APPENDIX 8

Phase 2 Screening Analysis

Midtown CONGESTION RELIEF

Detailed Concept Evaluation: Summary

Theme	Criteria	No Build Score	Mult. Int Concept Score	C-D Concept Score	At-Grade Intermed.
1. Community Impacts	1.1 Support long term land use and community development goals for Midtown?	-1	3	2	1
	1.2 Consistent with adopted plans and policies?	0	3	2	1
	1.3 Avoid the need for ROW acquisition?	3	-1	-1	-1
	1.4 Retain quality of life of communities within or directly adjacent to the study area?	-1	1	1	0
	Community Impacts Score	**1**	**6**	**4**	**1**
2. Connectivity and Access	2.1 Connect neighborhoods and businesses, commercial activities and recreation lands?	0	2	2	1
	2.2 Improve access to neighborhoods?	-1	3	2	1
	2.3 Improve access to businesses?	-1	3	2	1
	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	3	2	2
	2.6 Implement Travel Demand Management strategies from Metropolitan Transportation Plan?	-1	3	3	2
	Connectivity and Access Score	**-3**	**17**	**14**	**10**
3. Safety	3.1 Reduce conflict points for vehicles?	0	3	2	2
	3.2 Reduce conflict points for pedestrians?	0	3	2	1
	3.3 Reduce conflict points for bicyclists?	0	3	2	1
	3.4 Demonstrate strong potential to reduce crashes when compared to the documented crash trends?	0	2	1	1
	3.5 Improve accessibility and response time for emergency vehicles?	0	1	0	0
	Safety Score	**0**	**12**	**7**	**5**
4. Environmental	4.1 Minimize or mitigate impacts to historic resources?	3	3	3	3
	4.2 Minimize right-of-way acquisition?	3	1	2	1
	4.3 Minimize or mitigate potential noise impacts?	-1	0	0	0
	4.4 Minimize or mitigate potential adverse air quality impacts?	-1	2	2	1
	4.5 Minimize or mitigate potential adverse visual impacts?	0	2	2	0
	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**	**7**	**8**	**4**
5. N-M Connect-ions	5.1 Improve pedestrian and bicycle connectivity and crossing opportunities?	-1	3	2	2
	5.2 Provide direct routes between residential areas and employment/ commercial centers?	0	3	3	2
	Non-Motorized Connections Score	**-1**	**6**	**5**	**4**
6. Traffic Mobility/ Operations	6.1 Efficiently accommodate forecast traffic volumes and patterns?	-1	3	2	3
	6.2 Reduce expected travel time for vehicles and freight?	-1	3	3	1
	6.3 Improve future vehicular travel operations?	-1	2	2	2
	6.4 Create a roadway network that meets through and local access needs?	-1	3	3	1
	Traffic Mobility/ Operations Score	**-4**	**11**	**10**	**7**
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	1	2	2
	Implementation Score	**3**	**7**	**9**	**7**
8. C S	8.1 Is there community/agency support for the concept?	0	1	0	0
	Community Support Score	**0**	**1**	**0**	**0**
	TOTAL Score	**6**	**67**	**57**	**38**

Midtown
CONGESTION RELIEF

Evaluation Summary Scoring Key

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

Concept Evaluation: No Build

Theme	Evaluation Criteria – Does the concept:	Relevant FHWA Planning Factor(s)	Performance Measure	Evaluation	Summary
1. Community Impacts	1.1 Support long term land use and community development goals for Midtown?	1, 2, 4, 5, 6, 9, 10	Consistency with vision and goals of adopted plans and policies	Comprehensive Plan – accommodates future growth, builds community, supports a diverse, vibrant economy, supports creation of great spaces, streets and places that are vital and attractive, supports a strong, resilient community, maintains and fosters neighborhood identity and vitality, provides a walkable community that supports a healthy, active lifestyle, provides good access to land uses and modal choice. The No Build Concept will not accommodate future growth in a manner that will result in increased congestion and safety risk along the Seward Highway corridor and on east-west cross streets. This will result in delays, and potentially diverted traffic which will impact elsewhere on the Anchorage street network. No improved provision will be made for non-motorized traffic, which is currently not poorly provided for and the increased congestion associated with forecast increases in traffic volumes creates a the potential for increased safety risks to pedestrians and bicyclists and a lower level of comfort when using nonmotorized facilities. Over time, increased delay will be observed on the Seward Highway corridor and on the east-west transportation network, which will be a disincentive for users. This will potentially negatively impact on the access to Midtown. The vision and goals of adopted plans and policies seeks a transportation network that accommodates future growth, and supports the creation of great spaces, streets and places that are vital and attractive, support a strong, resilient community and provide a walkable community supportive of a health active lifestyle with good access to land uses and modal choice. The No Build is contrary to this vision and its associated goals.	-1

Theme	Evaluation Criteria – Does the concept:	Relevant FHWA Planning Factor(s)	Performance Measure	Evaluation	Summary
	1.2 Consistent with adopted plans and policies?	1, 5, 10	Compatibility with adopted plans and policies	• **Alaska LRTP:** Inconsistent. The No Build does not enable the provision of a transportation network that meets the mobility needs of the state's residents, as it enables the NHS corridor to become increasingly congested over time and increases safety risks for all transportation modes and freight. • **ASATP:** Inconsistent. Existing gaps in the network will not be addressed, and safe east-west crossing points will not be provided. Increasing congestion over time will reduce the level of comfort and increase the safety risk at crossing points. • **Comprehensive Plan:** Inconsistent. The No Build does not address traffic congestion, which will likely increase over time and be a disincentive to land use and economic development in Midtown. • **2040 LUP:** Inconsistent. The No Build will not support population growth, mixed use development and walkable communities as envisioned by the 2040 LUP, and increased congestion and safety risk along the corridor will potentially be a disincentive to economic development • **OSHP:** Consistent. However, the No Build does not separate mobility traffic from local access traffic which will prevent Seward Highway from functioning to a freeway standard as designated. • **2035 MTP:** Inconsistent. The No Build approach will not ensure a balanced transportation network that meets the needs of the forecast population, and will result in increased congestion and safety risk that is likely to be a disincentive to corridor use. • **Anchorage Pedestrian Plan:** Consistent. However, new facilities will not be provided to improve the pedestrian network, and the level of comfort associated with existing facilities will reduce over time owing to increasing congestion and safety risk. • **Anchorage Bicycle Plan:** Consistent. However, new facilities will not be provided to improve the bicycle network, and the level of comfort associated with existing facilities will reduce over time owing to increasing congestion and safety risk. • **Anchorage Municipal Code Title 21 Land Use Code:** Consistent. However, nonmotorized facilities will be less comfortable than the higher access concept. • **Anchorage Water Master Plan:** Consistent. • **Anchorage Wastewater Master Plan:** Consistent. • **Chester Creek Watershed Plan:** Inconsistent. Water quality decline associated with runoff from the Seward Highway will not be addressed.	0
	1.3 Avoids the need for ROW acquisition?	1, 5, 8	ROW requirements	The No Build option avoids the need for ROW acquisition	3

Theme	Evaluation Criteria – Does the concept:	Relevant FHWA Planning Factor(s)	Performance Measure	Evaluation	Summary
	1.4 Retain quality of life of communities within or directly adjacent to the study area?	1, 2, 4, 5, 6, 10	Qualitative assessment based on planning framework and socioeconomic observations.	The No Build concept will not: • Improve facilities to enable improved modal choice • Improve the safety of the transportation network for all transportation modes • Improve access between neighborhoods and businesses, employment and commercial land uses and recreation areas • Reduce congestion by separating mobility traffic from local access traffic. Over time, traffic volumes, congestion and safety issues are forecast to increase without intervention in the corridor and on east-west connections. The No Build option will not address issues identified in the bullet points above, and other time this is likely to negatively impact the quality of life of communities within or directly adjacent to the study area.	-1
2. Connectivity and Access	2.1 Connect neighborhoods and businesses, commercial activities and recreation lands?	1, 4, 5, 6, 7, 9, 10	Access to neighborhoods, businesses, commercial activities and recreation lands Density of network grid Connections to/from concept transportation network	Grid density, network connections, and access will not change.	0
	2.2 Improve access to neighborhoods?	4, 5, 7, 10	Proposed access to neighborhoods compared to existing	Access to neighborhoods will not change. However, increased delay associated with increased congestion over time has the potential to reduce access to neighborhoods and create conditions where traffic diverts to other streets within the network	-1
	2.3 Improve access to businesses?	1, 4, 5, 7, 10	Proposed access to businesses compared to existing	Access to businesses will not change. However, increased delay associated with increased congestion over time has the potential to reduce access to businesses and create conditions where traffic diverts to other streets within the network and away from Midtown.	-1
	2.4 Improve access to recreation lands?	4, 5, 7, 10	Proposed access to recreation lands compared to existing	Access to recreational lands will not change. However, increased delay associated with increased congestion over time has the potential to reduce access to recreation lands and reduce the pleasantness of recreational facilities immediately adjacent to the Seward Highway corridor.	-1
	2.5 Provide more than one way to access businesses and land uses	1, 4, 6, 9, 10	Density of network grid Network redundancy	The no-build concept does not provide additional network redundancy. The existing network provides only a single route for both through-traffic and local access traffic. However, the grid network provides alternative routes to access businesses and land uses.	1
	2.6 Implement Travel Demand Management strategies from Metropolitan Transportation Plan?	4, 6, 7, 9, 10	Implementation of TDM strategies from MTP	The no-build concept does not support TDM strategies identified in the MTP (does not increase opportunities for walking and bicycling and does not increase opportunities for transit). All other concepts have lower congestion and delay than the no-build concept.	-1
3. Safety	3.1 Reduce conflict points for vehicles?	2, 7, 9, 10	Conflict points for vehicles	The no-build concept does not reduce the number of conflict points for vehicles. Concepts using one-way frontage roads and median U-turns reduce the number of conflict points by eliminating the need for left-turn phasing at signalized intersections. Metric: The no-build concept has 7 intersections with more than 2 signal phases. All other concepts have only 3-4 intersections with more than 2 signal phases.	0

