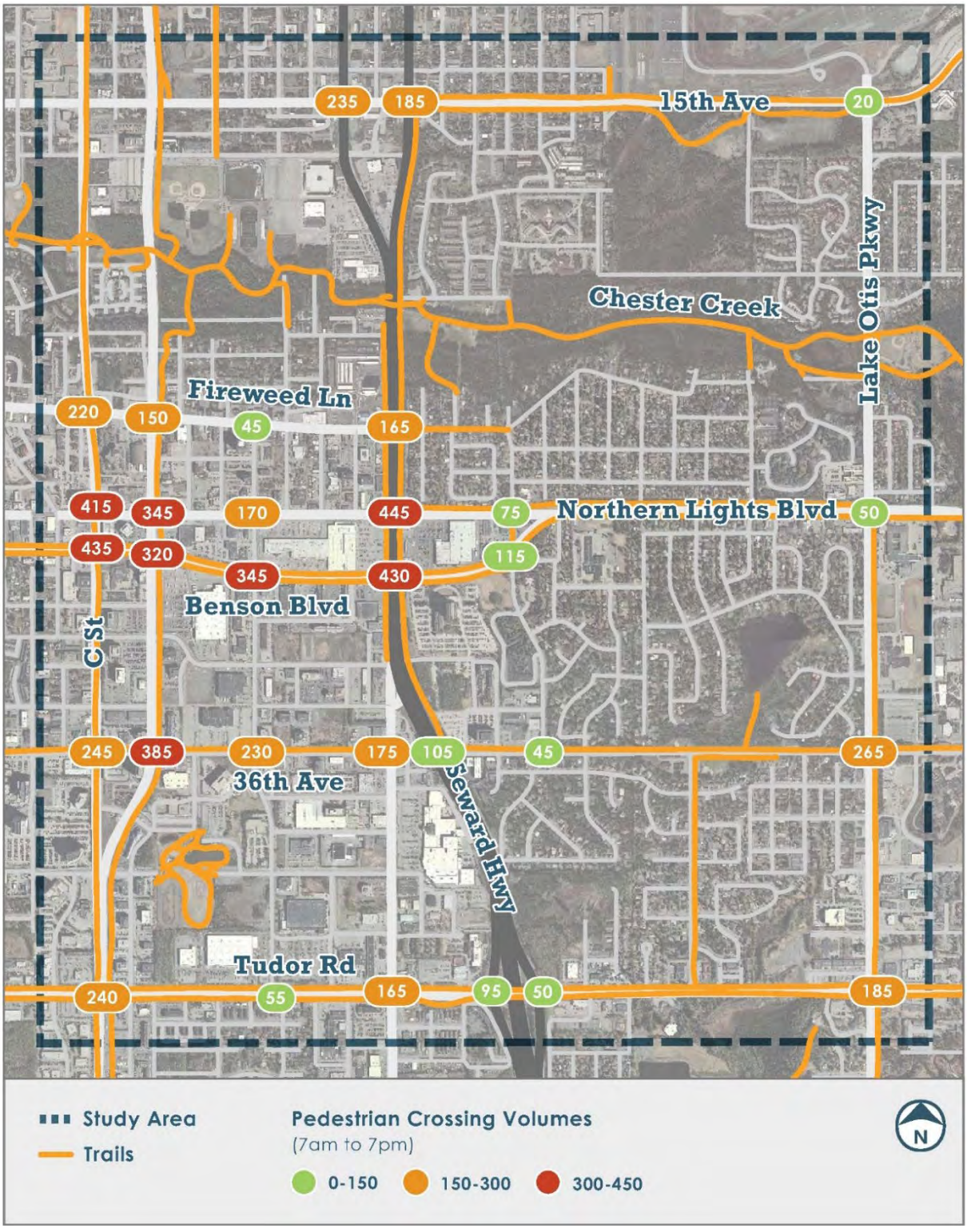


Figure 13: Pedestrian and Bicycle Crossing Volumes

The high traffic volumes and wide signalized intersections on Seward Highway create challenges for multi-modal traffic trying to travel between the residential areas to the east and the commercial areas to the west. The crossings are long, and the median islands are not wide enough refuge to stage the crossings. The lack of continuous pedestrian facilities along the highway, lack of grade-separated crossings, challenging crosswalks, and high traffic volumes/speeds all combine to make Seward Highway unappealing and a barrier for non-motorized users.

4.2 Traffic Analysis

A Traffic Engineering Report (see Appendix 4) was completed to evaluate the existing configuration and provide a basis for determining the need for and effectiveness of corridor improvements. Figures 14 and 15 illustrate the existing level of service (LOS) for each intersection and each approach in the Seward Highway corridor and at other key intersections in the study area. In the morning peak, most intersections operate at LOS A, B, or C. Whereas in the evening peak, most intersections operate at LOS C, D, or E. AADT in specific locations are shown to provide context for comparison with improvement alternatives described later in this report. Relevant observations from the existing conditions analysis include the following:

- Northbound volumes are typically higher than southbound volumes for all hours of the day, with about 55 percent of vehicles traveling north throughout the day. The directional distribution is most unbalanced during the morning peak, where 59 percent of traffic is traveling northbound.
- The evening peak hour is the most critical analysis period, but morning peak hour analysis is also beneficial at select intersections where particular turn movement volumes are higher during the morning commute.
- During both peaks, the majority of northbound and southbound traffic is turning off the Seward Highway and into Midtown. In the southbound direction, only 30 percent of traffic passes through the entire corridor in the morning and evening peaks. In the northbound direction, 35 percent of traffic passes through the entire corridor in the morning Peak, with only 15 percent passing through the entire corridor in the evening peak.
- 93 percent of vehicles on the Seward Highway are standard-sized vehicles (passenger cars/SUVs/vans/pick-up trucks), six percent are single-unit trucks, and less than one percent are heavy trucks.
- The intersections with the highest total number of pedestrian and bicycle crossings on intersection crosswalks during the 7 a.m. to 7 p.m. timeframe are:
  - Seward Highway/Northern Lights Boulevard -- 445 pedestrian and bicycle crossings per day
  - Seward Highway/Benson Boulevard -- 430 pedestrian and bicycle crossings per day.
- During the morning and evening peaks, 36th Avenue/Seward Highway intersection experiences the greatest delay per vehicle. The east/west approaches at 36th Avenue, Benson Boulevard, and Fireweed Lane illustrate the limited green time that is available for east/west movements compared to the much lower delays on Seward Highway.

Although not in the immediate corridor, the LOS on Lake Otis Parkway and at the C Street/Tudor Road intersection is below minimum criteria. Discussions with MOA revealed that in order to maintain acceptable LOS on Seward Highway, the signal timing plan in the Midtown area uses the intersections where there is adequate storage such as on Lake Otis Parkway and Tudor Road to meter traffic through the Seward Highway corridor and avoid debilitating congestion in areas of close intersection spacing.

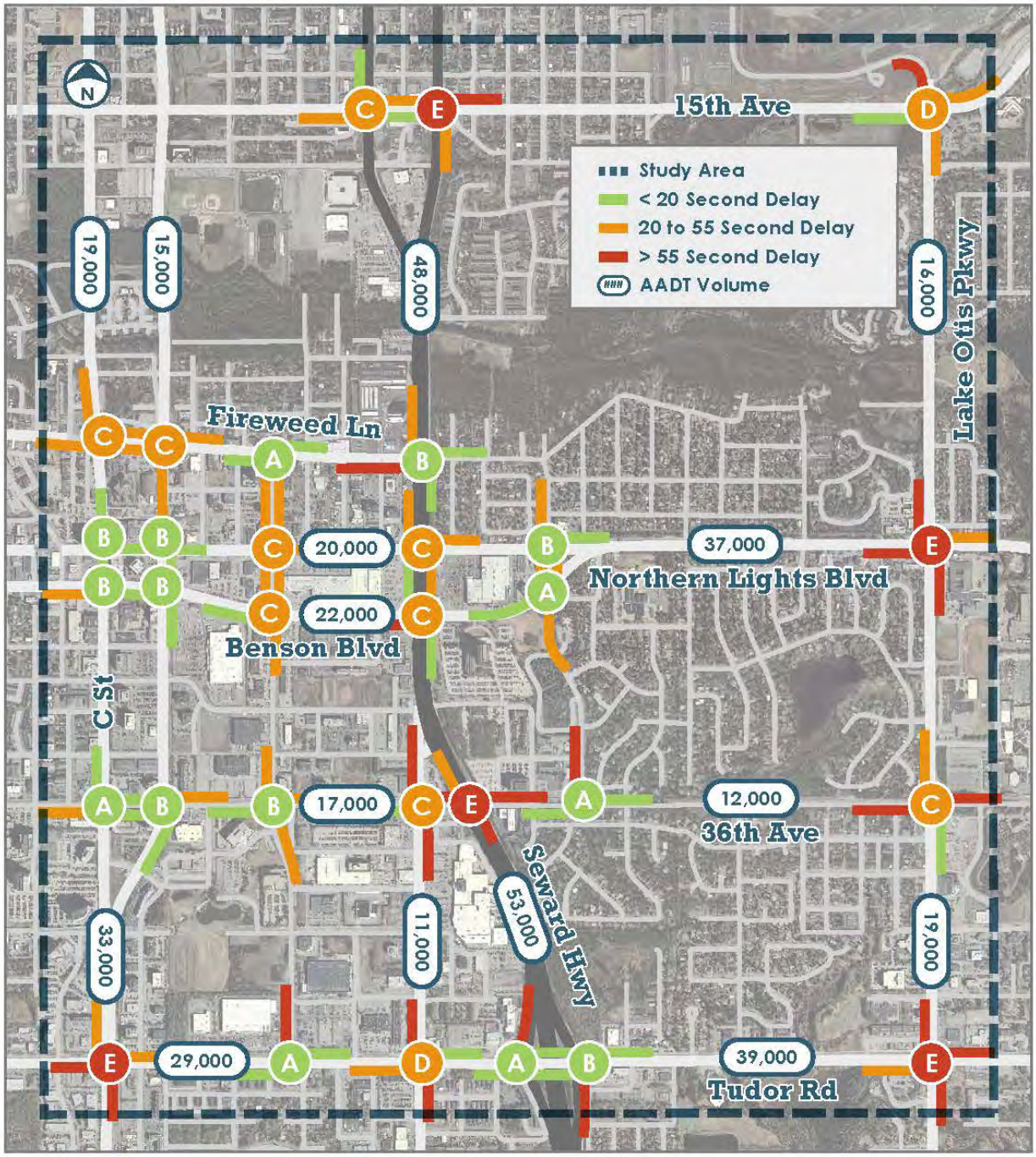


Figure 14: Level of Service – Existing AM Peak Hour

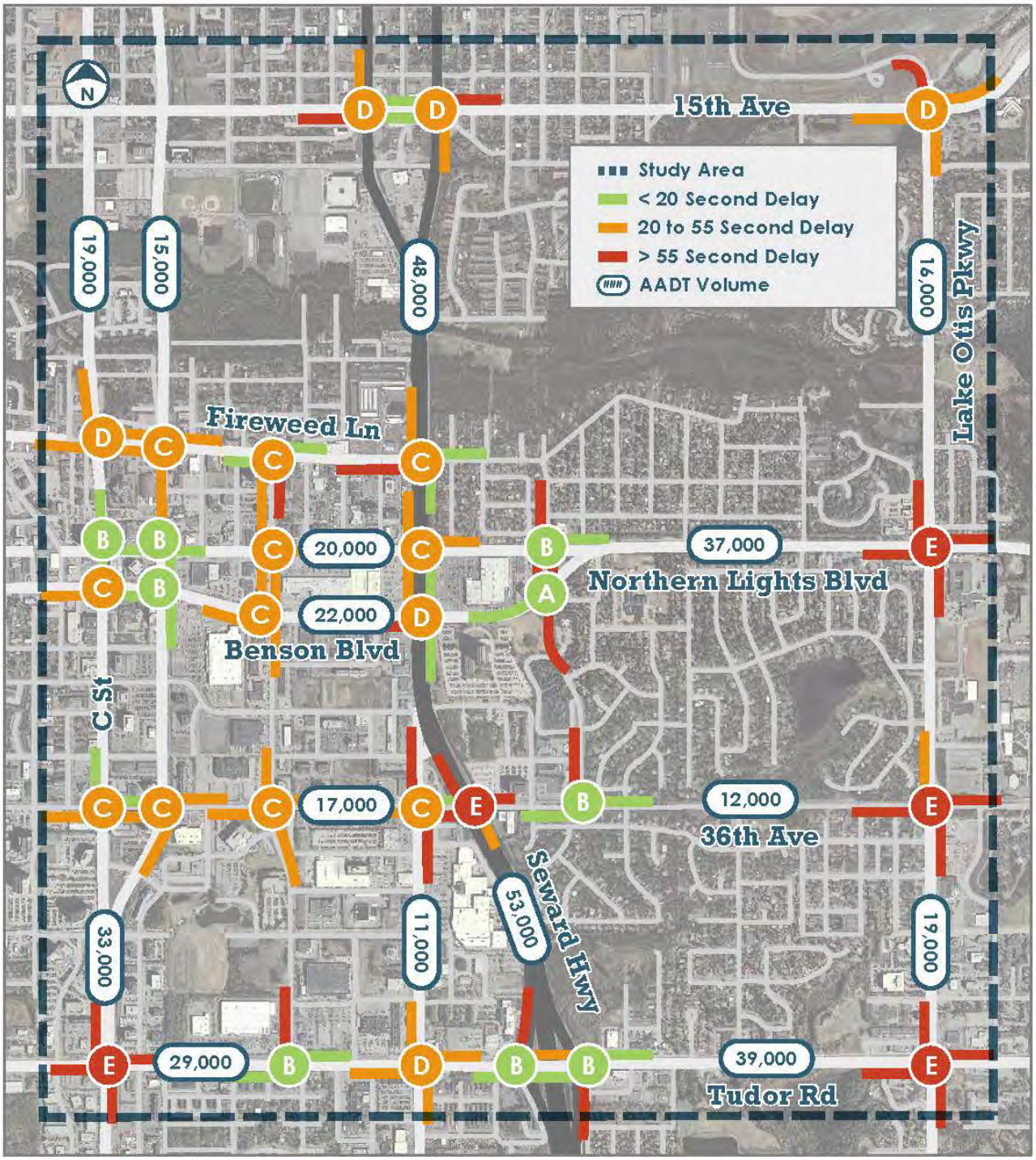


Figure 15: Level of Service – Existing PM Peak Hour

Table 1: Intersection Crash Rate Analysis (2010-2014)

Intersection	Total Crashes	Total Million Entering Vehicles (MEV)	Crash Rate (per MEV)	DOT&PF Average Crash Rate (per MEV)	Critical Crash Rate
20th Avenue/ Seward Highway (Ingra Street)	25	10.1	0.50	0.19	0.30
Fireweed Lane/ Seward Highway	149	20.8	1.43	1.45	1.65
Northern Lights Boulevard/ Seward Highway	211	26.2	1.61	1.13	1.29
Benson Boulevard/ Seward Highway	280	28.9	1.94	1.13	1.28
36th Avenue/ Seward Highway	277	25.7	2.15	1.41	1.59
Tudor Road/ NB Seward Highway Ramps	93	16.7	1.11	1.13	1.33
Tudor Road/ SB Seward Highway Ramps	65	17.0	0.76	1.13	1.33

A review of the data indicates the following:

- All the signalized intersections in the Seward Highway corridor are at or above the statewide average crash rates for comparable intersections
- Rear-end crashes at the northbound approach to 36th Avenue were the most common crash type and location
- One fatality occurred in the five-year evaluation window. The fatality was a pedestrian that was struck at the Tudor Road/Northbound Seward Highway Off Ramp
- A cluster of pedestrian/bicycle collisions occurs annually at the Seward Highway intersections with Benson Boulevard and Northern Lights Boulevard. An average of ten pedestrian/bicycle crashes per year occurred along the Seward Highway, Tudor Road to 20th Avenue corridor
- Major injuries and fatalities are hard to predict and vary widely from year to year. One occurred in the 2010 to 2014 time frame; whereas two occurred in 2018 alone.

4.3 Resiliency

Transportation departments across the United States (U.S.) are assessing solutions to ensure that our infrastructure is resilient, prepared to withstand, and respond to and quickly recover from potential disruptions. The United States Department of Transportation (USDOT) Strategic Plan for fiscal years 2018-2022 states that infrastructure should be made resilient and durable to withstand extreme weather events. The Fixing America's Surface Transportation (FAST) Act of 2015 requires agencies to take resiliency into consideration during the transportation planning phases of projects, and resiliency is one of FHWA's transportation planning factors.

The primary focus for resiliency on this corridor is to develop strategies for weather events, seismic activity and bridge strikes. Related to this definition of resiliency is the ability of the network to respond to road closures caused by major crashes, construction, or other emergencies.

4.3.1 Extreme Weather Events

The Alaska Vulnerability Pilot Project was initiated jointly by DOT&PF and the U.S. Federal Land Management Agency (FLMA) through a grant provided by FHWA. The focus of the project was to better understand changing climate conditions in Alaska and how to make more informed decisions on transportation asset investments. A few climate change observations from the Alaska Climate Trend Vulnerability Study[19] include:

- Historical records suggest that Alaska is already facing dramatically changing climate conditions. The state has warmed twice as fast as the rest of the nation
- Over the past 50 years, average precipitation levels in the state have increased by ten percent
- Climate projections for Alaska indicate that many of the challenges the state is facing now will become worse in the future.

4.3.2 Earthquakes

Earthquakes are frequent events in Alaska, and Anchorage has a front door view to the subduction zone where the Pacific Plate slides under the North American plate. This subduction zone spawns frequent earthquakes, with the most significant earthquakes typically occurring in the shallow part of the subduction zone – which includes the southern coastline of Alaska. The most significant earthquake recorded in Alaska was the 1964 Good Friday Earthquake, but several other tremors above 7 have been recorded since that time; the most recent being on November 30, 2018 when a 7.1 magnitude earthquake struck near Anchorage, causing widespread damage to roads, utilities, and bridge/structures across Anchorage and the Mat-Su Valley.

4.3.3 Bridge Strikes

Over the past two years, there have been two prominent instances of over-height trucks striking bridge girders; once in 2018 at the Eagle River/Artillery interchange and the second in 2019 at the Tudor Road/Seward Highway interchange. In both instances the damage was significant enough to require detouring traffic and full/partial closures until the bridge could be repaired or braced.

[19] FHWA (2016). Alaska Climate Trend Vulnerability Study

4.3.4 Considerations for Travel Disruption

The events described above emphasize the need to have strategies in place to ensure that users of the Seward Highway corridor and associated east-west corridor crossings have alternative routes if major flooding makes highways impassable, or if bridges damaged by vehicles or other catastrophic events such as earthquakes result in the need for temporary detours.

Positive drainage and a storm drain system with ample capacity and a short distance to the Chester Creek outfall prevents flooding from being a major concern with the existing road design. Soil conditions in the study area vary widely and the water table is relatively shallow (6 to 12 feet below surface), but the study area remained operational through the most recent earthquake. New roads and bridges will need to meet Alaska's design standards for earthquake performance, but if the earthquake is large enough, outages are still likely. Bridge strikes, construction and maintenance activities, and utility issues can also result, sometimes unexpectedly, in extended detours or disruptions to traffic.

Fortunately, the study area surrounding the Seward Highway corridor has both an east-west and north-south transportation grid of connector and arterial roadways. This system of sidewalks/pathways and roadways provides alternative routes (with a few exceptions) for users in the event of a major breakdown of flow on Seward Highway. If/when a major detour is needed, it is important to have a system that can adapt to these large shifts without causing excessive delays and/or gridlock.

4.4 Future Transportation Context

The length of Seward Highway subject to the MCR PEL Study is approximately 1.5 miles long. In the context of the Anchorage Bowl, transportation demand studies require a much broader look at Anchorage travel than the short distance of Seward Highway that routes through Midtown. For this reason, the objective of transportation demand management in MCR is to evaluate the performance of the corridor in relation to other areawide plans (e.g. Anchorage Pedestrian Plan, Anchorage Bicycle Plan, MTP, 2020 Comprehensive Plan, 2040 Land Use Plan, etc.) and to make sure that future projects incorporate measures to be as flexible as possible to adapt to changing technologies.

- **Non-motorized facilities:** the existing facilities are not continuous and require out-of-direction travel. Facilities are deteriorated, not Americans with Disabilities Act (ADA) accessible, and do not meet the needs of all users. Improvements in the corridor should fully include the recommendations of the Pedestrian and Bicycle Plans and Land Use Plans to the extent feasible.
- **Transit:** the primary role of the Seward Highway corridor is to provide a convenient and efficient corridor for transportation. Future transit on the Seward Highway would likely only be a commuter service between the Mat-Su valley and Anchorage. Transit stops are located on the cross-streets but are not present on Seward Highway. Preservation of existing infrastructure and functionality is the primary consideration of new projects on Seward Highway.
- **HOV:** the Seward Highway south of Tudor Road has a median width that is sufficiently wide to accommodate a future HOV lane in each direction, should the need arise. While there is no timetable for implementing this strategy, preservation of this capability north of Tudor Road is desired.
- **Vehicle Trips:** Emerging technologies such as connected and autonomous vehicles are difficult to predict in terms of their effect on vehicle trips. Best practices for accommodating these emerging technologies is to consider dedicated lanes or at least the ability to add dedicated lanes when investing in major infrastructure projects. A common misconception is that rideshare companies such

as Uber and Lyft will reduce vehicle trips and reduce congestion on our roads. The research has demonstrated the opposite effect – they tend to increase vehicle trips by pulling users off public transit.[20] This means that while transportation demand forecasts have become more complex, they are not likely to yield lower traffic projections.

- **Compatibility with other Projects:** transportation infrastructure must be evaluated in context of the MTP, which accounts for other planned and ongoing projects that could/will influence the project corridor (Figure 16). The State, MOA, and AMATS have several projects in the Midtown area that will affect motorized and non-motorized traffic alike.

[20] The Ride Hailing Effect: More Cars, More Trips, More Miles. CityLab. October 12, 2017.

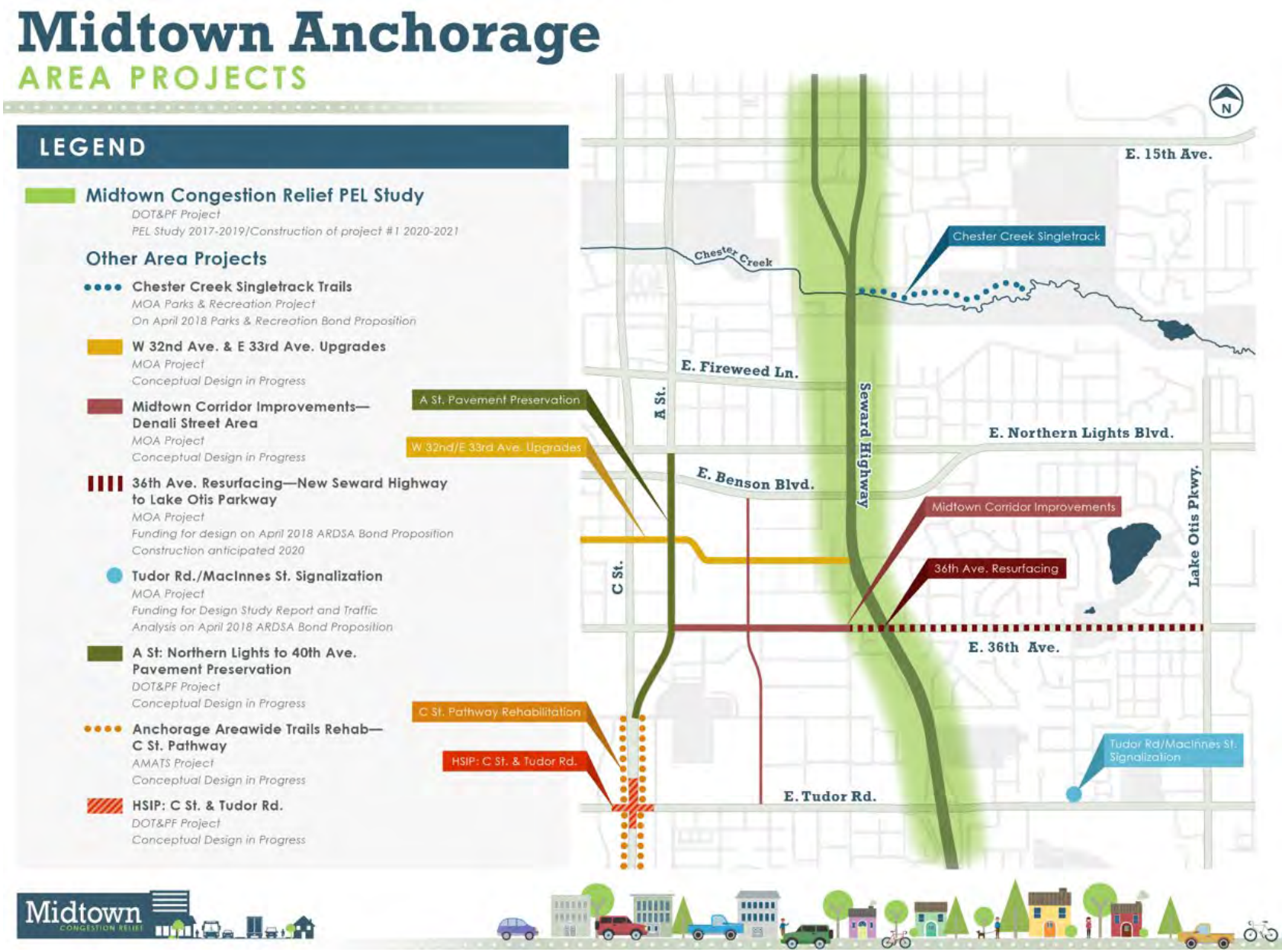


Figure 16: Other Projects in Study Area

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5.0 VISION AND GOALS

5.1 Vision

The study vision articulates a shared aspiration for corridor function and operations. The goals describe how the corridor vision will be achieved and reference the problems the study intends to address. The study vision is:

> "Improve safety and mobility for all users on the Seward Highway while enhancing east-west multimodal, safety, connectivity, and access for Midtown Anchorage."

The vision is visually depicted in Figure 17, with key elements being:

For Midtown:

- Increase access to adjoining land uses and connectivity between commercial and residential areas
- Increase multimodal (walking and bicycling) connections along and across the Seward Highway corridor.

For the Seward Highway:

- Increase mobility
- Decrease direct access to the Highway from adjacent land uses.

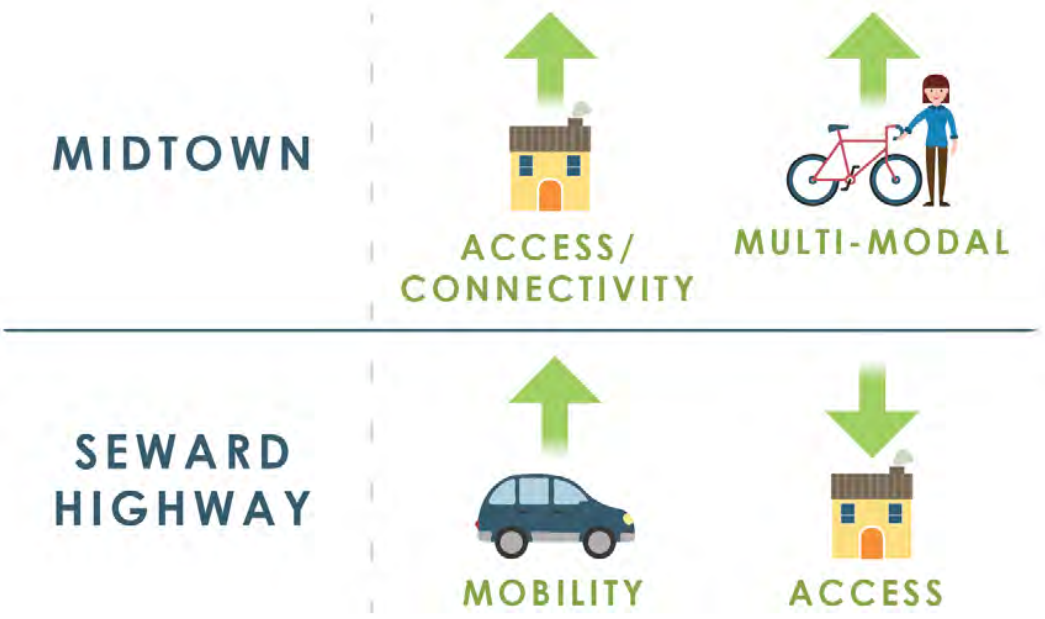


Figure 17: Vision Statement Illustration

5.2 Goals

The study's vision will be achieved by identifying individual projects for construction that will accomplish the following goals:

Safety

- Improve safety for all users by reducing the frequency and severity of crashes, particularly at intersections.

Access

- Maintain access to adjacent land uses and improve access across the corridor for all travel modes.

Environmental

- Minimize impacts to residents, businesses, other stakeholders and the natural environment.

Mobility and Connectivity

- Reduce traffic congestion on the Seward Highway and cross streets.
- Improve connections for motorized and non-motorized users along and across the Seward Highway corridor.

5.3 Relationship Between Vision and Goals and Study Purpose and Need

The study vision articulates a shared aspiration for corridor and study area function and operations. It reflects public, agency, stakeholder, and DOT&PF values. The goals describe how the corridor vision will be achieved and references the problems the study intends to address.

Elements of the PEL study vision and goals have informed the development of draft purpose and need statements for individual projects for the proposed environmental documents under NEPA. The FHWA technical advisory T 6640.8A states the purpose and need statement will:

> *"Identify and describe the proposed action and the transportation problem(s) or other needs which it is intended to address (40 CFR 1502.13). This section should clearly demonstrate that a "need" exists and should describe the "need" in terms understandable to the general public. This discussion should clearly describe the problems which the proposed action is to correct."*

5.4 Project Implementation Constraints

Although the goals for the project are to improve safety and access, minimize environmental impacts, and improve mobility and connectivity, other factors must be considered when designing and implementing specific projects to meet the corridor vision. Social and environmental factors and fiscal responsibility help constrain the range of solutions that are feasible for implementation.

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6.0 CONCEPT DEVELOPMENT AND EVALUATION

6.1 Concept Development Overview

The concept development process commenced in March 2018 with an evaluation of existing conditions and needs in the study area. The analysis was informed by details gathered in the agency kick-off meeting and public meeting and culminated in a Concept Development Workshop in late April/early May 2018. The various ideas raised in the Concept Development Workshop were woven together into three different categories:

- One-Way Frontage Road Concepts
- Two-Way Frontage Road Concepts
- Interim (Median U-Turn) Concept.

Within these groups, several different concept alternatives were developed. For one-way frontage road concepts, a total of four concept alternatives were developed, and for two-way frontage road concepts, a total of three concept alternatives were developed. A single intermediate (median u-turn) concept was developed. The initial concepts are graphically depicted in Section 6.3.

The evaluation of concepts involved a two-phased screening process. Phase 1 provided a high-level analysis of the initial concepts to determine their ability to meet the corridor vision and goals. Phase 1 primarily involved qualitative analyses intended to identify fatal flaws early in the concept development process, so those concepts could be dismissed from more detailed concept development and evaluation.

The concepts that passed the Phase 1 screening were subjected to concept refinement, which included a process of investigating whether the concepts were effective at delivering the improvements they were intended to achieve and receiving feedback from the public through the advisory groups and a second public meeting. The concepts were evaluated using quantitative (or measurable) screening criteria wherever possible. The Phase 2 evaluation was intended to identify the concept(s) that best achieve the study's vision of improving safety and mobility for all users on the Seward Highway while enhancing east-west multimodal, safety, connectivity and access for Midtown Anchorage. Figure 18 sets out the concept screening process.

The screening and analysis process culminated in the recommended concepts and projects discussed in Section 6 of the report. The remainder of this section discusses the following steps in the development and analysis of the concepts:

- Existing conditions and needs
- Initial concept development and Phase 1 screening
- Concept refinement and Phase 2 screening
- Recommendations.

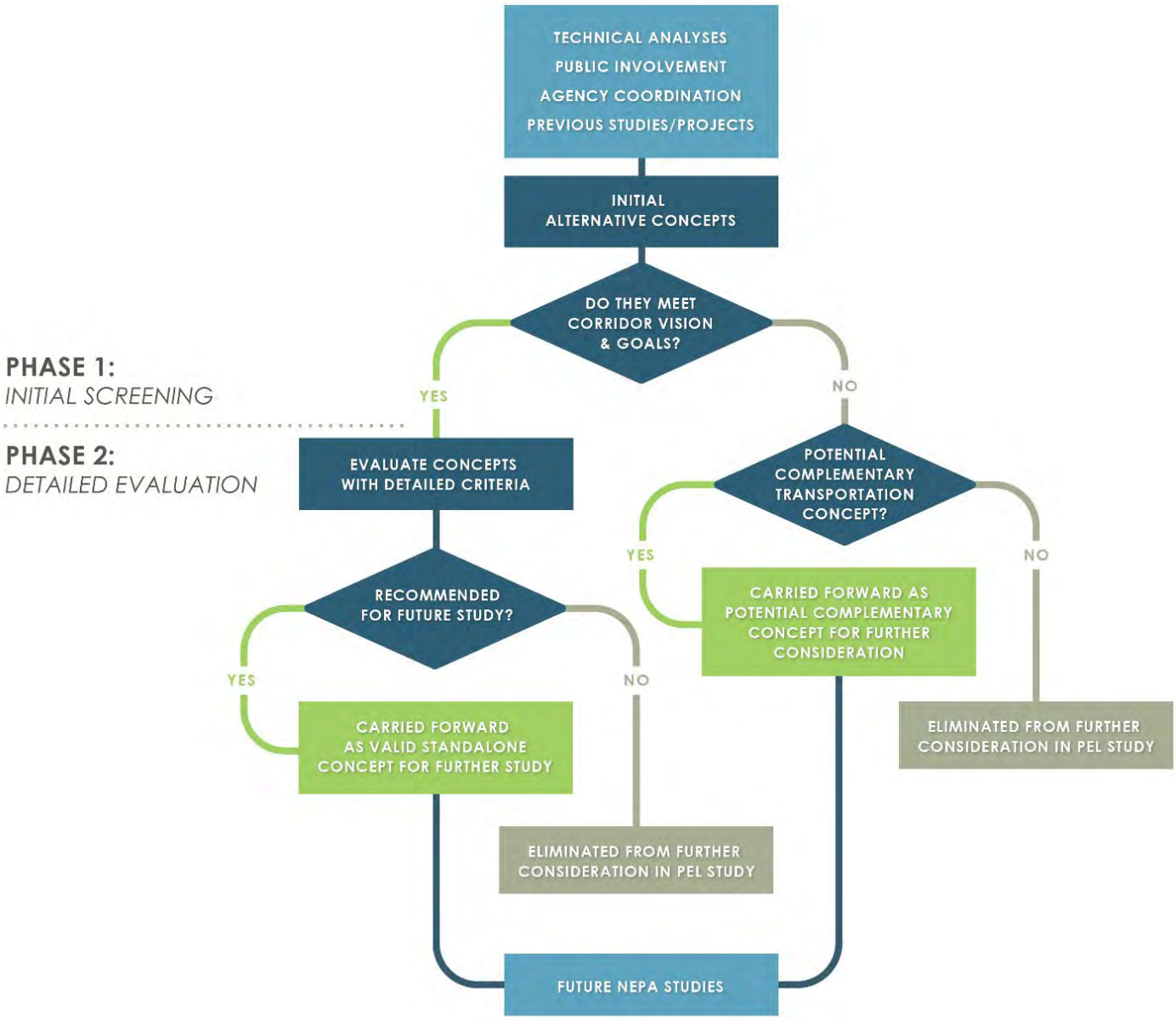


Figure 18: Concept Screening Process

6.2 Existing Conditions and Needs

The first step in the concept development and evaluation process was gathering information from agencies and the public and reviewing existing data to understand existing conditions and needs. Four key elements informed the existing conditions and needs phase of concept development and evaluation:

- Agency Kick-Off Meeting
- Public Meeting 1
- Existing Conditions Summary and Data Collection Analysis Report
- Concept Development Workshop.

The stakeholder and public involvement process is summarized in Section 3 of this report, and a detailed summary is provided in Appendix 3. Comments that contributed to the concept development process were gathered at the meetings and are summarized in Section 3.

6.2.1 Concept Development Workshop

The Concept Development Workshop was held over two days. It was attended by representatives from DOT&PF's project team, traffic, utilities, projects, construction and planning departments; the MOA's project management and engineering, traffic and planning departments; AMATS; and members of the consultant team specializing in transportation engineering, traffic, planning, ROW, environmental, utilities, and public involvement. The workshop commenced with an overview of existing conditions and needs in the corridor and study area. A sketch planning session followed with participants divided into three teams. The workshop focused on identifying concept ideas that addressed access, mobility, cross-sections, multimodal resources, construction phasing and individual project definition.

The concepts focused on the Seward Highway corridor, and at the conclusion of the first day the sketch planning session yielded seven one-way frontage road concepts, three two-way frontage road concepts and one no-build concept. Thematic elements of the concepts included:

- Several concepts recommended closing through access on Fireweed Lane
- Most of the concepts recommended the Seward Highway be elevated over 36th Avenue and depressed below Benson Boulevard, Northern Lights Boulevard, and Fireweed Lane
- Several of the concepts identified the opportunity to improve pedestrian and bicycle connectivity by providing a dedicated non-motorized crossing in the vicinity of 33rd Avenue
- Most of the concepts provided two to three grade separated multimodal crossings of the Seward Highway (at grade with the frontage road network).

Several of the concepts recommended improvements to the secondary road network in conjunction with traffic operations on the frontage road network.



Photo 8: Presenting the Sketch Concepts at the Workshop

On the second day of the workshop, the sketch planning session continued with a focus on:

- Interchange configurations at the east-west cross streets
- How to provide and enhance multimodal routes through the corridor and study area
- How to divide the concepts into projects with independent utility and logical termini
- How projects can be implemented in a phased manner.

