

# QUALITATIVE SCREENING ANALYSIS

## Mainline Highway Alternatives

	No Action	General Purpose Lanes (6 Lanes)	General Purpose Lanes (6 Lanes + Auxiliary)	General Purpose Lanes (6 Lanes + HOV)	General Purpose Lanes (6 Lanes + HOV + Auxiliary)	General Purpose Lanes (8 Lanes)	General Purpose Lanes (8 Lanes + Auxiliary)	Express Lanes (4 ELS + 4 GPLs) (South Corridor Limited Access)	Express Lanes (4 ELS + 4 GPLs) (South Corridor)
<b>Competition / Delay</b>									
<b>Goals/Objectives</b>									
<b>Unit of Measure</b>									
<b>Minimize congestion on C-470 from Kipling to I-25.</b>	2025 LOS peak hour, peak direction.	2 congested GPLs (LOS D-F) carrying a volume of 4600 to 6700.	3 congested GPLs (LOS D-F) carrying a volume of 5300 to 7700.	3 uncongested GPLs (LOS D-F) and 1 AUX lane carrying a volume of 5300 to 5300.	3 uncongested GPLs (LOS D-F) carrying a volume of 4500 to 7100. 1 uncongested HOV lane (LOS B-F) carrying a volume of 800 to 1300. Composite	3 uncongested GPLs (LOS D-F) and 1 AUX lane carrying a volume of 4900 to 8000. 1 uncongested HOV lane (LOS B-F) carrying a volume of 800 to 1300. Composite	4 uncongested GPLs (LOS D-F) carrying a volume of 5300 to 8500. 1 AUX lane carrying a volume of 5500 to 9000.	2 congested GPLs (LOS F) carrying a volume of 4100 to 4800. 2 uncongested ELS (LOS C-F) carrying a volume of 1900 to 2600. Composite	3 congested GPLs (LOS F) carrying a volume of 4100 to 4800. 2 uncongested ELS (LOS C-F) carrying a volume of 1700 to 3300. Composite
<b>Reliability</b>									
<b>Provide predictable travel times.</b>	LOS and whether lanes can be actively managed or not. (qualitative measure)	Poor LOS and no active management. No control over how CPLs are used.	Poor LOS and no active management. No control over how CPLs are used.	Moderate LOS and no active management. No control over how CPLs are used.	Moderate LOS and some active management. Limited control over HOV lanes as to number in general.	Moderate LOS and some active management. Limited control over HOV lanes as to number in general.	Moderate LOS and no active management. No control over how CPLs are used.	High LOS and no active management. No control over how CPLs are used.	Moderate LOS and high active management. Express Lanes can be actively managed.
<b>Provide reliable choices to most users.</b>	Number of choices and number of users. (qualitative measure)	Provides limited choices to limited users.	Provides limited choices to limited users.	Provides limited choices to limited users.	Provides moderate amount of choices (HOV lanes) to moderate amount of users (Bus, HOVs).	Provides moderate amount of choices (HOV lanes) to moderate amount of users (Bus, HOVs).	Provides limited choices to limited users.	Provides moderate amount of choices (improved LOS on CPLs) to moderate amount of users (Bus, SOVs, HOVs).	Provides most choices (Express Lanes) to most users (Bus, SOVs, HOVs).
<b>Implementation</b>									
<b>Implement in a timely fashion.</b>	When can the alternative be funded?	No cost.	Indefinite, must find funding sources.	Indefinite, must find funding sources.	Indefinite, must find funding sources.	Indefinite, must find funding sources.	Indefinite, must find funding sources.	Indefinite, must find funding sources.	Presently, as toll revenue provides potential for funding.
<b>Address affordability.</b>	Cost range (millions of dollars per mile) (costs include multi-lane and ramp tie-ins only - no ROW utility site limitations).	\$0 M/mile	\$2 - 4 M/mile	\$16 - 18 M/mile	\$16 - 18 M/mile	\$18 - 20 M/mile	\$16 - 18 M/mile	\$18 - 20 M/mile	\$22 - 28 M/mile - does not include access ramp costs.
	Cost range (millions of dollars per mile) (costs include access and/or interchange improvements only - no ROW costs are included).	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD
<b>Environment</b>									
<b>Note:</b> Values listed are for mainline and interchange extensions only. Values do not include attempts at avoiding or minimizing impacts to the resources. They are conservative estimates based on conceptual level design and preliminary environmental impact estimation. More detailed design and environmental evaluation will be completed at the next level of screening, which will provide more accurate impact evaluations. These numbers may increase or decrease slightly with more accurate information.									
<b>Minimize impacts to adjacent bicycle and pedestrian trail system.</b>	Linear miles trail relocation necessary.	0 miles	0 miles	3.7 miles	3.8 miles	4.5 miles	3.2 miles	3.9 miles	9.3 miles