Theme	Evaluation Criteria – Does the concept:	Relevant FHWA Planning Factor(s)	Performance Measure	Evaluation	Summary
	3.2 Reduce conflict points for pedestrians?	2, 7, 9, 10	Conflict points for pedestrians	The no-build concept does not reduce the number of conflict points for pedestrians. Large intersections increase the pedestrian crossing distance, which increases the time pedestrians are exposed to vehicles. Metric: The no-build concept has 10 locations where a pedestrian must cross 6 or more lanes. Concept B, C2, and J have 4, 5, and 7 locations, respectively, where a pedestrian must cross 6 or more lanes.	0
	3.3 Reduce conflict points for bicyclists?	2, 7, 9, 10	Conflict points for bicyclists	The no-build concept does not reduce the number of conflict points for bicyclists. All other concepts provide about 1.6 miles of new multi-use path (removes bicycle from travel lane).	0
	3.4 Demonstrate strong potential to reduce crashes when compared to the existing crash trends?	2	Crash data – peak crash years for each mode Countermeasures to reduce crashes	The total expected crashes per year in study area was not calculated for the no-build condition. However, the increased congestion expected on the facility is likely to increase safety issues and conflicts, which has the potential to increase crashes over time.	0
	3.5 Improve accessibility and response time for emergency vehicles?	2, 3, 9	Emergency response times/ contours	No change in emergency response times.	0
4. Environmental	4.1 Minimize or mitigate impacts to historic resources?	5	Impacts to historic resources	No impacts	3
	4.2 Minimize the need for right-of-way acquisition?	1, 5	ROW requirements	No ROW acquisition	3
	4.3 Minimize or mitigate potential noise impacts?	5	Potential noise impacts Potential noise-sensitive receptors	Noise levels would remain at current levels, or increase due to increased congestion	-1
	4.4 Minimize or mitigate potential adverse air quality impacts?	5	Potential air quality impacts	Air quality would remain at current levels, or increase due to increased congestion	-1
	4.5 Minimize or mitigate potential adverse visual impacts?	1, 5, 10	Potential visual impacts	Viewshed would not change	0
	4.6 Minimize or mitigate impacts to section 4(f) and section 6(f) resources?	5	Impacts to 4(f) and 6(f) resources	No impacts	3
	4.7 Documents and minimizes impacts on environmental justice populations?	1, 2, 4, 5, 6, 10	Community impact assessment conclusions	No impacts	3
5. Non-Motorized Connections	5.1 Improve pedestrian and bicycle connectivity and crossing opportunities?	2, 4, 5, 6, 7, 9, 10	Pedestrian crossing locations and distance Bicycle crossing locations and distance Number of crossing opportunities	The no-build concept does not improve pedestrian and bicycle connectivity. The no-build concept has larger intersections, which increases the pedestrian crossing distance and the time pedestrians are exposed to vehicles. In addition, the no-build condition contains existing hazards for east-west crossing points and a lack of crossings at several locations, which will not be addressed. Safety issues are expected to increase as traffic volumes increase, and non-motorized facilities are expected to become less comfortable for users, which will be a disincentive for their use. Metric: The no-build concept has 10 locations where a pedestrian must cross 6 or more lanes. The Multi-Interchange Concepts (Variants 1 (MUT) and 2 (loop ramp), and the C-D Concept have 4, 5, and 7 locations, respectively, where a pedestrian must cross 6 or more lanes. For all other concepts, pedestrians and bicyclists only need to cross one direction of traffic at any one time. In addition, all other concepts provide about 1.6 miles of new multi-use path, providing nonmotorized facilities along both sides of the Seward Highway corridor and both sides of all major cross streets. This more complete network improves opportunities for pedestrian and bicycle connectivity.	-1

Theme	Evaluation Criteria – Does the concept:	Relevant FHWA Planning Factor(s)	Performance Measure	Evaluation	Summary
	5.2 Provide direct routes between residential areas and employment/ commercial centers?	1, 4, 6, 7, 10	Bicycle and pedestrian crossing locations Transit routes and stop locations	The no-build concept does not provide new direct routes between residential and employment/commercial centers. All other concepts provide about 1.6 miles of new multi-use path, providing nonmotorized facilities along both sides of the Seward Highway corridor and both sides of all major cross streets. This more complete network improves opportunities for pedestrian and bicycle connectivity.	0
6. Traffic Mobility/ Operations	6.1 Efficiently accommodate forecast traffic volumes and patterns?	1, 2, 3, 4, 6, 7, 8, 9, 10	Critical movements	The no-build concept has 4 areas of concern for weaving and queuing (southbound Seward Highway queues at Fireweed Lane, northbound Seward Highway queues at 36th Avenue, cross street traffic at 36th Avenue, and generally greater congestion throughout study area compared with corridor concepts due to limited capacity along the Seward Highway).	-1
	6.2 Reduce expected travel time for vehicles and freight?	4, 5, 6, 7, 9, 10	Vehicle and freight movement travel time. Indirect or direct freight routes	The no-build concept will not reduce the travel time on the Seward Hwy, and owing to forecast increases in traffic volumes travel times are likely to be increased. Metric: In the no-build condition, the PM Peak Hour average travel speed on Seward Hwy is expected to be 17 mph (from Tudor Rd to 20th Ave). For all other concepts, the expected PM peak hour average travel speed is expected to be 55 mph. Average travel speed was obtained from Synchro.	-1
	6.3 Improve future vehicular traffic operations?	2, 4, 6, 7, 9, 10	Intersection volume-to-capacity ratio and delay (LOS)	The no-build concept does not reduce queuing and delay during peak hours. Metric: In the no-build condition, 3 intersections are expected to operate at LOS E or F in the PM peak hour (on Seward Hwy from Tudor Rd to 20th Ave). For all other concepts 1 or 2 intersections are expected to operate at LOS E or F in the PM peak hour.	-1
	6.4 Create a roadway network that meets through and local access needs?	4, 6, 7, 9, 10	Roadway network hierarchy	The no-build condition does not separate through traffic from local access traffic. Metric: All other concepts provide about 10 lane miles of grade separated limited access corridor.	-1
7. Implementation	7.1 Reasonable from a cost perspective?	1, 8	Planning level ROW costs Planning level construction costs Ability to be staged into cost-effective projects	No build anticipated, and therefore no costs associated with implementation	0
	7.2 Can the concept be constructed as separate projects with independent utility?	1, 7	Independent project benefit	No projects identified	0
	7.3 Can the concept be constructed as separate projects with logical termini?	1, 7	Independent project identification	No projects identified	0
	7.3 Does the concept minimize the maintenance burden along the corridor?	1, 7, 8	Additional lane miles/paved surface areas	There are only two bridges within the existing build-out that will require maintenance. There are fewer lane miles that will require plowing, road surfacing, pavement marking, etc, but the facility is aging and a rehabilitation project is likely to be required prior to the year 2048. There are 4 signalized intersections, and all facilities are at grade. Maintenance costs are expected to be lower than either concept.	3
8. Support	8.1 Is there community/agency support for the concept?	5	Input from stakeholders, agencies and public	Feedback from the public and agencies identifies the existing safety and congestion issues along the Seward Highway corridor and east-west cross streets, and the need to do something to address existing issues. With the anticipated traffic increases forecast within the planning horizon, the existing issues are expected to worsen and create even more congested and hazardous conditions within the corridor and on cross streets. This will have negative impacts for vehicular traffic, freight, pedestrians and bicyclists that are unlikely to be acceptable to either agencies or the public. A neutral score was assigned following the Phase 2 screening workshop on October 28, 2019.	0

Evaluation Summary Scoring Key

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

Planning Factors Key

1. Support the economic vitality of the area.
2. Increase the safety of the transportation system for motorized and non-motorized users.
3. Increase the security of the transportation system for motorized and non-motorized users.
4. Increase the accessibility and mobility of people and for freight.
5. Protect and enhance the environment, promote energy conservation, and improve the quality of life.
6. Enhance the integration and connectivity of the transportation system, across and between modes, for people and freight.
7. Promote efficient system management and operation.
8. Emphasize the preservation of the existing transportation system.
9. Improve resiliency and reliability of the transportation system and reduce or mitigate stormwater impacts of surface transportation.
10. Enhance travel and tourism.

Concept Evaluation: Multi-Interchange Concept

Theme	Evaluation Criteria – Does the concept:	Relevant FHWA Planning Factor(s)	Performance Measure	Evaluation	Summary
1. Community Impacts	1.1 Support long term land use and community development goals for Midtown?	1, 2, 4, 5, 6, 9, 10	Consistency with vision and goals of adopted plans and policies	Comprehensive Plan – accommodates future growth, builds community, supports a diverse, vibrant economy, supports creation of great species, streets and places that are vital and attractive, supports a strong, resilient community, maintains and fosters neighborhood identity and vitality, provides a walkable community that supports a health, active lifestyle, provides good access to land uses and modal choice. The proposed changes to the surface transportation network set out in the multi-interchange concept improve the ability to accommodate future growth. In particular, the concept provides for the separation of through traffic from local traffic to support mobility on the Seward Highway corridor and access to Midtown, whilst still providing several access points between the freeway (mobility) corridor and the frontage road (local access) street network. The concept also improves connections for all transportation modes, and creates a local street network that is physically separate from, but with good connection to, the NHS Freeway (Seward Highway). Local access continues to be provided from the local street network. This sets a strong framework to support the development pattern envisioned by the Comprehensive Plan.	3
	1.2 Consistent with adopted plans and policies?	1, 5, 10	Compatibility with adopted plans and policies	• **Alaska LRTP:** Consistent. • **ASATP:** Consistent. • **Comprehensive Plan:** Consistent. • **2040 LUP:** Consistent. • **OSHP:** Consistent. • **2035 MTP:** Consistent. • Anchorage Pedestrian Plan: Consistent. • **Anchorage Bicycle Plan:** Consistent. • **Anchorage Municipal Code Title 21 Land Use Code:** Consistent. • **Anchorage Water Master Plan:** Consistent. • **Anchorage Wastewater Master Plan:** Consistent. • **Chester Creek Watershed Plan:** Consistent. Overall, the higher access concept is consistent with adopted plans and policies.	3
	1.3 Avoids the need for ROW acquisition	1, 5, 8	ROW requirements	**MUT Variant:** 24 full acquisitions, 28 partial acquisitions. Approx. ROW Costs - $24-29 Million (excludes additional major impacts costs to cure (i.e., parking/site plan analyses) and relocation costs. Major commercial property issues: BP and Fred Meyer **Loop Ramp Variant:** 24 full acquisitions, 29 partial acquisitions. Approx. ROW Costs - $24-29 Million (excludes additional major impacts costs to cure (i.e., parking/site plan analyses) and relocation costs. Major commercial property issues: BP and Fred Meyer Both variants of the multi-interchange concept require some ROW acquisition.	-1