At the conclusion of the second day, each team was asked to present their two "best" concepts to the group.

6.2.2 Existing Conditions Summary and Data Collection Report

The Existing Conditions Summary and Data Collection Report is attached to this study report as Appendix 2. The report identified the following central issues and needs:

- Congestion at intersections throughout the corridor, which generates impacts on through traffic, access, turning, and queueing throughout the study area
- Safety impacts because of congestion issues
- The Seward Highway is a multimodal barrier, with poor or absent non-motorized facilities, poor signal phasing and non-motorized amenities
- Traffic signals give priority to north-south traffic movements along the Seward Highway, which results in congestion along east-west arterial roadways
- The majority of the traffic in the Seward Highway corridor within the study area either originates from or is destined for Midtown. This means the majority of traffic is not trying to divert past Midtown, and accommodations are needed for access

- Traffic volumes from the northbound and southbound direction are relatively balanced in both the morning and the evening peak. This means there is not excess lane capacity that could be considered for reversible lanes
- The Seward Highway generates noise impacts on surrounding neighborhoods, that will need to be carefully considered and addressed as part of any transportation improvements.

Together, these documents and meetings informed initial concept development.

6.3 Initial Concept Development

6.3.1 Initial Concepts

The following concepts were developed initially in response to the information gathered from the existing conditions and needs effort:

Active Transportation Facilities

Improvements to active (non-motorized) transportation facilities are proposed as basic elements of all concepts. Active transportation facilities are proposed on both sides of the Seward Highway through the study corridor, comprising the reconstruction and improvement of existing facilities, and provision of new active facility segments to fill in gaps in the active transportation network that currently exist. Reconstruction and improvement of active transportation facilities is also proposed on both sides of all east-west cross streets (Tudor Road, Benson Boulevard, Northern Lights Boulevard, and Fireweed Lane). Crossings of the Seward Highway will be provided using a pedestrian phase at signalized intersections with frontage roads, but these crossings will be an improvement over the existing arrangement as active transportation users will only have to cross one direction of travel at each crossing point, and the wait time at signals will be much shorter.

In addition to the improvements along the roadway, the subsurface crossing of the Seward Highway at the Chester Creek trail is proposed to be reconstructed and significantly improved, and where possible, a new grade-separated crossing of the Seward Highway is proposed at 33rd Avenue to connect with the MOA's non-motorized improvements along the 33rd Avenue corridor. The proposed active transportation facility improvements will be incorporated into all the concepts, and are shown in Figure 19.

Concepts A – H

Eight concepts were initially developed, known as Concepts A through H. Except for Concept H, all the concepts provided for traffic traveling through Midtown on an access-controlled freeway section that connected at various locations to a frontage road network for local access within Midtown. Concepts A through D provided local access using a one-way frontage road network, and Concepts F through G provided local access using a two-way frontage road network.

Concept H is an interim concept that provides for intersection improvements through the study area by converting the operation of the Seward Highway to a couplet format. This will enable signalized intersections to be converted from four-phase to two-phase, significantly improving safety by reducing delays and alleviating congestion. It will also support improved crossing opportunities for pedestrians and bicyclists, as they will cross a reduced number of lanes, and only one direction of traffic in a crossing cycle. Concepts A through A are shown in Figures 20 to 27. The key features of each concept are described on the figures.

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ACTIVE TRANSPORTATION

- New active transportation facility segments
- Existing active transportation facility to be Reconstructed or improved
- Structure

Active Transportation applies to all concepts

Objectives

- Provide east-west connection
- North-south mobility along Seward Highway
- Signalized crossings occur at each major intersection
- Grade separated crossings occur at Chester Creek and 33rd Ave
- Connection between Chester Creek and Campbell Creek trails

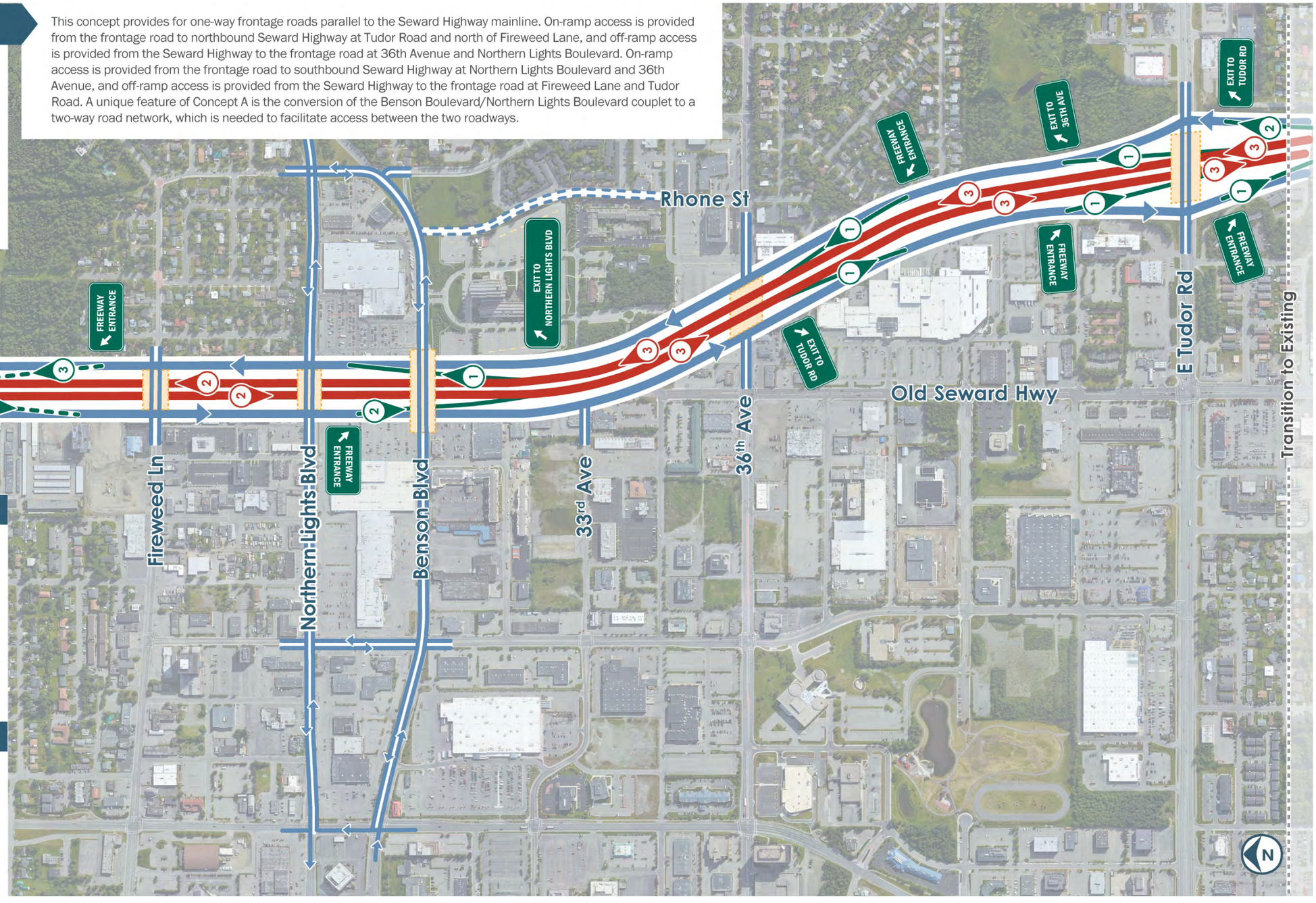
Figure 19: Active Transportation Facilities

CONCEPT A

- Seward Highway – Freeway Mainline
- Freeway Ramp
- Street/Frontage Network and Direction of Traffic
- Future Ramp
- Optional Secondary Road Improvement
- Number of Lanes and Direction of Traffic
- Structure

See active transportation schematic
Alignment/footprint to be determined

This concept provides for one-way frontage roads parallel to the Seward Highway mainline. On-ramp access is provided from the frontage road to northbound Seward Highway at Tudor Road and north of Fireweed Lane, and off-ramp access is provided from the Seward Highway to the frontage road at 36th Avenue and Northern Lights Boulevard. On-ramp access is provided from the frontage road to southbound Seward Highway at Northern Lights Boulevard and 36th Avenue, and off-ramp access is provided from the Seward Highway to the frontage road at Fireweed Lane and Tudor Road. A unique feature of Concept A is the conversion of the Benson Boulevard/Northern Lights Boulevard couplet to a two-way road network, which is needed to facilitate access between the two roadways.



KEY FEATURES

- Mainline could be over or under cross streets
- Accommodates future southbound off and northbound on ramps north of Fireweed Lane
- Includes redesign of Benson Blvd/Northern Lights Blvd to be two-way roads east of A Street to accommodate ramp spacing
- Benson Blvd is free-flowing crossing with greater focus on commercial access
- Active transportation free-flow crossing at Benson Blvd

CHALLENGES

- Large, high volume intersections required at Northern Lights Blvd/Seward Hwy ramps
- Clearance at Benson Blvd
- Modifications to facilitate two-way traffic on Benson Blvd/Northern Lights Blvd couplet
- High Volumes on frontage roads north of Northen Lights Blvd – likely 3 lanes each

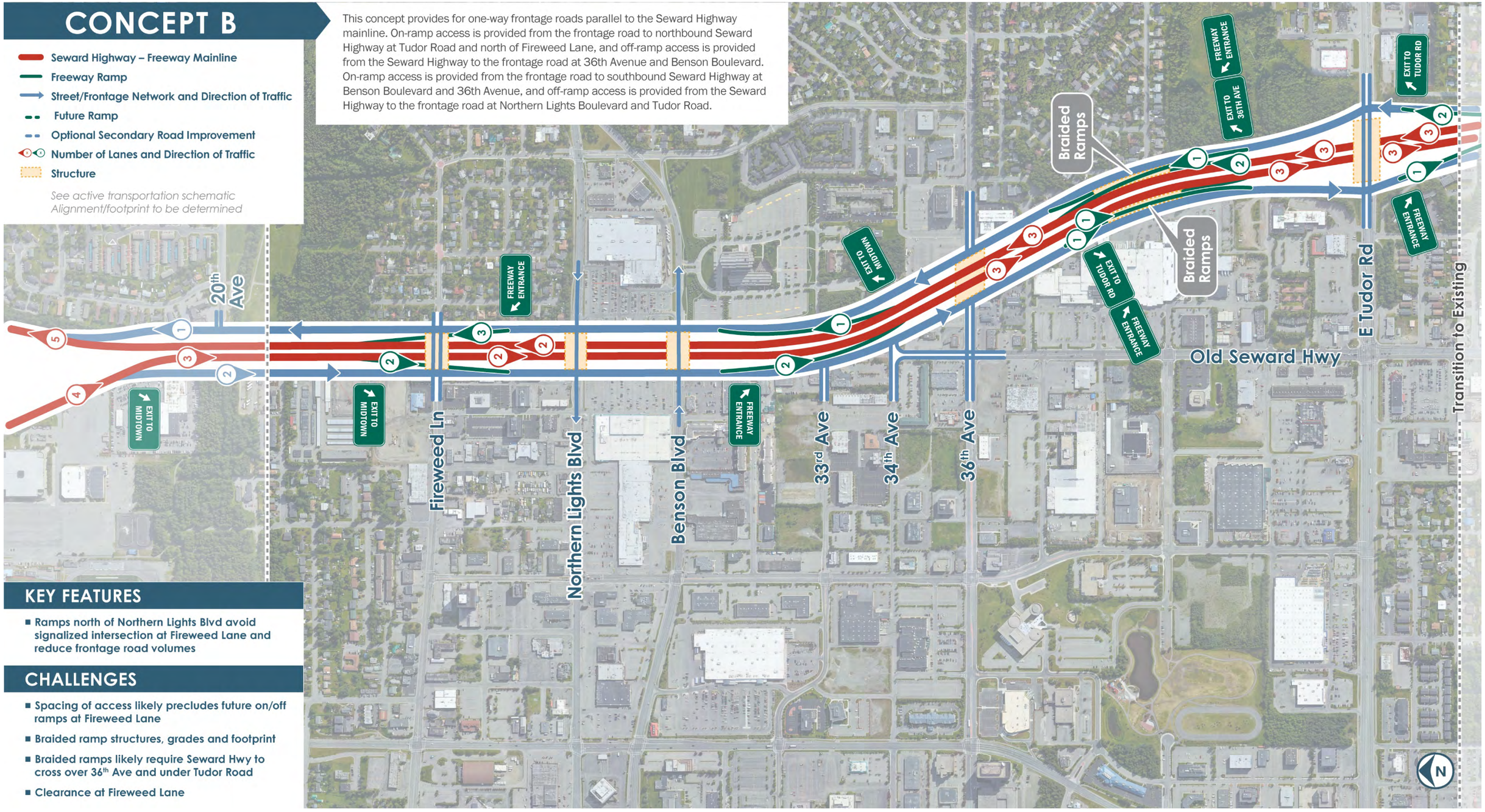
Figure 20: Concept A

CONCEPT B

- Seward Highway – Freeway Mainline
- Freeway Ramp
- Street/Frontage Network and Direction of Traffic
- Future Ramp
- Optional Secondary Road Improvement
- Number of Lanes and Direction of Traffic
- Structure

See active transportation schematic
Alignment/footprint to be determined

This concept provides for one-way frontage roads parallel to the Seward Highway mainline. On-ramp access is provided from the frontage road to northbound Seward Highway at Tudor Road and north of Fireweed Lane, and off-ramp access is provided from the Seward Highway to the frontage road at 36th Avenue and Benson Boulevard. On-ramp access is provided from the frontage road to southbound Seward Highway at Benson Boulevard and 36th Avenue, and off-ramp access is provided from the Seward Highway to the frontage road at Northern Lights Boulevard and Tudor Road.



KEY FEATURES

- Ramps north of Northern Lights Blvd avoid signalized intersection at Fireweed Lane and reduce frontage road volumes

CHALLENGES

- Spacing of access likely precludes future on/off ramps at Fireweed Lane
- Braided ramp structures, grades and footprint
- Braided ramps likely require Seward Hwy to cross over 36th Ave and under Tudor Road
- Clearance at Fireweed Lane

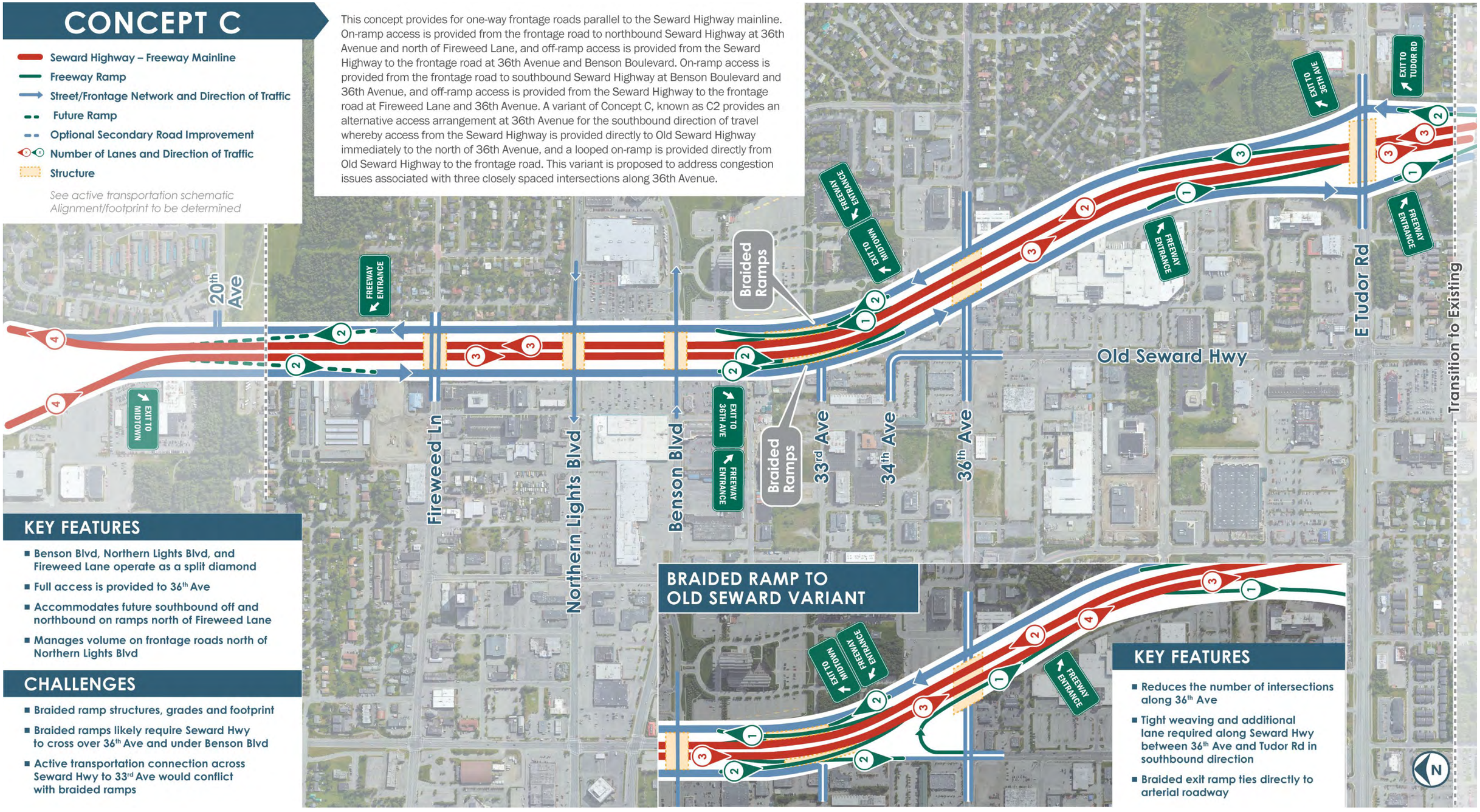
Figure 21: Concept B

CONCEPT C

- Seward Highway – Freeway Mainline
- Freeway Ramp
- Street/Frontage Network and Direction of Traffic
- Future Ramp
- Optional Secondary Road Improvement
- Number of Lanes and Direction of Traffic
- Structure

See active transportation schematic
Alignment/footprint to be determined

This concept provides for one-way frontage roads parallel to the Seward Highway mainline. On-ramp access is provided from the frontage road to northbound Seward Highway at 36th Avenue and north of Fireweed Lane, and off-ramp access is provided from the Seward Highway to the frontage road at 36th Avenue and Benson Boulevard. On-ramp access is provided from the frontage road to southbound Seward Highway at Benson Boulevard and 36th Avenue, and off-ramp access is provided from the Seward Highway to the frontage road at Fireweed Lane and 36th Avenue. A variant of Concept C, known as C2 provides an alternative access arrangement at 36th Avenue for the southbound direction of travel whereby access from the Seward Highway is provided directly to Old Seward Highway immediately to the north of 36th Avenue, and a looped on-ramp is provided directly from Old Seward Highway to the frontage road. This variant is proposed to address congestion issues associated with three closely spaced intersections along 36th Avenue.



KEY FEATURES

- Benson Blvd, Northern Lights Blvd, and Fireweed Lane operate as a split diamond
- Full access is provided to 36th Ave
- Accommodates future southbound off and northbound on ramps north of Fireweed Lane
- Manages volume on frontage roads north of Northern Lights Blvd

CHALLENGES

- Braided ramp structures, grades and footprint
- Braided ramps likely require Seward Hwy to cross over 36th Ave and under Benson Blvd
- Active transportation connection across Seward Hwy to 33rd Ave would conflict with braided ramps

BRAIDED RAMP TO OLD SEWARD VARIANT

KEY FEATURES

- Reduces the number of intersections along 36th Ave
- Tight weaving and additional lane required along Seward Hwy between 36th Ave and Tudor Rd in southbound direction
- Braided exit ramp ties directly to arterial roadway

Figure 22: Concept C

CONCEPT D

- Seward Highway – Freeway Mainline
- Freeway Ramp
- Street/Frontage Network and Direction of Traffic
- Future Ramp
- Optional Secondary Road Improvement
- Number of Lanes and Direction of Traffic
- Structure

See active transportation schematic
Alignment/footprint to be determined

This concept "borrows" from the diverging diamond interchange configuration to cross the main lines of Seward Highway through Midtown, with the diverge/merge points located immediately to the north of the Tudor Road intersection and the Fireweed Lane intersection. This concept supports easier left-turn movements between the Seward Highway and cross-streets. Early challenges were identified with this concept associated with congestion generated from right-turn movements, which meant the concept was deemed "fatally flawed" prior to Phase 1 screening.

KEY FEATURES

- Frontage roads intersect at Fireweed Lane and 33rd Ave
- Heavily concentrates access to and from Seward Hwy
- Facilitates left turning traffic at Benson Blvd/Northern Lights Blvd with no opposing traffic
- Accommodates future southbound off and northbound on ramps north of Fireweed Lane

CHALLENGES

- Right turning traffic volume is comparable to left turning traffic volume
- Right turning movements not intuitive
- Additional intersection for frontage traffic
- Additional structures for crossover intersections
- Complicated geometry and structures at frontage road intersections
- High frontage road volumes
- No additional ramping within crossover configuration

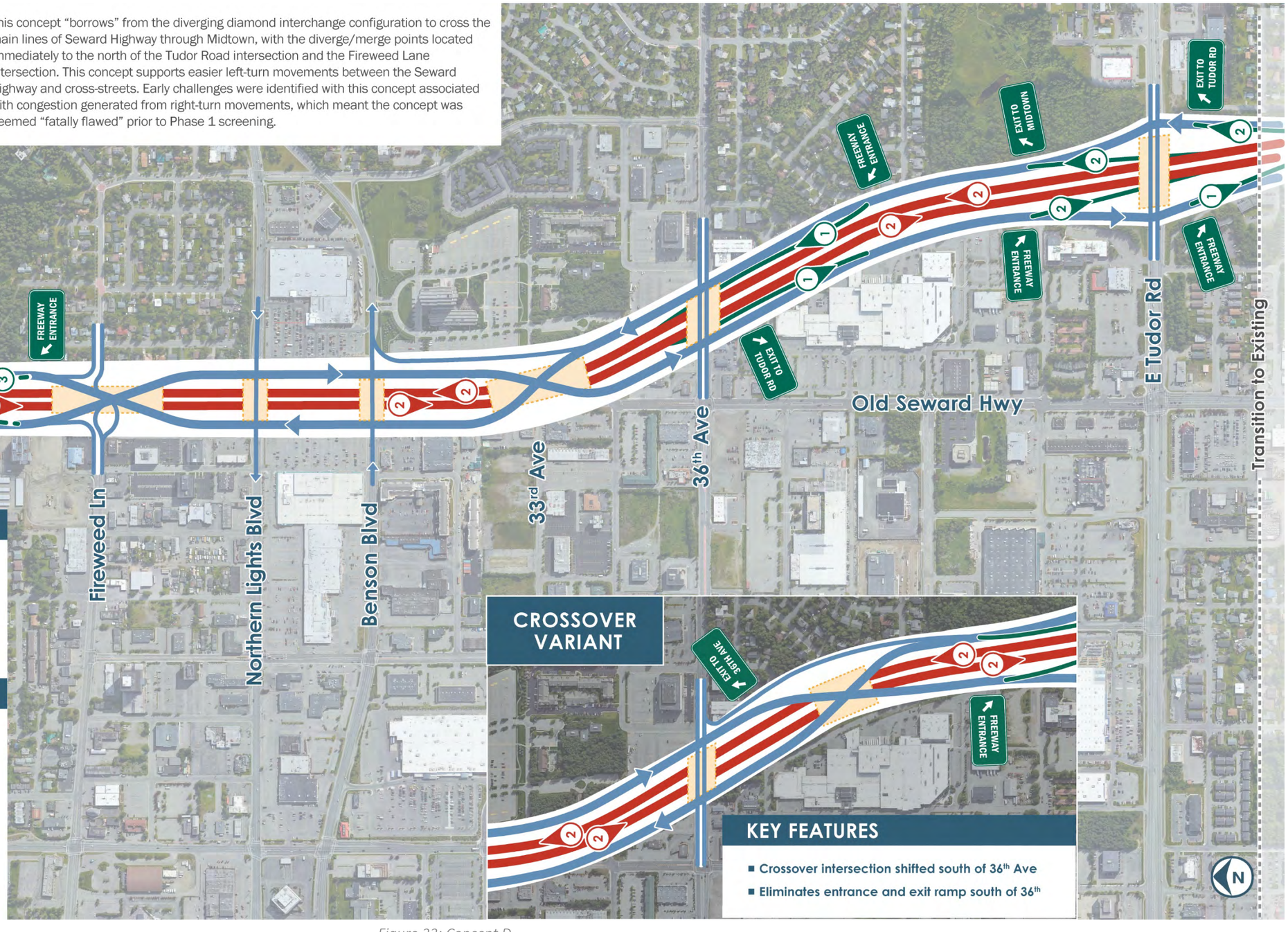


Figure 23: Concept D

CONCEPT E

- Seward Highway – Freeway Mainline
- Freeway Ramp
- Street/Frontage Network and Direction of Traffic
- Future Ramp
- Optional Secondary Road Improvement
- Number of Lanes and Direction of Traffic
- Structure

See active transportation schematic
Alignment/footprint to be determined

This concept proposes to extend the Old Seward Highway through to Fireweed Lane on the west side of the Seward Highway to create a two-way frontage road. Connection between the frontage road and the highway would be provided north of Fireweed Lane. Access to and from the frontage road network and the Seward Highway would be provided at Tudor Road, 36th Avenue and Benson Boulevard.

KEY FEATURES

- Mainline could be over or under cross streets
- Traditional two-way road next to the Seward Hwy for Midtown access
- Direct access to businesses may be difficult due to traffic volumes
- Additional structures required crossing mainline to end frontage
- Accommodates future southbound off and northbound on ramps north of Fireweed Lane

CHALLENGES

- High volumes on frontage roads – likely 3 lanes each direction
- Limits ability to add ramps
- Closely spaced intersections along 36th Ave
- Old Seward Hwy to Seward Hwy connection results in high signalized turning movements at Tudor Road and 36th Ave

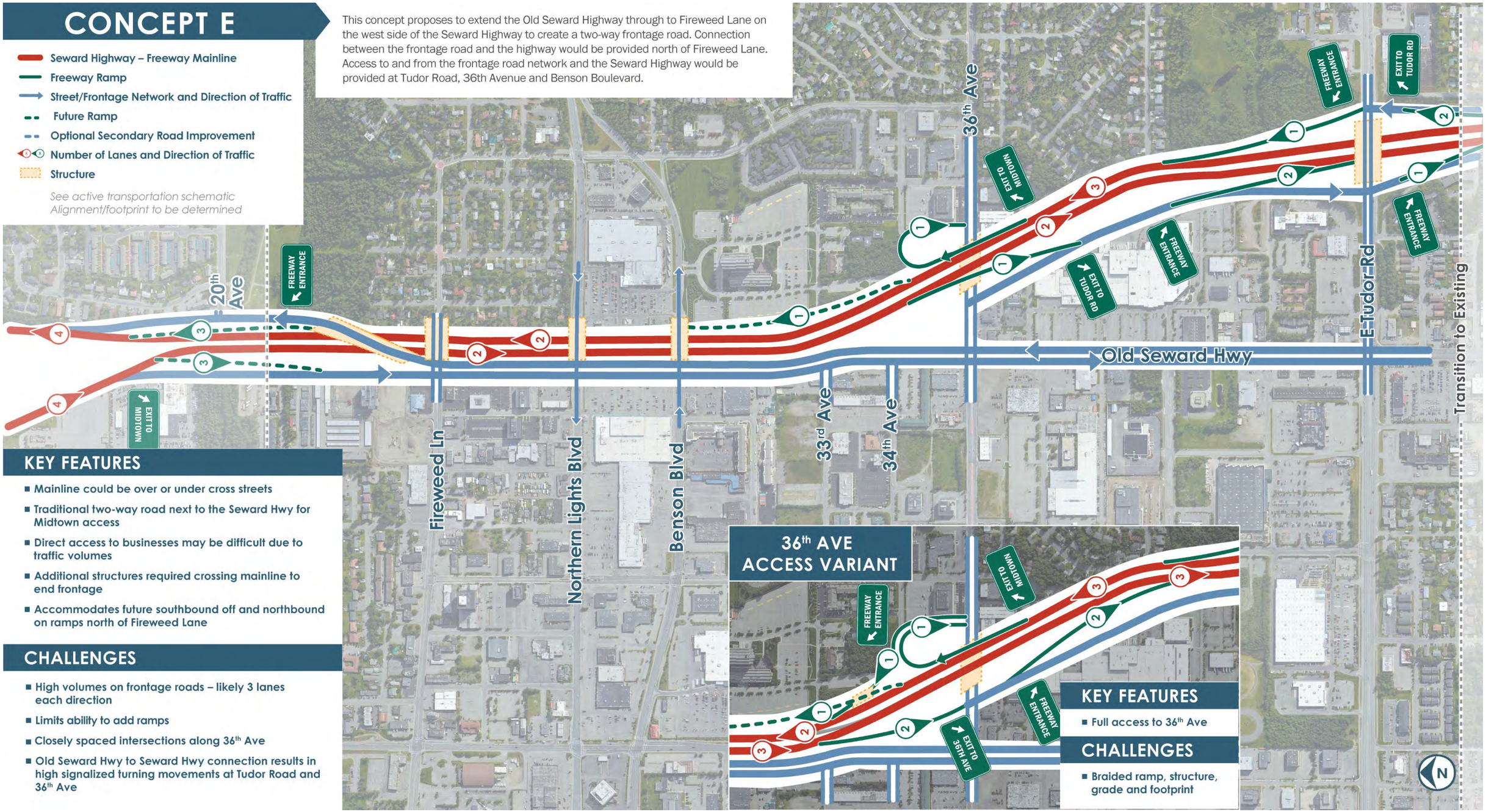


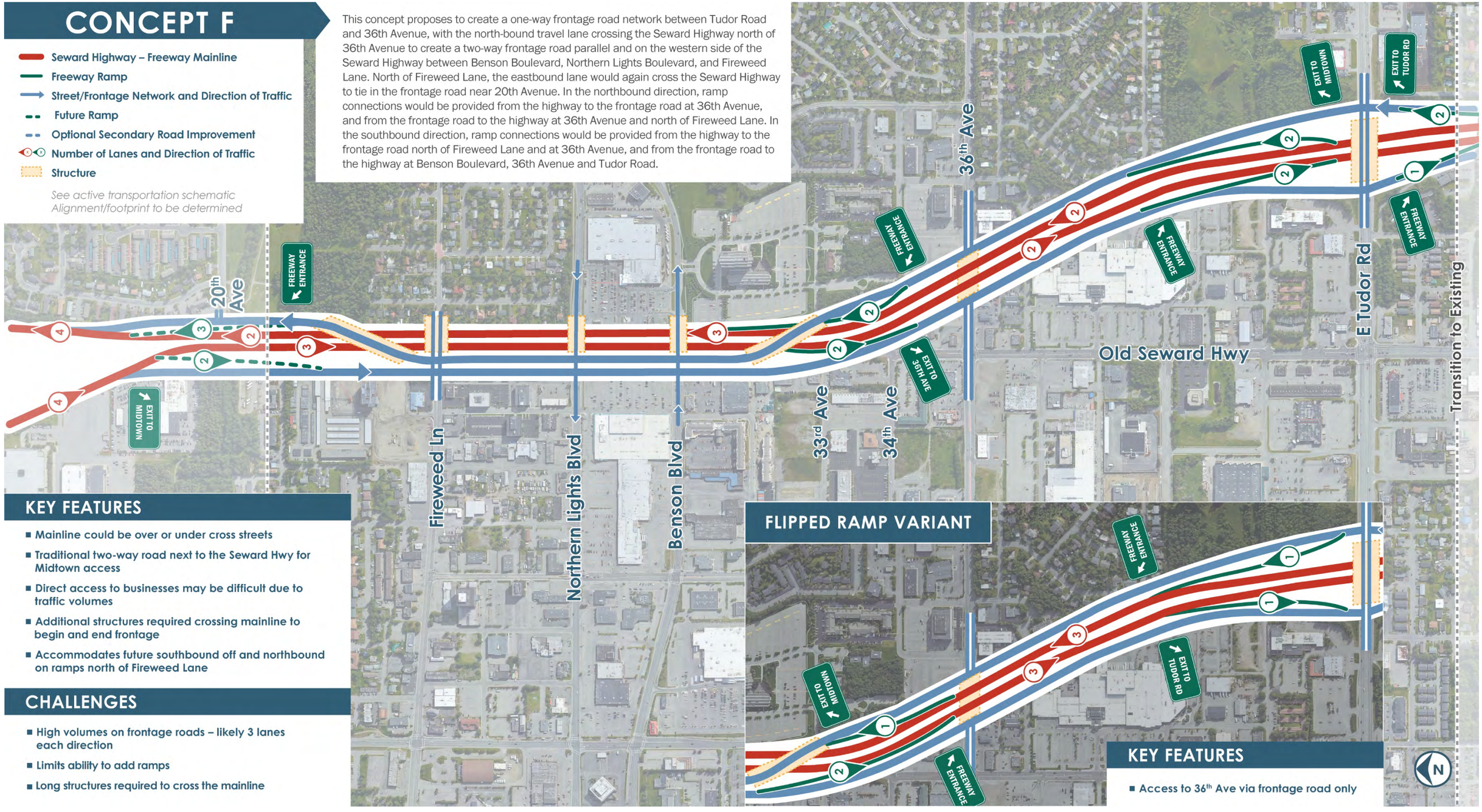
Figure 24: Concept E

CONCEPT F

- Seward Highway – Freeway Mainline
- Freeway Ramp
- Street/Frontage Network and Direction of Traffic
- Future Ramp
- Optional Secondary Road Improvement
- Number of Lanes and Direction of Traffic
- Structure

See active transportation schematic
Alignment/footprint to be determined

This concept proposes to create a one-way frontage road network between Tudor Road and 36th Avenue, with the north-bound travel lane crossing the Seward Highway north of 36th Avenue to create a two-way frontage road parallel and on the western side of the Seward Highway between Benson Boulevard, Northern Lights Boulevard, and Fireweed Lane. North of Fireweed Lane, the eastbound lane would again cross the Seward Highway to tie in the frontage road near 20th Avenue. In the northbound direction, ramp connections would be provided from the highway to the frontage road at 36th Avenue, and from the frontage road to the highway at 36th Avenue and north of Fireweed Lane. In the southbound direction, ramp connections would be provided from the highway to the frontage road north of Fireweed Lane and at 36th Avenue, and from the frontage road to the highway at Benson Boulevard, 36th Avenue and Tudor Road.



KEY FEATURES

- Mainline could be over or under cross streets
- Traditional two-way road next to the Seward Hwy for Midtown access
- Direct access to businesses may be difficult due to traffic volumes
- Additional structures required crossing mainline to begin and end frontage
- Accommodates future southbound off and northbound on ramps north of Fireweed Lane

CHALLENGES

- High volumes on frontage roads – likely 3 lanes each direction
- Limits ability to add ramps
- Long structures required to cross the mainline

FLIPPED RAMP VARIANT

KEY FEATURES

- Access to 36th Ave via frontage road only

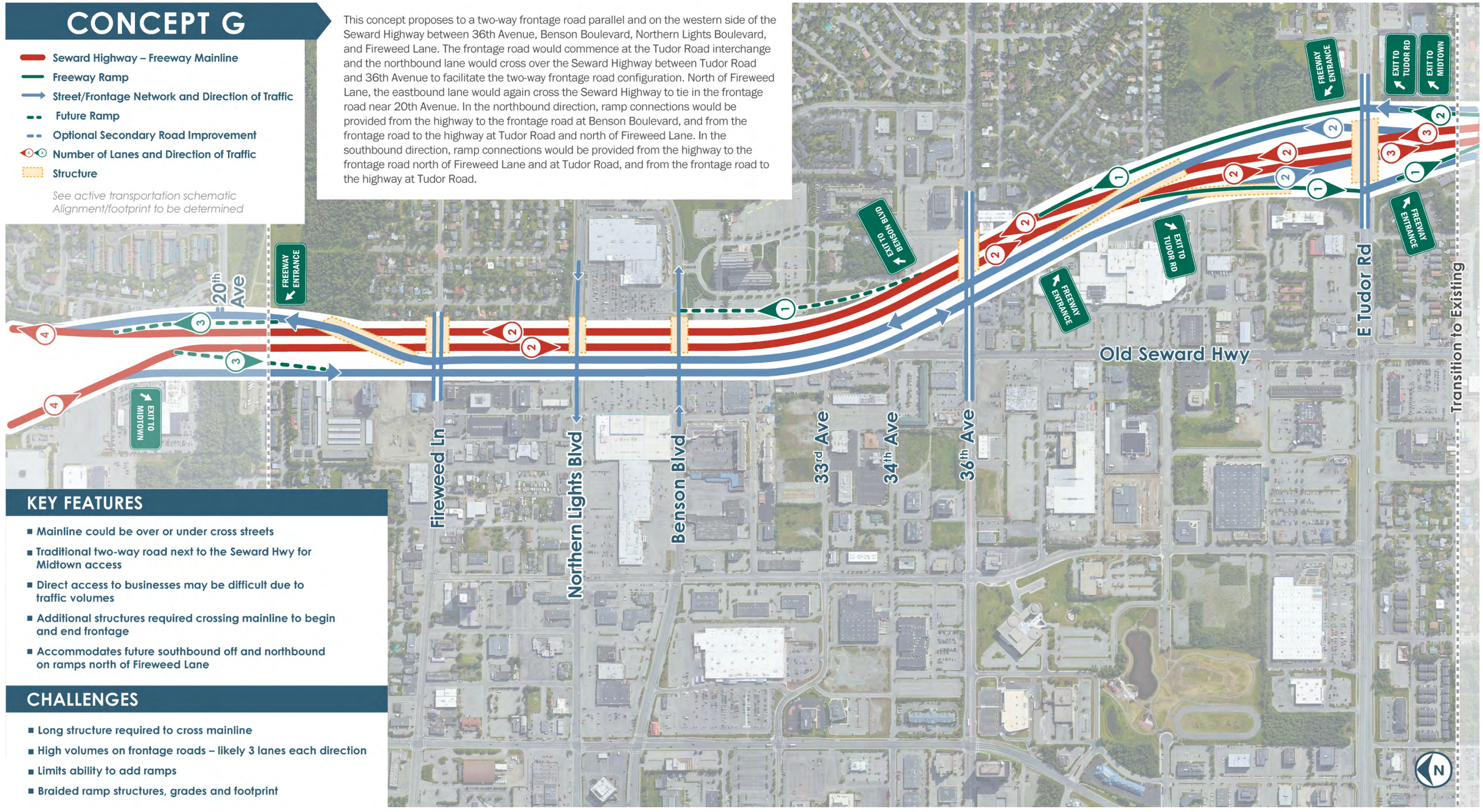
Figure 25: Concept F

CONCEPT G

- Seward Highway – Freeway Mainline
- Freeway Ramp
- Street/Frontage Network and Direction of Traffic
- Future Ramp
- Optional Secondary Road Improvement
- Number of Lanes and Direction of Traffic
- Structure

See active transportation schematic
Alignment/footprint to be determined

This concept proposes to a two-way frontage road parallel and on the western side of the Seward Highway between 36th Avenue, Benson Boulevard, Northern Lights Boulevard, and Fireweed Lane. The frontage road would commence at the Tudor Road interchange and the northbound lane would cross over the Seward Highway between Tudor Road and 36th Avenue to facilitate the two-way frontage road configuration. North of Fireweed Lane, the eastbound lane would again cross the Seward Highway to tie in the frontage road near 20th Avenue. In the northbound direction, ramp connections would be provided from the highway to the frontage road at Benson Boulevard, and from the frontage road to the highway at Tudor Road and north of Fireweed Lane. In the southbound direction, ramp connections would be provided from the highway to the frontage road north of Fireweed Lane and at Tudor Road, and from the frontage road to the highway at Tudor Road.