<b>Minimize acquisition of additional right-of-way.</b>	Number of parcels impacted (values are business parcels only; no residential values are necessary; acres of additional R/W values will change with the implementation of water quality features). Water quality features will include ponds, but these include alternatives to provide stormwater and sediment detention that otherwise would not be needed.	0 parcels, 0 acres	0 partial parcels, 0 total takes, 0 acres	37 partial parcels, 0 total takes, 18.8 acres	39 partial parcels, 0 total takes, 19.7 acres	62 partial parcels, 0 total takes, 23.5 acres	55 partial parcels, 0 total takes, 18.1 acres	58 partial parcels, 0 total takes, 20.6 acres	112 partial parcels, 0 total takes, 38.7 acres
<b>Minimize impacts to wetlands and waters of the U.S.</b>	Percent of wetlands and waters of the U.S. impacted within the RSA.**	0% of RSA (0 acres)	0% of RSA (0 acres)	2.4% of RSA (1.1 acres)	2.4% of RSA (1.1 acres)	2.9% of RSA (1.3 acres)	2.2% of RSA (1.0 acres)	2.7% of RSA (1.2 acres)	4.4% of RSA (2.0 acres)
<b>Minimize impacts to potential threatened or endangered habitat.</b>	Percent of threatened or endangered habitat impacted within the RSA.**	0% of RSA (0 acres)	0% of RSA (0 acres)	7.5% of RSA (6.2 acres)	8.1% of RSA (6.7 acres)	10.0 of RSA (8.3 acres)	7.5% of RSA (6.2 acres)	8.8% of RSA (7.3 acres)	13.3% of RSA (11 acres)
<b>Minimize encroachment on hazardous material sites.</b>	Number of haz-mat sites impacted.	0 sites	0 sites	0 sites	0 sites	0 sites	0 sites	0 sites	0 sites
<b>Minimize impacts to cultural resources.</b>	Qualitative impact to resource.	no impacts, or diminish integrity by indirect effects such as visual or noise impacts	no impacts, or diminish integrity by indirect effects such as visual or noise impacts	alter resource or change character by a direct physical impact	alter resource or change character by a direct physical impact	alter resource or change character by a direct physical impact	alter resource or change character by a direct physical impact	alter resource or change character by a direct physical impact	alter resource or change character by a direct physical impact
<b>Minimize impacts to 4(f) parkland resources.</b>	Acres of parklands impacted. (Values do not reflect interchange reconstruction acreage impacted.)	0 acres	0 acres	1.0 acres at Chaffield	1.1 acres at Chaffield	1.9 acres at Chaffield	1.0 acres at Chaffield	1.0 acres at Chaffield	2.3 acres at Chaffield
<b>Minimize impacts to riparian habitat.</b>	Percent of riparian habitat impacted within the RSA.**	0% of RSA (0 acres)	0% of RSA (0 acres)	3.6 % of RSA (1.9 acres)	3.8 % of RSA (4.1 acres)	4.0% of RSA (4.4 acres)	3.5% of RSA (3.8 acres)	3.8% of RSA (4.1 acres)	4.0% of RSA (4.4 acres)
<b>Facial Measurement</b>									
<b>Provide optimal opportunity for multi-modal solutions. (qualitative)</b>	Degree of transit service options, rideship potential, and connectivity to BRT/Bus Rapid facilities.	No new C470 service.	Congestion levels reduce transit travel speed/efficiency.	Congestion levels reduce transit travel speed/efficiency.	More effective service opportunities in HOV Lane.	More effective service opportunities in HOV Lane.	Congestion levels reduce transit travel speed/efficiency.	Congestion levels somewhat reduce transit travel speed/efficiency.	More effective service opportunities in Express Lane.
<b>Provide transportation choices to most users. (qualitative)</b>	Mode choice from interchanges on the corridor.	Limited choices.	Not provided if service is limited or non-existent.	Not provided if service is limited or non-existent.	Greater mode choice with transit service in HOV.	Greater mode choice with transit service in HOV.	Not provided if service is limited or non-existent.	Improved mode choice if service is not limited.	Greater mode choice with transit service in Express Lane.
<b>Provide a transportation system that is consistent with regional transportation plans. (qualitative)</b>	Conformity with regional transportation plans.	Regional plans do not call for expanded C470 service.	Regional plans do not call for expanded C470 service.	Regional plans do not call for expanded C470 service.	Improved service due to infrastructure changes, not inconsistent.	Improved service due to infrastructure changes, not inconsistent.	Regional plans do not call for expanded C470 service.	Regional plans do not call for expanded C470 service.	Improved service due to infrastructure changes, not inconsistent.
<b>Safety</b>									