Theme	Evaluation Criteria – Does the concept:	Relevant FHWA Planning Factor(s)	Performance Measure	Evaluation	Summary
	1.4 Retain quality of life of communities within or directly adjacent to the study area?	1, 2, 4, 5, 6, 10	Qualitative assessment based on planning framework and socioeconomic observations	The concept provides for the separation of traffic using the Seward Highway for north-south mobility purposes from traffic seeking access to Midtown, which is positive for local communities. Coupled with the separation provided by the concept, local access roads will have a 35-45mph speed limit, which will improve the quality of the local area through a slower speed transportation network that will improve comfort on adjacent land uses. The concept maximizes access points between the mobility and local access corridors, which will be positive owing to the high volumes of traffic along the Seward Highway corridor either originating from, or being destined for Midtown. This means the frontage roads need to be 2-3 lanes along the length of the study area to accommodate the forecast high local access volumes. The size of the local access roads will be smaller than the existing roadway network along the corridor because of mobility traffic is separated out from local access traffic, however. Nonmotorized facilities and crossing points will be improved in all directions, with dedicated walking and bicycling facilities being proposed along both sides of the Seward Highway, both sides of cross streets, and with dedicated facilities being proposed at the Chester Creek crossing and, dependent on the concept, at 33rd Avenue. Dependent on future traffic, the concept still has the potential to generate a barrier between commercial land uses on the east side of the Seward Highway corridor and residential uses on the eastern side, but improved, grade separated connections between the eastern and western side of the Seward Highway will significantly improve connectivity over existing conditions. A score of 1 was assigned following the Phase 2 Screening Workshop to reflect the potential for positive impacts, but community concerns about visual and noise impacts associated with the concepts.	1
2. Connectivity and Access	2.1 Connect neighborhoods and businesses, commercial activities and recreation lands?	1, 4, 5, 6, 7, 9, 10	Access to neighborhoods, businesses, commercial activities and recreation lands Density of network grid Connections to/from concept transportation network	Access to businesses, neighborhoods, and recreational lands will be provided via the frontage roads, with ramp access to the Seward Hwy. Having a greater number of ramps improves the ability to connect to the transportation network while traveling through fewer traffic signals. It also results in lower volumes at signalized intersections because traffic can remain on the grade-separated mainline for longer distances; this improves frontage road performance and east-west connectivity. Metric: The MUT variant provides 7 on/off ramps between Seward Hwy and the frontage roads (between Tudor Rd and 20th Ave), while the Loop Ramp variant provides 8 on/off ramps.	2
	2.2 Improve access to neighborhoods?	4, 5, 7, 10	Proposed access to neighborhoods compared to existing	Access to neighborhoods will be provided via the frontage roads and cross streets, with ramp access between the frontage roads and the Seward Hwy. The frontage roads will be lower classification roadways that are more conducive to neighborhood access than the Seward Highway. Metric: Concepts B and C2 maintain the existing turn restrictions at Fireweed Lane to avoid attracting cut-through traffic; therefore, the concepts are not expected to impact the Rogers Park neighborhood. The concepts will retain the right-in/right-out access to 20th Avenue approach to the Seward Highway.	3
	2.3 Improve access to businesses?	1, 4, 5, 7, 10	Proposed access to businesses compared to existing	Access to businesses will be provided via the frontage roads and cross streets, with ramp access between the frontage roads and the Seward Hwy. The frontage roads will be lower classification roadways that are designed to provide business access, and driveways will be able to be provided to the frontage road. The changes to signal phasing will speed up intersections (by reducing delay), which will improve access to businesses.	3

Theme	Evaluation Criteria – Does the concept:	Relevant FHWA Planning Factor(s)	Performance Measure	Evaluation	Summary
	2.4 Improve access to recreation lands?	4, 5, 7, 10	Proposed access to recreation lands compared to existing	The concepts will improve nonmotorized connections to recreation lands and address existing network gaps. The frontage roads will support local access.	3
	2.5 Provide more than one way to access businesses and land uses	1, 4, 6, 9, 10	Density of network grid Network redundancy	Concepts increase network resiliency by providing alternate north-south travel routes. Network redundancy helps the system to function under unexpected events such as natural disaster or infrastructure failure. The concept also provides multiple access points between the Seward Highway and the frontage road network, which will reduce the need for circuitous travel to access businesses. Metric: Resiliency was quantified as the average distance in miles a vehicle would travel to detour around a closure on the Seward Hwy (distance to exit Seward Hwy and bypass the closure via the frontage road). For the MUT variant, the average detour route is 0.9 miles; for the loop ramp variant, the average detour route is 1.1 miles.	3
	2.6 Implement Travel Demand Management strategies from Metropolitan Transportation Plan?	4, 6, 7, 9, 10	Implementation of TDM strategies from MTP	TDM strategies in the MTP include increasing opportunities for walking and bicycling, providing for transit, and ensuring signal progression minimizes congestion and delay. The concept provides for the separation of mobility trips from access trips by separating the freeway from the frontage road network; improving signal progression on the frontage road network, providing space for a future transit lane/HOV on the freeway, improving nonmotorized facilities and crossing points, and providing the opportunity for a Midtown transit hub within or close to study corridor.	3
3. Safety	3.1 Reduce conflict points for vehicles?	2, 7, 9, 10	Conflict points for vehicles	One-way frontage Roads and median U-turns reduce the number of conflict points and eliminate the need for left-turn phasing at signalized intersections. Metric: In the no-build condition, there are 7 signalized intersections with more than 2 signal phases. For the MUT variant, there are 3 two-phase intersections, while with the loop ramp variant there are 4 two-phase intersections.	3
	3.2 Reduce conflict points for pedestrians?	2, 7, 9, 10	Conflict points for pedestrians	Large intersections increase the pedestrian crossing distance, which increases the time pedestrians are exposed to vehicles. Metric: In the no-build condition, there are 10 locations where a pedestrian must cross 6 or more lanes. There are 4 such locations for MUT variant and 5 such locations for loop ramp variant, and the grade-separated mainline removes conflicts between pedestrians and the vehicles on the mainline. In addition, the separation of local access roads mean pedestrians only need to cross one direction of traffic at any one time. This is a significant improvement over the existing configuration.	3
	3.3 Reduce conflict points for bicyclists?	2, 7, 9, 10	Conflict points for bicyclists	All concepts include additional new multi-use paths along the frontage roads. In addition, crossing locations are improved by the separation of mobility traffic from local access traffic, and by the separation of roads which mean bicyclists only need to cross one direction of traffic at any one time. This is a significant improvement over the existing configuration. Metric: Both variants provide about 1.6 miles of new multi-use bike path (removes bicycle from travel lane), and the grade-separated mainline removes conflicts between bicycles and the vehicles on the mainline.	3

Theme	Evaluation Criteria – Does the concept:	Relevant FHWA Planning Factor(s)	Performance Measure	Evaluation	Summary
	3.4 Demonstrate strong potential to reduce crashes when compared to the existing crash trends?	2	Crash data – peak crash years for each mode Countermeasures to reduce crashes	The number of expected crashes for each concept varies based on the number of intersections, traffic volumes, and the number of conflict points at intersections. Metric: The grade-separated mainline removes vehicles from signalized intersections, which improves safety. For the MUT Variant 312 crashes are expected per year on the Seward Hwy corridor. For the loop ramp variant, 253 crashes are expected per year. The MUT Variant has 23 percent more predicted crashes than the loop ramp variant because of the greater number of intersections on the corridor. Both variants perform more strongly than the Collector-Distributor Concept. The elevated crash rate for the MUT variant is something that would need to be carefully considered in the design process to improve safety.	2
	3.5 Improve accessibility and response time for emergency vehicles?	2, 3, 9	Emergency response times/ contours	Emergency response times are expected to marginally improve for the multi-interchange concepts. This is because the concepts will enable emergency vehicles to avoid intersections when traveling along the Seward Highway, or use the frontage road network to access adjoining land uses/cross streets.	1
4. Environmental	4.1 Minimize or mitigate impacts to historic resources?	5	Impacts to historic resources	B & C2 - Number of potentially eligible properties within APE (0)	3
	4.2 Minimize right-of-way acquisition?	1, 5	ROW requirements	**MUT Variant:** 24 full acquisitions, 28 partial acquisitions. Approx. ROW Costs - $24-29 Million (excludes additional major impacts costs to cure (i.e., parking/site plan analyses) and relocation costs. Major commercial property issues: BP and Fred Meyer **Loop Ramp Variant:** 24 full acquisitions, 29 partial acquisitions. Approx. ROW Costs - $24-29 Million (excludes additional major impacts costs to cure (i.e., parking/site plan analyses) and relocation costs. Major commercial property issues: BP and Fred Meyer	1
	4.3 Minimize or mitigate potential noise impacts?	5	Potential noise impacts Potential noise-sensitive receptors	**MUT Variant:** Number of sensitive receptors within project limits and within 500 feet of project limits (137) **Loop Ramp Variant:** Number of sensitive receptors within project limits and within 500 feet of project limits (140) No noise assessment has been completed for the concepts. Specific noise assessments will be completed on projects forwarded from the PEL study, and it is assumed that noise mitigation such as acoustic walls will be installed adjacent to the Seward Highway corridor. However, until this assessment is completed it is assumed that the concepts perform neutrally in relation to the evaluation criteria.	0
	4.4 Minimize or mitigate potential adverse air quality impacts?	5	Potential air quality impacts	**MUT Variant and Loop Ramp Variant:** Project will result in higher LOS (yes). The delay will reduce for both concepts, which should generate positive effects for air quality.	2
	4.5 Minimize or mitigate potential adverse visual impacts?	1, 5, 10	Potential visual impacts	**MUT Variant:** 57% of project below ground surface; 26% of project above level **Loop Ramp Variant:** 56% of project below ground surface; 17% of project above level	2

Theme	Evaluation Criteria – Does the concept:	Relevant FHWA Planning Factor(s)	Performance Measure	Evaluation	Summary
	4.6 Avoid impacts to section 4(f) and section 6(f) resources?	5	Impacts to 4(f) and 6(f) resources	Both variants of the Multi-Interchange concept will generate some impact on Section 4(f) and Section 6(f) resources. **MUT Variant:** # of 4(f) properties within project limits/acres (4) # of 6(f) properties within project limits/acres (1) **Loop Ramp Variant:** # of 4(f) properties within project limits/acres (3) # of 6(f) properties within project limits/acres (1)	-1
	4.7 Avoids disproportionate impacts to environmental justice populations?	1, 2, 4, 5, 6, 10	Community impact assessment conclusions	**MUT Variant and Loop Ramp Variant:** Presence of minority of low-income residents within 500 feet of project limits (yes) The concept will have positive impacts on community cohesion for the following reasons: • Improving facilities to enable improved modal choice • Improving the safety of the transportation network for all transportation modes • Improving access between neighborhoods and businesses, employment and commercial land uses and recreation areas • Reducing congestion by separating mobility traffic from local access traffic However, quantifying whether the concepts will have disproportionate impacts to environmental justice populations will not be able to occur until specific noise assessment occurs when a project(s) is forwarded from the PEL study. Therefore, until this assessment is completed it is assumed the concept performs neutrally in relation to this evaluation criteria.	0
5. Non-Motorized Connections	5.1 Improve pedestrian and bicycle connectivity and crossing opportunities?	2, 4, 5, 6, 7, 9, 10	Pedestrian crossing locations and distance Bicycle crossing locations and distance Number of crossing opportunities	Large intersections increase the pedestrian crossing distance, which increases the time pedestrians are exposed to vehicles. Metric: In the no-build condition, there are 10 locations where a pedestrian must cross 6 or more lanes. There are 4 such locations for the MUT variant and 5 such locations for the loop ramp variant. In addition, the separation of local access roads mean pedestrians and bicyclists only need to cross one direction of traffic at any one time. Nonmotorized facilities are proposed along both sides of the Seward Highway corridor, and both sides of all major cross streets, which will improve opportunities for pedestrian and bicycle connectivity. Overall, the multi-interchange concept is a significant improvement over the existing configuration.	3
	5.2 Provide direct routes between residential areas and employment/ commercial centers?	1, 4, 6, 7, 10	Bicycle and pedestrian crossing locations Transit routes and stop locations	All concepts include additional new multi-use paths along the frontage roads. Metric: Both variants provide about 1.6 miles of new multi-use bike path (removes bicycle from travel lane). Nonmotorized facilities are proposed along both sides of the Seward Highway corridor, and both sides of all major cross streets, which will provide for more direct routes between residential areas and employment/commercial centers. Overall, the multi-interchange concept is a significant improvement over the existing configuration.	3
6. Traffic Mobility/ Operations	6.1 Efficiently accommodate forecast traffic volumes and patterns?	1, 2, 3, 4, 6, 7, 8, 9, 10	Critical movements	The multi-interchange concept was evaluated to identify key areas of concern for weaving and queuing, and showed an improvement compared to the existing geometry. The concept was modeled for the 2048 design year and it was able to efficiently accommodate forecast traffic volumes and patterns. Metric: For the MUT variant, one area of concern was identified (weaving section on frontage road between Benson Boulevard and NB ramp). For the loop ramp variant, two areas of concern were identified (weaving section on frontage road	3