KEY FEATURES

- Mainline could be over or under cross streets
- Traditional two-way road next to the Seward Hwy for Midtown access
- Direct access to businesses may be difficult due to traffic volumes
- Additional structures required crossing mainline to begin and end frontage
- Accommodates future southbound off and northbound on ramps north of Fireweed Lane

CHALLENGES

- Long structure required to cross mainline
- High volumes on frontage roads – likely 3 lanes each direction
- Limits ability to add ramps
- Braided ramp structures, grades and footprint

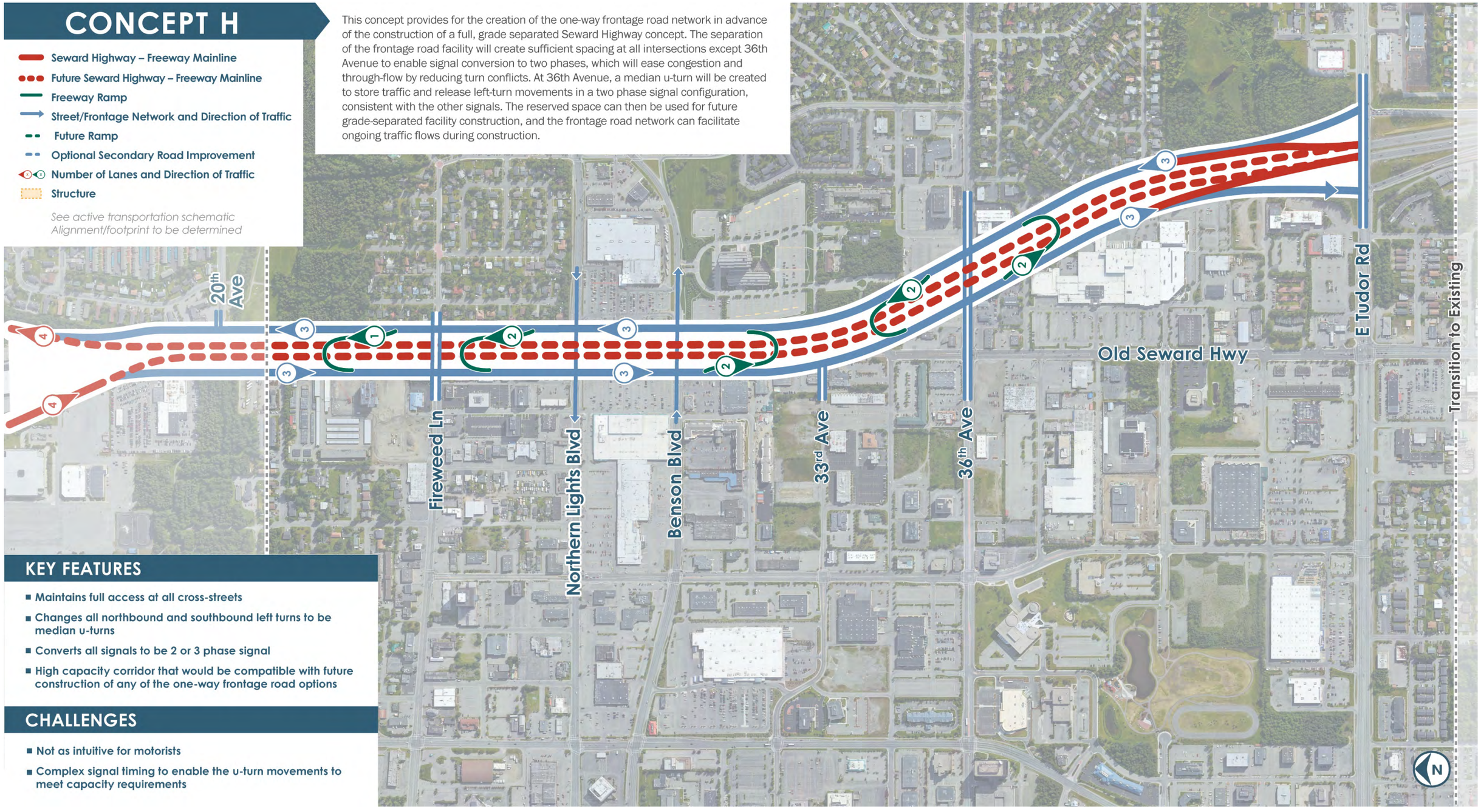
Figure 26: Concept G

CONCEPT H

- Seward Highway – Freeway Mainline
- Future Seward Highway – Freeway Mainline
- Freeway Ramp
- Street/Frontage Network and Direction of Traffic
- Future Ramp
- Optional Secondary Road Improvement
- Number of Lanes and Direction of Traffic
- Structure

See active transportation schematic
Alignment/footprint to be determined

This concept provides for the creation of the one-way frontage road network in advance of the construction of a full, grade separated Seward Highway concept. The separation of the frontage road facility will create sufficient spacing at all intersections except 36th Avenue to enable signal conversion to two phases, which will ease congestion and through-flow by reducing turn conflicts. At 36th Avenue, a median u-turn will be created to store traffic and release left-turn movements in a two phase signal configuration, consistent with the other signals. The reserved space can then be used for future grade-separated facility construction, and the frontage road network can facilitate ongoing traffic flows during construction.



KEY FEATURES

- Maintains full access at all cross-streets
- Changes all northbound and southbound left turns to be median u-turns
- Converts all signals to be 2 or 3 phase signal
- High capacity corridor that would be compatible with future construction of any of the one-way frontage road options

CHALLENGES

- Not as intuitive for motorists
- Complex signal timing to enable the u-turn movements to meet capacity requirements

Figure 27: Concept H

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Concept D was eliminated early owing to fatal flaws associated with traffic operations. The other concepts were subject to Phase 1 screening.

6.4 Phase 1 Concept Screening

The purpose of Phase 1 screening was to identify those concepts with the potential to meet the vision and goals of the study. The screening analysis performed during Phase 1 was a high level, pass/fail type analysis intended to eliminate concepts that obviously did not meet the vision and goals of the study. Each of the initial concepts was considered using a range of questions tied to the vision and goals, and a qualitative assessment was made about how well the concept performed in relation to each question. A rating, as set out in Table 2, was used to summarize the concept's performance.

Table 2: Phase 1 Evaluation Summary Key

Rating	Performance
	Performs Strongly
	Performs Moderately
	Neutral
	Performs Weakly
	Performs Poorly

Table 3 sets out a summary of the screening questions and results. The details of the Phase 1 Screening Analysis is attached to this report as Appendix 7.

Table 3: Phase 1 Evaluation Summary

Screening Criteria	A	B	C1	C2	E	F	G	H
Mobility: Does the concept reasonably resolve congested areas or bottlenecks?	↓↓	↑	↑	↑↑	↓↓	↓	↓	↑
Safety: Will the concept reduce existing and future year crash rates?	↔	↔	↑	↑↑	↓↓	↓↓	↓↓	↑
Access: Does the concept maintain or improve access to adjacent businesses, employment centers, and neighborhoods?	↓	↑↑	↑↑	↑↑	↓	↓	↓	↑↑
Non-motorized Connections: Will the concept improve connections and provide facilities for non-motorized users?	↑	↑↑	↑↑	↑↑	↓↓	↓	↓	↑
Land Use: Does the concept reasonably resolve significant obvious impacts to adjacent land uses and environmental resources?	↓↓	↔	↑	↑	↓↓	↓	↓	↑↑
Implementation: Can the concept be constructed and funded as a series of projects rather than one large project?	↑	↑↑	↑↑	↑↑	↓	↓↓	↓	↑↑
Progress Concept to Phase 2?	N	Y	Y	Y	N	N	N	Y

Following the Phase 1 analysis, it was recommended that the one-way frontage road Concept A, and two-way frontage road Concepts E, F and G be dismissed from further analysis as they did not meet the vision and goals of the study or exhibited significant challenges.

6.5 Concept Refinement

The results of the Phase 1 screening were presented to the AAG, BAG, and CAG, and then to the public at the second public open house and the Anchorage Transportation Fair. Feedback received was in support of the dismissal of the two-way frontage road concepts, and the one-way frontage road Concept A. The project team initially recommended eliminating Concept B, but the public encouraged the project team to continue to examine the concept and consider whether impacts to the Section 4(f) property immediately to the north-east of the Tudor Road interchange could be avoided or minimized.

Following the public outreach, the concepts moving forward (Concepts B, C1, C2, and H) were further refined, and a new Concept J was developed in response to feedback from several people seeking a concept that operated using a Collector-Distributor road approach.

Concept B Refinement:

The Tudor Road interchange and braided ramps were relocated to minimize ROW impacts, particularly on the Helen Louise McDowell Sanctuary. The 36th Avenue interchange was also redesigned to accommodate a permanent grade-separated median u-turn to reduce the impacts of the three closely-spaced intersections along 36th Avenue.

Concept C1 Refinement:

During the refinement process it became apparent the issues associated with the closely spaced intersections along 36th Avenue were not able to be overcome with Concept C1. The concept was dismissed from further consideration.

Concept C2 Refinement:

Further evaluation of Concept C2 identified that for the loop ramp at 36th Avenue to operate effectively, an additional braided off-ramp was required to Tudor Road. This feature was incorporated into Concept C2.

New Concept J:

A new Concept J was developed based on the principle of a collector-distributor road. A collector-distributor road parallels and connects with the main travel lanes of a highway, but do not necessarily access the highway at all traffic signals. For Concept J, access would be provided the frontage road network at the northern and southern end of Midtown (Tudor Road and Fireweed Lane). The concept would provide access to Midtown along the frontage road network, but reduce connections from the frontage roads to the freeway to improve freeway mobility.

Concept H:

The intermediate concept H was refined to demonstrate how it could provide an intermediate build-out for each of the concepts B, C2 and J. The intermediate build out involves creating the frontage road network and two-phase separated signals at the major east-west cross streets, to create immediate congestion relief and safety improvements in the short-to-medium term in advance of a grade-separated freeway section and associated interchanges being constructed. The creation of the frontage road network also enables traffic to continue to flow along the Seward Highway corridor during construction of the freeway, rather than closing the roadway for an extended period and forcing traffic to reroute elsewhere in the transportation network. The intermediate build-out would also enable the early construction of non-motorized facility improvements to improve opportunities for multimodal transportation.

Freeway Profile - Up or Down?

A key element of concept refinement was evaluating whether the freeway section of the concepts should be elevated, depressed, or a combination of both. The analysis considered the engineering requirements to create an elevated or depressed freeway section, and how the ramp elements would connect between the freeway section and the frontage road network. Figure 28 sets out profiles considered for the freeway section, and indicative costs associated with constructing the different profiles. The lowest cost option is to construct an elevated freeway (red line). The option to construct a freeway that is elevated over 36th Avenue before depressing beneath Benson Boulevard, Northern Lights Boulevard, and Fireweed Lane (blue line) is the next most expensive option, and the most expensive option is to depress

below all cross streets (green line). The profile elevates and lowers as it traverses from south to north, to minimize the depth of excavation needed and reduce the cost of construction.

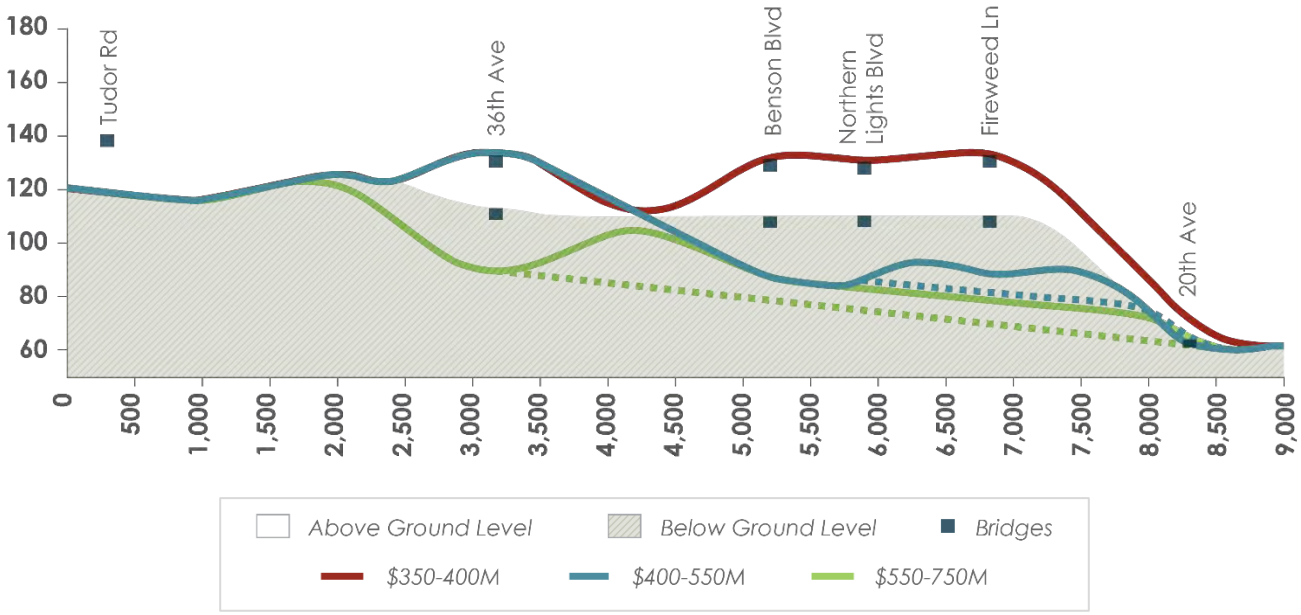


Figure 28: Profiles Evaluated for the Grade Separation of the Freeway Section of the Seward Highway

Public and stakeholder feedback overwhelmingly supports a depressed freeway, but one of the key design challenges is the high-water table through Midtown. Suppressing the water table could be accomplished by either constructing a roadway with sufficient materials weight to create a waterproof freeway section (Figure 29), or by constructing a drainage system to draw down the water table in the area surrounding the depressed freeway (Figure 30). Additional geotechnical investigation is required to understand the water table depth through the study area, and monitoring wells have been installed to provide water table information that will support the detailed design of the grade-separated freeway section.

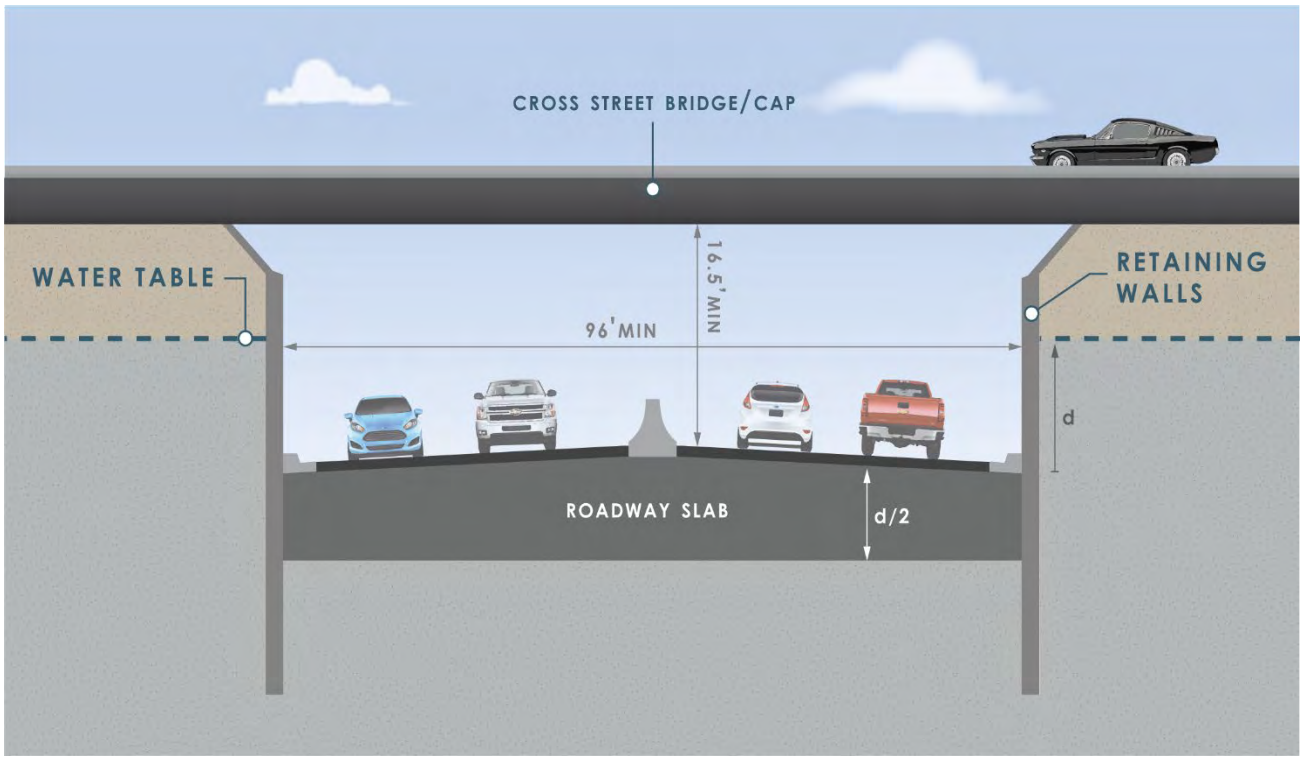


Figure 29: Depressed Freeway Section with Waterproofing

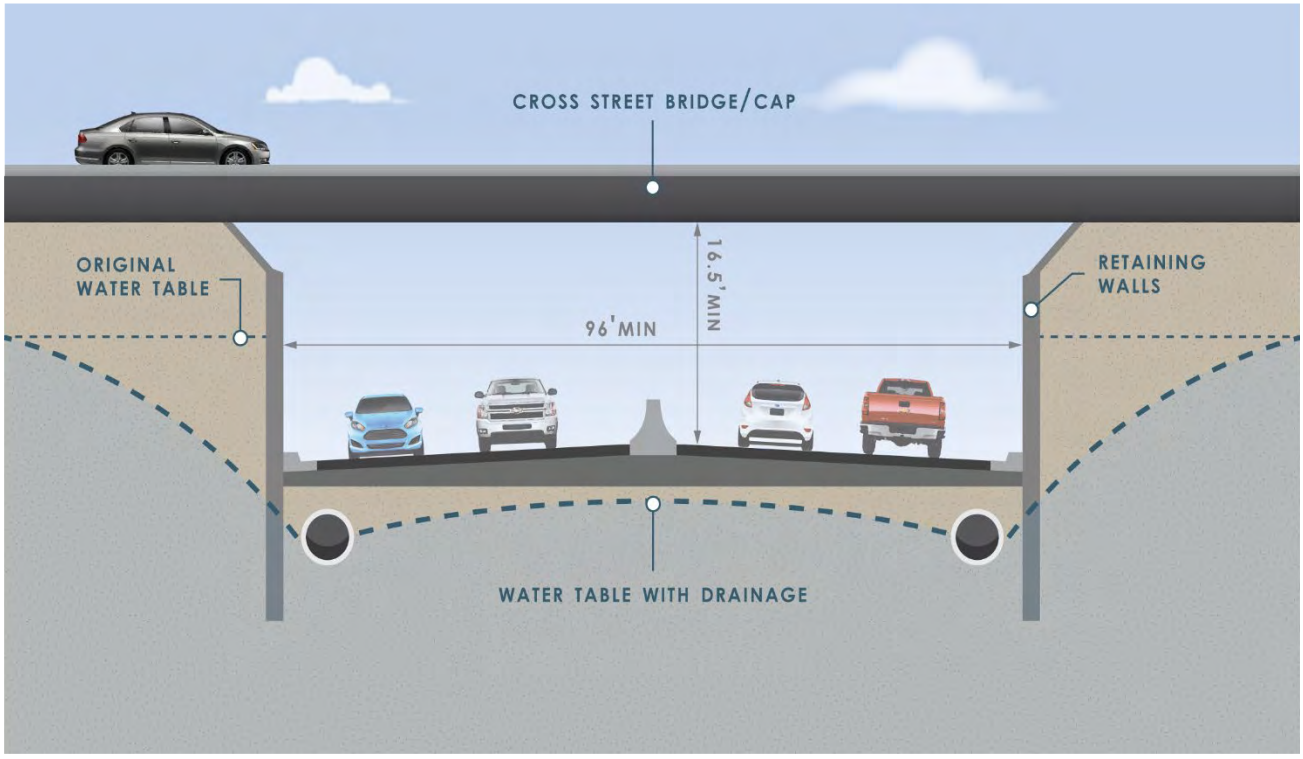


Figure 30: Depressed Freeway Section with Draw Down of the Water Table

Advisory Committees Feedback:

The refined concepts were presented to the AAG, BAG and CAG for feedback. The approach set out in the concepts was generally supported, although some participants voiced concerns about the intermediate build-out, and how long the roadway would stay in the intermediate formation. The concern expressed was the impact of vacant space in the median of the frontage road network on surrounding land uses, and whether it would attract undesirable ad-hoc land uses or adverse visual effects through the Seward Highway corridor for an extended time period.

The Advisory Committees continued to express support for a depressed freeway section under Benson Boulevard, Northern Lights Boulevard, and Fireweed Lane. The challenges associated with designing a depressed freeway section under 36th Avenue were discussed because of the depth of excavation and potential water draw down required to create a depressed freeway section. A general consensus was reached about the freeway being elevated over the 36th Avenue intersection, and then depressing below Benson Boulevard, Northern Lights Boulevard, and Fireweed Lane before elevating and daylighting to connect into the Ingra-Gambell couplet near 20th Avenue. This approach was presented to leadership at DOT&PF and MOA, and is the profile used in the refined concepts.

Concept Refinement Summary:

Concepts B and C2 represent two different variants of a one-way frontage road concept with multiple points of access along the length of the corridor. For this reason, the concepts have been combined to form the **Multi-Interchange Concept.** Concept B has become Variant 1 (Median U-Turn), and Concept C2 has become Variant 2 (Loop Ramp).

Concept J provides an alternative concept the provides a one-way frontage road concept that collects and distributes Midtown traffic and provides freeway access at the northern and southern end of the Midtown City Center. For this reason, it has been named the **Collector-Distributor Concept.**

Concept H provides an approach to achieve the Multi-Interchange Concept or the Collector-Distributor Concept as an independent project that delivers benefits to congestion relief and safety immediately as well as providing space and traffic maintenance for a separate project that would build the grade-separated freeway through Midtown. It can be delivered as either one or two separate projects with independent utility (benefit) and logical termini (beginning and end points), as part of the larger concepts and has therefore been evaluated as part of the Multi-Interchange Concept and the Collector-Distributor Concept.

6.6 Phase 2 Concept Screening

Phase 2 concept screening focused on the project's performance against a range of themes addressing social, environmental, economic, multimodal transportation, traffic operations, implementation, and community support. The implementation evaluation also enabled consideration of a planning level cost estimate for the implementation of each of the concepts, based on the ROW costs (excluding costs to cure), and the cost of construction of the concept. Themes evaluated included:

- Community impacts
- Connectivity and access
- Safety

- Environmental
- Non-motorized connections
- Traffic mobility/operations
- Implementation
- Community support.

Where possible, qualitative evaluation criteria were used to consider the potential effects of each concept. The evaluation criteria were also tied to the FHWA transportation planning factors, to ensure a comprehensive analysis and evaluation of the potential impacts of the concepts while addressing the aspirations and concerns of the community.

To assist with understanding the benefits of the concepts against the existing transportation network, a "No Build" concept was also scored, which assumes no improvements to the transportation network. Following public feedback during the draft PEL study public comment period, the intermediate build was also scored to understand its benefits against the existing transportation network.

Each concept was scored in relation to how well it performed against each of the evaluation criteria. A workshop was then held on October 28th 2019 which was attended by 36 people including representatives of the Agency, Business and Citizens Advisory Groups. The purpose of the workshop was to discuss the draft scoring, and the results were adjusted to reflect feedback received. The results of the Phase 2 screening were scored as set out in Table 4.

Table 4: Phase 2 Screening Evaluation Key

Score	Metric
3	Concept performs strongly against criteria
2	Concept performs moderately against criteria
1	Concept performs acceptably against criteria
0	Concept performs neutrally against criteria
-1	Concept demonstrates weak performance against criteria

The results of the Phase 2 screening are summarized in Table 5 and set out in further detail in Appendix 8.

Table 5: Phase 2 Screening Summary

Theme	Criteria	No Build Score	Intermed. Build Score	Mult. Int Concept Score	C-D Concept Score
1. Community Impacts	1.1 Support long term land use and community development goals for Midtown?	-1	1	3	2
	1.2 Consistent with adopted plans and policies?	0	1	3	2
	1.3 Avoid the need for ROW acquisition?	3	-1	-1	-1

Theme	Criteria	No Build Score	Intermed. Build Score	Mult. Int Concept Score	C-D Concept Score
	1.4 Retain quality of life of communities within or directly adjacent to the study area?	-1	0	1	1
	Community Impacts Score	**1**	**0**	**6**	**4**
2. Connectivity and Access	2.1 Connect neighborhoods and businesses, commercial activities and recreation lands?	0	1	2	2
	2.2 Improve access to neighborhoods?	-1	1	3	2
	2.3 Improve access to businesses?	-1	1	3	2
	2.4 Improve access to recreation lands?	-1	3	3	3
	2.5 Provide more than one way to access between businesses and land uses?	1	2	3	2
	2.6 Implement Travel Demand Management strategies from Metropolitan Transportation Plan?	-1	2	3	3
	Connectivity and Access Score	**-3**	**10**	**17**	**14**
3. Safety	3.1 Reduce conflict points for vehicles?	0	2	3	2
	3.2 Reduce conflict points for pedestrians?	0	1	3	2
	3.3 Reduce conflict points for bicyclists?	0	1	3	2
	3.4 Demonstrate strong potential to reduce crashes when compared to the documented crash trends?	0	1	2	1
	3.5 Improve accessibility and response time for emergency vehicles?	0	0	1	0
	Safety Score	**0**	**5**	**12**	**7**
4. Environmental	4.1 Minimize or mitigate impacts to historic resources?	3	3	3	3
	4.2 Minimize right-of-way acquisition?	3	1	1	2
	4.3 Minimize or mitigate potential noise impacts?	-1	0	0	0
	4.4 Minimize or mitigate potential adverse air quality impacts?	-1	1	2	2
	4.5 Minimize or mitigate potential adverse visual impacts?	0	0	2	2
	4.6 Avoid impacts to section 4(f) and section 6(f) resources?	3	-1	-1	-1
	4.7 Avoids disproportionate impacts on environmental justice populations?	3	0	0	0
	Environmental Score	**10**	**4**	**7**	**8**

Theme	Criteria	No Build Score	Intermed. Build Score	Mult. Int Concept Score	C-D Concept Score
5. N-M Connect-ions	5.1 Improve pedestrian and bicycle connectivity and crossing opportunities?	-1	2	3	2
	5.2 Provide direct routes between residential areas and employment/ commercial centers?	0	2	3	3
	Non-Motorized Connections Score	**-1**	**4**	**6**	**5**
6. Traffic Mobility/ Operations	6.1 Efficiently accommodate forecast traffic volumes and patterns?	-1	3	3	2
	6.2 Reduce expected travel time for vehicles and freight?	-1	1	3	3
	6.3 Improve future vehicular travel operations?	-1	2	2	2
	6.4 Create a roadway network that meets through and local access roads?	-1	1	3	3
	Traffic Mobility/ Operations Score	**-4**	**7**	**11**	**10**
7. Implementation	7.1 Reasonable from a cost perspective?	0	-1	-1	-1
	7.2 Can the concept be constructed as separate projects with independent utility?	0	3	3	3
	7.3 Can the concept be constructed as separate projects with logical termini?	0	3	3	3
	7.4 Does the concept minimize the maintenance burden along the corridor?	3	2	1	2
	Implementation Score	**3**	**7**	**7**	**9**
8. CS	8.1 Is there community/agency support for the concept?	0	0	1	0
	Community Support Score	**0**	**0**	**1**	**0**
	TOTAL Score	**6**	**38**	**67**	**57**

Following the preliminary Phase 2 analysis, the Multi-Interchange concept performs the most strongly in relation to the concept evaluation criteria.

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7.0 IMPROVEMENT CONCEPTS

7.1 Concept Overview

The vision for the PEL study is to improve safety and mobility for all users on the Seward Highway while enhancing east-west multimodal, safety, connectivity, and access for Midtown Anchorage. With numerous closely-spaced intersections along the Seward Highway corridor, a wide variety of improvement alternatives and combinations of alternatives was conceivable, and multiple potential solutions were identified that would resolve the issues to varying degrees.

The concept development process initially proceeded on the basis of separating the Seward Highway through Midtown into a limited access freeway section, with local access provided using either a one-way or a two-way frontage road network. As the concept refinement process proceeded, it became clear the emerging concepts could be differentiated based on the level of access they provided to Midtown, as shown in Figure 31.

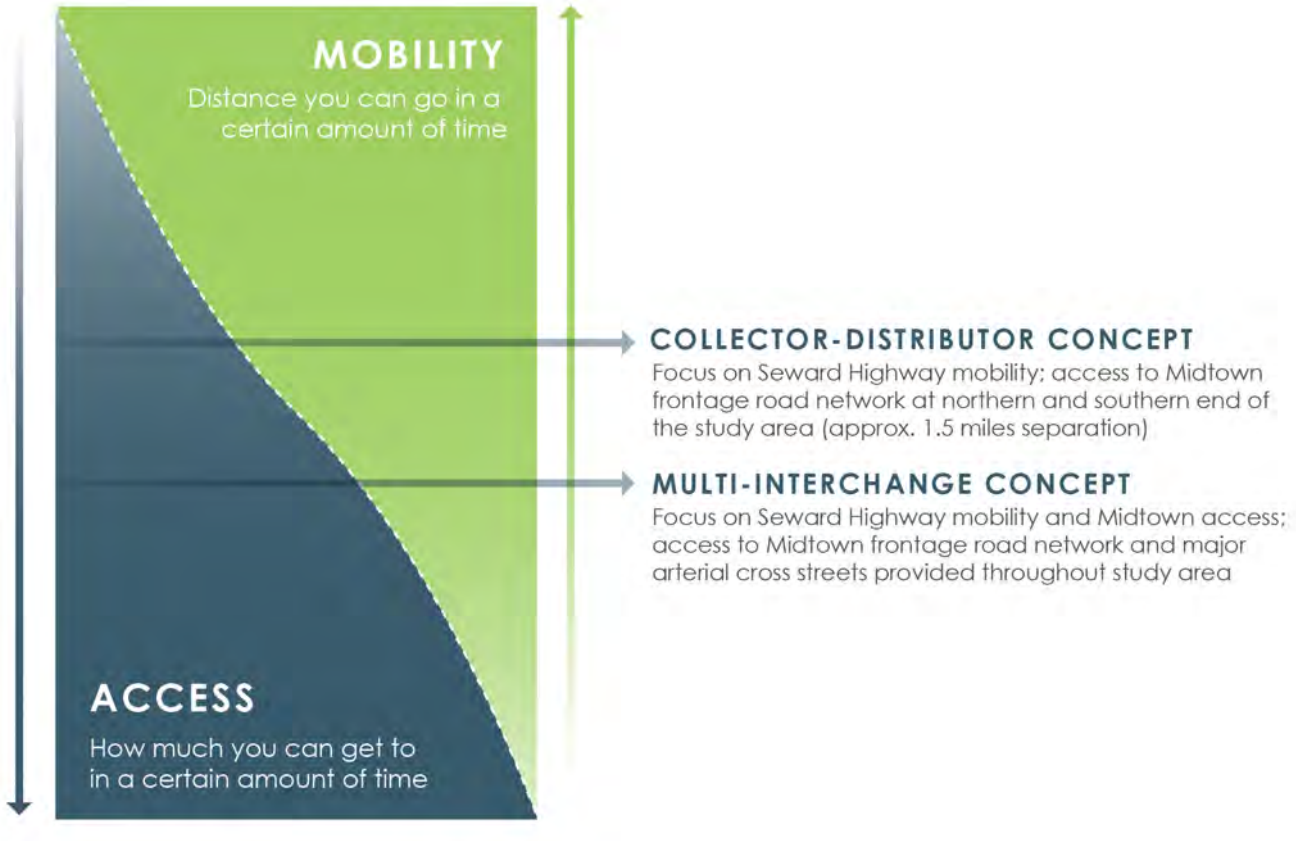


Figure 31: Concept Relationship to Transportation Functions

This section of the report focuses on the final concepts evaluated. Further detail on the concept development and screening process is included in Section 6 of this report.

7.2 Non-Motorized Facilities

For both concepts, a multi-use trail is proposed on both the east and west side of the Seward Highway corridor for the length of the study area, parallel to the frontage road network. This is shown in Figure 32. The trail is proposed to be 10 feet in width and paved. Facilities for walking and bicycling are also proposed on both sides of east-west cross streets (Tudor Road, 36th Avenue, Benson Boulevard, Northern Lights Boulevard, and Fireweed Lane). These facilities will cross one direction of frontage road traffic at-grade, with a pedestrian signal cycle available. Pedestrian and bicycle facilities will be grade-separated from freeway traffic.

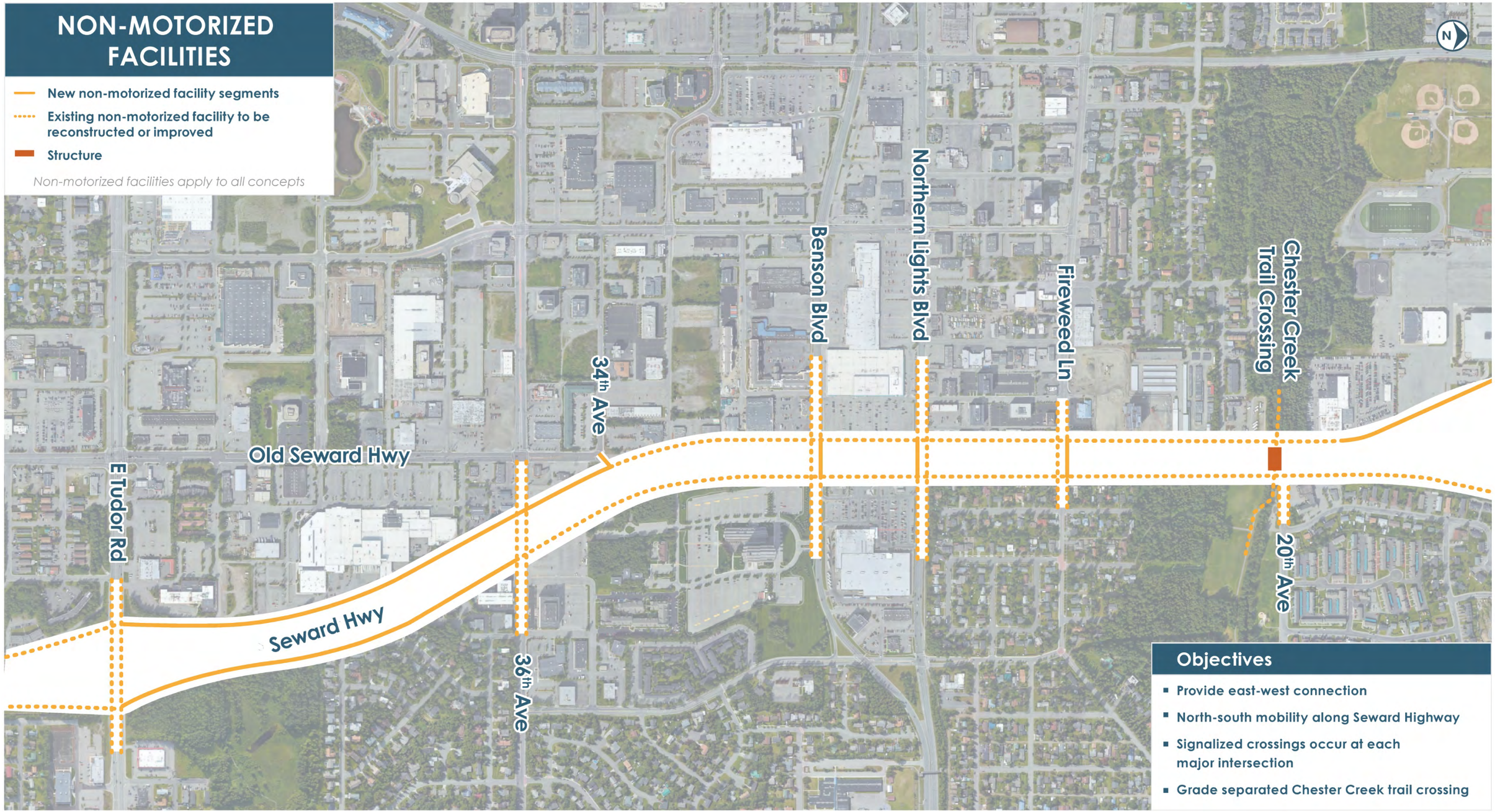


Figure 32: Non-motorized Facilities

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7.3 Multi-Interchange Concept

7.3.1 Concept Overview

The Multi-Interchange concept extends the Seward Highway controlled access facility from Tudor Road through Midtown to 20th Avenue, where the Seward Highway ties into the Ingra-Gambell couplet. The Multi-Interchange concept focuses on providing as much access as possible between the Seward Highway, frontage road network, Tudor Road, 36th Avenue, Benson Boulevard, Northern Lights Boulevard, and Fireweed Lane.