<b>Address existing mainline safety issues.</b>	Does the alternative meet all desirable/minimum project design criteria at selected locations?	Currently does not meet criteria.	Will not change geometry in any sub-standard areas.	Will meet all project design criteria.	Will meet all project design criteria.	Will meet all project design criteria.	Will meet all project design criteria.	Will meet all project design criteria.	Will meet all project design criteria.
<b>Address pavement condition deficiencies.</b>	Will the alternative reconstruct deficient pavement areas?	Currently contains deficient pavement areas.	Does not reconstruct deficient pavement areas.	Will reconstruct deficient pavement areas.	Will reconstruct deficient pavement areas.	Will reconstruct deficient pavement areas.	Will reconstruct deficient pavement areas.	Will reconstruct deficient pavement areas.	Will reconstruct deficient pavement areas.
<b>Summary of each alternative:</b>									
		Provides no congestion and delay relief in all lanes. No opportunity for actively or passively managing corridor reliability and LOS/D-F in all lanes during peak hours results in unpredictable travel times. No reliable mode choice as buses could not reliably run in general purpose lanes. Comparatively no costs and no environmental impacts. No funding needed.	Provides minimal congestion and delay relief in all lanes. No opportunity for actively or passively managing corridor reliability and LOS/D-F in all lanes during peak hours results in unpredictable travel times. No reliable mode choice as buses could not reliably run in general purpose lanes. Comparatively minimal costs and minimal environmental impacts. Funding not identified for design and construction.	Provides some congestion and delay relief in all lanes. No opportunity for actively or passively managing corridor reliability and LOS/D-F in all lanes during peak hours results in unpredictable travel times. No reliable mode choice as buses could not reliably run in general purpose lanes. Comparatively low costs and low environmental impacts. Funding not identified for design and construction.	Provides minimal congestion and delay relief in general purpose lanes and optimal relief in HOV lanes. Some opportunity for actively managing corridor reliability in HOV lanes and LOS B-F in all lanes during peak hours results in moderately predictable travel times. Highly reliable mode choice as buses & carpools could run in HOV lanes. Comparatively moderate costs and moderate environmental impacts. Funding not identified for design and construction.	Provides some congestion and delay relief in general purpose lanes and optimal relief in HOV lanes. Some opportunity for actively managing corridor reliability in HOV lanes and LOS B-F in all lanes during peak hours results in moderately predictable travel times. Highly reliable mode choice as buses & carpools could run in HOV lanes. Comparatively moderate costs and moderate environmental impacts. Funding not identified for design and construction.	Provides some congestion and delay relief in all lanes. Some opportunity for passively managing reliability in general purpose lanes and LOS C-D in all lanes during peak hours results in highly predictable travel times. Moderately reliable mode choice as buses could run in general purpose lanes. Comparatively moderate costs and moderate environmental impacts. Funding not identified for design and construction.	Provides optimal congestion and delay relief in all lanes. Best opportunity for passively managing reliability in general purpose lanes and LOS C-F in all lanes during peak hours results in highly predictable travel times. Moderately reliable mode choice as buses, carpools and SOVs could run in express lanes. Comparatively higher costs and higher environmental impacts. Funding for construction, operation, & maintenance could be made available through tolling.	Provides minimal congestion and delay relief in express lanes. Best opportunity for actively managing reliability in express lanes and LOS C-F in all lanes during peak hours results in highly predictable travel times. Highly reliable mode choice as buses, carpools and SOVs could run in express lanes. Comparatively higher costs and higher environmental impacts. Funding for construction, operation, & maintenance could be made available through tolling.
<b>Disposition:</b>		CARRIED FORWARD	ELIMINATED	ELIMINATED	ELIMINATED	ELIMINATED	ELIMINATED	CARRIED FORWARD	CARRIED FORWARD

**LEGEND**

○ Most Desirable      ● Least Desirable

\*Definition of RSA: Resource Study Area, as defined as a 500' buffer of mainline that relates to natural resources only.



# C-470 CORRIDOR PROJECT

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**RES**

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