Theme	Evaluation Criteria – Does the concept:	Relevant FHWA Planning Factor(s)	Performance Measure	Evaluation	Summary
				between Benson Boulevard and NB ramp, Old Seward Highway/36th Avenue intersection capacity). This would need to be considered in further detail as part of the design process for project(s) forwarded from the PEL study. This concept will generate more weaving on the highway, and less weave distance on the frontage roads, which is a lower speed environment.	
	6.2 Reduce expected travel time for vehicles and freight?	4, 5, 6, 7, 9, 10	Vehicle and freight movement travel time. Indirect or direct freight routes	All concepts are expected to reduce the travel time on the Seward Hwy. Metric: In the no-build condition, the PM Peak Hour average travel speed on Seward Hwy is expected to be 17 mph (from Tudor Rd to 20th Ave). For the Multi-Interchange concept, the expected PM peak hour average travel speed is expected to be 55 mph. Average travel speed was obtained from Synchro.	3
	6.3 Improve future vehicular traffic operations?	2, 4, 6, 7, 9, 10	Intersection volume-to-capacity ratio and delay (LOS)	Traffic operations during peak hours were evaluated to quantify the expected delay and queuing associated with each concept. Metric: In the no-build condition, 3 intersections are expected to operate at LOS E or F in the PM peak hour (on Seward Hwy from Tudor Rd to 20th Ave). For the MUT variant, 1 intersection is expected to operate at LOS E or F in the PM peak hour, and for the loop ramp variant, 2 intersections are expected to operate at LOS E or F in the PM peak hour.	2
	6.4 Create a roadway network that meets through and local access needs?	4, 6, 7, 9, 10	Roadway network hierarchy	Grade separated mainline and frontage road system separates through traffic from local access traffic. Metric: The MUT variant provides 10.5 lane miles of grade separated limited access corridor. The loop ramp variant provides 10.0 lane miles of grade separated limited access corridor.	3
7. Implementation	7.1 Reasonable from a cost perspective?	1, 8	Planning level ROW costs Planning level construction costs Ability to be staged into cost-effective projects	**MUT Variant** Approx. ROW Costs - $24-29 Million (excludes additional major impacts costs to cure (i.e., parking/site plan analyses) and relocation costs, comprised of: • Tudor $42-52 Million • Project 1: $30-37 Million • Project 2: $69-86 Million • Project 3: $108-135 Million • Project 4: $184-230 Million • **Total: $433-540 Million** **Loop Ramp Variant** Approx. ROW Costs - $24-29 Million (excludes additional major impacts costs to cure (i.e., parking/site plan analyses) and relocation costs, comprised of: • Tudor: $31-38 Million • Project 1: $37-46 Million • Project 2: $67-83 Million • Project 3: $175-218 Million • Project 4: $130-162 Million • **Total: $440-547 Million**	-1
	7.2 Can the concept be constructed as separate projects with independent utility?	1, 7	Independent project benefit	**MUT Variant** **Tudor Interchange: Improves mobility, safety for all users, reduces congestion, updates bridge structure.** The Multi-Interchange concept resolves the deteriorating interchange and bridge. It increases capacity in the east-west direction and access to the highway, and provides updated nonmotorized connections and crossings. The concept simplifies	3

Theme	Evaluation Criteria – Does the concept:	Relevant FHWA Planning Factor(s)	Performance Measure	Evaluation	Summary
				construction, with a permanent bridge constructed to the south of the existing which allows the existing bridge to be used during construction. **Project 1: Improve mobility, safety for all users, reduces congestion. Independent of other projects**. The concept resolves traffic congestion between the Seward Hwy/36th Avenue intersection and Old Seward Hwy/36th Avenue intersection. It improves north-south and east-west movements, and improves safety of the intersections. It provides nonmotorized connections that are currently not available. The wider median is proposed to accommodate intersection queue storage, and to eliminate the need to reconstruct the frontage road network at a later date when the freeway section is constructed. It also eliminates the need to curve the roadway, which would increase safety concerns for through traffic. **Project 2: Improve mobility, safety for all users, reduces congestion. Independent of other projects.** The concept resolves the single large intersections at Benson Blvd, Northern Lights Blvd and Fireweed Lane and replaces them with smaller intersections at each cross street that are now two phase signals. **Project 3: Improve mobility, safety for all users, reduces congestion. Does need Project 1 and 2 prior to construction.** A grade-separated highway is extended from Tudor Road to Benson Blvd. 36th Avenue is improved as traffic going to Tudor Road can now stay on highway and use the braided ramp exit in the southbound direction. In the northbound direction traffic from Tudor Road can bypass the 36th Avenue intersection using the entrance ramp from Tudor Road. Highway traffic can also bypass the 36th Avenue intersection in the northbound or southbound directions. **Project 4: Improves mobility, safety for all users, reduces congestion. Does need Project 1 and 2 prior to construction** A grade separated highway is extended from Benson Boulevard to 20th Avenue. The intersections at Benson Blvd, Northern Lights Blvd, and Fireweed Lane all benefit from reduced through traffic. The grade-separated highway reduces the risk of collisions and allows free flow of traffic through the Midtown area. **Loop Ramp Variant** **Tudor Interchange: Improves mobility, safety for all users, reduces congestion, updates bridge structure.** The Multi-Interchange Concept resolves the deteriorating interchange and bridge. It increases capacity in the east-west direction and access to the highway. It provides updated nonmotorized connections and crossings. **Project 1: Improve mobility, safety for all users, reduces congestion. Independent of other projects**. The concept resolves traffic congestion between the Seward Hwy/36th Avenue intersection and Old Seward Hwy/36th Avenue intersection. It improves north-south and east-west movements, and improves the safety of the intersections. The concept also provides a pathway connection that is currently not available. The wider median is proposed to accommodate intersection queue storage, and to eliminate the need to reconstruct the frontage road network at a later date when the freeway section is constructed. It also eliminates the need to curve the roadway, which would increase safety concerns for through traffic. **Project 2: Improve mobility, safety for all users, reduces congestion. Independent of other projects.**	

Theme	Evaluation Criteria – Does the concept:	Relevant FHWA Planning Factor(s)	Performance Measure	Evaluation	Summary
				The concept resolves the single large intersections at Benson Blvd, Northern Lights Blvd and Fireweed Lane and replaces with smaller intersections at each cross street that are now two phase signals. **Project 3: Improve mobility, safety for all users, reduces congestion. Does need Project 1 and 2 prior to construction.** A grade-separated highway is constructed from Benson Blvd to 20th Avenue. The intersections at Benson Blvd, Northern Lights Blvd, and Fireweed Lane all benefit from reduced through traffic. The construction of the grade separated highway reduces collisions and allows free flow of traffic through the Midtown area. **Project 4: Improves mobility, safety for all users, reduces congestion. Does need Project 1 and 2 prior to construction** The grade-separated highway is extended from Benson Boulevard to Tudor Road. 36th Avenue is improved as traffic going to Tudor Road can now stay on the highway and use the braided ramp exit in the southbound direction. In the northbound direction, traffic headed to 36th Avenue can access via exit ramp. Braided ramps between 36th Avenue and Benson Boulevard provide access to and from 36th Avenue. 36th Avenue has full access from and to the highway.	
	7.3 Can the concept be constructed as separate projects with logical termini?	1, 7	Independent project identification	**MUT Variant** **Tudor Interchange:** Yes, already its own project. Requires realignment of Tudor Road and additional ROW, but can be viewed as a construction benefit by eliminating the need for a temporary bridge during construction. **Project 1:** Yes, has rational end point for the transportation improvement. The location was chosen because of the elevated safety and congestion problems at 36th Avenue. This project complements and ties into Tudor interchange replacement project. **Project 2**: Yes, ties into the 36th Avenue interchange improvement (Project 1) and extends north to 20th Avenue. **Project 3:** Yes, grade separated highway is extended from the Tudor interchange to south of Benson Boulevard. **Project 4:** Connects separated highway from south of Benson Boulevard through Midtown up to 20th Avenue. **Loop Ramp Variant** **Tudor:** Yes, already its own project. **Project 1:** Yes, has rational end point for the transportation improvement. The location was chosen because of the elevated safety and congestion problems at 36th Avenue. This project complements and ties into Tudor interchange replacement project. **Project 2**: Yes, ties into the 36th Avenue interchange improvement (Project 1) and extends north to 20th Avenue. **Project 3:** Yes. Creates a grade-separated highway from 20th Avenue through Midtown to south of Benson Boulevard. **Project 4:** Yes, extends the grade separated highway from south of Benson Boulevard to the Tudor interchange.	3
	7.3 Does the concept minimize the maintenance burden along the corridor?	1, 7, 8	Additional lane miles/paved surface areas	**MUT Variant** There are 8.7 Mainline lane miles, 6.1 Frontage lane miles and 2.7 Ramp lane miles, totaling 17.5 lane miles. This relates to area of roadway that maintenance will be required including plowing, road resurfacing, pavement marking etc. In addition, with this concept there are 10 bridge structures that would need maintenance and inspection. This variant has 13 signalized intersections. Due to the additional ramps and access points there are additional walls and railing that will need to be maintained in comparison to the Collector-Distributor Concept.	1

Theme	Evaluation Criteria – Does the concept:	Relevant FHWA Planning Factor(s)	Performance Measure	Evaluation	Summary
				Loop Ramp Variant There are 8.2 Mainline lane miles, 6.7 Frontage lane miles and 2.8 Ramp lane miles, Totaling 17.7 lane miles. This relates to area of roadway that maintenance will be required including plowing, road resurfacing, pavement marking etc. In addition, with this concept there are 10 bridge structures that would need maintenance and inspection. This variant has 10 signalized intersections. Due to the additional ramps and access points there is additional walls and railing that will need to be maintained in comparison to the Collector-Distributor Concept.	
8. Support	8.1 Is there community and agency support for the concept?	5	Input from stakeholders, agencies and public	Feedback from the Agency, Business and Citizen's Advisory Groups has supported the development of the Multi-Interchange Concept. To date, there has been a moderate level of community support/acceptance for the concept, especially because of the depressed freeway element to the concept. Some concerns have been voiced about the intermediate element of the concept resulting in a large area of undeveloped space through the center of the Midtown, which may not be built on for several years, and the relatively large frontage road network. A score of 1 was assigned following the Phase 2 Screening Workshop on October 28, 2019.	1

Evaluation Summary Scoring Key

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

Planning Factors Key

1. Support the economic vitality of the area.
2. Increase the safety of the transportation system for motorized and non-motorized users.
3. Increase the security of the transportation system for motorized and non-motorized users.
4. Increase the accessibility and mobility of people and for freight.
5. Protect and enhance the environment, promote energy conservation, and improve the quality of life.
6. Enhance the integration and connectivity of the transportation system, across and between modes, for people and freight.
7. Promote efficient system management and operation.
8. Emphasize the preservation of the existing transportation system.
9. Improve resiliency and reliability of the transportation system and reduce or mitigate stormwater impacts of surface transportation.
10. Enhance travel and tourism.