The mainline Seward Highway consists of two general purpose lanes in each direction separated by a barrier with inside shoulders wide enough to accommodate a future lane adjacent to the barrier when demand warrants additional capacity, or transit-oriented accommodations are needed. One-way frontage roads parallel the mainline to provide access to the cross streets and commercial access to Midtown businesses.

Two different configurations at 36th Avenue (variants) are considered in the Multi-Interchange concept.

7.3.2 Variant 1 – Median U-Turn

The Multi-Interchange Concept Variant 1 (median u-turn) is shown in Figures 34 and 35. The key features are described below.

Tudor Road/36th Avenue Access

Variant 1 (median u-turn) retains full diamond access (all four ramps) at the Tudor Road interchange. Ramp braids (crossing ramps that are grade separated with bridges) are used for the Seward Highway northbound off-ramp to 36th Avenue and the on-ramp from Tudor Road, and southbound for the Tudor Road off-ramp and the on-ramp from 36th Avenue. Tudor Road is shifted to the south as it crosses the Seward Highway to allow the ramp braids to be located as far south as possible, and minimize the impact to the University Center Mall, Geneva Woods neighborhood, and the Helen Louise McDowell Sanctuary. Tudor Road is also expanded to eight lanes within the interchange, to accommodate east- and westbound dual left-turn lanes to the Seward Highway and frontage roads.

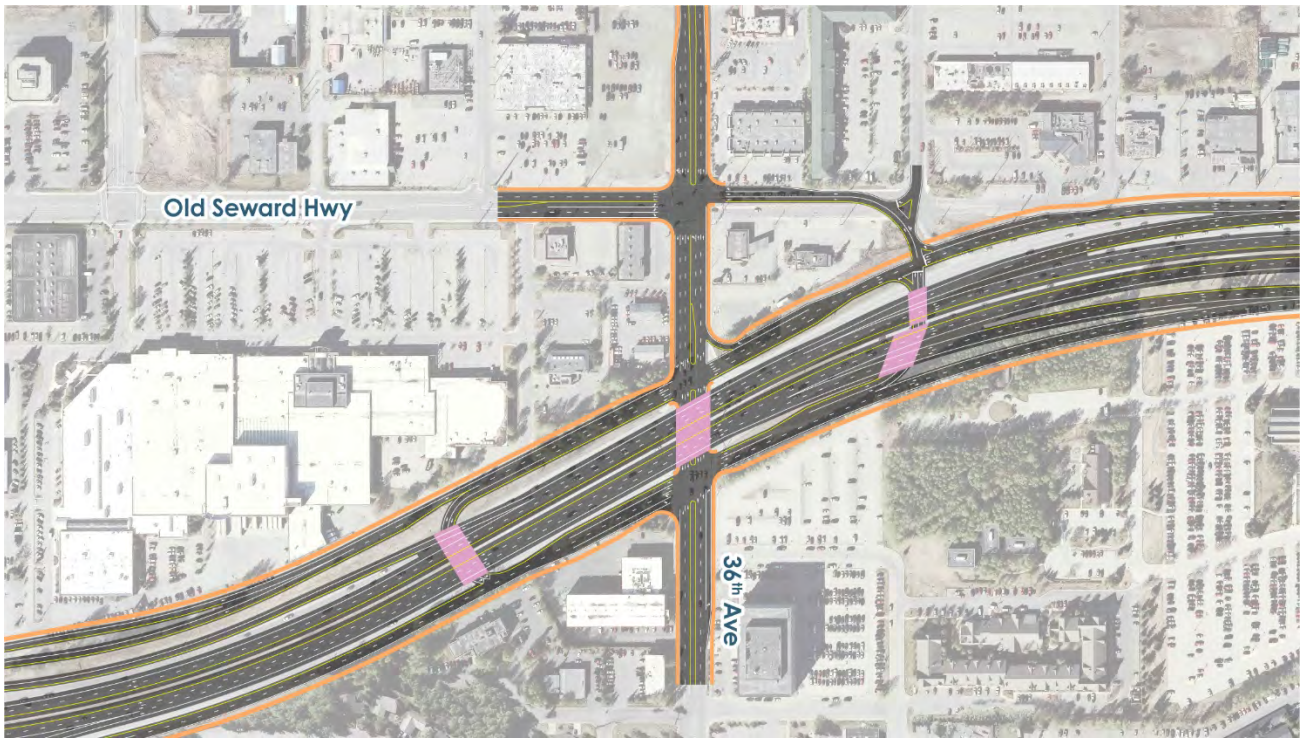


Figure 33: 36th Avenue Access (Variant 1)

Direct access to 36th Avenue is provided to and from the south only. Access to Seward Highway to and from the north is via the frontage road system and Midtown ramps north of Northern Lights Boulevard (on-ramp) and Fireweed Lane (off-ramp). Median left-turns (u-turns) are included north and south of 36th Avenue, and cross under the Seward Highway mainline to accommodate left turns to 36th Avenue (Figure 33). The close proximity of the Old Seward Highway with the southbound and northbound frontage road intersections along 36th Avenue require left-turns to be accommodated using the median u-turns in order to prevent queues from extending into adjacent intersections and deteriorating operations.

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MULTI-INTERCHANGE CONCEPT: VARIANT 1

South Corridor

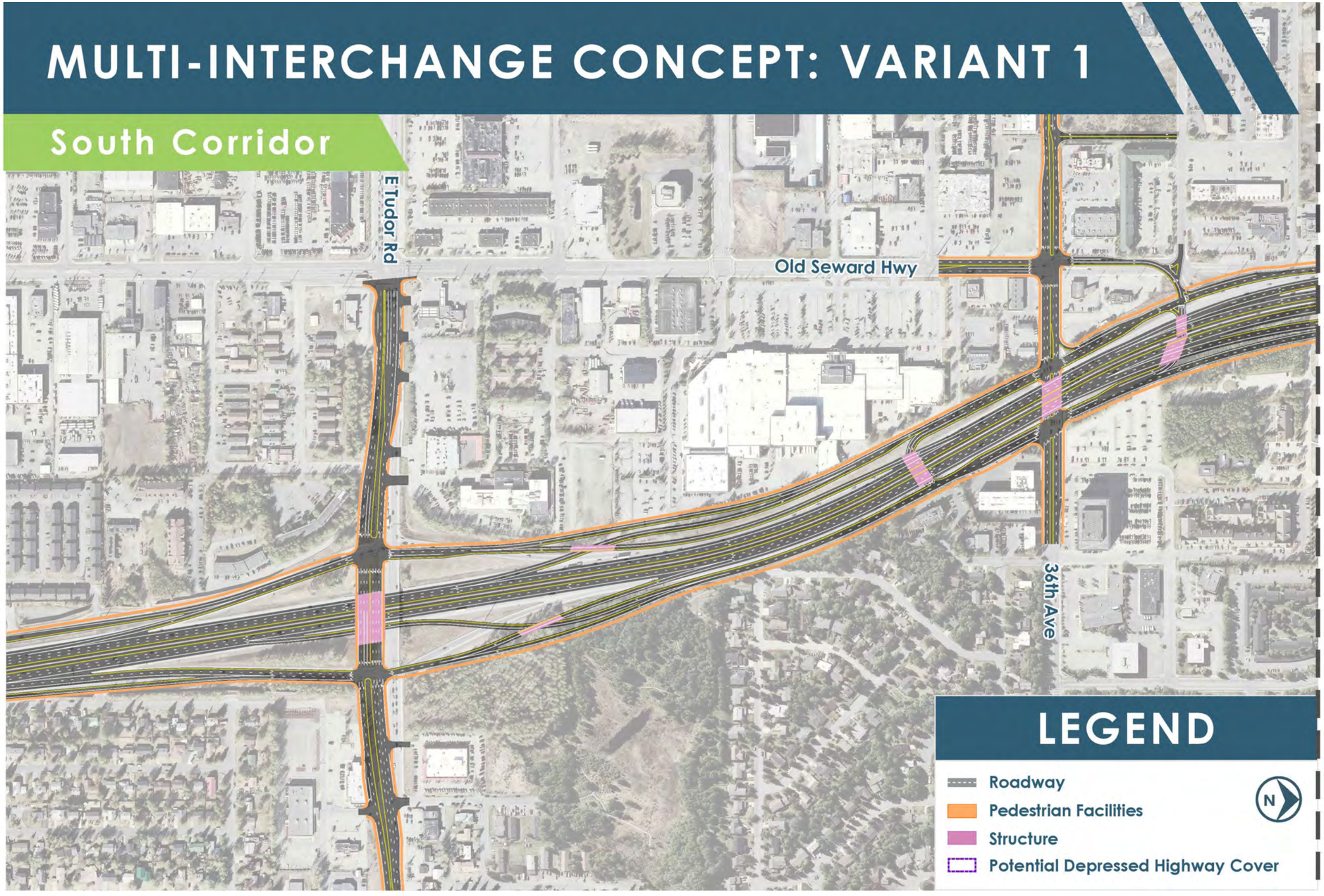


Figure 34: Multi-Interchange Concept Variant 1: South Corridor

MULTI-INTERCHANGE CONCEPT: VARIANT 1

North Corridor

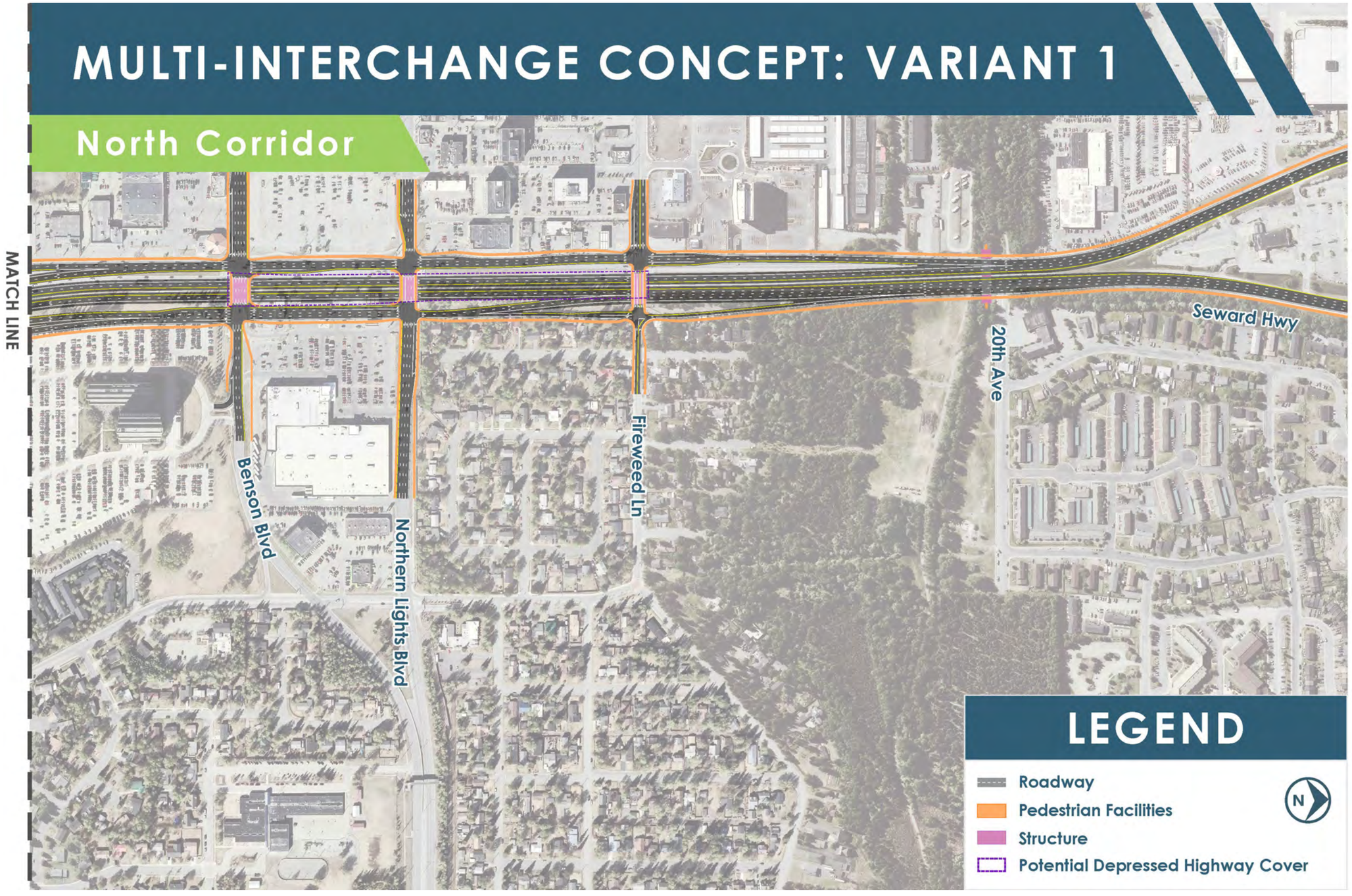


Figure 35: Multi-Interchange Concept Variant 1: North Corridor

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Midtown Access

Freeway access to the Benson Boulevard, Northern Lights Boulevard, and Fireweed Lane cross streets is provided with a split diamond interchange (Figure 36). On- and off-ramps are located south of Benson Boulevard and north of Fireweed Lane. An additional northbound on-ramp is included between Northern Lights Boulevard, and Fireweed Lane to divert traffic from the frontage road to minimize roadway width adjacent to the Rogers Park neighborhood.

Northbound Seward Highway drivers exit the freeway at an off-ramp to Benson Boulevard and the Midtown frontage road system. Northbound Midtown frontage road drivers enter the freeway at two locations, an on-ramp north of Northern Lights Boulevard and a second on-ramp north of Fireweed Lane.

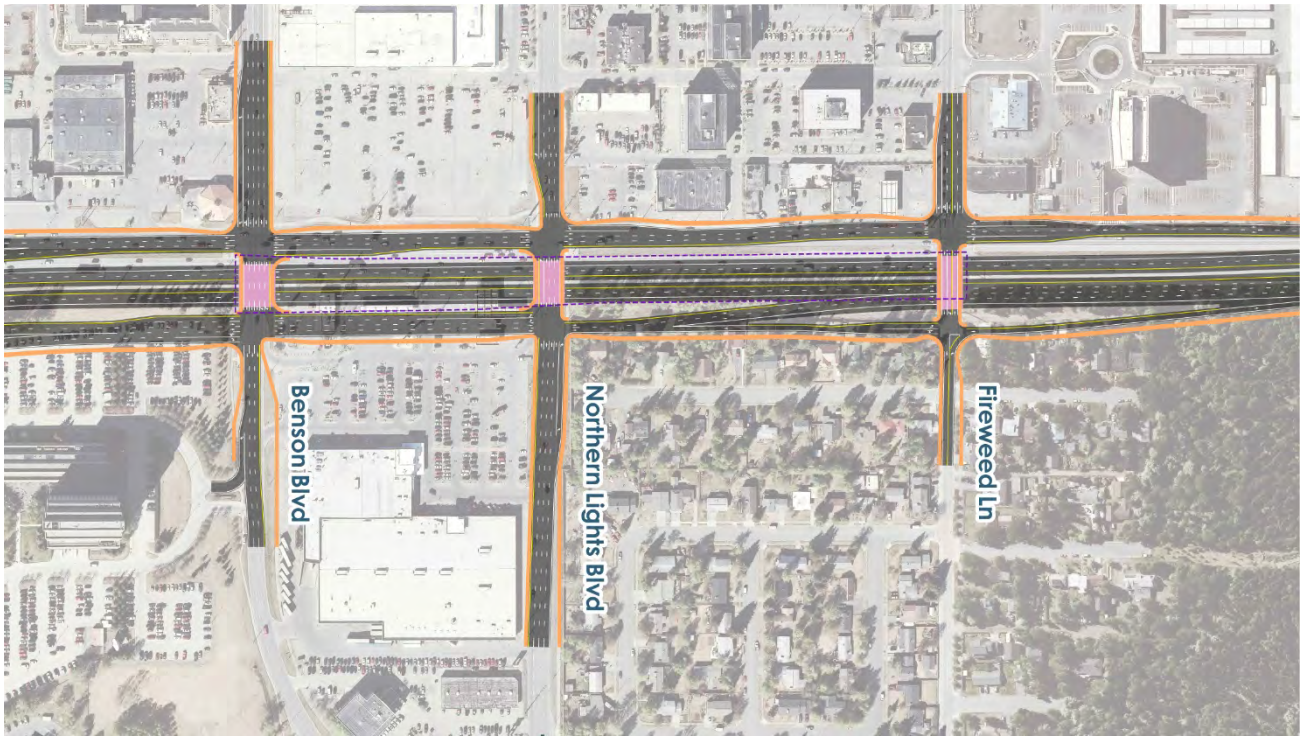


Figure 36: Benson Boulevard, Northern Lights Boulevard, and Fireweed Lane Access (Variant 1)

Southbound drivers exit the Seward Highway (Ingra-Gambell couplet) at an off-ramp to Fireweed Lane and the Midtown frontage road system. This off-ramp also serves as an access to 36th Avenue, where southbound drivers exit the Seward Highway and travel the signalized frontage road through the cross-street signals (Fireweed Lane, Northern Lights Boulevard, and Benson Boulevard) to the signal at 36th Avenue. Drivers destined for the U-Med district continue through the intersection and exit at the median u-turn then turn right onto 36th Avenue headed east.

7.3.3 Variant 2 – Loop Ramp

The Multi-Interchange Concept Variant 2 (loop ramp) is shown in Figures 38 and 39. The key features of the variant are described below.

Tudor Road/36th Avenue Access

Variant 2 (loop ramp) retains all but the northbound on-ramp at the Tudor Road interchange. Full access is provided at 36th Avenue with a partial cloverleaf (parclo) interchange. A ramp braid is used to accommodate the southbound Tudor Road off-ramp and the southbound on-ramp from 36th Avenue. On- and off-ramps north of 36th Avenue are braided with the off-ramp to Benson Boulevard and the southbound frontage road. Northbound, the braided ramps accommodate the on-ramp from 36th Avenue and the off-ramp to Benson Boulevard. The southbound braid provides on-ramp access from Benson Boulevard to the frontage road and an off-ramp directly from Seward Highway to 36th Avenue. The southbound loop on-ramp from 36th Avenue joins the southbound frontage road prior to bridging over 36th Avenue. Grade separating the loop and frontage road provides critical separation distance between the Old Seward Highway and northbound frontage road intersections (Figure 37).

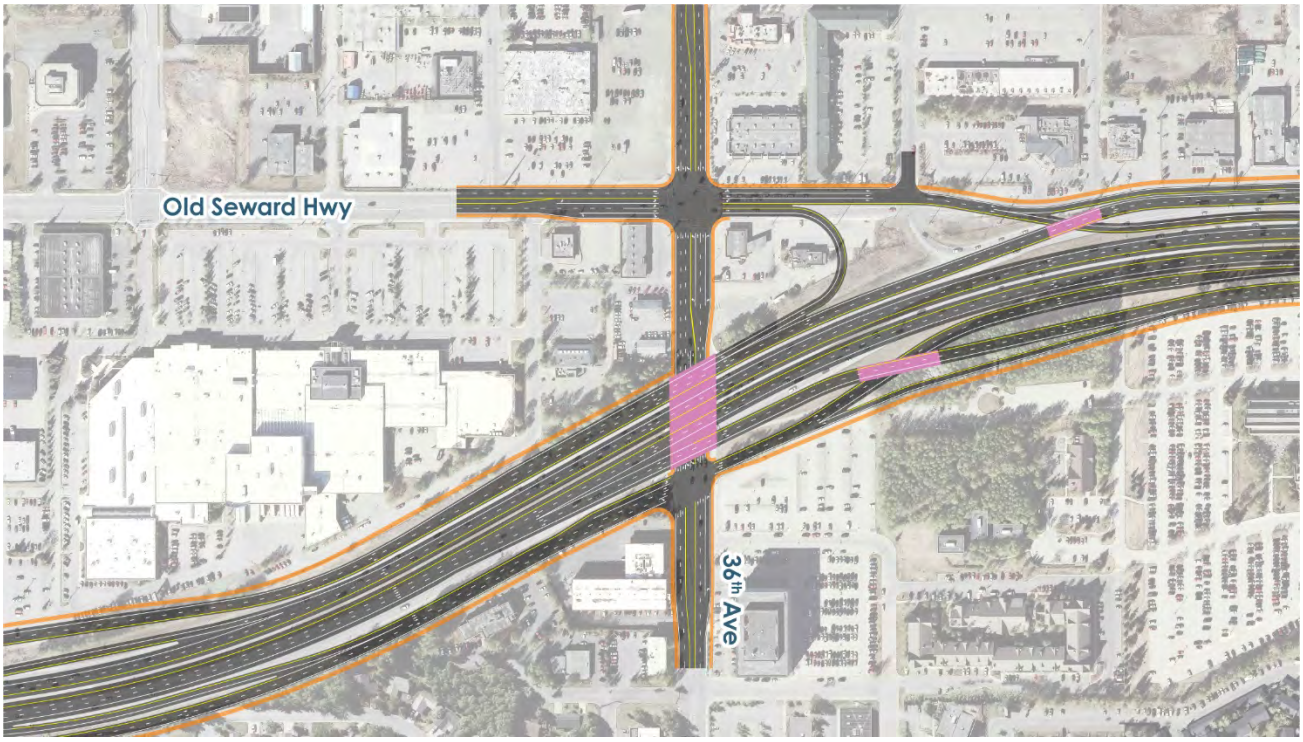


Figure 37: 36th Avenue Access (Variant 2)

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MULTI-INTERCHANGE CONCEPT: VARIANT 2

South Corridor

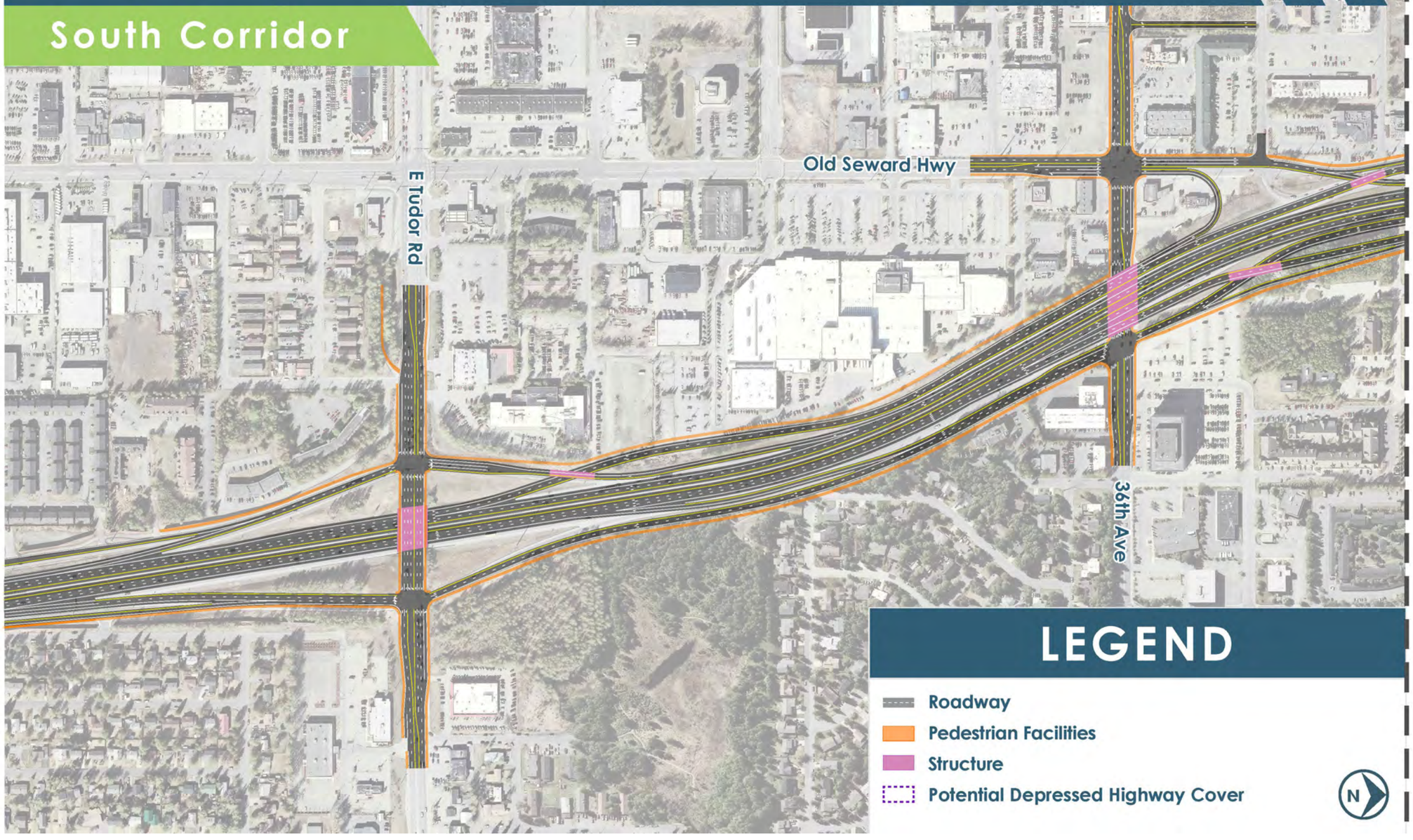


Figure 38: Multi-Interchange Concept Variant 2: South Corridor

MULTI-INTERCHANGE CONCEPT: VARIANT 2

North Corridor

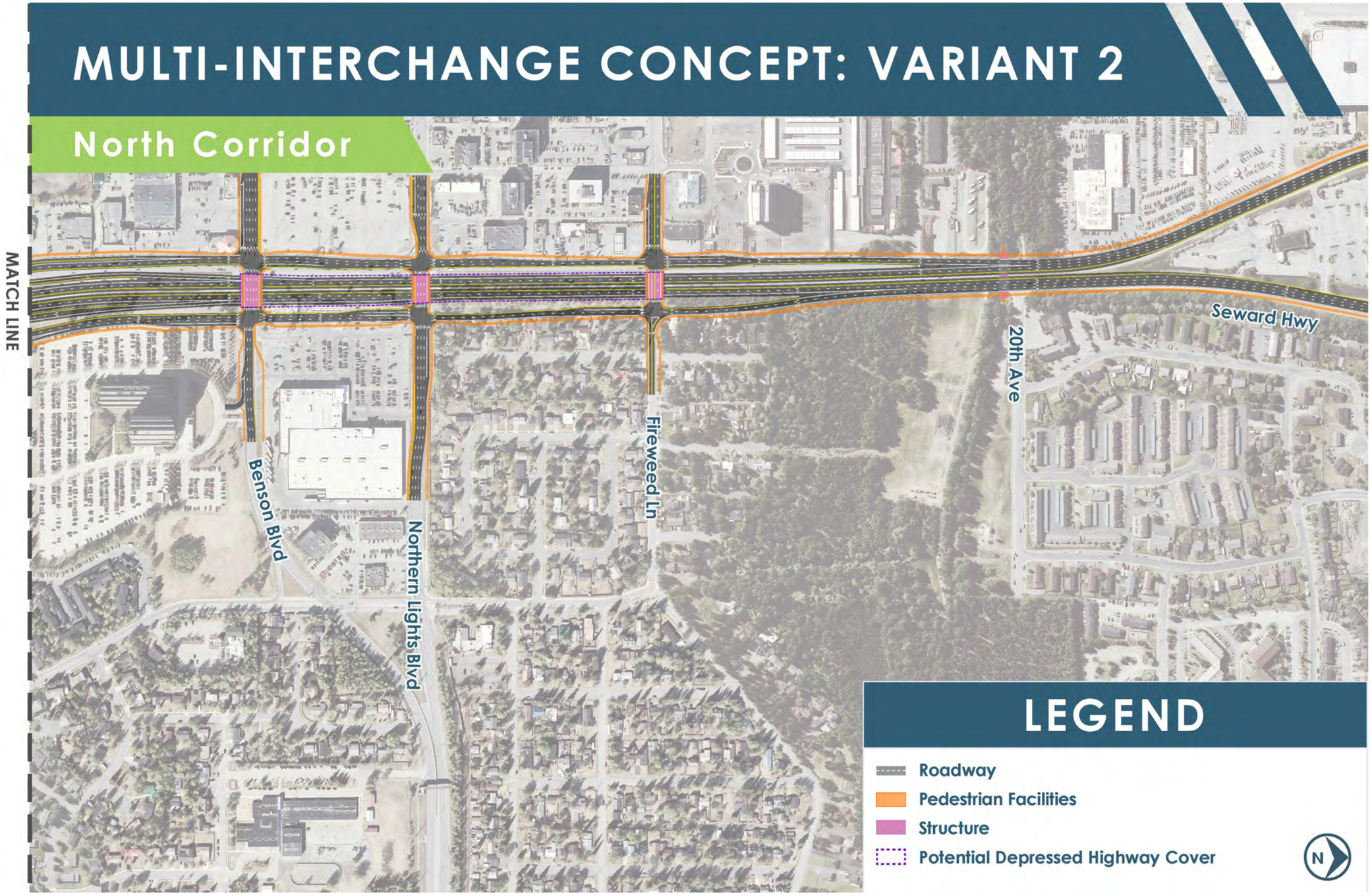


Figure 39: Multi-Interchange Concept Variant 2: North Corridor

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Midtown Access

Freeway access to Benson Boulevard, Northern Lights Boulevard, and Fireweed Lane is provided with a split diamond interchange. On- and off-ramps are south of Benson Boulevard and north of Fireweed Lane (Figure 40).

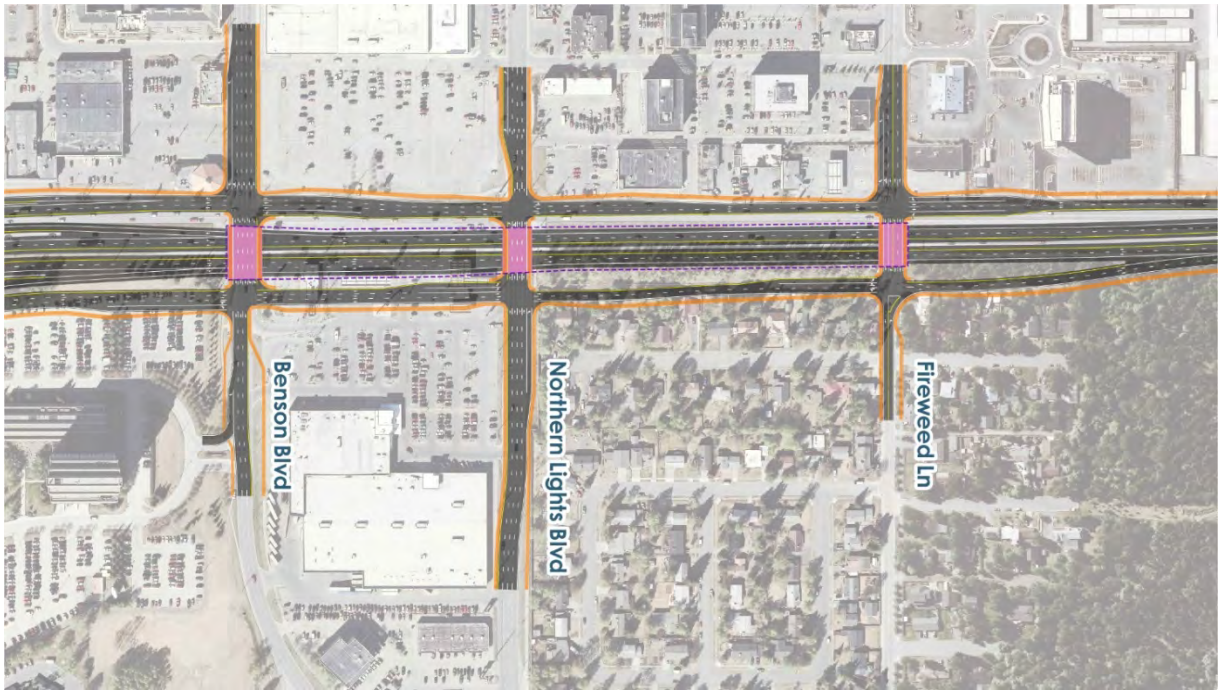


Figure 40: Benson Boulevard, Northern Lights Boulevard, and Fireweed Lane Access (Variant 2)

Northbound Seward Highway drivers exit the freeway at an off-ramp to Benson Boulevard and the Midtown frontage road system. Northbound Midtown frontage road drivers enter the freeway at an on-ramp north of 36th Avenue and a second on-ramp north of Fireweed Lane.

Southbound drivers exit the Seward Highway (Ingra-Gambell couplet) at an off-ramp to Fireweed Lane and the Midtown frontage road system or at an off-ramp to Old Seward Highway south of Benson Boulevard. Southbound Midtown drivers enter the freeway using the on-ramp south of 36th Avenue.

7.3.4 Lanes

Variant 1 – Median U-Turn Variant

The freeway section of the Seward Highway will be constructed with two lanes in each direction. Space will be reserved for the creation of a future third lane or a HOV lane. The frontage road network will generally be constructed with two to three lanes in each direction, except for the northbound section between Benson Boulevard and Northern Lights Boulevard, which will be four lanes. Auxiliary and turn lanes are proposed where they are needed to accommodate forecast traffic volumes and congestion.

Variant 2 – Loop Ramp Variant

The freeway section of the Seward Highway will be constructed with two lanes in each direction. Space will be reserved for the creation of a future third lane or a HOV lane. The frontage road network will generally be constructed with two to three lanes in each direction. Auxiliary and turn lanes are proposed where they are needed to accommodate forecast traffic volumes and congestion.

7.3.5 Structures

Variant 1 – Median U-Turn Variant

The following structures are proposed to implement Variant 1 (median u-turn):

- **Tudor Road:** The existing bridge over the Seward Highway would be replaced on an alignment to the south of the existing alignment. This is proposed to accommodate the braided ramps whilst minimizing impacts on the adjoining Section 4(f) property (Helen Louise McDowell Sanctuary). Structures are needed to construct the braided ramps north of the Tudor Road interchange on both the east and west side of the Seward Highway.
- **36th Avenue:** Structures would be needed to grade-separate 36th Avenue and to construct the median u-turn for left turning movements from the Seward Highway at 36th Avenue. The structures will enable Seward Highway traffic to cross over 36th Avenue traffic.
- **Benson Boulevard:** A structure (bridge or cap) would be required to grade-separate Benson Boulevard from the depressed Seward Highway.
- **Northern Lights Boulevard:** A structure (bridge or cap) would be required to grade-separate Northern Lights Boulevard from the depressed Seward Highway.
- **Fireweed Lane:** A structure (bridge or cap) would be required to grade-separate Fireweed Lane from the depressed Seward Highway.
- **20th Avenue:** The existing culvert structure would be replaced with a bridge to widen the crossing and provide space for the Chester Creek trail adjacent to the creek (Figure 41).



Figure 41: Rendering Illustration of Chester Creek Non-motorized Crossing from the Bridge on the east side of Seward Highway

Variant 2 – Loop Ramp Variant

Variant 2 would require similar structures to Variant 1 with the following exceptions:

- **Tudor Road:** The existing bridge over the Seward Highway would be reconstructed to recreate the Tudor Road interchange. One additional structure is needed to construct a braided ramp north of the Tudor Road interchange on the west side of the Seward Highway. A change in alignment for Tudor Road is not required for this variant.
- **36th Avenue:** A structure would be needed to grade-separate 36th Avenue and the Seward Highway. The structure would enable Seward Highway traffic to cross over 36th Avenue traffic. Additional structures would be needed to construct the braided ramps north of the 36th Avenue overpass on both the east and west side of the Seward Highway.

7.3.6 Planning Level Cost Estimate

An Independent Cost Estimate has been prepared to assist DOT&PF and the design team with the design development and budgetary decisions. The project estimate includes capital costs and owner expenses (agency costs), in current second quarter 2019 U.S. dollars. The cost estimates for the Multi-Interchange Variant 1 – Median u-turn, and Variant 2 – Loop ramp, are shown in Table 6.

Table 6: Planning Level Cost Estimate for the Multi-Interchange Concept

Multi-Interchange Concept	Low Range (-20%)	Middle Range	High Range (30%)
Variant 1: Median U-Turn	$395,976,000	$494,970,000	$643,461,000
Variant 2: Loop Ramp	$401,048,000	$501,310,000	$653,703,000

7.4 Collector-Distributor Concept

7.4.1 Concept Overview

Like the Multi-Interchange concept, the Collector-Distributor concept extends the Seward Highway controlled access facility from Tudor Road through Midtown to 20th Avenue, where the Seward Highway ties into the Ingra-Gambell couplet. The Collector-Distributor concept provides for access to the Midtown frontage road system in two locations only – north of Fireweed Lane and south of the Tudor interchange. Traffic wanting to access Midtown must transition to a frontage road network in these locations.

The mainline Seward Highway consists of two general purpose lanes in each direction separated by a barrier with inside shoulders wide enough to accommodate a future lane adjacent to the barrier when demand warrants additional capacity, or transit-oriented accommodations are needed. One-way frontage roads parallel the mainline to provide access to the cross streets and commercial access to Midtown businesses. The Collector-Distributor Concept is shown in Figure 43 and 44. The key features of the concept are described below.

Tudor Road/36th Avenue Access

The northbound off-ramp to 36th Avenue replaces the existing on-ramp from Tudor Road. Tudor Road traffic heading north must traverse the Midtown frontage road system through 36th Avenue, Benson Boulevard, Northern Lights Boulevard, and Fireweed Lane intersections before entering the freeway north of Fireweed Lane. A southbound loop on-ramp from 36th Avenue and the Old Seward Highway intersection provides southbound freeway access and adds a third lane to the southbound collector-distributor roadway between 36th Avenue and Tudor Road.

Midtown Access

Access to Midtown is provided with ramps at Fireweed Lane to and from the north and ramps between Tudor Road and 36th Avenue to and from the south. Drivers on Benson Boulevard and Northern Lights Boulevard must use the Midtown frontage roads to access the northbound freeway north of Fireweed Lane and the southbound freeway south of 36th Avenue.

Northbound Seward Highway drivers exit the freeway at an off-ramp to Fireweed Lane and the Midtown frontage road system. Northbound Midtown frontage road drivers enter the freeway at an on-ramp north of Fireweed Lane.

Southbound drivers exit the Seward Highway (Ingra-Gambell couplet) at an off-ramp to Fireweed Lane and the Midtown frontage road. Southbound drivers enter the freeway using the on-ramp south of 36th Avenue (Figure 42).

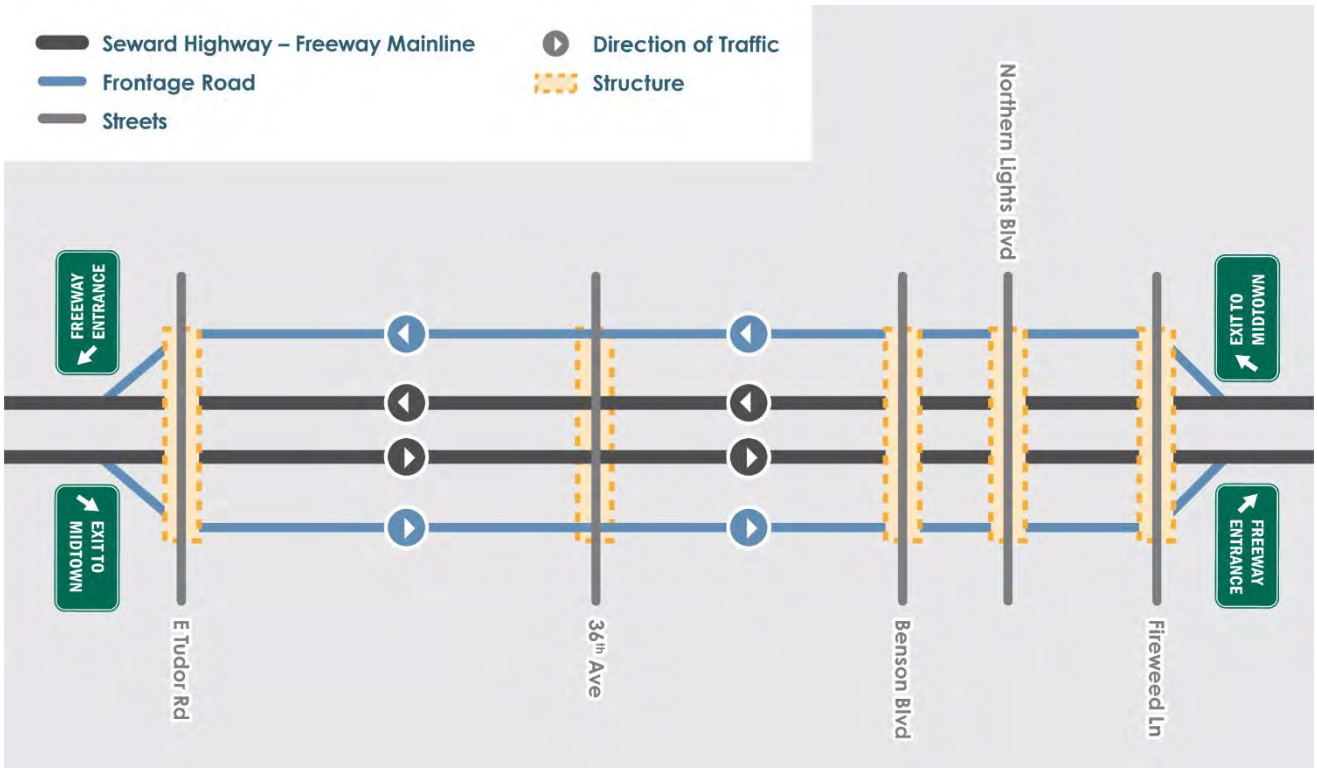


Figure 42: Collector-Distributor Traffic Flows

7.4.2 Lanes

The freeway section of the Seward Highway will be constructed with two lanes in each direction. Space will be reserved for the creation of a future third lane or a HOV lane. The frontage road network will generally be constructed with three to four lanes in each direction. Auxiliary and turn lanes are proposed where they are needed to accommodate forecast traffic volumes and congestion.

7.4.3 Structures

The following structures are proposed to implement the Collector-Distributor Concept:

- **Tudor Road:** The existing bridge over the Seward Highway would be reconstructed as part of the Tudor Road interchange reconstruction.
- **36th Avenue:** A structure would be needed to grade-separate 36th Avenue and the Seward Highway. The structure would enable Seward Highway traffic to cross over 36th Avenue traffic.
- **Benson Boulevard:** A structure (bridge or cap) would be required to grade-separate Benson Boulevard from the depressed Seward Highway.
- **Northern Lights Boulevard:** A structure (bridge or cap) would be required to grade-separate Northern Lights Boulevard from the depressed Seward Highway.

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COLLECTOR-DISTRIBUTOR CONCEPT

South Corridor

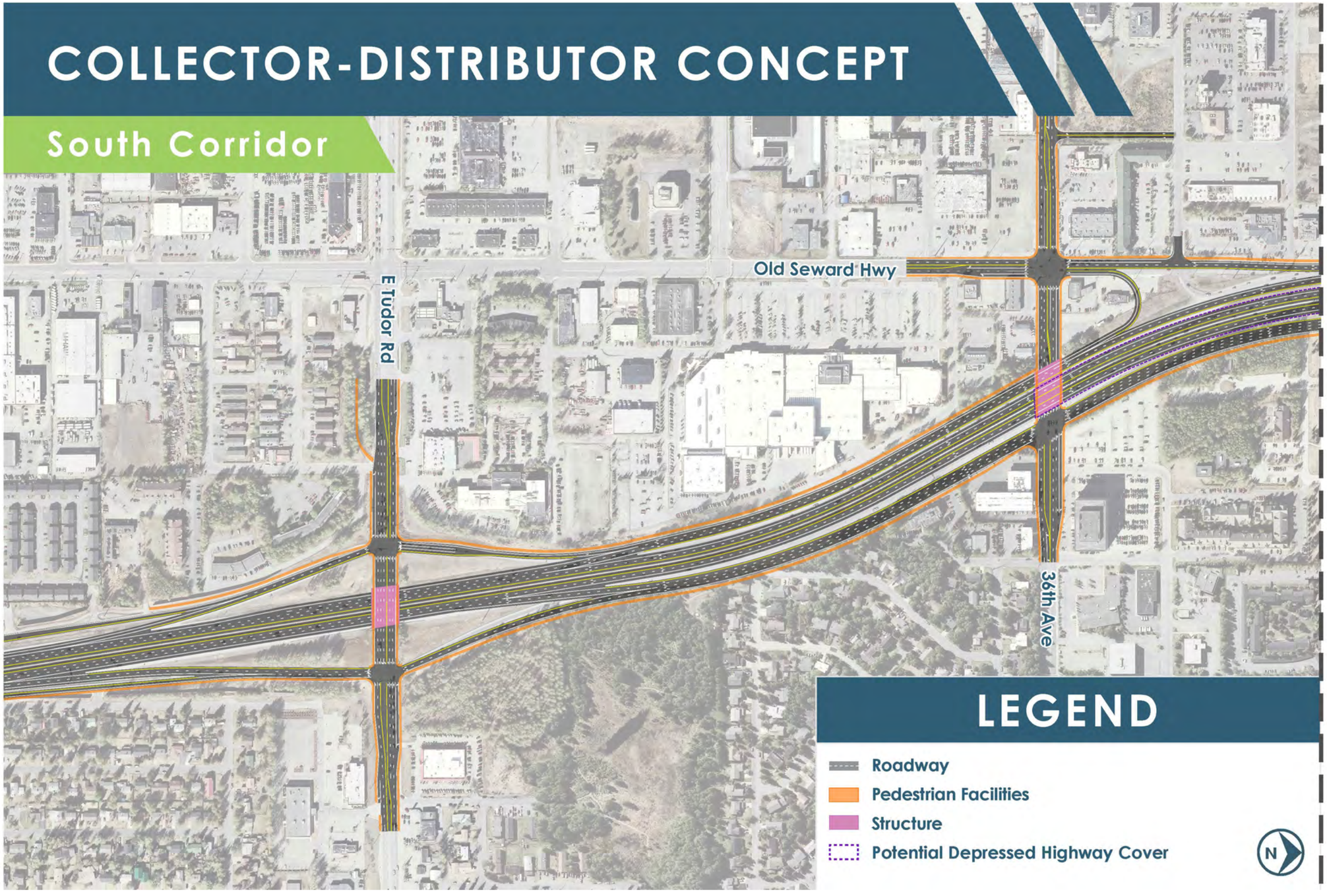


Figure 43: Collector-Distributor Concept: South Corridor

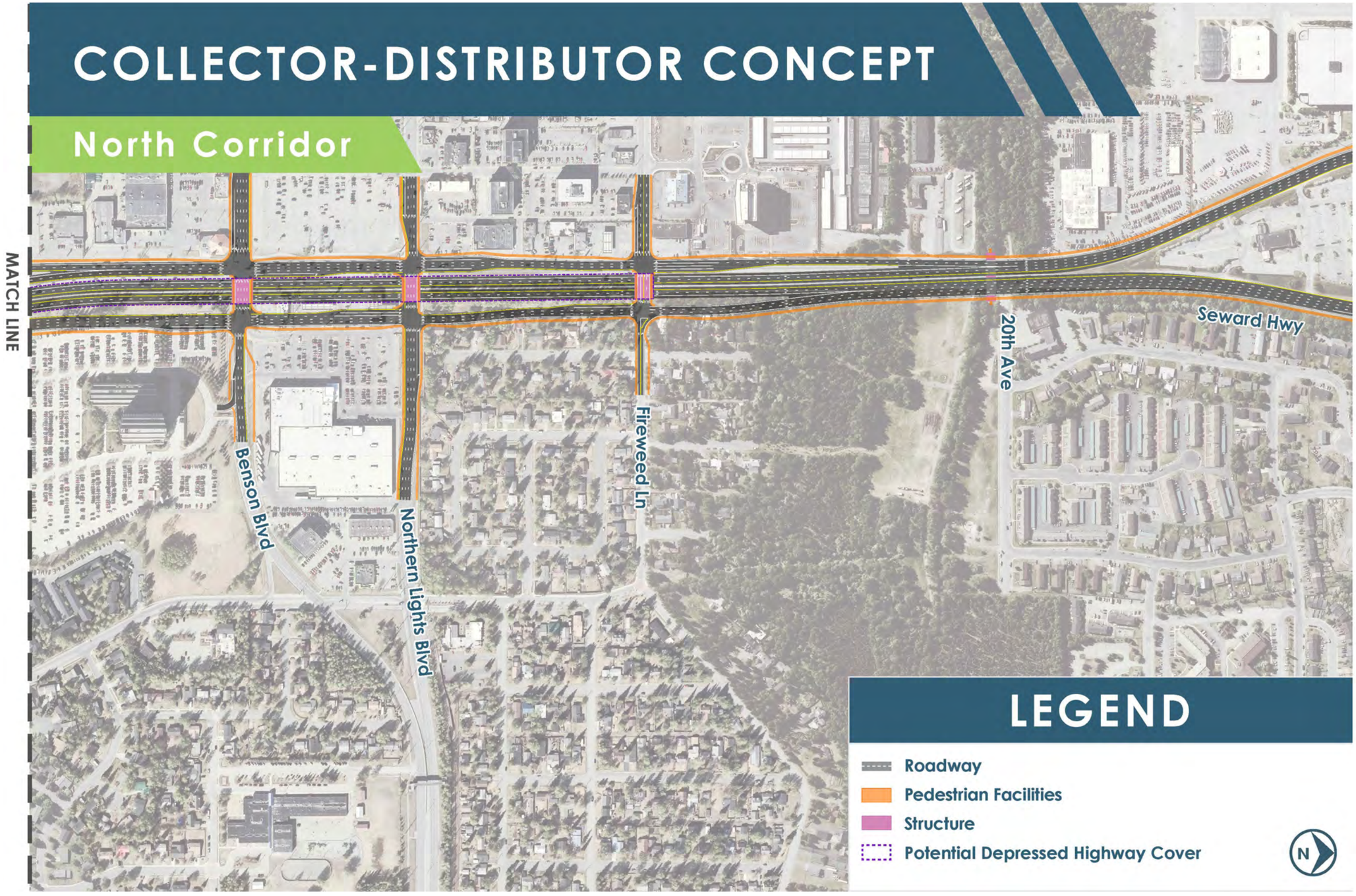


Figure 44: Collector-Distributor Concept: North Corridor

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- **Fireweed Lane:** A structure (bridge or cap) would be required to grade-separate Fireweed Lane from the depressed Seward Highway.
- **20th Avenue:** The existing culvert structure would be replaced with a bridge to widen the crossing and provide space for the Chester Creek trail adjacent to the creek (Refer to Figure 45).



Figure 45: Rendering Illustration of Chester Creek Non-motorized Crossing

7.4.4 Planning-Level Cost Estimate

The project estimate includes capital costs and owner expenses (agency costs), in current second quarter 2019 U.S. dollars. The cost estimates for the Collector-Distributor Concept are shown in Table 7.

Table 7: Planning Level Cost Estimate for the Collector-Distributor Concept

Collector-Distributor Concept	Low Range (-20%)	Middle Range	High Range (30%)
C-D Concept	$358,528,000	$448,160,000	$582,608,000

7.5 Concept Profiles

Vertically, all concepts raise the mainline Seward Highway over 36th Avenue. North of 36th Avenue, the Seward Highway transitions to a below grade facility in a trenched or depressed freeway section allowing at-grade bridge crossings at Benson Boulevard, Northern Lights Boulevard, and Fireweed Lane between the one-way frontage roads. The depressed freeway section also minimizes noise and visual impacts from freeway traffic through Midtown. Parallel frontage roads generally match existing ground elevations for connection to existing business access and the existing cross street. Figure 46 illustrates the approximate profile of the concepts.

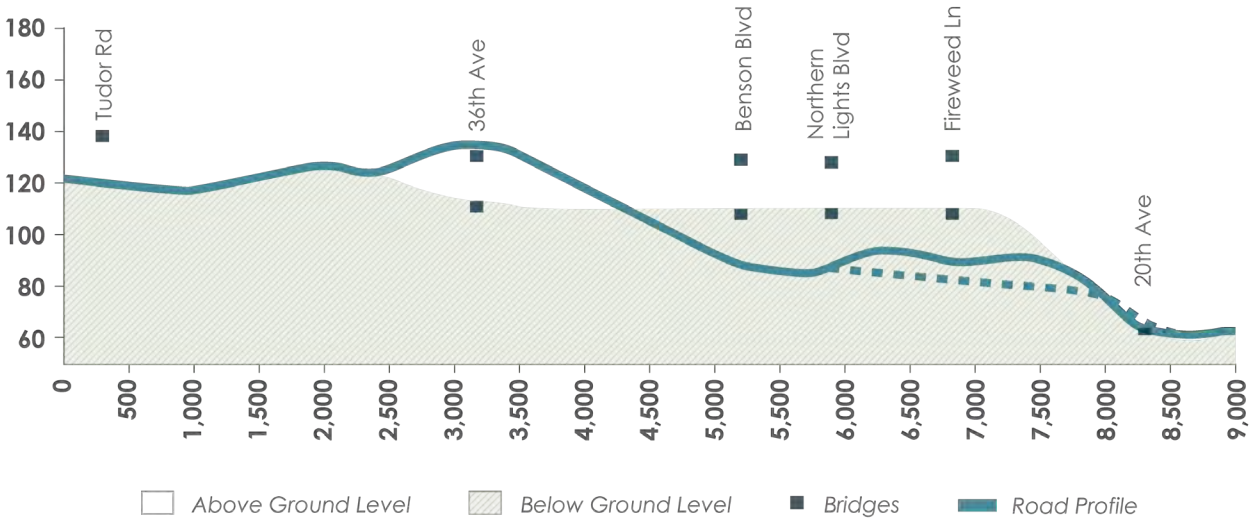


Figure 46: Concept Profile

7.6 Recommendations

The preferred concept is the **Multi-Interchange Concept**. Further detail on the preferred concept is provided in Section 9 of this report.

Figure 47 shows the Multi-Interchange Concept – Variant 1 (Median U-Turn) looking south-east with covers shown over the depressed freeway section.



Figure 47: Multi-Interchange Concept – Variant 1(Median U-Turn) looking south-east with a cover over the depressed freeway section

Figure 48 shows the Multi-Interchange Concept – Variant 1 (Median U-Turn) looking south, with future covers shown over the depressed freeway section.



Figure 478: Multi-Interchange Concept – Variant 1 (Median U-Turn) looking south with covers over the depressed freeway section

Figure 49 shows the Multi-Interchange Concept – Variant 2 (Loop Ramp) looking east.



Figure 49: Multi-Interchange Concept – Variant 2 (Loop Ramp) looking east

Figure 50 shows the Multi-Interchange Concept – Variant 2 (Loop Ramp) looking south, with future covers shown over the depressed freeway section.



Figure 50: Multi-Interchange Concept – Variant 2 (Loop Ramp) looking south with covers over the depressed freeway section

8.0 ENVIRONMENTAL RESOURCES AND PRELIMINARY EFFECTS ANALYSIS

8.1 Introduction

Identification and documentation of issues and potential effects on the natural and human environment is part of the corridor study process. This section briefly describes existing conditions of resources in the corridor study area. More detailed information is available in the Existing Conditions Summary and Data Collection Analysis Report (Appendix 2). The resources considered in this section are consistent with FHWA and DOT&PF environmental review guidelines, and include issues raised during the public involvement process. The following resources do not exist within the study area and are therefore not analyzed: farmlands, wild and scenic rivers, coastal barriers and coastal zone management.

Section 8.2 summarizes the potential effects related to both the human environment and natural resources. The existing conditions of each resource are first described, followed by identification of the potential environmental effects of the Multi-Interchange Concept (both variants)..

Information presented in Section 8.2 is a screening level analysis used to determine the resources of greatest concern in the areas proposed for improvement. The proposed improvements are conceptual and therefore effects on all resources will be confirmed through the NEPA process when a project is funded for design and construction. Some potential effects (i.e. air quality and noise) are described only briefly, due to limited information on the concepts at this early stage of design. Air quality and noise analyses will be completed during future design and NEPA phases.

A general discussion of potential cumulative effects is included, when appropriate, within the potential effects discussion for each resource in Section 8.2. Section 8.3 provides an overview of past, present, and future actions and their effects within the study area to provide context for discussion of potential cumulative effects. Section 8.4 summarizes anticipated permits and authorizations.

8.2 Existing Conditions and Potential Environmental Effects of Concepts

8.2.1 Human Environment

Socioeconomic Effects and Environmental Justice

Existing Conditions and Regulatory Framework: Based on the Existing Conditions Summary and Data Collection Analysis Report (Appendix 2), the social environment of the corridor study area consists mainly of a mixture of commercial businesses, residential areas, and some recreational open space. The corridor study area has approximately 10,034 residents, a minority population of 42 percent and a low-income population of 27 percent, which qualify as an Environmental Justice population (per Executive Order 12898 – Environmental Justice for Low Income and Minority Populations), as both exceed state and national averages (Table 8).

Table 8: Socioeconomic Characteristics of Corridor Study Area

	Affected Community	State Average	National Average
Population (2018)	10,034		
Percent minority (2018)	42%	38%	38%
Low Income (2018)	27%	25%	34%

Source: EPA 2019

Potential Effects: A 500-foot distance from the project limits was used to assess the socioeconomic conditions of adjacent residents, in order to provide a preliminary assessment of effects. (Note that this study area may need to be broadened during the NEPA phase, depending on the geographic extent of potential noise and/or air quality effects).

Approximately four percent of residents within this smaller study area are considered linguistically isolated (non-English speaking) and nine percent have an education level less than high school. Of the 503 housing units in the corridor study area, more than half of the housing units are not owner-occupied.

This smaller study area has approximately 1,251 residents, a minority population of 61 percent and a low-income population of 39 percent, which qualifies as an Environmental Justice population (per Executive Order 12898 – Environmental Justice for Low Income and Minority Populations, Table 9).

Table 9: Socioeconomic Characteristics of Residents Directly Adjacent to Project Limits

	Affected Community	State Average	National Average
Population (2018)	1,251		
Percent minority (2018)	61%	38%	38%
Housing Units (2010)	503		
Renter Occupied (2010)	68%		
Low Income (2018)	39%	25%	34%
Linguistically Isolated (2018)	4%	2%	4%

Source: EPA 2019

The Multi-Interchange concept is anticipated to provide benefits to the community through increased safety, improved access to employment centers, and upgraded facilities for non-motorized users. Details regarding how the community was involved in developing concepts are provided in Section 3.

The preferred concept constructs at least one mile of new non-motorized pathways. The Multi-Interchange Concept – Variant 1 (median u-turn) would construct approximately 9,000 linear feet of new pedestrian and bicycle pathways and the Multi-Interchange Concept – Variant 2 (loop ramp) would construct approximately 8,500 linear feet of new pathways.

All concepts would result in ROW acquisition, including multiple full residential acquisitions in addition to business property impacts. More detailed information on ROW is addressed in Section 9.

Noise and air quality analyses will be completed as part of design and NEPA phases when a project is forwarded from the PEL Study. At that time a determination of any disproportionate effects to low income or minority (Environmental Justice) populations would be completed, as required by Executive Order 19898.

Potential Cumulative Effects: Land was acquired in the past for development of the major road network in the Anchorage Bowl. The MTP does not call for new major road corridors that would require acquisition of large areas but would instead continue improvements to existing corridors and construction of new roads along reserved corridors, including within the study area. This may result in incremental land acquisition in areas adjacent to existing facilities. These acquisitions can result in adverse effects on individual property owners, but effects are minimized and mitigated during project design and development and through compliance with the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 (Uniform Act).

Special Land Use Designations

Existing Conditions and Regulatory Framework: Public parks in the study area include Chester Creek Sports Complex and the Chester Creek Greenbelt (home to Chester Creek and Hillstrand Pond), Cuddy Family Midtown Park, and Jacobson Park. The Helen Louise McDowell Sanctuary is a natural resource area with a conservation easement adjacent to Seward Highway, north of Tudor Road. These sites are described in Table 10 and shown in Figure 51. Data is sourced from the most recent MOA Park Master Plan (MOA 2006) and a search of MOA parcel tax records.

These parks will be reviewed for consideration under Section 4(f) of the U.S. Department of Transportation Act of 1966 and Section 6(f) of the Land and Water Conservation Fund (LWCF) Act of 1965. Section 4(f) of the U.S. Department of Transportation Act of 1966 was enacted to protect publicly owned parks, recreation areas, wildlife and waterfowl refuges, and public and private historic sites of local, state, and national significance. Section 6(f)(3) of the LWCF Act prohibits the conversion of property acquired or developed with grants from this fund to a non-recreational purpose without the approval of the National Park Service.

Table 10: Parks, Greenbelts, and Sanctuaries Adjacent to Project Limits

Property	Purpose	Section 6(F)	Park Classification	Status	Facilities
Seward Highway Buffer	Buffer/Park	No	Natural resource	Open space	None
Woodside Park	(deleted from MOA 2006 Plan inventory) Recreational purpose (LWCF used for this park)	Yes (1977)	(rental portion of Eastchester Park)	Dedicated	Soccer fields
Helen Louise McDowell Sanctuary	Natural resource area (conservation easement on property)	No	Natural resource	Unknown	Trails
Chester Creek Greenbelt	Recreation/Natural resource area (connect other resources i.e. Charles W Smith Memorial, Chester Creek Sports Complex, Eastchester Park, etc.)	Yes (1976, 1977)		Dedicated	Trails
Eastchester Park	Natural resource area	Yes (Chester Creek Greenbelt)	Natural resource	Dedicated	Nordic skiing, picnic shelters, play equipment, sledding, and volleyball
New Seward Park	Unknown	No	Natural resource	It is part of DOT&PF Right-of-Way	None

Potential Effects: The Multi-Interchange Concept – Variant 1 (median u-turn) would affect four potential Section 4(f) properties totaling approximately 3.7 acres. The Multi-Interchange Concept – Variant 2 (loop ramp) would affect three potential Section 4(f) properties totaling approximately 2.7 acres. Both variants would affect one Section 6(f) property, ranging from 0.3 acres to 0.15 acres. DOT&PF is currently determining the applicability of Section 4(f) on these properties.



Figure 51: Section 4(f) and Section 6(f) Properties (special land use)

Potential Cumulative Effects: Past development activities may have adversely affected public recreation areas. The community has also invested in park protection and development resulting in the current pattern of park and recreation areas. Potential improvements in the study area would need to comply with Section 4(f) requirements to avoid use of public recreation areas and if unavoidable, to minimize and mitigate effects. Proposed projects are not expected to result in any substantive cumulative effects on recreation areas.

Historical and Cultural Resources

Existing Conditions and Regulatory Framework: Historic resources may include archaeological artifacts or features, and historic standing structures more than 45 years old. The Alaska Department of Natural Resources (ADNR) Office of History and Archaeology database identified no known buried archaeological resources and only one property that is currently considered eligible for the National Register of Historic Places (NRHP) in the study area. However, this property is considered eligible as a contributing property to a potential historic district, leaving the possibility that as-yet undocumented structures nearby may also be eligible as part of the same potential district. There are 89 other properties in the database that are not currently on the NRHP but are potentially eligible historic properties. Additionally, there are numerous structures in the study area for which dates of construction cannot be determined without a survey of municipal records. Some of these may have reached the age threshold for consideration of significance. Significant historic resources are afforded special consideration by Section 106 of the National Historic Preservation Act of 1966, as amended.

Potential Effects: A preliminary Area of Potential Effect (APE) was established for each concept consisting of the project limits with a 500-ft buffer that should account for indirect effects such as noise and vibration. There are no recorded historic properties within the preliminary APE for the preferred concept, however, a cultural resources survey is anticipated to be required as part of the NEPA process in consultation with the SHPO, to make eligibility determinations on the properties noted above.

8.2.2 Natural Environment

Waterbodies, Water Quality and Floodplains

Existing Conditions and Regulatory Framework: Three main waterbodies are present in the study area: Chester Creek (main stem, north and south fork); Campbell Creek; and Fish Creek (Figure 52). Fish Creek is mostly diverted into the storm drain system, with two small areas of daylighted creek (at Cuddy Park and near 40th Avenue and Lake Otis Parkway). None of these waters have been determined navigable by the State of Alaska. Drainage within the study area flows into the existing storm drain system and eventually into either Chester or Fish Creek. The MOA and DOT&PF own and operate storm sewer systems through a system of subsurface storm sewers, roadside ditches, and surface streets. Within the study area, Chester Creek receives most of the stormwater flow.

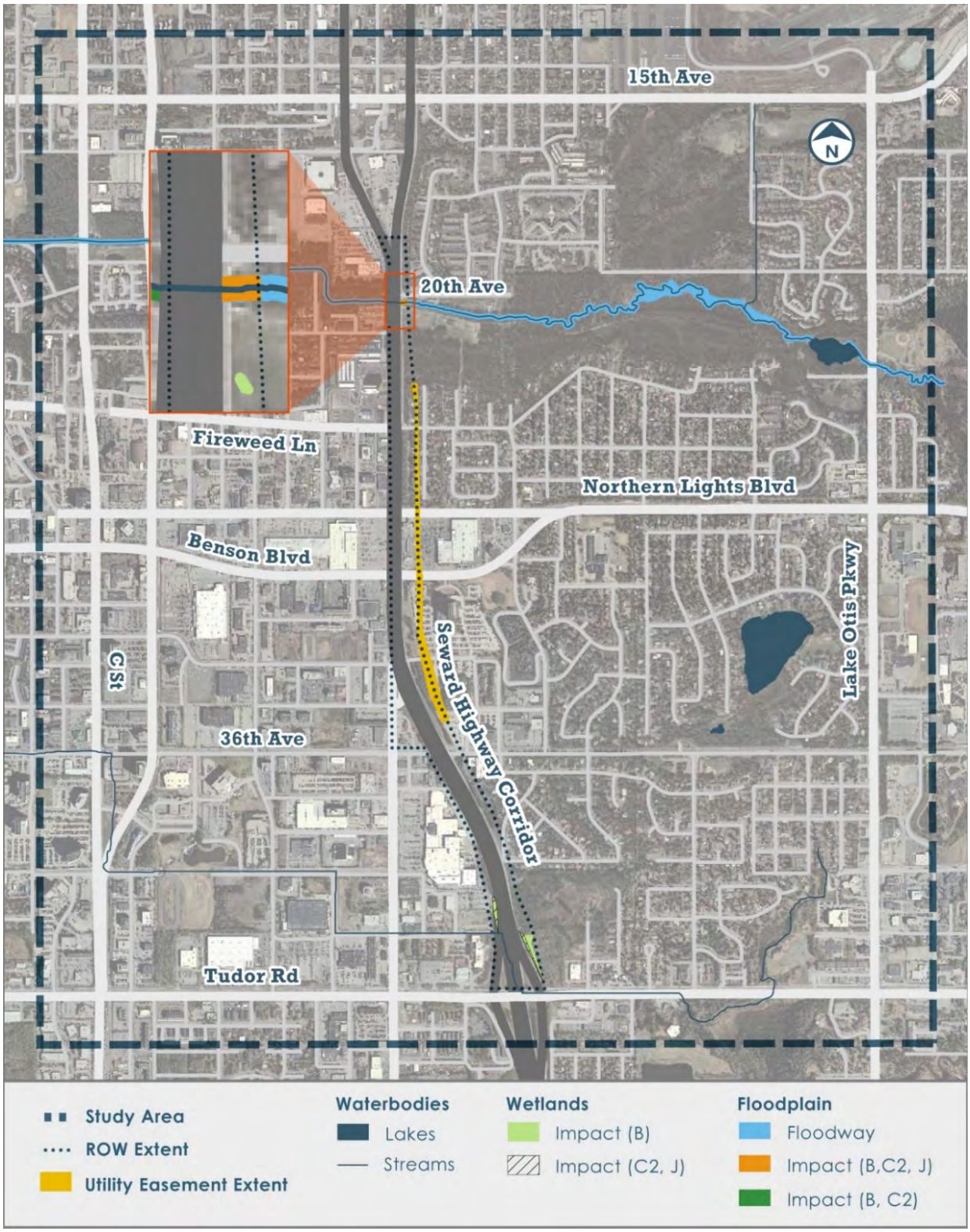


Figure 52: Waterbodies, Floodplains, and Wetlands

Section 303, subsection "d" of the Clean Water Act requires the State of Alaska to develop a list, subject to EPA approval, of water bodies that do not meet water quality standards. When water quality fails to meet state water quality standards, DEC determines the causes and sources of pollutants in a sub-basin assessment and sets maximum pollutant levels, called total maximum daily loads (TMDL). The TMDLs set by DEC become the basis for implementation plans to restore water quality to a level that supports

state designated beneficial water uses. The implementation plans identify and describe pollutant controls and management measures to be undertaken (such as best management practices), the mechanisms by which the selected measures would be put into action, and the individuals and entities responsible for implementation projects. Chester and Fish Creek are both listed as "impaired" through the Alaska Clean Water Actions (ACWA) ranking process, because of impairment from fecal bacteria, and each has approved management plans that limit the TMDL of pollutants (DEC 2004; 2005).

Flood insurance rate maps from the Federal Emergency Management Agency (FEMA) are used to identify drainages with 100-year floodplains within the study area (FEMA, 2009). Floodplains have been mapped in the study area and are associated with Chester Creek and are localized to the immediate area around Chester Creek. Most of the area identified as having a risk of flooding corresponds with a relatively narrow band associated with the Chester Creek drainage. Executive Order 11988, Floodplain Management, requires federal agencies to avoid to the extent possible, the long- and short-term adverse effects associated with the occupancy and modification of floodplains, and to avoid direct and indirect support of floodplain development wherever there is a practicable alternative.

Potential Effects: No in-water work is anticipated for any concept.

All concepts would impact less than one-tenth of an acre of floodplains, ranging from .06 to 0.09 acres, requiring a Flood Hazard Permit from the MOA.

Impacts to water quality could occur as a result of stormwater runoff from the project area, both during construction, and post-construction. The following BMPs are anticipated to be employed to minimize water quality impacts during construction:

- A project-specific Erosion and Sediment Control Plan will be developed prior to construction initiation for any projects resulting from this study.
- A SWPPP will be developed and implemented by the construction contractor for each project. The SWPPP will comply with applicable Alaska Pollutant Discharge Elimination System (APDES) permits to prevent erosion and prevent untreated runoff from reaching nearby waterbodies.

Potential Cumulative Effects: Past development has resulted in re-routing of stream channels of Fish Creek, the reduction of wetland areas and reduced permeability and created stormwater infrastructure, leading to decreased water quality. Future projects may result in a positive effect by creating stormwater treatment structures (e.g., "green development") and may result in creek "daylighting". Present and future wetland loss will be mitigated by more stringent requirements that aims for no net loss of wetlands. Proposed projects are not expected to result in any substantive cumulative effects on waterbodies, water quality, or floodplains.

Wetlands and Vegetation

Existing Conditions and Regulatory Framework: The study area is an urban center with few areas of natural vegetation. The Chester Creek greenbelt and Helen Louise McDowell Sanctuary are naturally vegetated primarily with tall shrubs and grasses. The buffer area between the Seward Highway and the Rogers Park neighborhood and the area between the BP Energy Center and Seward Highway are forested.

The USACE defines wetlands as those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas. The MOA mapped approximately 132 acres of wetlands within the study area and project team members conducted a wetland delineation to verify MOA mapping

within specific areas of potential impacts from the concepts under consideration (Appendix 9). DOWL identified 1.66 acres of wetlands, of which 1.11 acres were mapped as wetlands by the MOA. The wetland delineation will be submitted to the USACE.

Potential Effects: The buffer area between the Seward Highway and Rogers Park neighborhood vegetation will be removed under all concepts, and minor tree clearing will occur within the forested area between the BP Energy Center and Seward Highway. All concepts will affect wetlands, both adjacent to the Chester Creek Greenbelt and within the Helen Louise McDowell Sanctuary.

The Multi-Interchange Concept – Variant 2 (loop ramp) would impact approximately 0.5 acres of wetlands and Multi-Interchange Access Concept – Variant 1 (median u-turn) would impact approximately one acre of wetlands, requiring a permit under Section 404 of the Clean Water Act (CWA). As effects will involve more than 0.5 acres of Class A wetlands, they will require an Individual Permit permitted through the USACE.

Due to the minor amount of anticipated impacts to wetlands and vegetation, cumulative impacts are not anticipated to be substantial.

Federally Listed Threatened and Endangered Species

Existing Conditions: There is no habitat for federally listed or candidate species per Section 7 of the Endangered Species Act (ESA) in the study area (USFWS, 2012).

Potential Effects: No effects to federally listed or candidate species are anticipated.

Fish and Wildlife

Existing Conditions and Regulatory Framework: ADF&G Anadromous Waters Catalog lists the Chester Creek as providing habitat for coho salmon, sockeye salmon, and Dolly Varden. Within the study area, Fish creek may have resident fish such as rainbow trout. Although the majority of the study area is developed, moose and black bear are common to the Chester Creek greenbelt and wetland areas within the study area. Aside from use in landscaping, vegetation and trees in the study area are generally restricted to the Chester Creek greenbelt, riparian areas around Fish Creek, and within and adjacent to wetlands. Terrestrial habitat suitable for migratory land birds/raptors exists on or adjacent to the proposed project. Suitable eagle perching and nesting habitat exists on or adjacent to the proposed project, particularly within the Chester Creek greenbelt and in undeveloped wetland areas, but no known active or inactive eagle nests occur within the study area. Migratory birds, bald and golden eagles and their nests are protected from take, including disturbance under the federal Migratory Bird Treaty Act and Bald and Golden Eagle Protection Act.

Potential Effects: The construction of a replacement bridge over Chester Creek is not anticipated to require any in-water work, therefore no effects to anadromous fish or anadromous fish habitat are anticipated.

Invasive Species

Existing Conditions: More than 500 instances of invasive species have been mapped in the study area representing 50 species by the Alaska Exotic Plants Information Clearinghouse (AKEPIC). This includes plants considered to be extremely invasive (e.g., white sweetclover, reed canary grass) and highly invasive (e.g., european bird cherry, chokecherry, bird vetch, bigleaf lupine, canada thistle, field sow thistle). Invasive species can degrade native vegetative communities; damage riparian areas; compete with native plants; create fire hazards; degrade agricultural and recreational lands; pose threats to the

viability of livestock, humans, and wildlife; and are expensive to manage. Disturbed and trafficked areas, like highway ROWs, are at particular risk of invasive plant encroachment.

Potential Effects: The following species were identified within the preferred concept limits:

- Bromus inermis Leyss (smooth brome)
- Leontodon autumnalis L. (fall dandelion)
- Linaria vulgaris P. Mill. (butter and eggs)
- Melilotus albus Medik (white sweetclover)
- Vicia cracca L. ssp. Cracca (bird vetch)

None of these species have an aggressiveness rating assigned. All are listed as "highest priority species" for study type. Any construction project has the potential to introduce new invasive species to the project site on construction equipment or by importing fill containing invasive species. Invasive species already within the project area could colonize newly-disturbed areas and could also be spread beyond the study area to earth/debris disposal sites, by transport within existing earth and debris.