Concept Evaluation: Collector-Distributor Concept

Theme	Evaluation Criteria – Does the concept:	Relevant FHWA Planning Factor(s)	Performance Measure	Evaluation	Summary
1. Community Impacts	1.1 Support long term land use and community development goals for Midtown?	1, 2, 4, 5, 6, 9, 10	Consistency with vision and goals of adopted plans and policies	Comprehensive Plan – accommodates future growth, builds community, supports a diverse, vibrant economy, supports creation of great species, streets and places that are vital and attractive, supports a strong, resilient community, maintains and fosters neighborhood identity and vitality, provides a walkable community that supports a health, active lifestyle, provides good access to land uses and modal choice. The proposed changes to the surface transportation network set out in the C-D concept improve the ability to accommodate future growth, but do not provide the full build-out along the frontage road network forecast to be required to support traffic growth. Instead, the concept relies on traffic reaching capacity and then diverting to other north-south roads within the transportation network (i.e., A/C Street couplet, Minnesota Drive, Lake Otis Parkway). This is because a full build-out would necessitate up to 5 traffic lanes in each direction, which would increase the likelihood of the road being a barrier and creating challenging conditions for non-motorized users. Pushing traffic to other streets in the network will use capacity where available, but it will increase delay and congestion throughout the north-south transportation network and at intersections in Midtown in particular, potentially creating congestion and safety issues on other corridors in the network. The concept provides for the separation of through traffic from local traffic to support mobility on the Seward Highway corridor, and it provides for access to Midtown at either Fireweed Lane or Tudor Road. It improves the transportation network for nonmotorized traffic and improves crossing points, but not the number of lanes of traffic to be crossed on the frontage road network. The slower speed environment within the frontage road network should alleviate some stress associated with nonmotorized crossings of multiple traffic lanes, however. Local access continues to be provided from the local street network. This sets a strong framework to support the development pattern envisioned by the Comprehensive Plan, but the concept performs less strongly than the Multi-Interchange concept because: • The frontage road network will accommodate higher traffic volumes owing to less access being available between the frontage road network and the Seward Highway, which will result in higher levels of congestion. • The higher levels of congestion along the frontage road network will make the streets less attractive for nonmotorized transportation.	2

Theme	Evaluation Criteria – Does the concept:	Relevant FHWA Planning Factor(s)	Performance Measure	Evaluation	Summary
	1.2 Consistent with adopted plans and policies?	1, 5, 10	Compatibility with adopted plans and policies	• **Alaska LRTP:** Consistent. • **ASATP:** Consistent. However, nonmotorized facilities will be less comfortable than the higher access concept. • **Comprehensive Plan:** Consistent. However, the concept performs less well than the higher access concept for the reasons given in 1.1. • **2040 LUP:** Consistent. However, the concept performs less well than the higher access concept for the reasons given in 1.1. associated with increased congestion on the frontage road network, and potentially on other north-south roadway connections. • **OSHP:** Consistent. • **MOA LRTP:** Consistent. • **2035 MTP:** Consistent. • Anchorage Pedestrian Plan: Consistent. However, nonmotorized facilities will be less comfortable than the higher access concept. • **Anchorage Bicycle Plan:** Consistent. However, nonmotorized facilities will be less comfortable than the higher access concept. • Anchorage Municipal Code Title 21 Land Use Code: Consistent. However, nonmotorized facilities will be less comfortable than the higher access concept. • **Anchorage Water Master Plan:** Consistent. • **Anchorage Wastewater Master Plan:** Consistent. • **Chester Creek Watershed Plan:** Consistent. Overall, the C-D concept is consistent with adopted plans and policies, but the concept performs less strongly than the Multi-Interchange concept owing to facilities being less comfortable for nonmotorized users, and the higher levels of traffic congestion anticipated along the frontage road network.	2
	1.3 Avoids the need for right-of-way acquisition?	1, 5, 8	ROW requirements	24 full acquisitions, 20 partial acquisitions. Approx. ROW Costs - $23-28 Million (excludes additional major impacts costs to cure (i.e., parking/site plan analyses) and relocation costs. Major commercial property issues: BP and Fred Meyer The C-D concept requires some ROW acquisition.	-1

Theme	Evaluation Criteria – Does the concept:	Relevant FHWA Planning Factor(s)	Performance Measure	Evaluation	Summary
	1.4 Retain quality of life of communities within or directly adjacent to the study area?	1, 2, 4, 5, 6, 10	Qualitative assessment based on planning framework and socioeconomic observations	The concept provides for the separation of traffic using the Seward Highway for north-south mobility purposes from traffic seeking access to Midtown, which is positive for local communities. Coupled with the separation provided by the concept, local access roads will have a 35-45mph speed limit, which will improve the quality of the local area. Because the concept provides fewer access points between the mobility and local access corridors, more traffic will need to be accommodated on the frontage roads, which will increase congestion and result in the need for more traffic lanes. This is because a full build-out would necessitate up to 5 traffic lanes in each direction, which would increase the likelihood of the road being a barrier and creating challenging conditions for non-motorized users. Notwithstanding this, nonmotorized facilities and crossing points will be improved in all directions. The traffic volumes and congestion are likely to make these facilities less comfortable to use than the higher access concept, however. Dependent on future traffic, the concept still has the potential to generate a barrier between commercial land uses on the east side of the Seward Highway corridor and residential uses on the eastern side, but improved, grade separated connections between the eastern and western side of the Seward Highway will significantly improve connectivity over existing conditions. A score of 1 was assigned following the Phase 2 Screening Workshop to reflect the potential for positive impacts, but community concerns about visual and noise impacts associated with the concepts.	1
2. Connectivity and Access	2.1 Connect neighborhoods and businesses, commercial activities and recreation lands?	1, 4, 5, 6, 7, 9, 10	Access to neighborhoods, businesses, commercial activities and recreation lands Density of network grid Connections to/from concept transportation network	Access to businesses, neighborhoods, and recreational lands will be provided via the frontage roads, with ramp access to the Seward Hwy. Having a greater number of ramps improves the ability to connect to the transportation network while traveling through fewer traffic signals. It also results in lower volumes at signalized intersections because traffic can remain on the grade-separated mainline for longer distances; this improves frontage road performance and east-west connectivity. Metric: The C-D Concept provides 5 on/off ramps between Seward Hwy and the frontage roads (between Tudor Rd and 20th Ave).	2
	2.2 Improve access to neighborhoods?	4, 5, 7, 10	Proposed access to neighborhoods compared to existing	Access to neighborhoods will be provided via the frontage roads and cross streets, with ramp access between the frontage roads and the Seward Hwy. The frontage roads will be lower classification roadways that are more conducive to neighborhood access than the Seward Highway. Metric: The C-D concept maintains the existing turn restrictions at Fireweed Lane to avoid attracting cut-through traffic; therefore, the concept is not expected to impact the Rogers Park neighborhood. The concept will retain the right-in/right-out access to 20th Avenue approach to the Seward Highway.	2
	2.3 Improve access to businesses?	1, 4, 5, 7, 10	Proposed access to businesses compared to existing	Access to businesses will be provided via the frontage roads and cross streets. Access to the frontage C-D road will be at either end of Midtown, which will provide less access than the Multi-Interchange concept. The frontage C-D roads will be lower classification roadways that are designed to provide business access, and driveways will be able to be provided to the frontage road. However, the additional lane in each direction and expected congestion on the frontage road network may make access to business from the C-D road challenging in the out-years. The changes to signal phasing will speed up intersections (by reducing delay), which will improve access to businesses.	2
	2.4 Improve access to recreation lands?	4, 5, 7, 10	Proposed access to recreation lands compared to existing	The concept will improve nonmotorized connections to recreation lands and address existing network gaps. The frontage roads will support local access.	3

Theme	Evaluation Criteria – Does the concept:	Relevant FHWA Planning Factor(s)	Performance Measure	Evaluation	Summary
	2.5 Provide more than one way to access businesses and land uses	1, 4, 6, 9, 10	Density of network grid Network redundancy	Concepts increase network resiliency by providing alternate north-south travel routes. Network redundancy helps the system to function under unexpected events such as natural disaster or infrastructure failure. Metric: Resiliency was quantified as the average distance in miles a vehicle would travel to detour around a closure on the Seward Hwy (distance to exit Seward Hwy and bypass the closure via the frontage road). For the C-D concept, the average detour route is 1.5 miles.	2
	2.6 Implement Travel Demand Management strategies from Metropolitan Transportation Plan?	4, 6, 7, 9, 10	Implementation of TDM strategies from MTP	TDM strategies in the MTP include increasing opportunities for walking and bicycling, providing for transit, and ensuring signal progression minimizes congestion and delay. The concept provides for the separation of mobility trips from access trips by separating the freeway from the frontage road network; improving signal progression on the frontage road network, providing space for a future transit lane/HOV on the freeway, improving nonmotorized facilities and crossing points, and providing the opportunity for a Midtown transit hub within or close to the study corridor.	3
3. Safety	3.1 Reduce conflict points for vehicles?	2, 7, 9, 10	Conflict points for vehicles	One-way frontage Roads and median U-turns reduce the number of conflict points and eliminate the need for left-turn phasing at signalized intersections. Metric: In the no-build condition, there are 7 signalized intersections with more than 2 signal phases. With the C-D concept, there are 4 two-phase intersections. This concept scored lower than the Multi-Interchange concept because of the greater number of lanes required on the frontage road to accommodate forecast traffic volume, which increases the number of conflict points on the local street network.	2
	3.2 Reduce conflict points for pedestrians?	2, 7, 9, 10	Conflict points for pedestrians	Large intersections increase the pedestrian crossing distance, which increases the time pedestrians are exposed to vehicles. Metric: In the no-build condition, there are 10 locations where a pedestrian must cross 6 or more lanes. There are 7 such locations for the C-D concept and the grade-separated mainline removes conflicts between pedestrians and the vehicles on the mainline. In addition, the separation of local access roads mean pedestrians only need to cross one direction of traffic at any one time. This is a significant improvement over the existing configuration. The C-D concept will, however, require a larger number of lanes to be crossed than the Multi-Interchange concept, and the C-D frontage road is expected to accommodate at least 20 percent more vehicles. Therefore, the C-D concept does not perform as well as the Multi-Interchange concept.	2
	3.3 Reduce conflict points for bicyclists?	2, 7, 9, 10	Conflict points for bicyclists	All concepts include additional new multi-use paths along the frontage roads. In addition, crossing locations are improved by the separation of mobility traffic from local access traffic, and by the separation of roads which mean bicyclists only need to cross one direction of traffic at any one time. This is a significant improvement over the existing configuration. However, this concept will require a larger number of lanes than the Multi-Interchange concept and the C-D frontage road is expected to accommodate at least 20 percent more vehicles, which will result in an environment that is less comfortable for bicyclists. Therefore, this concept does not perform as well as the Multi-Interchange concept. Metric: The C-D Concept provides about 1.6 miles of new multi-use bike path (removes bicycle from travel lane), and the grade-separated mainline removes conflicts between bicycles and the vehicles on the mainline.	2