8.2.3 Built Environment

Land use and Transportation Infrastructure

Existing Conditions and Regulatory Framework: Although a large portion of the study area is identified by the MOA as a City Center in the Anchorage Bowl 2040 Land Use Plan, large areas of lower density residential development are adjacent to the east of Seward Highway with small pockets of higher density residential scattered around the perimeter of the City Center. The study area includes extensive medium to large office buildings and a variety of large and small retailers that is second only in density to downtown Anchorage.

The Seward Highway corridor between Tudor Road and 20th Avenue links residential areas to the east and the commercial areas to the west. The Seward Highway is classified by DOT&PF as an interstate highway and the MOA has classified the Seward Highway as a freeway and identified it as a regional truck route. Other major roadways within the study area are Northern Lights Boulevard, Benson Boulevard, Tudor Road, A Street, C Street, and Fireweed Lane west of the Seward Highway. These all fall under DOT&PF ownership and management responsibilities. The MOA owns and manages the remaining major roadways within the study area.

Multi-use pathways are not continuous for north/south movements between 36th Avenue and Tudor Road. Gaps in the trail system exist, forcing non-motorized users to use roadside shoulders or alternate routes along secondary streets, requiring significant out-of-direction travel. Large intersections, a lack of continuous and separated pathways, and high traffic volumes all combine to make the Seward Highway corridor unappealing for non-motorized users.

Several statewide, regional and local plans regulate and guide future development of the study area and are described in Section 2.4. A thorough discussion of existing land use and transportation infrastructure is included in Section 2.

Potential Effects: This project is consistent with existing land use plans and policies and will not require the need to change existing zoning designations, however some existing land uses may need modification and/or may be eliminated due to ROW acquisition.

The proposed concepts will improve conditions for multi-modal traffic travelling between the residential areas to the east, and the commercial areas to the west. Non-motorized use will likely increase as connectivity is improved between non-motorized facilities, and new pedestrian and bicycle facilities are added.

Potential Cumulative Effects: Future projects will likely alter areas of existing land use due to ROW acquisition.

Contaminated Sites

Existing Conditions and Regulatory Framework: According to the State of Alaska Contaminated Sites database, there are 57 sites within the study area that have been affected by contamination and required cleanup. Of the 57 sites, 36 sites have a status of "Cleanup Complete;" 12 sites are 'active' and eight have a Cleanup Complete status with Institutional Controls (IC) assigned. Table 11 and Figure 55 present the latter two categories (20 total sites). Contaminated sites often threaten public health or the environment and can cause economic hardship to people and communities (DEC 2011). The regulatory framework for the management of hazardous materials, hazardous wastes, and contamination is complex, with both federal and state components.

Potential Effects: The following contaminated sites are located within 250 feet of the project limits (Table 11 and Figure 53):

Table 11: DEC Active Sites and Sites with IC within 250 feet of Project Limits

Hazard ID	Site Name	Status	Site Type	IC	Anticipated ROW Acquisition
23362	Former Holiday Station Store #608, formerly Williams Express Store #5008	Cleanup Complete	Gas Station	Yes	Yes - partial
23371	Tesoro - Olson Gas Service #2 (former)	Active	Gas Station	No	Yes - partial
23595	Chevron - #1518 (Former) - Wendy's	Active	Gas Station	No	Yes – full
23820	Chevron - #5799	Active	Gas Station	No	Yes - partial
24727	Tesoro Northstore #79, Formerly Garrett's #1	Cleanup Complete	Gas Station	Yes	Yes – full



Figure 53: DEC Contaminated Sites

- **Former Holiday Station Store #608, formerly William Express Store #5008:** In 1988, benzene levels in groundwater increased to a point that the gas station was shut down for extensive upgrading. DEC determined the cleanup levels at this site were acceptable in 2008. Standard IC's were set in place requiring DEC approval to transport soil or groundwater offsite and no groundwater wells can be

installed without approval. DEC will also review the site conditions every three years. DOWL staff contacted the IC Department at DEC and they stated that unless there is a policy change regarding ICs or they receive additional information about the site which provides some assurance on risk, the ICs will stay in place.

- **Tesoro Olsen Gas Service #2 (former):** In 1987 there was an explosion from vapors as well as a leaking Underground Storage Tank (UST). Further investigation found free floating petroleum in groundwater 13 feet below ground surface (bgs). Groundwater wells showed the contamination extended to adjacent properties up until 1997. According to DEC records, it appears that limited remediation has occurred. Groundwater flows north/northeast.

- **Chevron #1548 (Former)- Wendy's:** In 1987, three gasoline tanks and one diesel tank were removed. While monitoring wells were being installed, soil and groundwater contamination was identified. Years of quarterly remediation have been completed on the site with successful Gasoline Range Organics (GRO) and Benzene removal despite constant system malfunctions. Although some remediation has been successful, the contamination levels seem to increase in the fall while decreasing in the summer. Groundwater is usually found between 10 to 13 feet bgs and contamination is present to the northwest. The DEC staff member on this site is Robert Weimer. DOWL staff contacted Mr. Weimer on July 10, 2019 to determine if site closure with IC within the next five years was obtainable. Due to the size, trends in groundwater concentrations, the remaining groundwater concentrations, and contamination that extends off property, Mr. Weimer believes it will take longer than five years for site closure with IC. Groundwater is estimated to be relatively shallow (10 to 13 bgs).

- **Chevron #5799:** A UST was removed in 1989 and soil contamination was observed with gasoline and diesel. Monitoring wells later installed found groundwater contamination. The service station was removed in 1998 and the new station was built on the west side of the property with new tanks. More contamination was found during the tank installation. There is ongoing monitoring at this site. Groundwater is estimated to be relatively shallow (13 feet bgs). The groundwater monitoring report states "No petroleum hydrocarbons were detected above cleanup levels with the exception of Diesel Range Organics (DRO) in MW-11R and benzene in OS-2. GHD will continue semiannual groundwater monitoring and sampling in 2019."

- **Tesoro Northstore #79, Formerly Garretts #1:** Multiple USTs were removed in 1997. Groundwater monitoring started in November 2006. Because the past or current presence of DRO, GRO, and benzene, ethylbenzene, toluene, and three isomers of xylene (BTEX) in soil, and groundwater or soil transportation must be approved by DEC. Other IC include approval from DEC before any water wells are installed on this property. DOWL staff contacted the IC Department at DEC and they stated that unless there is a policy change regarding ICs or they receive additional information about the site which provides some assurance on risk, the ICs will stay in place.

- ROW acquisition of two sites (Chevron #1518 and Tesoro Northstore #79) may be required for project completion. However, the Chevron site is not anticipated to be deemed 'cleanup complete' within the next five years, which may prove challenging as DOT&PF ROW policy does not favor full acquisition of 'active' sites. These contaminated sites could result in project delays and increased cost if contaminated soils or groundwater are exposed during construction activity. Consultation with DEC will be required during project planning.

Noise

Existing Conditions and Regulatory Framework: FHWA's regulations "Procedures for Abatement of Highway Noise and Construction Noise" (23 CFR 772) provides procedures for noise studies and noise abatement measures to help protect the public health and welfare, supplies noise abatement criteria (NAC), and establishes requirements for information to be given to local officials for use in the planning and design of highways. Noise analysis is necessary for Type I projects, which include elements such as increasing the number of through lanes, adding auxiliary lanes (except for turn lanes), adding new or realigning roadways, or modifying interchange ramps. Concepts that include these elements will require a noise analysis during future design and NEPA phases.

Potential Effects: Each concept contains or is within 500 feet of approximately 140 residential properties, as well as other sensitive noise receivers such as churches and parks. Changes to road elevation, road footprints, intersection controls, or traffic patterns have the potential to change traffic noise or vibration effects to sensitive land uses, such as residences, parks and schools. State and federal transportation agencies have established thresholds for evaluating noise effects and whether there is a need for mitigation. The preferred concept and associated projects are likely to be Type I projects, for which the DOT&PF Noise Policy requires a noise analysis.

Potential Cumulative Effects: Noise effects from the preferred concept and associated projects could result in changes in noise in areas close to the actual improvement projects/corridors (Figure 54). The noise generated by the preferred concept and projects may increase noise in certain areas due to changes in traffic patterns or decreases in distance from traffic to adjacent land uses. Future projects that reduce idling times at intersections through congestion relief or changing signalized intersections to non-signalized intersections could decrease noise to adjacent receptors.

Air Quality

Existing Conditions and Regulatory Framework: Air quality analysis requirements for the study area are dictated by MOA, AMATS, and Regional Transportation Improvement Programs. The Anchorage Bowl is designated as a carbon monoxide (CO) maintenance area. The EPA recently approved the Anchorage Carbon Monoxide Limited Maintenance Plan (LMP), which streamlines the air quality conformity demonstration process.

Potential Effects: Vehicle emissions are increased where there is traffic congestion during peak periods. Vehicles idling when stopped at signalized intersections also increase vehicle emissions. Any action that alleviates congestion and vehicle idling improves regional and local air quality. An air quality conformity analysis will be completed during the NEPA process to determine which type of analysis will be needed when the corridor concepts are identified. The current MOA LRTP will be evaluated to determine if any alternatives are included, which may indicate what type of air quality analysis is required.

Potential Cumulative Effects: Air quality in the Anchorage Bowl has been adversely affected by past development, motor vehicle emissions, home heating, power generation and other industrial activities. Compliance with state and federal air quality regulations should minimize the adverse effects of future actions on air quality. Future projects that reduce idling times at intersections through congestion relief or changing signalized intersections to non-signalized intersections could improve air quality.

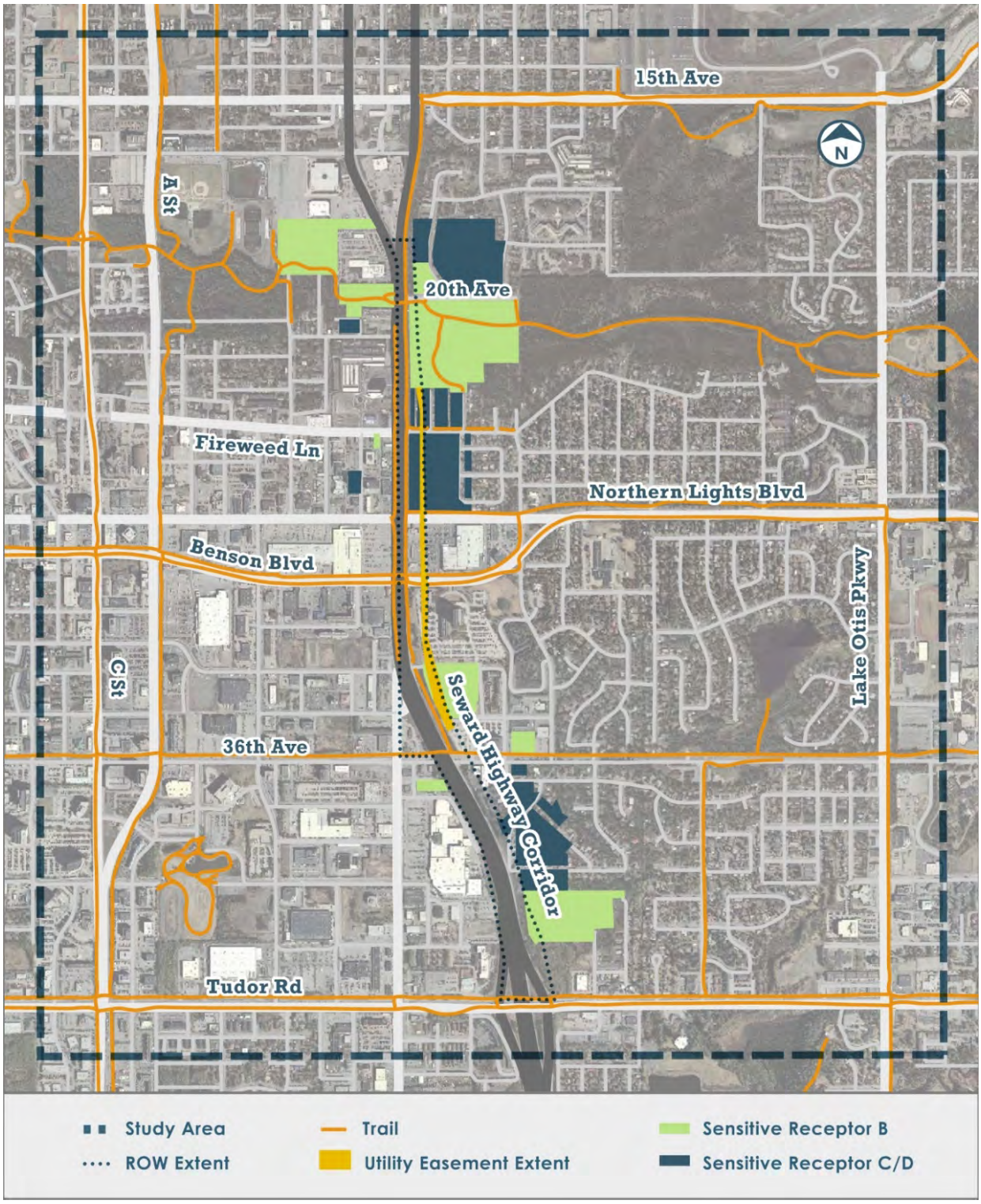


Figure 54: Sensitive Receptors

Visual Effects

Existing Conditions: The study area is primarily urban, without elevated intersections, except for the Tudor Road overpass. Natural spaces include Chester Creek and Helen Louise McDowell Sanctuary, which are both accessed by public trails.

Potential Effects: The preferred concept is anticipated to result in new above-grade and below-grade sections of the Seward Highway. The Multi-Interchange Concept – Variant 1 (median u-turn) will have the highest proportion of above grade mainline (26 percent), with 17 percent at grade and 57 percent below grade. The Multi-Interchange Concept – Variant 2 (loop ramp) will have 17 percent above grade, 27 percent at grade and 56 percent below grade. All resulting projects will be developed in accordance with the MOA Context Sensitive Solutions process, which will address and minimize visual effects.

Utilities

Existing Conditions: Known utilities are addressed in Section 3 of the Existing Conditions and Data Collection Analysis Report (Appendix 2), and summarized in Section 2.5.1 of this report.

Potential Effects: Construction of transportation improvements will require the relocation and re-provision of utilities within the project corridor. Utility relocations will include:

- High voltage overhead transmission lines, including a 115 kV transmission line that currently runs between 36th Avenue and Northern Lights Boulevard, and a 35 kV transmission line that runs from 36th Avenue to 20th Avenue
- Fiber optic relocations, including east-west crossings of 36th Avenue, Northern Lights Boulevard, Fireweed Lane, and 20th Avenue, and north-south facilities running from 36th Avenue to Northern Lights Boulevard, and Fireweed Lane to 20th Avenue
- A sewer lift station at 36th Avenue and sewer pipe crossings at 36th Avenue and 20th Avenue
- A north-south water pipe between 36th Avenue and Northern Lights Boulevard and pipe crossings at Tudor Road, 36th Avenue, Northern Lights Boulevard and Fireweed Lane
- Gas lines running north-south between 36th Avenue and 20th Avenue, and east-west crossings at 36th Avenue, Tudor Road, and Fireweed Lane.

Each utility company may choose to update or consolidate utilities when construction occurs.

8.3 Cumulative Effects

Cumulative effects are the aggregate result of direct and indirect effects of a project on affected resources when combined with the effects of other past, present, and reasonably foreseeable future actions.

The following projects have been identified as present and reasonably foreseeable future projects that will likely be considered under the cumulative impact analysis for the NEPA review. Projects related to planning studies to determine future projects are not included. Each of these projects potentially affects community cohesion/socioeconomic conditions, noise, and air quality. It is unknown if these projects will affect Section 4(f)/6(f) properties and aquatic resources.

Determination of appropriate spatial and temporal limits for past, present, and reasonably foreseeable future projects is critical to accurately assess aggregate effects. If limits to cumulative projects are too

large, then incremental effects may be diluted and if too small, they may be inappropriately magnified. Defining these limits will occur at the project level under the appropriate NEPA document and be applied to projects in Table 12.

Table 12: Present and Reasonably Foreseeable Future Projects

Project Name	Project Description	Status	Relationship to MCR
32nd Ave and 33rd Ave Rehabilitation – Arctic Boulevard to Old Seward Hwy	Rehabilitate 32nd Ave and 33rd Ave from Arctic Boulevard to Old Seward Hwy to collector standards. Project would include non-motorized improvements and consider adjacent land use.	Underway	This project is located within the study area and immediately adjacent to the Seward Highway corridor.
Midtown Corridor Improvements Denali Street Area	Upgrade Denali Street from Benson Boulevard to Tudor Road and 36th Avenue from A Street to the Old Seward Highway. Project would include non-motorized improvements and consider adjacent land use.	Underway	This project is located within the study area and has a terminus at the intersection of Old Seward Highway and 36th Avenue, which is part of the area of recommended improvements.
Tudor Road Interchange	Replacement of Tudor Road Interchange.	Future (expected late 2019)	This project is located within the study corridor.
Fireweed Lane Rehabilitation – Spenard Road to Seward Highway	This project would rehabilitate Fireweed Lane from Spenard Road to the Seward Highway and include a road diet. Changing Fireweed from four lanes to three lanes (two with a center turn lane). This project would also include non-motorized improvements.	Future (2019-2022 TIP)	This project is located within the study area and adjoins the Seward Highway corridor.
36th Avenue Access Management – Spenard Road to Denali Street	Access management treatments. This project would consider adjacent land use.	2035 MTP	This project considers access management changes within the study area.
Lake Otis Pkwy Reconstruction – Debarr Road to Northern Lights Boulevard	Reconstruct and increase capacity of Lake Otis Parkway from Debarr Road to Northern Lights Boulevard. Replace bridge over Chester Creek and reconstruct Lake Otis Pkwy/Northern Lights Boulevard intersection. Project would include non-motorized improvements and consider adjacent land use.	2035 MTP	This project considers improvements to a transportation corridor parallel to the Seward Highway within the study area.
Northern Lights Boulevard – Lake Otis Pkwy to Bragaw Street	Extend third eastbound lane from Lake Otis Parkway to Bragaw Street. May include intersection improvements at both Lake Otis Parkway and UAA Drive. Project would include non-motorized improvements, replacement of existing pedestrian overcrossing if required, and consider adjacent land use.	2035 MTP	This project considers improvements to a transportation corridor within the study area.

Project Name	Project Description	Status	Relationship to MCR
Northern Lights/Benson Boulevard Access Management – Seward Highway to Minnesota Drive	Add access management and turn restrictions; modify local connections to make adjacent property access to other roads; east-west or north-south access in lieu of direct access from Northern Lights Boulevard and Benson Boulevard where practical.	AMATS Northern Lights/ Benson Boulevard Pedestrian Safety Study	This project considers access management changes within the study area along major arterial roads.
Tudor Road Access Management – Seward Highway to Arctic Boulevard	Add access management and turn restrictions; modify local connections to make adjacent property access to other roads; east-west or north-south access in lieu of direct access from Tudor Road wherever practical.	2035 MTP	This project considers access management changes within the study area along a major arterial road.
Tudor Road Access Management – Seward Highway to Patterson Street	Add access management and turn restrictions; modify local connections to make adjacent property access to other roads; east-west or north-south access in lieu of direct access from Tudor Road wherever practical.	2035 MTP	This project considers access management changes within the study area along a major arterial road.
A St Sidewalk/Pathway – 13th Ave to Fireweed Lane	Construct a sidewalk/ pathway on the west side of A St from 13th Avenue to Fireweed Lane. Project would consider adjacent land use.	2035 MTP	This project proposes non-motorized facility improvements along a parallel north-south corridor within the study area.
A St West Sidewalk – Benson Boulevard to 36th Ave	Construct a missing sidewalk on the western side of A Street from Benson Boulevard to 36th Avenue. Project would consider adjacent land use.	2035 MTP	This project proposes non-motorized facility improvements along a parallel north-south corridor within the study area.
A St West Sidewalk – Fireweed Lane to Benson Boulevard	Construct a missing sidewalk on the western side of A Street from Fireweed Lane to Benson Boulevard. Project would consider adjacent land use.	2035 MTP	This project proposes non-motorized facility improvements along a parallel north-south corridor within the study area.
A St Sidewalk/Pathway Study – 13th Ave to Fireweed Lane	Study the feasibility of constructing a sidewalk/ pathway on the west side of A Street from 13th Avenue to Fireweed Lane. Project would consider adjacent land use.	New/ 2035 MTP	This project proposes non-motorized facility improvements along a parallel north-south corridor within the study area.
Campbell Trail Lighting Construction – Victor Road to Seward Highway	Construct lighting along Campbell Creek Trail from Victor Road to Seward Highway. Project would consider adjacent land use.	2035 MTP	This project proposes non-motorized facility improvements within the study area.

Project Name	Project Description	Status	Relationship to MCR
Northern Lights Boulevard Lane Reduction – Minnesota Drive to Seward Highway	Convert an existing travel lane on Northern Lights Boulevard between the Seward Highway and Minnesota Drive to expand the existing sidewalks. Project would consider adjacent land use.	New	This project proposes reconfiguring a major arterial roadway within the study area to provide improved non-motorized facilities.
Transit Intersection Signal Priority Improvements	Install bus signal priority at key intersections along frequent routes.	New	This project improves transit service reliability with improved bus running times and may include intersections within the study area.
Transit Centers/ Support Facilities	This project supports an ongoing effort to provide major transit facilities in key areas of the city and major destinations. The Anchorage Comprehensive Plan and 2040 Land Use Plan (LUP) identified neighborhood, town, regional commercial, and city centers that function as focal points for community activities with a mix of retail, residential, and public services and facilities. Anchorage Talks Transit coordinated with the LUP and implemented a frequent bus network along transit supportive development corridors. These corridors should provide pedestrian connections to surrounding neighborhoods and transit. Existing and future facility improvements along these corridors and in areas like *Midtown*, Downtown, U-Med, Dimond Center and Muldoon, are vital to the implementation of these community planning documents.	AMATS TIP	This project supports transit facility improvement, including within the study area. This is specifically referenced in the discussion of existing and future facility improvements along transit supportive development corridors and in areas like Midtown.

8.4 Permits and Authorizations

No permits or authorizations are required as part of the PEL study process. The following permits and authorizations are anticipated to be required for projects identified in the preferred concept(s):

- CSS Process for Transportation Projects and Approvals (MOA)
- Alaska Pollutant Discharge Elimination System Permit (DEC)
- Clean Water Act 404 permit/401 water quality certification (USACE)
- Flood Hazard Permit (MOA)
- NHPA Section 106 Consultation (SHPO)
- Department of Transportation Section 4(f) Determination (MOA/DOT&PF)
- Land and Water Conservation Fund Act Section 6(f) Determination (ADNR/DOT&PF)

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9.0 RIGHT-OF-WAY REQUIREMENTS AND EFFECTS

The Multi-Interchange Concept (Variant 1 – Median U-Turn and Variant 2 – Loop Ramp) will potentially require ROW acquisitions from commercial and residential properties, and also from park land adjacent to the corridor. This section provides background information and analysis of potential ROW impacts, and an analysis of properties potentially impacted to a major extent. It has been prepared on the basis of limited information and conceptual design and should therefore be treated as a high level summary. ROW impacts will be determined in greater detail as part of design projects forwarded from the PEL study.

The alignment of the ROW was considered as part of the process of determining the approximate ROW width necessary to accommodate each of the concepts. The team considered expanding the ROW in a variety of configurations as a means of minimizing impacts to businesses, residential properties, and park lands. The range of alignment options varied based on centering the existing Seward Highway in the existing ROW to try and balance the impacts to both sides of the road, or widening to either the east and/or west. All alignment options require acquisitions and impact numerous properties, but, relatively speaking, the analysis determined that enlarging the ROW to the east has a lesser impact, mostly because of existing undeveloped buffer areas north of Fireweed Lane and between Benson Boulevard and 36th Avenue.

During the stakeholder and public involvement activities, it was clear that property owners along the corridor would prefer the ROW acquisition process occur one time and not in an incremental manner over a long period of time. To support the analysis, a separate ROW width was developed for each concept to help understand the extent of the potential ROW impacts.

Figures 55 and 56 show number of potential full property acquisitions required for each concept.

Table 13: Potential Full Acquisitions

Full Acquisitions	Multi-Interchange Concept Variant 1 (MUT)	Multi-Interchange Concept Variant 2 (Loop Ramp)
Commercial Properties	3	4
Residential Properties	19	19
Park Land Parcels	2	2
Total Full Acquisitions	24	25

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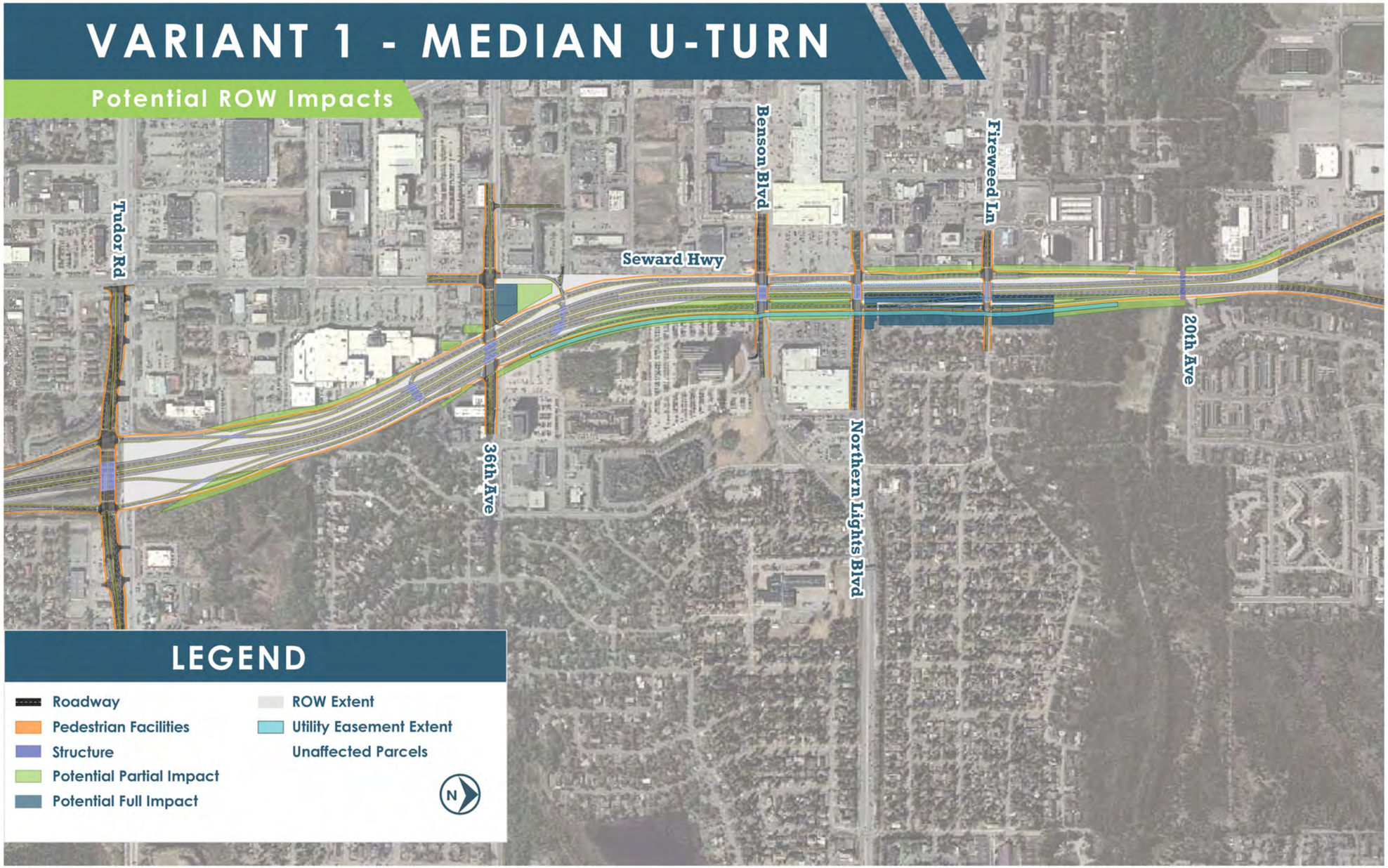


Figure 55: Potential ROW Impacts: Multi-Interchange Concept - Variant 1

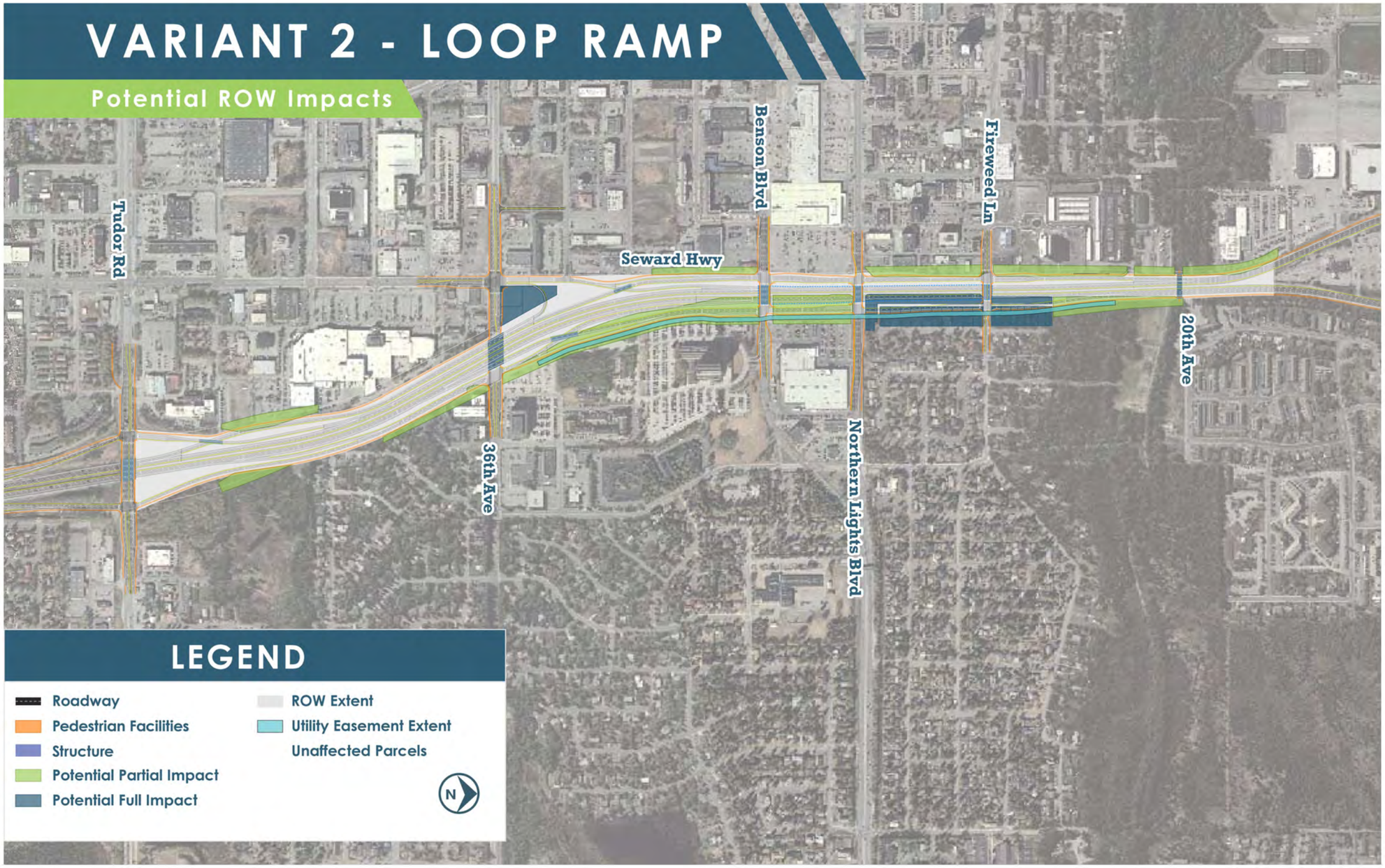


Figure 56: Potential ROW Impacts: Multi-Interchange Concept - Variant 2

Table 14: Potential ROW Impacts

Full Acquisitions	Multi-Interchange Concept Variant 1 (MUT)	Multi-Interchange Concept Variant 2 (Loop Ramp)
Commercial Properties	23	22
Residential Properties	0	2
Park Land Parcels	5	4
Institutional/Church	1	0

A further evaluation was completed to consider whether, as a result of partial property acquisition, major impacts would occur to the properties that would need to be considered as part of the calculation of costs for curative work required to make the property "whole", or to enable it to continue to effectively function in the manner that it would have if the ROW acquisition did not occur. Properties that are identified as potentially being subject to major impacts will be clarified as part of the design process for projects forwarded from the PEL Study, and the information contained in Table 15 is intended to be indicative only.

Table 15: Properties with Potential Major Impacts

Property	Multi-Interchange Concept Variant 1 (MUT)	Multi-Interchange Concept Variant 2 (Loop Ramp)	Collector-Distributor Concept
Tudor Bingo/Parker Drilling	A partial acquisition may impact this property, requiring the purchase of the Parker Drilling Building.	No additional major impact	No additional major impact
BP Campus	No additional major impact	The Learning Center portion of the campus may require some parking modifications and the lift station may have to be relocated.	No additional major impact
Fred Meyer	Both concepts are likely to require the full acquisition of the Fred Meyer fuel station and may generate additional impacts to parking. Fred Meyer has an existing parking variance, and early analysis indicates an additional 16-20 net parking spaces may be lost. Potential cure: A parking utilization study is recommended, as well as a survey site plan to understand the location of property boundaries.		

Property	Multi-Interchange Concept Variant 1 (MUT)	Multi-Interchange Concept Variant 2 (Loop Ramp)	Collector-Distributor Concept
Jacobs Office Building	Concept potentially impacts total parking spaces required by code. Potential cure: Redesign of the parking lot combined with vacation of ROW or encroachment permit to provide needed spaces.	Concept potentially impacts total parking spaces required by code. Potential cure: A parking utilization study is recommended based on the current number of tenants in the building and the individual parking required by code.	Minor impacts to parking. Potential cure: Redesign the traffic flow and parking spaces as code requires.
Best Western Golden Lion Hotel	Both concepts are likely to impact the hotel site. Overflow parking currently occurs within the road ROW. Potential cure: A waiver or variance may be required from the MOA, or parking may need to be provided off site, within 600 feet of the existing parking. Shuttle services or valet parking may be able to be used to reduce the on-site parking requirement. Parking may be able to be provided on the two lots DOT&PF has already acquired between the Old Seward Highway and Seward Highway, adjacent to 36th Avenue. Alternatively, the RTO Auto Rental/Sales lots may be able to be acquired to provide parking.		

Each full acquisition of an improved property should be assumed to have an associated relocation, either residential or commercial in nature. The intent of this conceptual study was to conduct a high-level analysis of potential property impacts. ROW impacts will be more fully defined when projects are forwarded from the PEL Study for further design and the preparation of associated environmental documentation. Future efforts to evaluate ROW impacts usually include a relocation study that identifies the number and type of business and residential relocations that will needed.

Public Law 91-646, the Uniform Act, provides important protections and assistance for people affected by federally-funded projects. The Uniform Act is designed to provide for fair and equitable treatment for people whose real property is being acquired, or who must move as a result of projects receiving federal funds.

All acquisitions will be impartial, conducted in accordance with the Uniform Act only if Federal funds are used in project implementation.

10.0 PREFERRED CONCEPT

10.1 Overview

The preferred concept is the Multi-Interchange concept, which can be achieved using one of two different variants:

- Variant 1: Median u-turn variant
- Variant 2: Loop ramp variant

Both variants refer to how the concept provides solutions for access between the frontage road network and the freeway at 36th Avenue. Variant 1 (median u-turn) also provides flexibility on the placement of an additional on-ramp from Northern Lights Boulevard to the freeway in the northbound travel direction. The Multi-Interchange concept has been evaluated and is able to be implemented in five separate projects with independent utility and logical termini, and one further project that does not have independent utility and logical termini but provides for aesthetic improvements and place-making initiatives. The projects required to implement each variant are essentially the same, but with different design elements (and costs).

Projects with independent utility and logical termini are described in Section 10.2. In addition, a separate project has been identified to incorporate Complete Streets, Aesthetic Improvements and Community Placemaking for short- and medium-term projects, which will include working with the community to identify improvements to support facilities that enable safe access for all users, including pedestrians, bicyclists, motorists and transit riders of all ages and abilities. It will include initiatives for stakeholders and the community to collectively identify and implement initiatives that strengthen the connection between people and the public realm. This will support the Anchorage Bowl 2040 Land Use Plan's goal to create a city center in Midtown that is a thriving mixed-use environment that enables business growth.

10.2 Logical Termini for Specific Projects

Federal regulations (23 CFR 771.111(f)) outline three general principles to be used in defining a highway project to ensure meaningful alternatives evaluation and avoid commitments to transportation improvements before they are fully evaluated. It notes actions evaluated in NEPA compliance documentation shall:

1. Connect logical termini and be of sufficient length to address environmental matters on a broad scope;
2. Have independent utility or independent significance, i.e., be usable and a reasonable expenditure even if no additional transportation improvements in the area are made; and
3. Not restrict consideration of alternatives for other reasonably foreseeable transportation improvements.

Further FHWA guidance defines logical termini as "(1) rational end points for a transportation improvement, and (2) rational end points for a review of the environmental impacts" (FHWA, 1993). Each defined project must serve an identified need and meet that need on its own without forcing other immediate transportation improvements within the remainder of the facility. The proposed project termini are identified in Table 16 and described in further detail below. Note the Complete Streets,

Aesthetic Improvements and Community Placemaking project provides for improvements throughout the Seward Highway corridor, and therefore does not have independent utility or logical termini.

Table 16: Proposed Project Termini

Recommended Project	Start	End	Project Area Description
Complete Streets, Aesthetic Improvements and Community Placemaking	Milepost (MP) 124.4	MP 126.4	City center placemaking initiatives throughout the Midtown Congestion Relief study area corridor, including activating covers proposed as part of Projects D and E.
Project A: Tudor Road Interchange Reconstruction	MP 124.4	MP 124.9	Tudor Road interchange with Seward Highway and extending south for approximately 1,500 feet, and north to approximately 1,400 feet south of the intersection with 36th Avenue.
Project B: Seward Highway/36th Avenue Intersection Improvements	MP 124.8	MP 125.6	North side of Tudor Road interchange and extending to the intersection of Seward Highway and Benson Boulevard.
Project C: Seward Highway/ Benson Boulevard, Northern Lights Boulevard and Fireweed Lane Intersection Improvements	MP 125.6	MP 126.4	Commencing from the north side of Benson Boulevard and extending to approximately 800 feet north of 20th Avenue, to tie in with the existing Ingra-Gambell couplet.
Project D: Seward Highway/36th Avenue Interchange	MP 124.6	MP 125.6	Approximately 650 feet south of the Tudor Road interchange and extending north to tie in with the frontage road network immediately south of the intersection of Seward Highway and Benson Boulevard. Placemaking initiatives identified by the Community Taskforce.
Project E: Seward Highway/ Benson Boulevard to 20th Avenue Access Improvements	MP 125.2	MP 126.4	Commencing at the intersection of Seward Highway and Benson Boulevard, and extending north to tie in with the existing Ingra-Gambell couplet. Placemaking initiatives identified by the Community Taskforce.

10.2.1 Logical Termini: Tudor Road Interchange Reconstruction

The redevelopment of the grade-separated Tudor Road interchange with the Seward Highway has logical termini starting at the intersection on and off-ramps to the Seward Highway, approximately 1,500 feet south of the highway bridge to the on-and off ramps that connect back into the Seward Highway north of the interchange. DOT&PF has already completed an approved EA as part of a prior project – Seward Highway Tudor to Dowling. The project is shown on Figures 57 and 58.

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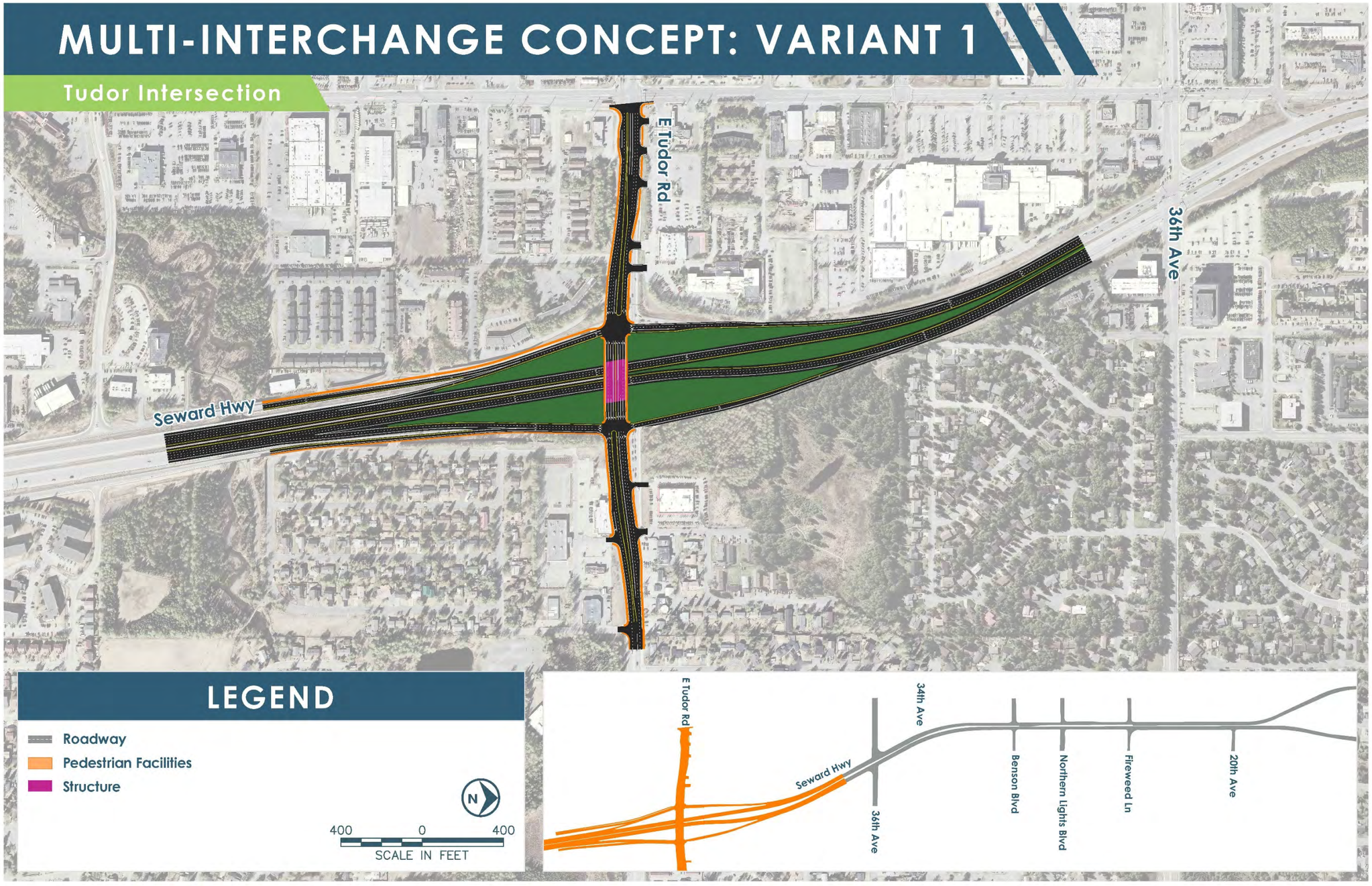


Figure 57: Tudor Road Interchange – Variant 1

MULTI-INTERCHANGE CONCEPT: VARIANT 2

Tudor Intersection

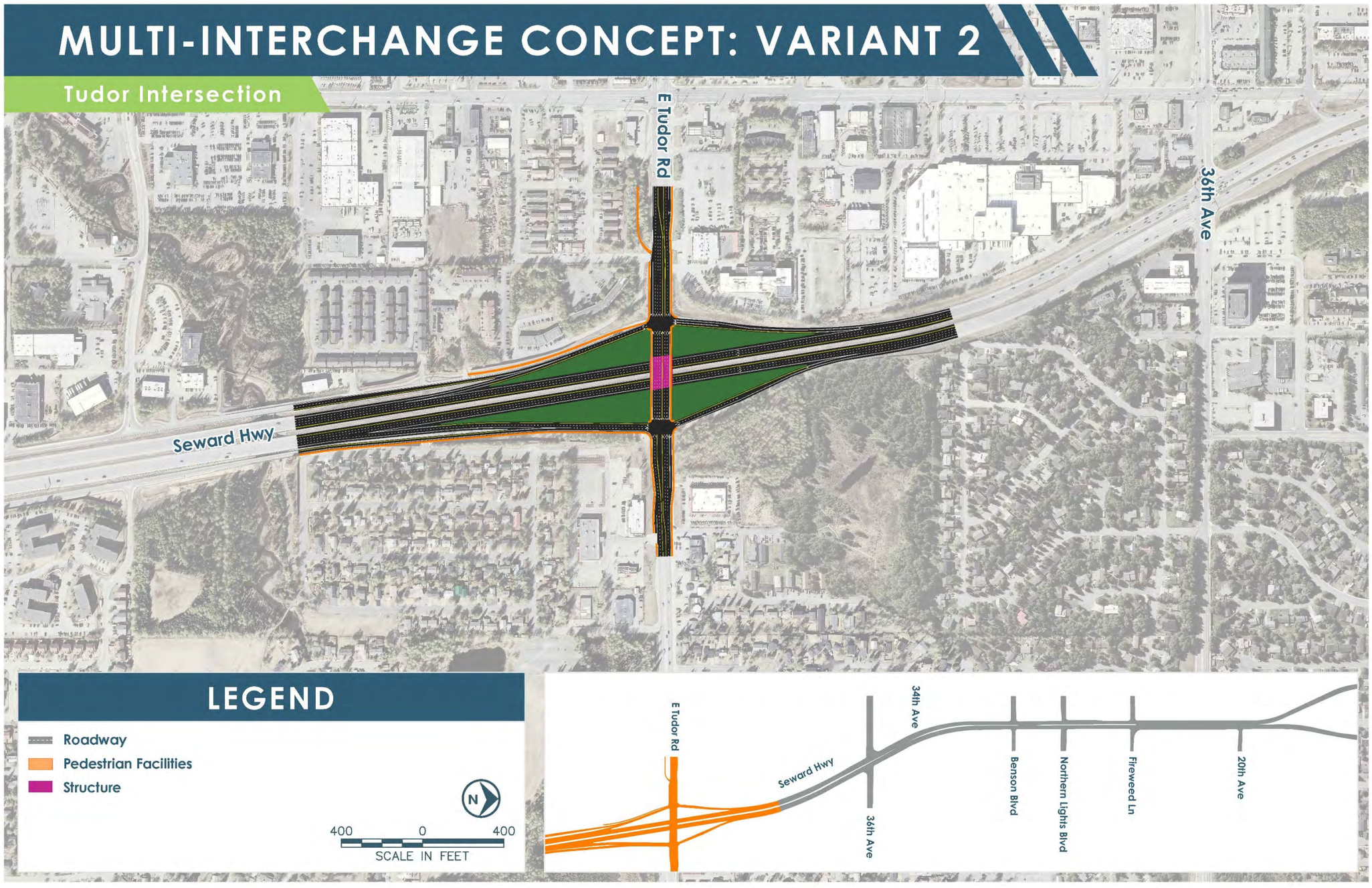


Figure 58: Tudor Road Interchange – Variant 2

10.2.2 Logical Termini: Seward Highway/ 36th Avenue Intersection Improvements

This project provides safety and congestion mitigation at the intersection of 36th Avenue and Seward Highway. The logical termini for the project is the north side of Tudor interchange and extending to the intersection of Seward Highway and Benson Boulevard (refer to Figures 59 and 60). These termini meet the three NEPA compliance project criteria as described below:

1. The endpoints identified are rational end points for the transportation improvements and a review of their environmental impacts.

- The proposed termini are logical for the project purpose and need to improve safety, capacity, connectivity and mobility by relieving congestion, improving operational efficiency, and reducing safety risks for all modes of transportation by improving turn movements at the intersections of 36th Avenue and Old Seward Highway and 36th Avenue and the Seward Highway, and/or increasing intersection spacing. Signal phasing will also be improved by conversion from a four-phase signal operation to a two-phase signal operation, which will significantly reduce delays and speed up signal operations. The spacing of the intersections of Old Seward Highway and 36th Avenue, and Seward Highway and 36th Avenue is insufficient to accommodate current traffic volumes without generating congestion along the east/west connection. This creates safety risks for all users and decreases through movement of north/south travel on the Seward Highway. Walking and bicycling facilities will include a separated pathway along the Seward Highway, and sidewalks on both sides of 36th Avenue. This project would provide an improved surface transportation facility and needed intersection improvements at 36th Avenue to relieve congestion and enhance mobility and access.

- The proposed termini are rational for the environmental review as the project area affected would be limited to the portion of the highway affected by the reconstruction of the separated Seward Highway corridor to facilitate traffic operations and intersection improvements. No environmental effects would be expected outside this area.

- The environmental effects associated with this project do not overlap any other project in the Multi-Interchange concept.
  - The project has independent utility. It would be usable and a reasonable expenditure even if no additional transportation improvements were made.
  - The project independently provides safety and mobility benefits, regardless of whether other corridor improvements occur. The reconstruction of the Seward Highway in the recommended configuration will improve traffic operations along the Seward Highway corridor and along 36th Avenue in the vicinity of the intersections with Seward Highway and Old Seward Highway. It also provides the opportunity to significantly improve existing facilities for walking and bicycling.
  - This project does not require any other improvements to occur. It addresses the safety and mobility deficiencies in the area.
  - This project does not restrict consideration of alternatives for other reasonably foreseeable transportation improvements.
  - This project does not change or reduce the potential range of alternatives for any other foreseeable transportation improvements.

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MULTI-INTERCHANGE CONCEPT: VARIANT 1

Seward Highway/36th Avenue Improvements

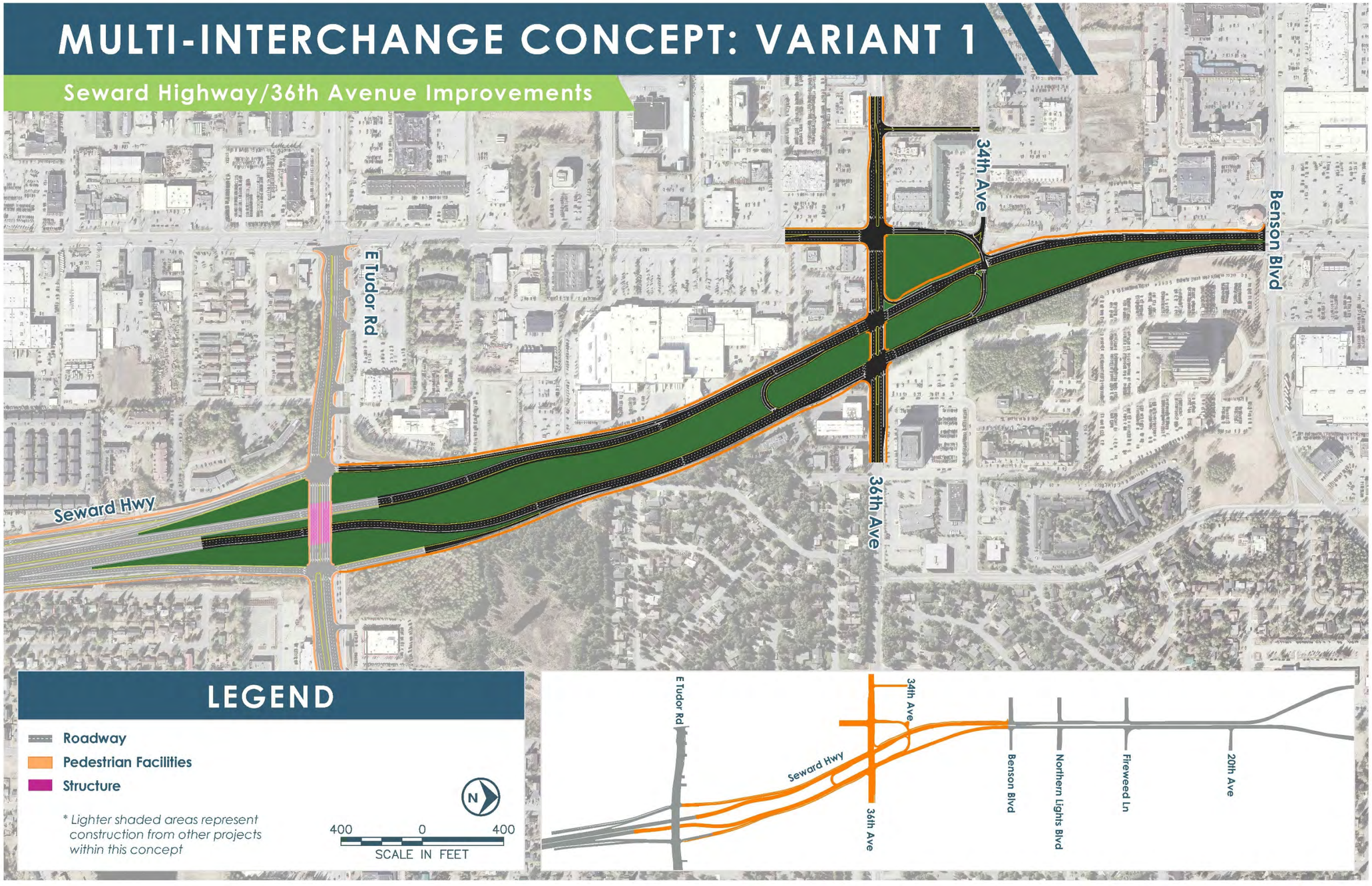


Figure 59: Seward Highway/36th Avenue Intersection Improvements – Variant 1

MULTI-INTERCHANGE CONCEPT: VARIANT 2

Seward Highway/36th Avenue Improvements

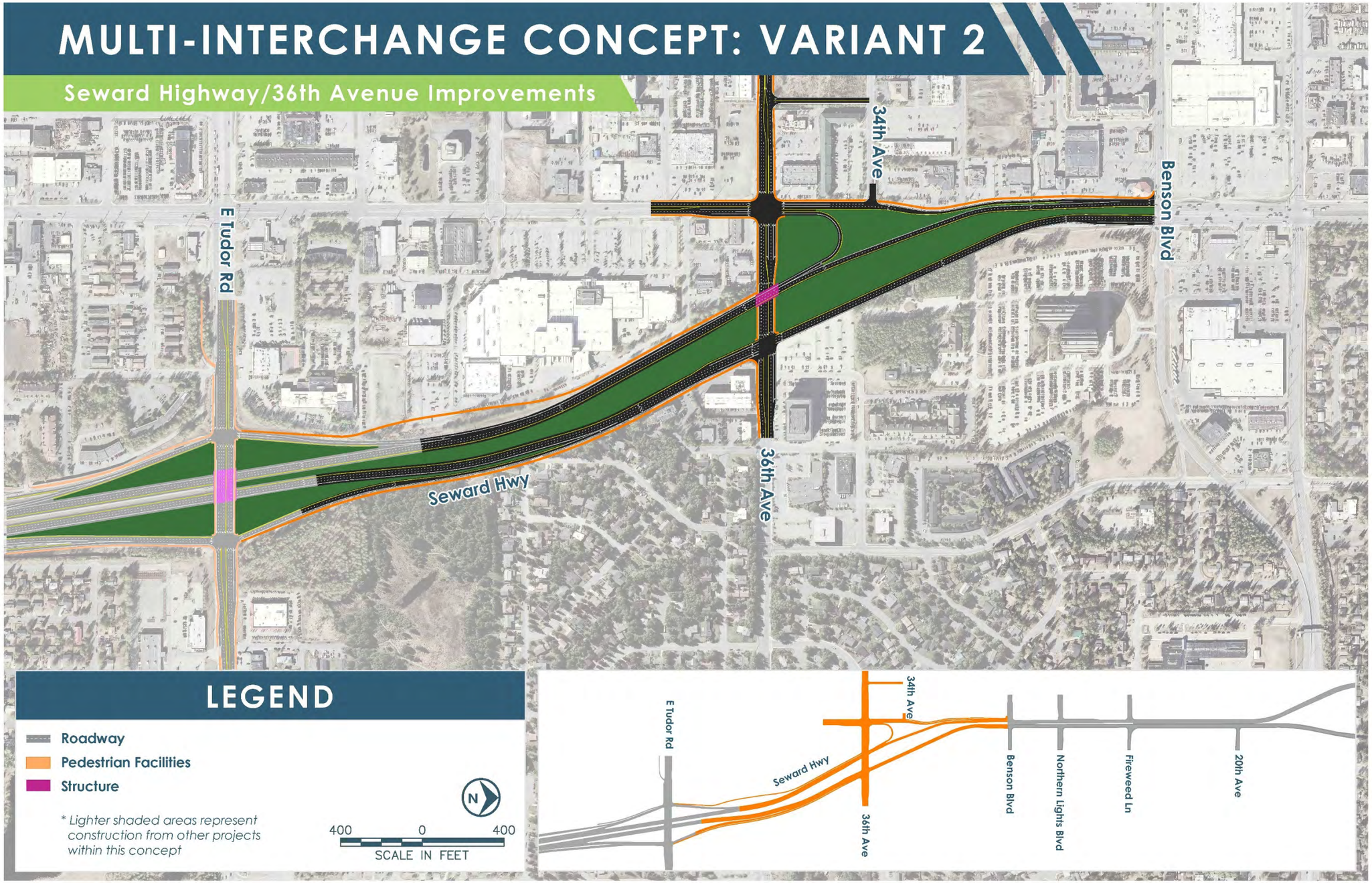


Figure 60: Seward Highway/36th Avenue Intersection Improvements – Variant 2

10.2.3 Logical Termini: Seward Highway/ Benson Boulevard, Northern Lights Boulevard, and Fireweed Lane Intersection Improvements

The project provides for safety and congestion mitigation at the intersections of Benson Boulevard, Northern Lights Boulevard and Fireweed Lane through the creation of a one-way couplet-type facility with two-phase traffic signals (Refer to Figure 61 and 62). The logical termini for the project is immediately south of the intersection of Benson Boulevard and Seward Highway through to the Ingra-Gambell couplet. These termini meet the three NEPA compliance project criteria as described below.

1. The endpoints identified are rational end points for the transportation improvements and a review of their environmental impacts.

   - The proposed termini are logical for the project purpose and need to improve safety and mobility by relieving congestion, improving operational efficiency, and reducing safety risks for all modes of transportation by creating a one-way couplet-type facility with two-phase traffic signals. The use of two-phase signals will reduce the amount of time vehicles are stopped at the intersection, thereby reducing delay during the signal phase. Spacing at the three large intersections with the Seward Highway (Benson Boulevard, Northern Lights Boulevard, and Fireweed Lane) is insufficient to accommodate current volumes, which leads to congestion of east/west connectivity, poses safety risks to all users, and decreases the through movement of north/southbound travel on the Seward Highway. Walking and bicycling facilities will include a separated pathway along the Seward Highway, and sidewalks on both sides of Benson Boulevard, Northern Lights Boulevard and 36th Avenue.
   - The proposed termini are rational for the environmental review as the project area affected would be limited to the portion of the highway affected by the reconstruction of the one-way couplet-type facility and associated intersection improvements. No environmental effects would be expected outside this area.
   - The environmental effects associated with this project do not overlap any other project in the Multi-Interchange concept.

2. The project has independent utility. It would be usable and a reasonable expenditure even if no additional transportation improvements were made.

   - The project independently provides safety and mobility benefits, regardless of whether other corridor improvements occur. The reconstruction of the Seward Highway in the recommended configuration will improve traffic operations along the Seward Highway corridor and the intersections with Benson Boulevard, Northern Lights Boulevard, and Fireweed Lane. It also provides the opportunity to significantly improve existing facilities for walking and bicycling.
   - This project does not require any other improvements to occur. It addresses the safety and mobility deficiencies in the area.

3. This project does not restrict consideration of alternatives for other reasonably foreseeable transportation improvements.

   - This project does not change or reduce the potential range of alternatives for any other foreseeable transportation improvements.

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MULTI-INTERCHANGE CONCEPT: VARIANT 1

Seward Highway Widening Between Benson Boulevard and 20th Avenue

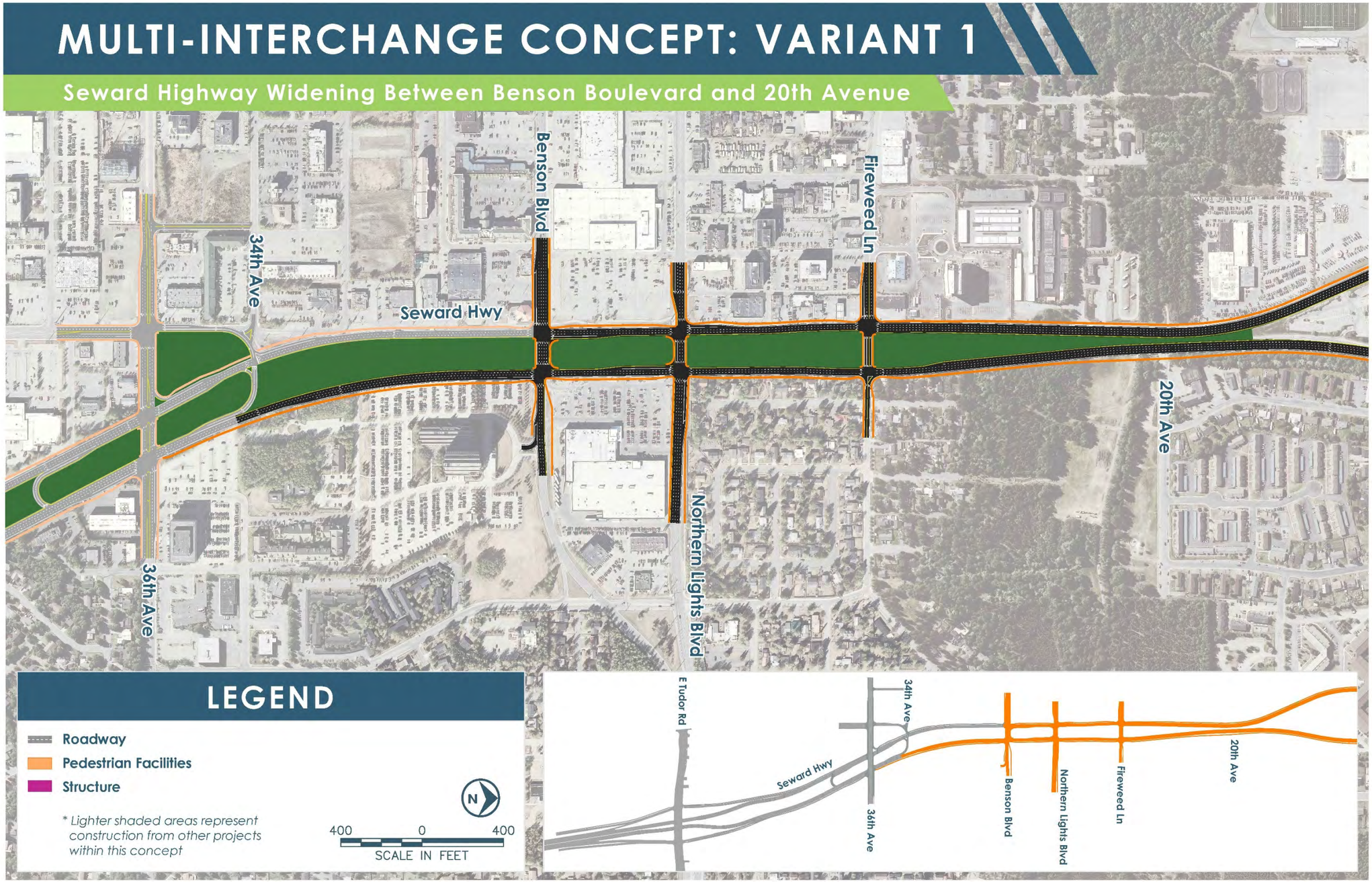


Figure 61: Seward Highway/ Benson Boulevard, Northern Lights Boulevard and Fireweed Lane Intersection Improvements – Variant 1

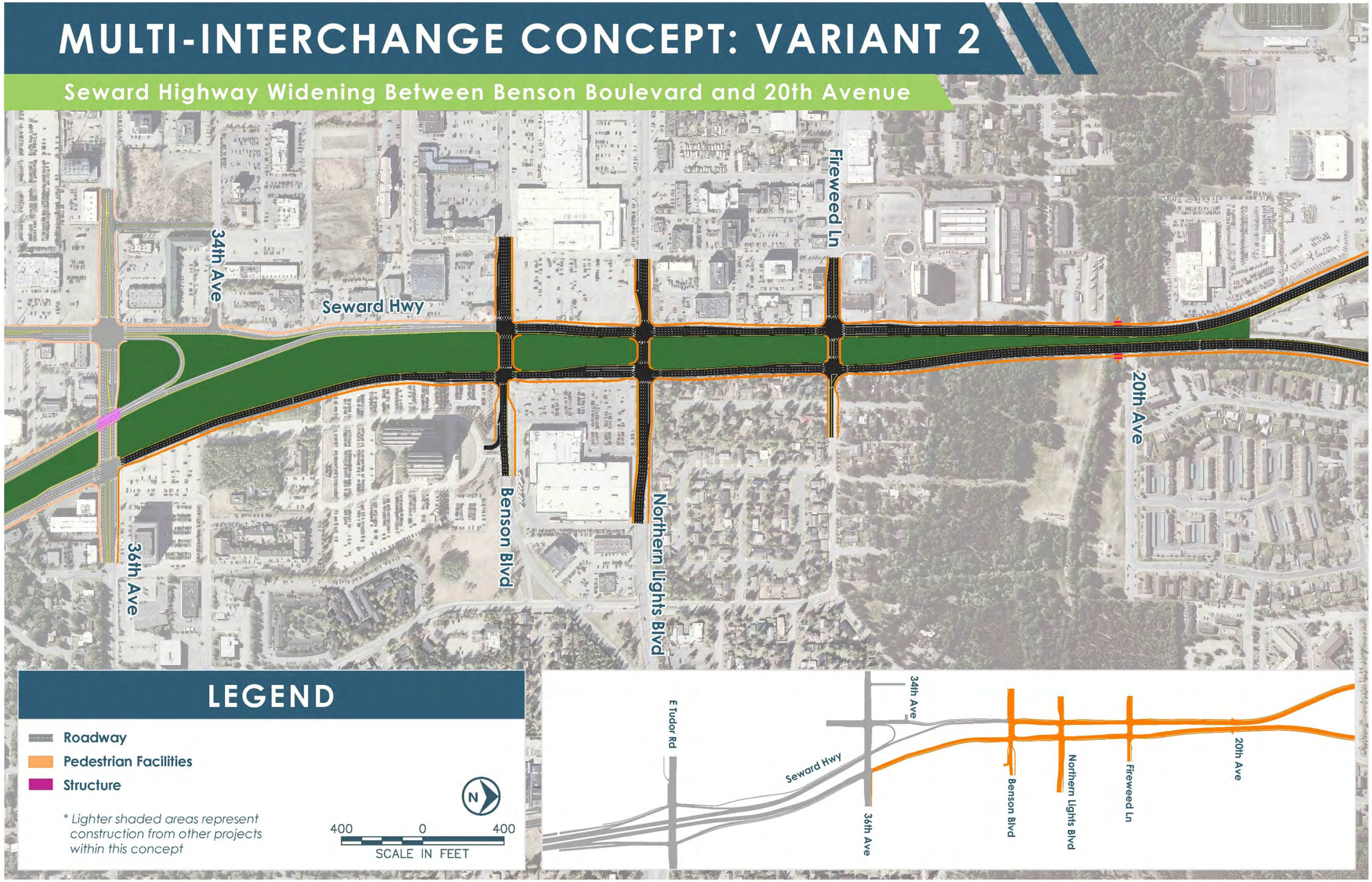


Figure 62: Seward Highway/ Benson Boulevard, Northern Lights Boulevard and Fireweed Lane Intersection Improvements – Variant 2

10.2.4 Logical Termini: Seward Highway/36th Avenue Interchange

This project provides for the construction of a grade-separated intersection of 36th Avenue with the Seward Highway, extending the existing access-controlled freeway to Benson Boulevard and converting the highway into a frontage road network (Refer to Figures 63 and 64). The logical termini for the project is from the Tudor Road interchange through to the intersection with Benson Boulevard. These termini meet the three NEPA compliance project criteria as described below.

1. The endpoints identified are rational end points for the transportation improvements and a review of their environmental impacts.

   - The proposed termini are logical for the project purpose and need to improve mobility by grade-separating the highway with ramp connections, creating an access-controlled freeway corridor to support mobility and a lower-speed frontage road network to support local access. Seward Highway currently mixes mobility and access traffic and consequently cannot accommodate current volumes which leads to congestion, poses safety risks, decreases through movement of north/southbound travel on the Seward Highway and delays east-west cross-street movement at 36th Avenue. This project would extend the freeway from the Tudor interchange to the intersection with Benson Boulevard and provide a grade-separated facility for 36th Avenue.
   - The proposed termini are rational for the environmental review as the project area affected would be limited to the portion of the highway affected by the construction of the freeway and interchange, including the ramps onto and off the Seward Highway. No environmental effects would be expected outside this area.
   - The environmental effects associated with this project do not overlap any other project in the Multi-Interchange concept.

2. The project has independent utility. It would be usable and a reasonable expenditure even if no additional transportation improvements were made.

   - The project independently provides safety, mobility, and access benefits, regardless of whether other corridor improvements occur. Extending the access-controlled freeway from the Tudor Road interchange to the intersection of Seward Highway with Benson Boulevard and construction of an grade-separated interchange at 36th Avenue benefits safety and mobility along the Seward Highway, improves congestion along 36th Avenue, and improves access to land uses along the Seward Highway corridor by creating a low-speed frontage road network. The project would also provide safer and more efficient access between the local street network and the Seward Highway for motorized traffic.
   - This project does not require any other improvements to occur. It addresses the safety and mobility deficiencies in the area.

3. This project does not restrict consideration of alternatives for other reasonably foreseeable transportation improvements.

   - This project does not change or reduce the potential range of alternatives for any other foreseeable transportation improvements.

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MULTI-INTERCHANGE CONCEPT: VARIANT 1

Seward Highway/36th Avenue Grade Separation and Ramp Connections

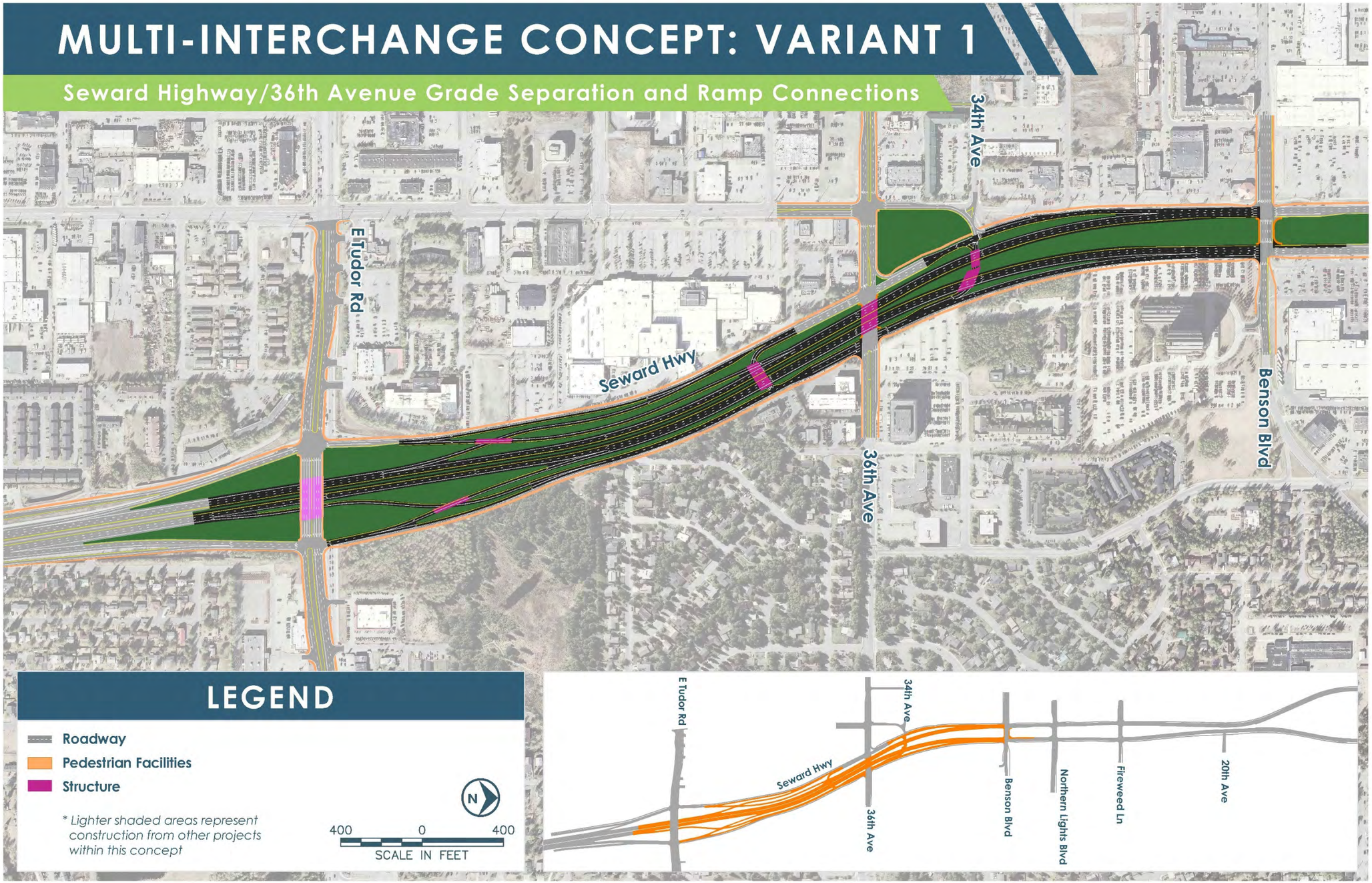


Figure 63: Seward Highway/36th Avenue Interchange – Variant 1

MULTI-INTERCHANGE CONCEPT: VARIANT 2

Seward Highway/36th Avenue Grade Separation and Ramp Connections

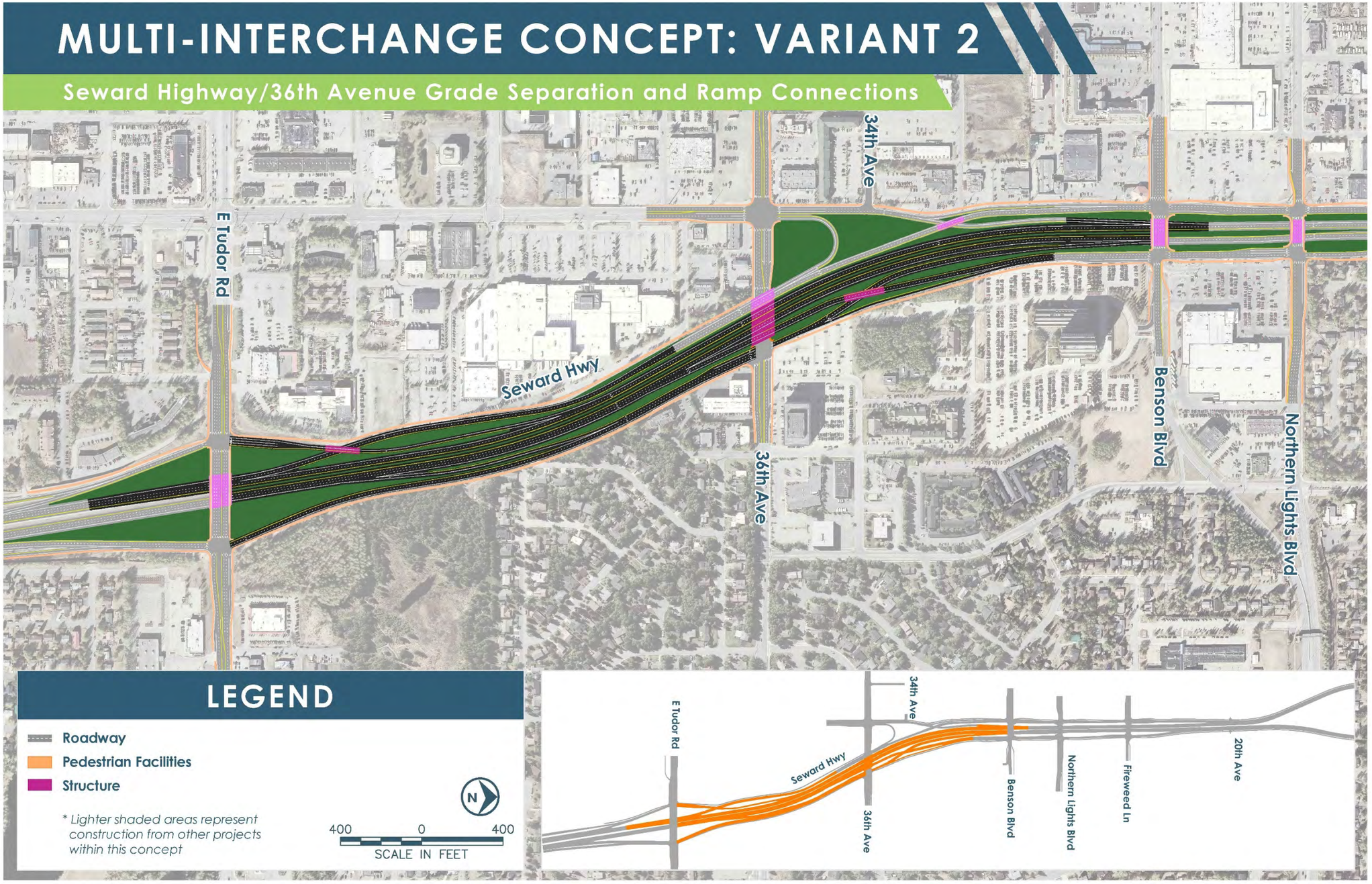


Figure 64: Seward Highway/36th Avenue Interchange – Variant 2

10.2.5 Logical Termini: Seward Highway Benson Boulevard to 20th Avenue Controlled Access Improvements

This project provides for the construction of an access-controlled freeway from south of the intersection with Benson Boulevard through to the Ingra-Gambell couplet, constructing grade-separated intersections of Benson Boulevard, Northern Lights Boulevard and Fireweed Lane with the Seward Highway, and converting the highway into a frontage road network (Refer to Figures 65 and 66). The logical termini for the project are from immediately south of Benson Boulevard through to where the freeway ties in with the Ingra-Gambell couplet. These termini meet the three NEPA compliance project criteria as described below.