Theme	Evaluation Criteria – Does the concept:	Relevant FHWA Planning Factor(s)	Performance Measure	Evaluation	Summary
	3.4 Demonstrate strong potential to reduce crashes when compared to the existing crash trends?	2	Crash data – peak crash years for each mode Countermeasures to reduce crashes	The number of expected crashes for each concept varies based on the number of intersections, traffic volumes, and the number of conflict points at intersections. Metric: The grade-separated mainline removes vehicles from signalized intersections, which improves safety. For C-D Concept, 329 crashes are expected per year on the Seward Hwy corridor. This concept performs less strongly than the Multi-Interchange concept, particularly the loop ramp variant which has forecast 30 percent fewer crashes than this concept.	1
	3.5 Improve accessibility and response time for emergency vehicles?	2, 3, 9	Emergency response times/ contours	Emergency response times are expected to remain the same or similar to the existing configuration.	0
4. Environmental	4.1 Minimize or mitigate impacts to historic resources?	5	Impacts to historic resources	Number of potentially eligible properties within APE (0)	3
	4.2 Minimize right-of-way acquisition?	1, 5	ROW requirements	24 full acquisitions, 20 partial acquisitions. Approx. ROW Costs - $23-28 Million (excludes additional major impacts costs to cure (i.e., parking/site plan analyses) and relocation costs. Major commercial property issues: BP and Fred Meyer	2
	4.3 Minimize or mitigate potential noise impacts?	5	Potential noise impacts Potential noise-sensitive receptors	Number of sensitive receptors within project limits and within 500 feet of project limits (139) No noise assessment has been completed for the concepts. Specific noise assessments will be completed on projects forwarded from the PEL study, and it is assumed that noise mitigation such as acoustic walls will be installed adjacent to the Seward Highway corridor. However, until this assessment is completed it is assumed that the concept performs neutrally in relation to this evaluation criteria.	0
	4.4 Minimize or mitigate potential adverse air quality impacts?	5	Potential air quality impacts	Project will result in higher LOS (yes) The delay will reduce for both concepts, which should generate positive effects for air quality.	2
	4.5 Minimize or mitigate potential adverse visual impacts?	1, 5, 10	Potential visual impacts	56% of project below ground surface; 17% of project above level	2
	4.6 Avoid impacts to section 4(f) and section 6(f) resources?	5	Impacts to 4(f) and 6(f) resources	The concept will generate some impact on Section 4(f) and Section 6(f) resources. # of 4(f) properties within project limits/acres (3) # of 6(f) properties within project limits/acres (1)	-1
	4.7 Documents and minimizes impacts on environmental justice populations?	1, 2, 4, 5, 6, 10	Community impact assessment conclusions	Presence of minority of low-income residents within 500 feet of project limits (yes) The concept will have positive impacts on community cohesion for the following reasons: • Improving facilities to enable improved modal choice • Improving the safety of the transportation network for all transportation modes • Improving access between neighborhoods and businesses, employment and commercial land uses and recreation areas • Reducing congestion by separating mobility traffic from local access traffic However, quantifying whether the concepts will have disproportionate impacts to environmental justice populations will not be able to occur until specific noise assessment occurs when a project(s) is forwarded from the PEL study. Therefore, until this assessment is completed it is assumed the concept performs neutrally in relation to this evaluation criteria.	0

Theme	Evaluation Criteria – Does the concept:	Relevant FHWA Planning Factor(s)	Performance Measure	Evaluation	Summary
5. Non-Motorized Connections	5.1 Improve pedestrian and bicycle connectivity and crossing opportunities?	2, 4, 5, 6, 7, 9, 10	Pedestrian crossing locations and distance Bicycle crossing locations and distance Number of crossing opportunities	Large intersections increase the pedestrian crossing distance, which increases the time pedestrians are exposed to vehicles. Metric: In the no-build condition, there are 10 locations where a pedestrian must cross 6 or more lanes. There are 7 such locations for the C-D Concept. The separation of local access roads mean pedestrians and bicyclists only need to cross one direction of traffic at any one time. Nonmotorized facilities are proposed along both sides of the Seward Highway corridor, and both sides of all major cross streets, which will improve opportunities for pedestrian and bicycle connectivity. Overall, the C-D concept is a significant improvement over the existing configuration, but it performs less well than the Multi-Interchange concept as the larger number of traffic lanes and higher expected traffic volumes will increase the potential for conflict and make the facilities less comfortable.	2
	5.2 Provide direct routes between residential areas and employment/ commercial centers?	1, 4, 6, 7, 10	Bicycle and pedestrian crossing locations Transit routes and stop locations	All concepts include additional new multi-use paths along the frontage roads. Metric: The C-D Concept provides about 1.6 miles of new multi-use bike path (removes bicycle from travel lane). Nonmotorized facilities are proposed along both sides of the Seward Highway corridor, and both sides of all major cross streets, which will provide for more direct routes between residential areas and employment/commercial centers. Overall, the multi-interchange concept is a significant improvement over the existing configuration.	3
6. Traffic Mobility/ Operations	6.1 Efficiently accommodate forecast traffic volumes and patterns?	1, 2, 3, 4, 6, 7, 8, 9, 10	Critical movements	Each concept was evaluated to identify key areas of concern for weaving and queuing. However, all concepts are an improvement compared to the existing geometry and attract high traffic volumes to the corridor. Metric: For the C-D Concept, three areas of concern were identified (frontage roads sized to accommodate fewer vehicles than the model predicts will want to use them, causing traffic to be diverted to other routes; Benson Boulevard/southbound frontage road capacity, Old Seward Highway/36th Avenue intersection capacity). This would need to be considered in further detail as part of the design process for project(s) forwarded from the PEL study. This concept will generate less weaving on the highway, and more weave distance on the frontage roads, which is a lower speed environment.	2
	6.2 Reduce expected travel time for vehicles and freight?	4, 5, 6, 7, 9, 10	Vehicle and freight movement travel time. Indirect or direct freight routes	All concepts are expected to reduce the travel time on the Seward Hwy. Metric: In the no-build condition, the PM Peak Hour average travel speed on Seward Hwy is expected to be 17 mph (from Tudor Rd to 20th Ave). For the C-D concept, the expected PM peak hour average travel speed is expected to be 55 mph. Average travel speed was obtained from Synchro.	3
	6.3 Improve future vehicular traffic operations?	2, 4, 6, 7, 9, 10	Intersection volume-to-capacity ratio and delay (LOS)	Traffic operations during peak hours were evaluated to quantify the expected delay and queuing associated with each concept. Metric: In the no-build condition, 3 intersections are expected to operate at LOS E or F in the PM peak hour (on Seward Hwy from Tudor Rd to 20th Ave). For the C-D Concept, 2 intersections are expected to operate at LOS E or F in the PM peak hour.	2
	6.4 Create a roadway network that meets through and local access needs?	4, 6, 7, 9, 10	Roadway network hierarchy	Grade separated mainline and frontage road system separates through traffic from local access traffic. Metric: The C-D Concept provides 10.3 lane miles of grade separated limited access corridor.	3

Theme	Evaluation Criteria – Does the concept:	Relevant FHWA Planning Factor(s)	Performance Measure	Evaluation	Summary
7. Implementation	7.1 Reasonable from a cost perspective?	1, 8	Planning level ROW costs Planning level construction costs Ability to be staged into cost-effective projects	Approx. ROW Costs - $23-28 Million (excludes additional major impacts costs to cure (i.e., parking/site plan analyses) and relocation costs, comprised of. Tudor: $31-38 Million Project 1: $35-43 Million Project 2: $64-80 Million Project 3: $95-118 Million Project 4: $161-201 Million **Total: $386-480 Million**	-1
	7.2 Can the concept be constructed as separate projects with independent utility?	1, 7	Independent project benefit	**Tudor Interchange: Improves mobility, safety for all users, reduces congestion, updates bridge structure.** The C-D Concept resolves deteriorating interchange and bridge. It increases capacity in the east-west direction and access to the highway. It also provides updated nonmotorized connections and crossings. **Project 1: Improve mobility, safety for all users, reduces congestion. Independent of other projects**. The concept resolves traffic congestion between the Seward Hwy/36th Avenue intersection and Old Seward Hwy/36th Avenue intersection. It improves north-south and east-west movements, and safety of the intersections. The concept provides a pathway connection that is currently not available. **Project 2: Improve mobility, safety for all users, reduces congestion. Independent of other projects.** The concept resolves the single large intersections at Benson Boulevard, Northern Lights Boulevard and Fireweed Lane and replaces them with smaller intersections at each cross street that are now two-phase signals. **Project 3: Improve mobility, safety for all users, reduces congestion. Does need Project 1 and 2 prior to construction.** A grade separated highway is extended from Tudor Road to Benson Boulevard. Traffic on Seward Highway can bypass 36th Avenue, relieving congestion at 36th Avenue. **Project 4: Improves mobility, safety for all users, reduces congestion. Does need Project 1 and 2 prior to construction.** The grade separated highway is extended from Benson Boulevard to 20th Avenue. The intersections at Benson Boulevard, Northern Lights Boulevard, and Fireweed Lane all benefit from reduced through traffic. The grade-separated highway reduces collisions and allows free flow of traffic through the Midtown area.	3
	7.3 Can the concept be constructed as separate projects with logical termini?	1, 7	Independent project identification	**Tudor:** Yes, already its own project to be designed and constructed. **Project 1:** Yes, has rational end point for the transportation improvement. The location was chosen because of the elevated safety and congestion problems at 36th Avenue. This project complements and ties into Tudor interchange replacement project. **Project 2**: Yes, ties into the 36th Avenue interchange improvement (Project 1) and extends north to 20th Avenue. **Project 3:** Yes, grade separated highway is extended from the Tudor interchange to south of Benson Boulevard. **Project 4:** Connects separated highway from south of Benson Boulevard through Midtown up to 20th Avenue.	3
	7.3 Does the concept minimize the maintenance burden along the corridor?	1, 7, 8	Additional lane miles/paved surface areas	There are 7.5 Mainline lane miles, 8.3 Frontage lane miles and 1.8 Ramp lane miles, totaling 17.6 lane miles. This relates to an area of roadway that maintenance will be required including plowing, road resurfacing, pavement marking etc. In addition, with this concept there are 7 bridge structures that would need maintenance and inspection. This variant has 10 signalized intersections.	2

Theme	Evaluation Criteria – Does the concept:	Relevant FHWA Planning Factor(s)	Performance Measure	Evaluation	Summary
8. Support	8.1 Is there community support for the concept?	5	Input from stakeholders, agencies and public	Feedback from the Agency, Business and Citizen's Advisory Groups has supported the development of the C-D Concept. To date, there has been a moderate level of community support/acceptance for the concept, especially because of the depressed freeway element to the concept. Concerns have been voiced about the size of the frontage road network to accommodate forecast traffic movements for access, the limited connection between the Seward Highway and the frontage road network and the risk of travelers "missing" an exit and having to travel past Midtown before doubling back, which could have economic implications for businesses, and the intermediate element of the concept resulting in a large area of undeveloped space through the center of the Midtown, which may not be built on for several years. A score of 0 was assigned following the Phase 2 Screening Workshop on October 28, 2019.	0

Evaluation Summary Scoring Key

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

Planning Factors Key

1. Support the economic vitality of the area.
2. Increase the safety of the transportation system for motorized and non-motorized users.
3. Increase the security of the transportation system for motorized and non-motorized users.
4. Increase the accessibility and mobility of people and for freight.
5. Protect and enhance the environment, promote energy conservation, and improve the quality of life.
6. Enhance the integration and connectivity of the transportation system, across and between modes, for people and freight.
7. Promote efficient system management and operation.
8. Emphasize the preservation of the existing transportation system.
9. Improve resiliency and reliability of the transportation system and reduce or mitigate stormwater impacts of surface transportation.
10. Enhance travel and tourism.

Concept Evaluation: At-Grade Intersection Improvements (Implementation of Projects B & C Only)

Theme	Evaluation Criteria – Does the concept:	Relevant FHWA Planning Factor(s)	Performance Measure	Evaluation	Summary
1. Community Impacts	1.1 Support long term land use and community development goals for Midtown?	1, 2, 4, 5, 6, 9, 10	Consistency with vision and goals of adopted plans and policies	The at-grade intersection improvements partially implement the complete concept and will provide immediate safety improvements, enhanced nonmotorized facilities, and accommodate future growth modeled until approximately 2028. It will not, however accommodate 2048 forecast traffic volumes. This will likely result in delays, and potentially diverted traffic which will impact elsewhere on the Anchorage street network. Over time, increased delay will be observed on the Seward Highway corridor and on the east-west transportation network, which will be a disincentive for users. This will potentially negatively impact on the access to Midtown. The vision and goals of adopted plans and policies seeks a transportation network that accommodates future growth, and supports the creation of great spaces, streets and places that are vital and attractive, support a strong, resilient community and provide a walkable community supportive of a health active lifestyle with good access to land uses and modal choice. The At-Grade Intersection Improvements has the potential to create short-term improvements to the transportation network, but long term it is contrary to this vision and its associated goals.	1

Theme	Evaluation Criteria – Does the concept:	Relevant FHWA Planning Factor(s)	Performance Measure	Evaluation	Summary
	1.2 Consistent with adopted plans and policies?	1, 5, 10	Compatibility with adopted plans and policies	• **Alaska LRTP:** Consistent. The at-grade intersection improvements provide a transportation network that meets the mobility needs of the state's residents, as it will provide immediate safety and congestion improvements. Over time, however, increased traffic volumes will diminish the benefit of the improvements. • **ASATP:** Neutral. Existing gaps in the network will be addressed, and safe east-west crossing points will be provided. However, increasing congestion over time will reduce the level of comfort and increase the safety risk at crossing points. • **Comprehensive Plan:** Neutral. The at-grade intersection improvements a provide transportation network that will provide immediate safety and congestion improvements, but the roadway will continue to separate Midtown in this location, which is inconsistent with the long-term goals of the Comprehensive Plan. • **2040 LUP:** Inconsistent. The at-grade intersection improvements a provide transportation network that will provide immediate safety and congestion improvements, but the roadway will continue to bifurcate Midtown in this location, which is inconsistent with the long-term goals of the Land Use Plan and is not supportive of the City Center concept. • **OSHP:** Consistent. However, the at-grade intersection improvements do not separate mobility traffic from local access traffic which will prevent Seward Highway from functioning to a freeway standard as designated. • **2035 MTP:** Consistent. The at-grade intersection improvements will ensure a balanced transportation network that meets the needs of the forecast population in the short to medium term. • **Anchorage Pedestrian Plan:** Consistent. New facilities will be provided to improve the pedestrian network. • **Anchorage Bicycle Plan:** Consistent. New facilities will be provided to improve the bicycle network. • **Anchorage Municipal Code Title 21 Land Use Code:** Consistent. • **Anchorage Water Master Plan:** Consistent. • **Anchorage Wastewater Master Plan:** Consistent. • **Chester Creek Watershed Plan:** Consistent. The reconstruction of the Chester Creek crossing and new roadway will help resolve existing issues with fish passage and runoff from the Seward Highway. Overall, the at-grade intersection improvements are consistent with adopted plans and policies.	1
	1.3 Avoids the need for ROW acquisition?	1, 5, 8	ROW requirements	ROW acquisition will be required to implement the at-grade intersection improvements concept.	-1

Theme	Evaluation Criteria – Does the concept:	Relevant FHWA Planning Factor(s)	Performance Measure	Evaluation	Summary
	1.4 Retain quality of life of communities within or directly adjacent to the study area?	1, 2, 4, 5, 6, 10	Qualitative assessment based on planning framework and socioeconomic observations.	The concept provides immediate safety and congestion benefits at the at-grade intersections by improving intersection configuration and supporting two-phase signals. It also provides for significantly improved facilities for pedestrians and bicyclists, by ensuring the provision of a 10-foot wide multi-use trail adjacent to the Seward Highway, and 10-foot wide sidewalks with signalized crossings on all east-west connections. The signalized crossings provide a greater area for pedestrian refuge and shorter crossing spans, which will enhance pedestrian safety. The intermediate build provides at-grade improvements, which does not resolve existing issues associated with the Seward Highway separating the commercial and business activities in Midtown from residential neighborhoods to the east. Concerns have also been raised about the potential for the divided median to be a blight on this part of Midtown, by not bringing uses together and also through the creation of a wide median space that has created community concern about attracting undesirable uses. The benefits associated with the transportation improvements from the intermediate build will retain the quality of life of broader Anchorage residents, but may negatively impact communities within or directly adjacent to the study area.	0
2. Connectivity and Access	2.1 Connect neighborhoods and businesses, commercial activities and recreation lands?	1, 4, 5, 6, 7, 9, 10	Access to neighborhoods, businesses, commercial activities and recreation lands Density of network grid Connections to/from concept transportation network	Grid density, network connections, and access will not change. However, the two-phase signals will reduce congestion compared to the no-build conditions and may offset some of the growth between now and 2048.	1
	2.2 Improve access to neighborhoods?	4, 5, 7, 10	Proposed access to neighborhoods compared to existing	Access to neighborhoods will not change. The two-phase signals are expected to improve operations and offset the delay associated with increased volumes over time, which otherwise has the potential to reduce access to neighborhoods and create conditions where traffic diverts to other streets within the network	1
	2.3 Improve access to businesses?	1, 4, 5, 7, 10	Proposed access to businesses compared to existing	Access to businesses will not change. The two-phase signals are expected to improve operations and offset the delay associated with increased volumes over time, which otherwise has the potential to reduce access to businesses and create conditions where traffic diverts to other streets within the network and away from Midtown.	1
	2.4 Improve access to recreation lands?	4, 5, 7, 10	Proposed access to recreation lands compared to existing	Access to recreational lands will not change. The two-phase signals are expected to improve operations and offset the delay associated with increased volumes over time, which otherwise has the potential to reduce access to recreation lands and reduce the pleasantness of recreational facilities immediately adjacent to the Seward Highway corridor. The concept also implements replacement of the Chester Creek crossing, which is a significant recreational benefit.	3
	2.5 Provide more than one way to access businesses and land uses	1, 4, 6, 9, 10	Density of network grid Network redundancy	The at-grade intersection improvements do not provide significant additional network redundancy. The north and south roads have greater separation between them but do not provide more routing options to the existing network.	2
	2.6 Implement Travel Demand Management strategies from Metropolitan Transportation Plan?	4, 6, 7, 9, 10	Implementation of TDM strategies from MTP	TDM strategies in the MTP include increasing opportunities for walking and bicycling, providing for transit, and ensuring signal progression minimizes congestion and delay. The at-grade intersection improvements improve signal progression, nonmotorized facilities, and crossing points. However, the improvements have less potential TDM benefits compared to the collector-distributor and multi-interchange concepts.	2

Theme	Evaluation Criteria – Does the concept:	Relevant FHWA Planning Factor(s)	Performance Measure	Evaluation	Summary
3. Safety	3.1 Reduce conflict points for vehicles?	2, 7, 9, 10	Conflict points for vehicles	The at-grade intersection improvements reduce the number of vehicular conflict points by eliminating the need for left-turn phasing at signalized intersections due to the one-way frontage roads and median U-turns. Metric: In the no-build condition, there are 7 signalized intersections with more than 2 signal phases. The at-grade intersection concepts have 3 intersections with more than 2 signal phases.	2
	3.2 Reduce conflict points for pedestrians?	2, 7, 9, 10	Conflict points for pedestrians	Large intersections increase the pedestrian crossing distance, which increases the time pedestrians are exposed to vehicles. Metric: In the no-build condition, there are 10 locations where a pedestrian must cross 6 or more lanes. There are 4 to 6 such locations for the at-grade intersection concepts. In addition, pedestrians only need to cross one direction of traffic at a time for many of the new crossings. This is a significant improvement over the existing configuration. However, the volume of conflicting traffic on the frontage road is much higher for this concept, compared to the collector-distributor and multi-interchange concepts.	1
	3.3 Reduce conflict points for bicyclists?	2, 7, 9, 10	Conflict points for bicyclists	The at-grade intersection concepts include new multiuse paths along the new separated roads. In addition, the separation of the northbound/southbound roads means bicyclists only need to cross one direction of traffic at any one time. This is a significant improvement over the existing configuration. However, the volume of conflicting traffic on the frontage road is much higher for this concept compared to the collector-distributor and multi-interchange concepts. Metric: The at-grade intersection concept provides about 1.6 miles of new multi-use bike path (removes bicycle from travel lane).	1
	3.4 Demonstrate strong potential to reduce crashes when compared to the existing crash trends?	2	Crash data – peak crash years for each mode Countermeasures to reduce crashes	The total expected crashes per year in the study area was not calculated for the at-grade intersection concepts in the year 2048. However, the increased congestion expected on the northbound/southbound roads is likely to increase safety issues and conflicts, which has the potential to increase crashes over time.	0
	3.5 Improve accessibility and response time for emergency vehicles?	2, 3, 9	Emergency response times/ contours	Emergency response times are expected to remain the same or similar to the no-build configuration.	0
4. Environmental	4.1 Minimize or mitigate impacts to historic resources?	5	Impacts to historic resources	Number of potentially eligible properties within APE (0)	3
	4.2 Minimize the need for right-of-way acquisition?	1, 5	ROW requirements	**MUT Variant:** 24 full acquisitions, 28 partial acquisitions. Approx. ROW Costs - $24-29 Million (excludes additional major impacts costs to cure (i.e., parking/site plan analyses) and relocation costs. Major commercial property issues: BP and Fred Meyer **Loop Ramp Variant:** 24 full acquisitions, 29 partial acquisitions. Approx. ROW Costs - $24-29 Million (excludes additional major impacts costs to cure (i.e., parking/site plan analyses) and relocation costs. Major commercial property issues: BP and Fred Meyer	1