1. The endpoints identified are rational end points for the transportation improvements and a review of their environmental impacts.

   - The proposed termini are logical for the project purpose and need to improve mobility by extending the access-controlled freeway from south of Benson Boulevard to connect with the Ingra-Gambell couplet, alleviate congestion on the north-south and east-west transportation network by grade-separating intersections at Benson Boulevard, Northern Lights Boulevard, and Fireweed Lane with ramp connections, and improve access to adjoining land uses by converting the highway to a lower-speed frontage road network. Seward Highway currently mixes mobility and access traffic and consequently cannot accommodate current volumes which leads to congestion, poses safety risks, and decreases through movement of north/southbound travel on Seward Highway and delays east-west cross-street movement at Benson Boulevard, Northern Lights Boulevard, and Fireweed Lane. This project would provide a freeway from Benson Boulevard to the Ingra-Gambell couplet and provide grade-separated intersections for Benson Boulevard, Northern Lights Boulevard, and Fireweed Lane.
   - The proposed termini are rational for the environmental review as the project area affected would be limited to the portion of the highway affected by the extension of the freeway and construction of the three interchanges, including the ramps onto and off the Seward Highway. No environmental effects would be expected outside this area.
   - The environmental effects associated with this project do not overlap any other project in the Multi-Interchange concept.

2. The project has independent utility. It would be usable and a reasonable expenditure even if no additional transportation improvements were made.

   - The project independently provides safety, mobility, and access benefits, regardless of whether other corridor improvements occur. Extending the access-controlled freeway from Benson Boulevard to connect with the Ingra-Gambell couplet and construction of grade-separated interchanges at Benson Boulevard, Northern Lights Boulevard and Fireweed Lane benefits safety and mobility along the Seward Highway, improves congestion along Benson Boulevard, Northern Lights Boulevard, and Fireweed Lane, and improves access to land uses along the Seward Highway corridor by creating a low-speed frontage road network. The project would also provide safer and more efficient access between the local street network and the Seward Highway for motorized traffic.
   - This project does not require any other improvements to occur. It addresses the safety and mobility deficiencies in the area.

3. This project does not restrict consideration of alternatives for other reasonably foreseeable transportation improvements.

   - This project does not change or reduce the potential range of alternatives for any other foreseeable transportation improvements.

MULTI-INTERCHANGE CONCEPT: VARIANT 1

Seward Highway Cross Street Ramp Connections at Benson Boulevard, Northern Lights Boulevard, and Fireweed Lane

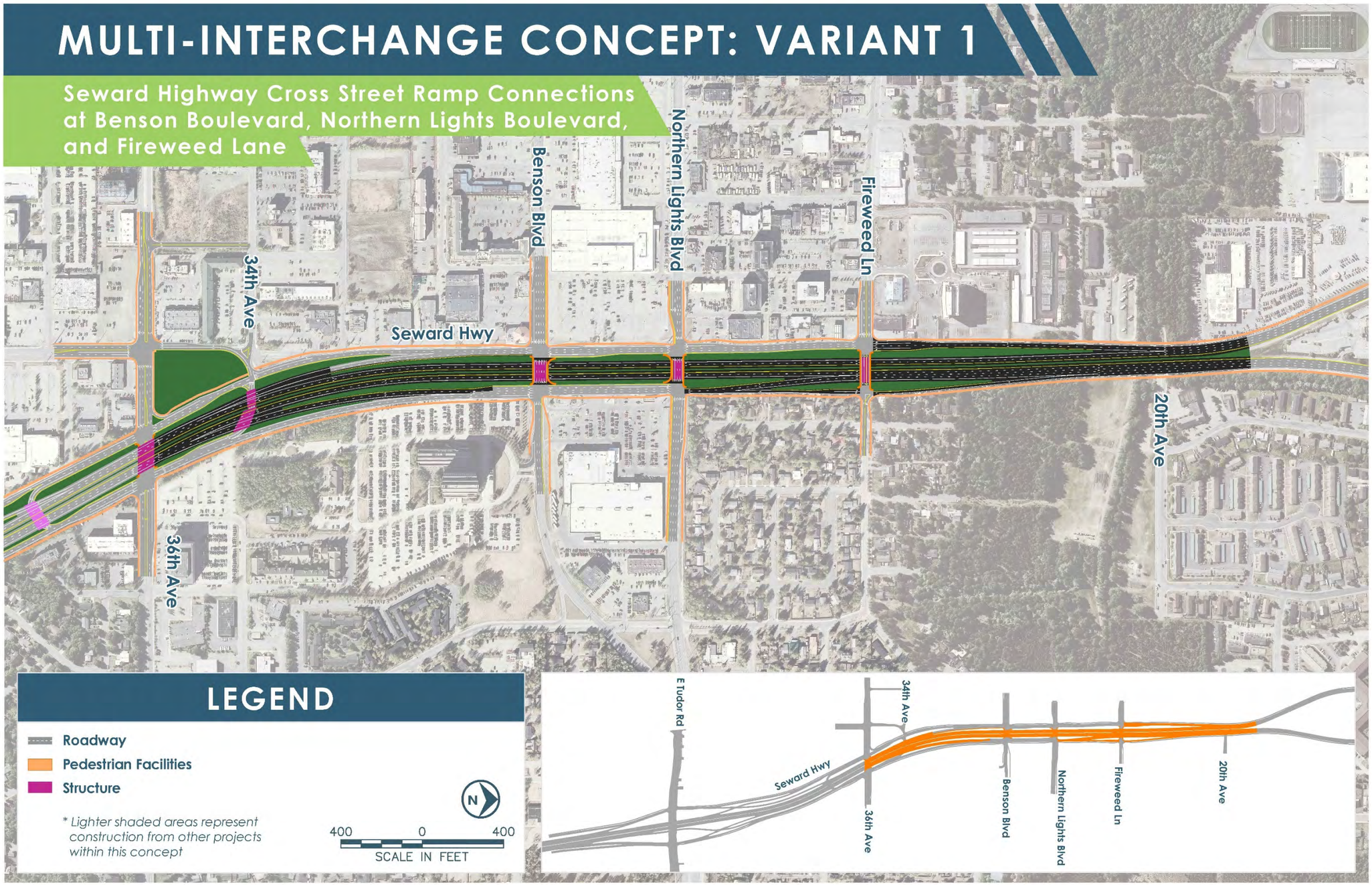


Figure 65: Seward Highway to 20th Avenue Controlled Access Improvements – Variant 1

MULTI-INTERCHANGE CONCEPT: VARIANT 2

Seward Highway Cross Street Ramp Connections at Benson Boulevard, Northern Lights Boulevard, and Fireweed Lane

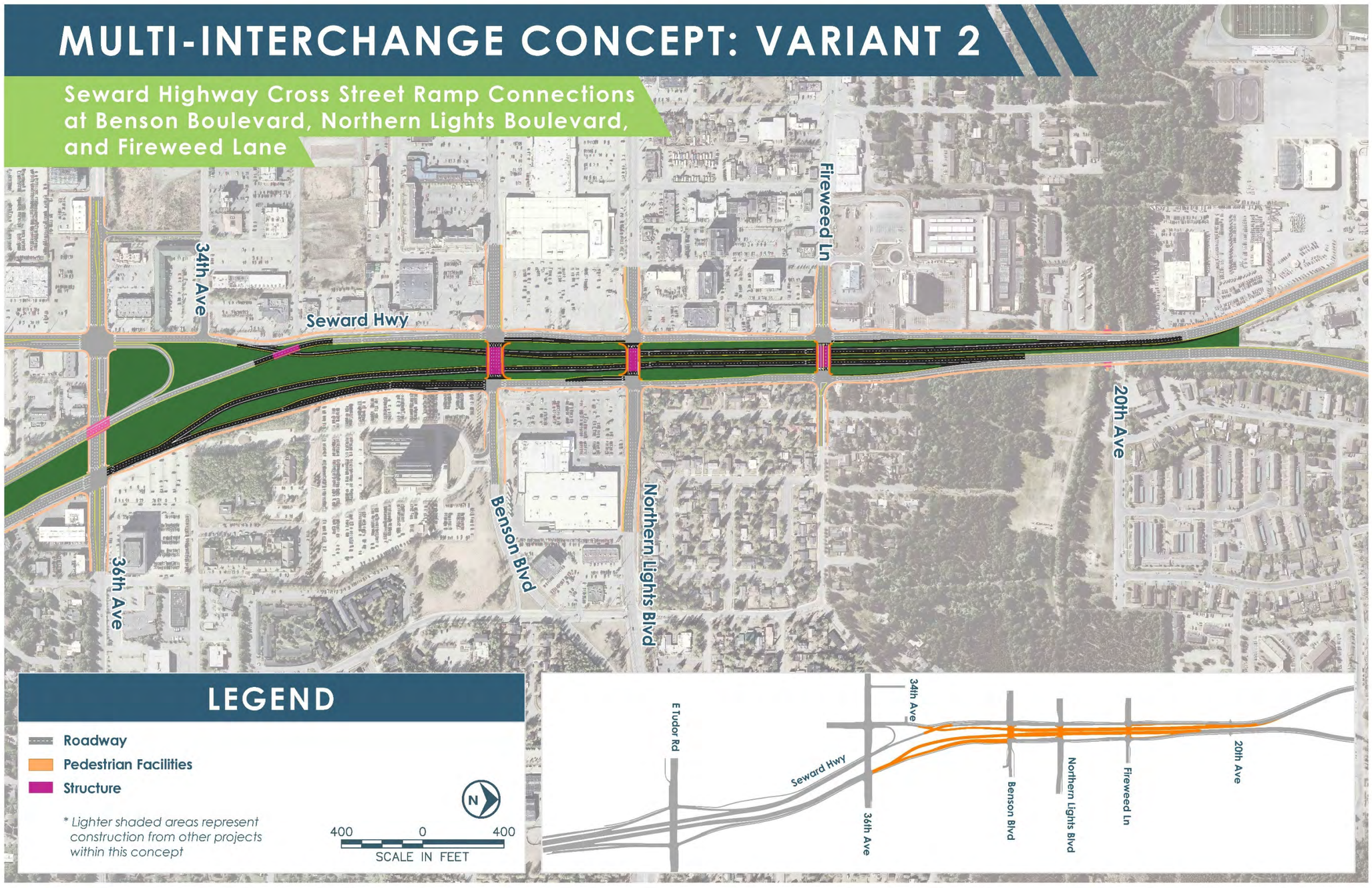


Figure 66: Seward Highway to 20th Avenue Controlled Access Improvements – Variant 2

10.3 Purpose and Need of Projects

The following draft purpose and need statements have been developed for the following projects:

- Seward Highway/ 36th Avenue Intersection Improvements
- Seward Highway/ Benson Boulevard, Northern Lights Boulevard and Fireweed Lane Intersection Improvements
- Seward Highway/ 36th Avenue Interchange
- Seward Highway/ Benson Boulevard to 20th Avenue Controlled Intersection Improvements.

The Tudor Road Interchange project has already been permitted through a separate EA. The Complete Streets, Aesthetic Improvements and Community Placemaking project does not have independent utility and logical termini, and therefore draft purpose and need statements have not been developed for these projects.

10.3.1 Seward Highway/ 36th Avenue Intersection Improvements

- **Need:** The spacing of the intersections of Old Seward Highway and 36th Avenue, and Seward Highway and 36th Avenue is insufficient to accommodate current traffic volumes without generating congestion along the east/west connection. This creates safety risks for all users and decreases through movement of north/south travel on the Seward Highway and east/west travel on 36th Avenue. Bicycle and pedestrian crossing facilities are also inadequate and feel unsafe and uncomfortable for users.
- **Purpose:** Improve capacity, connectivity and mobility by relieving congestion, improving operational efficiency, and reducing safety risks for all modes of transportation by improving turn movements at the 36th Avenue intersection, and/or increasing intersection spacing. Signal phasing will also be improved. Improve walking and bicycling facilities by providing a separated pathway along the Seward Highway, and sidewalks on both sides of 36th Avenue.

10.3.2 Seward Highway/ Benson Boulevard, Northern Lights Boulevard and Fireweed Lane Intersection Improvements

- **Need:** Spacing at three large intersections with the Seward Highway (Benson Boulevard, Northern Lights Boulevard, and Fireweed Lane) is insufficient to accommodate current volumes, which leads to congestion of east/west connectivity, poses safety risks to all users, and decreases the through movement of north/southbound travel on the Seward Highway. Bicycle and pedestrian crossing facilities are also inadequate, feel unsafe and uncomfortable for users, and have elevated pedestrian and bicycle crash rates.
- **Purpose:** Improve mobility and access by relieving congestion, improving operational efficiency, and reducing safety risks for all modes of transportation by separating the highway northbound and southbound directions and providing turning storage between the northbound and southbound highway. Signal phasing will also be improved. Improve walking and bicycling facilities by improving pedestrian crossing phases at traffic signals, and creating improved facilities for non-motorized transportation along the Seward Highway and at east-west crossing locations.

10.3.3 Seward Highway/ 36th Avenue Interchange

- **Need:** Seward Highway currently mixes mobility and access traffic and consequently cannot accommodate current volumes which leads to congestion, poses safety risks, decreases through movement of north/southbound travel on the Seward Highway and delays east-west cross-street movement at 36th Avenue.
- **Purpose:** Improve mobility by grade-separating the highway with ramp connections, creating an access-controlled freeway corridor to support mobility and a lower speed frontage road network to support local access.

10.3.4 Seward Highway/ Benson Boulevard to 20th Avenue Controlled Access Improvements

- **Need:** Seward Highway currently mixes mobility and access traffic and consequently cannot accommodate current volumes which leads to congestion, poses safety risks, and decreases through movement of north/southbound travel on Seward Highway and delays east-west cross-street movement at Benson Boulevard, Northern Lights Boulevard, and Fireweed Lane.
- **Purpose:** Improve mobility by extending the access-controlled freeway from south of Benson Boulevard to connect with the Ingra-Gambell couplet, alleviate congestion on the north-south and east-west transportation network by grade-separating intersections at Benson Boulevard, Northern Lights Boulevard, and Fireweed Lane with ramp connections, and improve access to adjoining land uses by converting the highway to a lower speed frontage road network.

10.4 Project Cost Estimate

An independent cost estimate was prepared to provide an opinion of probable costs associated with each project and concept. The estimate provides a very early cost estimate for each project, based on conceptual level design. The costs include capital costs and owner expenses (agency costs), in current second quarter 2019 U.S. dollars. This section provides the cost estimate range on a project-by-project basis for each variant of the preferred concept.

10.4.1 Cost Estimate – Multi-Interchange Concept: Variant 1 – Median U-Turn

Table 17: Cost Estimate – Multi-Interchange Concept: Variant 1

Multi-Interchange Concept: Variant 1 – Median U-Turn	Low Range (-20%)	Middle Range	High Range (30%)
Tudor Road Interchange	$47M	$58.5M	$76M
Complete Streets, Aesthetic Improvements and Community Placemaking	-	TBD	-
Seward Highway/ 36th Avenue Improvements	$37M	$46M	$60M
Seward Highway/ Benson Boulevard, Northern Lights Boulevard, and Fireweed Lane Intersection Improvements	$63M	$79M	$102M
Seward Highway/ 36th Avenue Interchange	$72M	$90M	$117M
Seward Highway/Benson Boulevard to 20th Avenue Controlled Access Improvements	$178M	$220M	$289M

10.4.2 Cost Estimate – Multi-Interchange Concept: Variant 2 – Loop Ramp

Table 18: Cost Estimate – Multi-Interchange Concept: Variant 2

Multi-Interchange Concept: Variant 2 – Loop Ramp	Low Range (-20%)	Middle Range	High Range (30%)
Tudor Road Interchange	$32.5M	$40M	$53M
Complete Streets, Aesthetic Improvements and Community Placemaking	-	TBD	-
Seward Highway/ 36th Avenue Improvements	$46M	$57M	$74M
Seward Highway/ Benson Boulevard, Northern Lights Boulevard, and Fireweed Lane Intersection Improvements	$62.5M	$78M	$102M
Seward Highway/ 36th Avenue Interchange	$96M	$120M	$155M
Seward Highway/Benson Boulevard to 20th Avenue Controlled Access Improvements	$165M	$205M	$268M

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11.0 NEXT STEPS

The PEL study is the first step in a larger process to achieving MCR's vision of improving safety and mobility for all users on the Seward Highway while enhancing east-west multimodal, safety, connectivity, and access for Midtown Anchorage. The next phase of the process is to progress design and prepare an environmental document for each of the individual projects identified in Section 10 of this report, starting with the highest priority project. This phase includes detailed engineering of the identified projects, detailed analysis of impacts and costs and continued public involvement. The final phase is the construction of the preferred alternative identified in the NEPA phase.

11.1 NEPA Preliminary Class of Action

For every federally-funded transportation project, the environmental review process begins with determination of the class of action (COA), or level of NEPA documentation required for the project. The COA is based upon the scale of the project, the level of public controversy, and the anticipated level of effects on social and environmental resources. Projects which are minor or routine, such as road resurfacing, and not anticipated to have significant effects may be addressed through a Categorical Exclusion (CE) or an Environmental Assessment (EA). Projects that are likely to have significant impacts, like new highway corridors, require a more detailed Environmental Impact Statement (EIS) to document the environmental effects.

NEPA is a federal agency requirement and typically the federal agency makes the COA determination and is responsible for ensuring compliance with the agency's NEPA regulations. As of November 2017, DOT&PF has assumed NEPA responsibilities for environmental review, consultation, or other actions required under any Federal environmental law with respect to one or more Federal Highway projects within Alaska. According to DOT&PF's Environmental Procedures Manual (Chapter 2), CEs (Class II)[21] are actions that typically meet the definition of a CE on two specific lists, commonly referred to as the "c" list[22] and the "d" list[23], if conditions are met. Due to likely changes in access control the anticipated projects may not qualify as "c" list activity. Additionally, any actions which would normally be classified as a CE but could involve unusual circumstances will require appropriate environmental studies to determine if the CE classification is proper. Such unusual circumstances include:

- Significant environmental impacts
- Substantial controversy on environmental grounds
- Significant impact on properties protected by Section 4(f) of the Department of Transportation Act or Section 106 of the National Historic Preservation Act
- Inconsistencies with any Federal, State, or local law, requirement or administrative determination relating to the environmental aspects of the action.

Additionally, certain projects that do not fall under a specific "c" or "d" list activity may still be processed as a non-listed CE if they include actions which do NOT:

- Induce significant impacts to planned growth or land use for the area

[21] (Class II) (23 CFR 771.115(b)) (40 CFR 1508.4) (23 CFR 771.117).
[22] (23 CFR 771.117(c)).
[23] (23 CFR 771.117(d)).

- Require the relocation of significant numbers of people
- Have a significant impact on any natural, cultural, recreational, historic or other resource
- Involve significant air, noise, or water quality impacts
- Have significant impacts on travel patterns
- Otherwise, individually or cumulatively, have any significant environmental impacts.

Chapter 8 details the environmental resources considered in this PEL Study and provides a preliminary analysis of environmental effects. Although this overview was based on improvement concepts and not final design, it provides the DOT&PF Statewide Environmental Office (SEO) with information to determine whether a proposed project is likely to have significant impacts and allows a preliminary assessment of the appropriate class of action.

In May 2019, the SEO issued a memorandum stating that until DOT&PF develops a PEL Guidebook, during the planning process:

A. The PEL study must be developed in consultation with the appropriate Federal and State resource agencies and any appropriate municipal government or Tribe.

B. The PEL study must be developed using a broad consideration of transportation needs and potential effects (i.e., corridor or subarea analysis), and must consider the effects on the human and natural environment.

C. The PEL study must be developed using a Public Involvement Plan (Preconstruction Manual Section 520.1) including a public notice that the resulting planning products may be adopted during a subsequent environmental review process.

The Memorandum further states that to expedite the SEO's review of a PEL study, a region must first complete the Interim PEL Questionnaire and submit the completed document to the SEO along with the PEL study being reviewed. The Interim PEL Questionnaire should be used as a guide throughout the planning process, and not just completed at the end of the process. The FHWA PEL Questionnaire was used as a guide throughout the MCR PEL Study, and updated to the DOT&PF Interim PEL Questionnaire when the project team was advised of it. The Interim PEL Questionnaire is attached as Appendix 1.

11.2 Funding

11.2.1 Programmed Funds

Statewide Transportation Improvement Program

The 2018-2021 STIP Amendment 3 was approved on June 21, 2019. The STIP is the state's four-year program for transportation system preservation and development, and covers all surface transportation improvements for which partial or full federal funding is approved and that are expected to take place during the four-year duration of the STIP. Table 19 sets out projects or programs identified in the approved STIP that are relevant to the PEL Study Area.

Table 19: Projects and Programs Identified in STIP That Are Within or Available for Use in the Study Area

Need ID	Title	Region	Place Name	Highway	Project Description
6087	Highway Safety Improvement Program/ Safety Management	Central	Central Region	N/A	HSIP Management, studies and responses on safety-related issues.
6460	AMATS CTP Program Allocation	Central	Anchorage	N/A	AMATS CTP Program Allocation. See AMATS TIP for projects.
9299	AMATS CMAQ Allocation for Qualifying Air Quality Projects	Central	Anchorage	N/A	This is an additional allocation for projects utilizing federal mandatory Congestion Mitigation and Air Quality Improvement (CMAQ) funding on qualifying projects.
18924	Pavement and Bridge Rehabilitation	Central	Central Region	N/A	Crack sealing, surface treatment drainage, signage, guardrail, illumination, and other refurbishments to prolong the life of road pavement and bridges and their safety related structures. Project includes NHS Lane Delineators, Destination and Distance Signing, Pavement Markings and Signalization, Abandoned Vehicle Program, Road Surfacing and Transfer, Road Surface Treatments, and improve curb ramps to meet ADA standards (in coordination with Need ID 30397). The scope does not include landscaping or other elements inconsistent with a pavement preservation focus.
30389	Central Region ITS Repair and Upgrade Project	Central	Various	N/A	Purchase, install, repair, replace, redeploy, operate, and maintain, as allowed by ITS regulations, traffic signal, traveler information, traffic incident management, and illumination, and other Intelligent Transportation Systems (ITS) equipment and activities, improving operations such as remote operation or traffic signals, provide traveler information via changeable message signs and 511, and energy/cost saving in roadway illumination.
30390	Central Region Adaptive Signal Control	Central	Various	N/A	Purchase, install, integrate, operate, and maintain equipment, as allowed by ITS regulations to change signal timing for progression depending on traffic demand and providing enhanced response to emergency services.

Need ID	Title	Region	Place Name	Highway	Project Description
30397	Central Region ADA Compliance Report	Central	Various	N/A	This project will provide ADA improvements along State owned and operated routes in the Central Region. Initial phase includes auditing State roads to determine ADA compliance and identify those issues that can be quickly resolved. Prioritization and construction of needed ADA improvements will be identified per ADA audit.
31597	Statewide Planning and Environmental Linkages (PEL) Studies Program	Head-quarters	Various	N/A	Develop a statement PEL program including a guidebook and identification of priorities for PEL studies. Initiate PEL studies to further refine and analyze conceptual highway improvements, evaluate environmental challenges, and improve the understanding of various design issues and anticipated project costs in an effort to reduce project delivery costs and schedules.

Transportation Improvement Program

The 2019-2022 AMATS Transportation Improvement Program (TIP) is the region's short-range project plan for transportation improvement. It outlines the investment program of capital improvements to the metropolitan transportation system. The FHWA/Federal Transit Administration (FTA) adopted incorporation of the 2019-2022 TIP into the 2018-2021 STIP on February 26, 2019. Specific projects identified in the TIP that are located within the study area as described as follows:

- NID-RDY00001 Fireweed Lane Rehabilitation: [Spenard Road to Seward Highway] – This project would rehabilitate Fireweed Lane from Spenard Road to the Seward Highway and include a road diet, changing Fireweed Lane from 4 lanes to 3 lanes (2 with a center turn lane). This project would also include non-motorized improvements.
- NIDRDY00009 Seward Highway to Glenn Highway Connection PEL Design: Implement the projects identified as part of the PEL done for the Seward Highway to Glenn Highway connection.
- NIDPLN00003 Seward Highway to Glenn Highway Connection Planning and Environmental Linkages (PEL) Study: [20th Ave to Glenn/Hwy/Airport Heights Intersection] – The intent of this PEL is to define a vision for the future of this connection, identify environmental and resource concerns and opportunities in the study area, and use the information to develop reasonable alternatives through consultation with the affected agencies and the public.
- NIDHSP0003 Minnesota / Seward Hwy / Tudor / Muldoon Lighting Improvements.

11.2.2 Potential Future Funding Sources

DOT&PF administers several programs funded from state and federal sources. The Fixing America's Surface Transportation (FAST) Act of 2015 authorized $305 billion over fiscal years 2016 through 2020 for highway, highway and motor safety, rail, and research, technology and statistics programs. As future improvements are considered, funding eligibilities and categories will need to be evaluated under future funding guidelines.

National Highway Performance Program

The National Highway Performance Program (NHPP) provides funding for the NHS, including the Interstate System and non-Interstate NHS roads and bridges. The purpose of the NHS is to provide an interconnected system of principal arterial roads serving major population centers, international border crossings, intermodal transportation facilities and other major travel destinations; meet national defense requirements; and serve interstate and interregional travel. The NHS includes all Interstate routes, a large percentage of urban and rural principal arterial roads, the defense strategic highway network, and strategic highway connectors.

Activities eligible for NHS funding include construction, reconstruction, resurfacing, restoration, and rehabilitation of segments of the NHS roadway; construction, replacement, rehabilitation, preservation and protection of bridges on the NHS; and projects or part of a program supporting national goals for improving infrastructure condition, safety, mobility, or freight movements on the NHS. Operational improvements as well as highway safety improvements are also eligible. Other miscellaneous activities that may qualify for NHS funding include bikeways and pedestrian walkways, environmental mitigation, restoration and pollution control, infrastructure based intelligent transportation systems, traffic and traveler monitoring and control, and construction of intra and inter-city bus terminals serving the NHS.

Under the FAST Act, Surface Transportation Program (STP) funds are federally apportioned to Alaska and allocated to various programs to finance transportation projects on public roads within the state. STP funds may be used for a wide range of transportation improvement projects and activities, including roadway reconstruction and rehabilitation, bridge construction and inspection, highway and transit safety infrastructure, environmental mitigation, carpooling, and bicycle and pedestrian transportation facilities. The transportation projects identified in the PEL study are eligible recipients under this program.

Highway Safety Improvement Program

The goal of the Highway Safety Improvement Program (HSIP) is to significantly reduce traffic fatalities and serious injuries on public roadways. Projects or activities selected for completion under the HSIP program must either correct or improve a hazardous roadway location or features or address a highway safety problem. HSIP projects and activities must also be consistent with the Alaska Strategic Highway Safety Plan, a federally-required document that must be updated every five years.

Congestion Mitigation and Air Quality Improvement Program

The Congestion Mitigation and Air Quality Improvement (CMAQ) Program was developed to help state and local governments meet Clean Air Act (CAA) requirements. CMAQ funds can be used for a wide array of activities, such as:

- Projects that improve traffic flow
- Projects that shift demand to non-peak hours

- Establishment or operation of a traffic monitoring, management, and control facility.

In states like Alaska with air quality non-attainment and maintenance areas, a percentage of the CMAQ apportionment can be used on any STP project statewide.

Transportation Alternatives

The Transportation Alternatives (TA) Program focuses on non-motorized transportation users and enhancements to the transportation system. The program funds projects such as the development of bicycle and pedestrian paths and interpretative waysides, as well as historic preservation, vegetation management, and environmental mitigation activities.

State General Funds

With legislative and executive approval, state general funds can be allocated to individual projects as part of the annual capital budget. The availability of state general funds has become increasingly difficult to forecast; these funds are more-commonly available when State revenues are high and surplus funds are considered for discretionary projects. Projects fully funded with State general funds typically have greater flexibility in sequencing the design/environmental tasks since following FHWA policies and procedures is not required.

General Obligation Bonds

The State may also choose to issue voter-approved bonds to fund projects in a similar manner to State general funds at the discretion of the state legislative and executive leadership. The primary difference is the State pays for these projects over a 20-year period rather than out of a one-time allocation. Bond-funded projects typically follow the same process as general fund projects, although the funding requires greater coordination since the bonds are not typically sold until they are needed for individual projects.

Private Funding

The State may also choose to engage private partners to fund the delivery of projects. This approach could involve collaboration between DOT&PF and a private sector company to finance and build the improvement project. This approach is known as a Public-Private-Partnership, and is authorized in Alaska on a limited, or project-specific basis.

11.3 Prioritization of Individual Projects

Implementation of proposed improvements would be phased based on a number of factors including availability of sufficient ROW, availability of project funding, level of environmental effect, public feedback, and benefits to multimodal mobility, access, safety and congestion relief.

Project 1 – Tudor Intersection is already identified as a separate transportation project with independent utility and logical termini. An upcoming STIP amendment will program funds for the project, and proposals for the design and environmental documentation are expected in the first half of 2020.

DOT&PF intends to prioritize Projects 2 – Seward Highway/ 36th Avenue Intersection Improvements and 3 – Seward Highway Frontage Roads for the following reasons:

Seward Highway/ 36th Avenue Improvements

- The Seward Highway/36th Avenue Improvements is in an area with minimal need for ROW acquisition, allowing the project to move forward quickly. While some minor ROW acquisition will be needed to shift the signal further from Old Seward Highway, it is not expected to be as complex in this area.
- The 36th Avenue intersection is a high priority as it experiences poor level of service and delay, and associated safety issues particularly in the evening peak. The improvements proposed will enhance traffic operations and signal phasing, resulting in shorter delays and improved traffic flow in both the north-south and east-west direction.
- Significant improvements are proposed to non-motorized facilities along the Seward Highway and through the 36th Avenue intersection. This will create a safer and more comfortable facility for walkers and bicyclists, and provide a new non-motorized facility on the west side of the Seward Highway between 36th Avenue and Tudor Road, addressing a network gap.

Seward Highway/Benson Boulevard, Northern Lights Boulevard and Fireweed Lane Intersection Improvements

- Improving the intersections along the Seward Highway with Benson Boulevard, Northern Lights Boulevard and Fireweed Lane is one of the highest priorities because it will address safety issues and provide congestion relief on the remaining cross streets within the study corridor. The construction of a highway using a one-way couplet-type form will improve traffic operations by enabling the introduction of two-phase signals to reduce delays and improve traffic flows for motorists, pedestrians and bicyclists in all directions.
- This completion of this project will complete ROW acquisition needed for the implementation of the concept. While both full and partial property acquisitions will be required to complete the project, the high priority of this project will ensure that residents and business owners are not left for an extended period with the risk of property acquisition affecting their investment and maintenance decisions.
- Significant improvements are proposed to non-motorized facilities along the Seward Highway and through the Benson Boulevard, Northern Lights Boulevard, and Fireweed Lane intersections. This will create safer and more comfortable facilities for pedestrians and bicyclists through and across the corridor.

Complete Streets, Aesthetic Improvements and Community Placemaking

- Incorporating Complete Streets, Aesthetic Improvements and Community Placemaking initiatives will enable enhancements to occur for the above short-term projects through working with the community to identify improvements to support facilities that enable safe access for all users, including pedestrians, bicyclists, motorists and transit riders of all ages and abilities. It will include initiatives for stakeholders and the community to collectively identify and implement initiatives that strengthen the connection between people and the public realm. This will support the Anchorage Bowl 2040 Land Use Plan's goal to create a city center in Midtown that is a thriving mixed-use environment that enables business growth.
- This approach will also enable the identification of initiatives to improve the aesthetic appearance of projects identified for implementation in the medium term, to ensure a clear

design aesthetic is identified early in the implementation of corridor improvements and retained throughout the implementation of projects.

Accordingly, DOT&PF intends to pursue the above identified projects first, as indicated in Table 20.

Table 20: Prioritization of Individual Projects

Improvement Project	Indicative Project Start Timeframe (dependent on funding availability)
Complete Streets, Aesthetic Improvements and Community Placemaking	Short Term (1-3 years)
Project A: Tudor Road Interchange Reconstruction	Short Term (1-3 years)
Project B: Seward Highway/36th Avenue Improvements	Short Term (1-3 years)
Project C: Seward Highway/ Benson Boulevard, Northern Lights Boulevard and Fireweed Lane Intersection improvements	Short Term (1-3 years)
Project D: Seward Highway/36th Avenue Interchange	Medium Term (3-8 years)
Project E: Seward Highway/ Benson Boulevard to 20th Avenue Access Improvements	Medium Term (3-8 years)

11.4 Integration with Future NEPA Efforts

The PEL Study process is intended to streamline implementation of recommended improvements by facilitating early consideration of environmental constraints and feedback from interested parties. The following planning products developed during the study process may be directly incorporated into future NEPA efforts:

- Environmental baseline information
- Purpose and need for future improvements
- Range of potential alternative improvements
- Screening outcomes and preferred concept
- Potential environmental effects
- Documented public, stakeholder, and agency feedback.

Final Rule, 81 FR 34049 updated transportation planning legislation to clarify and encourage the use of planning projects in project development. It states:

> In addition to changing the planning statutes, the MAP-21 and FAST made changes to project delivery provisions concerning coordination between the transportation planning process and the environmental review process. The FHWA and FTA have long supported the use of planning products and decisions during the environmental review process, an approach referred to as Planning and Environmental Linkages (PEL). Under PEL, Federal agencies use and rely on planning analyses, studies, decisions, or other information for the project development and environmental review of transportation projects. With PEL, FHWA and FTA may, for example: Establish a project's purpose and need by relying on the goal and objective developed during the planning process; eliminate the need to further consider alternatives during planning; rely on future land use plans as a source of information for the cumulative impacts analysis required under the National Environmental Policy Act (NEPA); carry forward suitable mitigation measures and approaches identified through the planning process; or establish the modal choice selections for the consideration of reasonable alternatives to address the identified need, provided that such strategies are consistent with NEPA for the particular project. The final rule explicitly recognizes a variety of PEL methods that may be used to integrate planning with environmental reviews."[24]

Incorporation of the planning products listed above into project-level NEPA reviews allows for an early determination of the appropriate level of NEPA documentation for each project with the intent of streamlining completion of the project-level NEPA review.

11.5 Implementation

The next steps in implementation of the proposed study improvements are listed below:

- Coordinate with DOT&PF SEO on COA
- Secure funding for design and environmental review
- Complete design and NEPA review/permitting
- Acquire ROW if needed
- Complete final design
- Construct improvements.

DOT&PF's SEO has developed an Interim PEL Questionnaire to support the SEO's review of the PEL study. This questionnaire has been used as guide throughout the planning process. The DOT&PF PEL Questionnaire is attached to this report as Appendix 1.

[24] https://www.federalregister.gov/d/2016-11964/p-14, Accessed 8/14/19.

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