Theme	Evaluation Criteria – Does the concept:	Relevant FHWA Planning Factor(s)	Performance Measure	Evaluation	Summary
	4.3 Minimize or mitigate potential noise impacts?	5	Potential noise impacts Potential noise-sensitive receptors	**MUT Variant:** Number of sensitive receptors within project limits and within 500 feet of project limits (137) **Loop Ramp Variant:** Number of sensitive receptors within project limits and within 500 feet of project limits (140) No noise assessment has been completed for the concepts. Specific noise assessments will be completed on projects forwarded from the PEL study, and it is assumed that noise mitigation such as acoustic walls will be installed adjacent to the Seward Highway corridor. However, until this assessment is completed it is assumed that the concepts perform neutrally in relation to the evaluation criteria.	0
	4.4 Minimize or mitigate potential adverse air quality impacts?	5	Potential air quality impacts	**MUT Variant and Loop Ramp Variant:** Project will result in higher LOS (yes). The delay will reduce for both concepts, which should generate positive effects for air quality. The benefits will not be as significant as the full concept build-out, however.	1
	4.5 Minimize or mitigate potential adverse visual impacts?	1, 5, 10	Potential visual impacts	**MUT Variant:** Project is at ground level **Loop Ramp Variant:** Project is at ground level	0
	4.6 Minimize or mitigate impacts to section 4(f) and section 6(f) resources?	5	Impacts to 4(f) and 6(f) resources	Both variants of the Multi-Interchange concept will generate some impact on Section 4(f) and Section 6(f) resources. **MUT Variant:** # of 4(f) properties within project limits/acres (4) # of 6(f) properties within project limits/acres (1) **Loop Ramp Variant:** # of 4(f) properties within project limits/acres (3) # of 6(f) properties within project limits/acres (1)	-1
	4.7 Documents and minimizes impacts on environmental justice populations?	1, 2, 4, 5, 6, 10	Community impact assessment conclusions	**MUT Variant and Loop Ramp Variant:** Presence of minority of low-income residents within 500 feet of project limits (yes) The concept will have positive impacts on community cohesion for the following reasons: • Improving facilities to enable improved modal choice • Improving the safety of the transportation network for all transportation modes • Improving access between neighborhoods and businesses, employment and commercial land uses and recreation areas • Reducing congestion by separating mobility traffic from local access traffic However, quantifying whether the concepts will have disproportionate impacts to environmental justice populations will not be able to occur until specific noise assessment occurs when a project(s) is forwarded from the PEL study. Therefore, until this assessment is completed it is assumed the concept performs neutrally in relation to this evaluation criteria.	0
5. Non-Motorized Connections	5.1 Improve pedestrian and bicycle connectivity and crossing opportunities?	2, 4, 5, 6, 7, 9, 10	Pedestrian crossing locations and distance Bicycle crossing locations and distance Number of crossing opportunities	Creating two smaller intersections decreases the distance of each pedestrian crossing, which provides increased comfort. Metric: In the no-build condition, there are 10 locations where a pedestrian must cross 6 or more lanes. There are 4 to 6 such locations for the at-grade intersection concepts. In addition, pedestrians only need to cross one direction of traffic at any one time. This is a significant improvement over the existing configuration. However, the volume of conflicting traffic on the frontage road is much higher for this concept, compared to the collector-distributor and multi-interchange concepts.	2

Theme	Evaluation Criteria – Does the concept:	Relevant FHWA Planning Factor(s)	Performance Measure	Evaluation	Summary
	5.2 Provide direct routes between residential areas and employment/ commercial centers?	1, 4, 6, 7, 10	Bicycle and pedestrian crossing locations Transit routes and stop locations	The at-grade intersection concepts include new multiuse paths along the separated roads. In addition, the separation of northbound/southbound roads means bicyclists only need to cross one direction of traffic at a time. This is a significant improvement over the existing configuration. However, the volume of conflicting traffic on the frontage road is much higher for this concept compared to the collector-distributor and multi-interchange concepts. Metric: The at-grade intersection concept provides about 1.6 miles of new multi-use bike path (removes bicycle from travel lane).	2
6. Traffic Mobility/ Operations	6.1 Efficiently accommodate forecast traffic volumes and patterns?	1, 2, 3, 4, 6, 7, 8, 9, 10	Critical movements	The at-grade intersection improvements are not expected to have any areas of concern for weaving and queuing but are expected to effectively serve the level of traffic volumes able to access the study corridor. Lower volumes are expected because this concept assumes the Seward-to-Glenn Highway connection is NOT in place, but instead that existing capacity constraints exist along Ingra and Gambell Streets north of 15th Avenue and result in lower traffic volumes along the corridor compared to the collector-distributor and multi-interchange concepts.	3
	6.2 Reduce expected travel time for vehicles and freight?	4, 5, 6, 7, 9, 10	Vehicle and freight movement travel time. Indirect or direct freight routes	The at-grade intersection concepts will reduce the travel time on the Seward Hwy compared to the no-build condition. However, these concepts have higher travel time than the collector-distributor and multi-interchange concepts, especially for through traffic due to the absence of a free-flow mainline facility. Metric: The PM Peak Hour average travel speed on the frontage roads is expected to be about 20 mph, for the at-grade intersection concepts. This is slightly higher than the no-build condition, which has an average travel speed of 17 mph on Seward Highway (from Tudor Rd to 20th Ave). For the collector-distributor and multi-interchange concepts, the expected PM peak hour average travel speed for the mainline traffic is expected to be 55 mph. Average travel speed was obtained from Synchro.	1
	6.3 Improve future vehicular traffic operations?	2, 4, 6, 7, 9, 10	Intersection volume-to-capacity ratio and delay (LOS)	The at-grade intersection improvements reduce queuing and delay during peak hours compared to the no-build condition. Vehicles on the Seward Highway have similar delays as the collector-distributor and multi-interchange concepts, due in part to the fact that the Seward-to-Glenn Highway connection is NOT in place, but instead that existing capacity constraints exist along Ingra and Gambell Streets north of 15th Avenue and result in lower traffic volumes than the collector-distributor and multi-interchange concepts. Metric: Similar to the collector-distributor and multi-interchange concepts, only 1 or 2 intersections are expected to operate at LOS E in the PM peak hour.	2
	6.4 Create a roadway network that meets through and local access needs?	4, 6, 7, 9, 10	Roadway network hierarchy	The at-grade intersection improvements do not separate through traffic from local access traffic but they do create smoother operations. Metric: The concept does not have any grade-separated limited access facility, compared to the 10 lane miles of grade separated limited access corridor for the collector-distributor and multi-interchange concepts.	1
7. Implementation	7.1 Reasonable from a cost perspective?	1, 8	Planning level ROW costs Planning level construction costs Ability to be staged into cost-effective projects	Approx. ROW Costs - $24-29 Million (excludes additional major impacts costs to cure (i.e., parking/site plan analyses) and relocation costs, comprised of: Project 1: $30-46 Million Project 2: $67- 86 Million Total: $97- 132 Million	-1
	7.2 Can the concept be constructed as separate projects with independent utility?	1, 7	Independent project benefit	**MUT Variant:** **Project 1: Improve mobility, safety for all users, reduces congestion. Independent of other projects**.	3

Theme	Evaluation Criteria – Does the concept:	Relevant FHWA Planning Factor(s)	Performance Measure	Evaluation	Summary
				The concept resolves traffic congestion between the Seward Hwy/36th Avenue intersection and Old Seward Hwy/36th Avenue intersection. It improves north-south and east-west movements, and improves safety of the intersections. It provides nonmotorized connections that are currently not available. The wider median is proposed to accommodate intersection queue storage, and to eliminate the need to reconstruct the frontage road network when the freeway section is constructed. **Project 2: Improve mobility, safety for all users, reduces congestion. Independent of other projects.** The concept resolves the single large intersections at Benson Blvd, Northern Lights Blvd and Fireweed Lane and replaces them with smaller intersections at each cross street that are now two-phase signals. **I**mproved safety for all modes of transportation. **Loop Ramp Variant:** **Project 1: Improve mobility, safety for all users, reduces congestion. Independent of other projects**. The concept resolves traffic congestion between the Seward Hwy/36th Avenue intersection and Old Seward Hwy/36th Avenue intersection. It improves north-south and east-west movements, and improves the safety of the intersections. The concept also provides a pathway connection that is currently not available. The wider median is proposed to accommodate intersection queue storage, and to eliminate the need to reconstruct the frontage road network when the freeway section is constructed. **Project 2: Improve mobility, safety for all users, reduces congestion. Independent of other projects.** The concept resolves the single large intersections at Benson Blvd, Northern Lights Blvd and Fireweed Lane and replaces with smaller intersections at each cross street that are now two phase signals. Improved safety for all modes of transportation.	
	7.3 Can the concept be constructed as separate projects with logical termini?	1, 7	Independent project identification	**MUT Variant** **Project 1:** Yes, has rational end point for the transportation improvement. The location was chosen because of the elevated safety and congestion problems at 36th Avenue. This project complements and ties into Tudor interchange replacement project. **Project 2**: Yes, ties into the 36th Avenue interchange improvement (Project 1) and extends north to 20th Avenue. **Loop Ramp Variant** **Project 1:** Yes, has rational end point for the transportation improvement. The location was chosen because of the elevated safety and congestion problems at 36th Avenue. This project complements and ties into Tudor interchange replacement project. **Project 2**: Yes, ties into the 36th Avenue interchange improvement (Project 1) and extends north to 20th Avenue.	3
	7.3 Does the concept minimize the maintenance burden along the corridor?	1, 7, 8	Additional lane miles/paved surface areas	Depending on variant chosen there could be one additional bridge at 36th Avenue. The Tudor bridge and Chester creek undercrossing will remain as structures that will require maintenance. There is a minor increase in lane miles that will require plowing, road surfacing, pavement marking, etc, There will be additional pedestrian facilities, noise walls, and up to 5 additional signalized intersections	2

Theme	Evaluation Criteria – Does the concept:	Relevant FHWA Planning Factor(s)	Performance Measure	Evaluation	Summary
8. Support	8.1 Is there community/agency support for the concept?	5	Input from stakeholders, agencies and public	There is limited community support for the at-grade intersection improvements as a long-term solution. Particular concerns arise around the potential for the concept being the permanent build-out, and creating a blight on Midtown because of the open median through the heart of the study area.	0

Evaluation Summary Scoring Key

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

Planning Factors Key

1. Support the economic vitality of the area.
2. Increase the safety of the transportation system for motorized and non-motorized users.
3. Increase the security of the transportation system for motorized and non-motorized users.
4. Increase the accessibility and mobility of people and for freight.
5. Protect and enhance the environment, promote energy conservation, and improve the quality of life.
6. Enhance the integration and connectivity of the transportation system, across and between modes, for people and freight.
7. Promote efficient system management and operation.
8. Emphasize the preservation of the existing transportation system.
9. Improve resiliency and reliability of the transportation system and reduce or mitigate stormwater impacts of surface transportation.
10. Enhance travel and tourism.