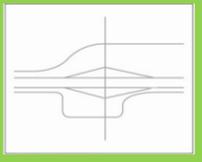
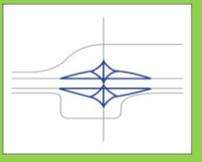
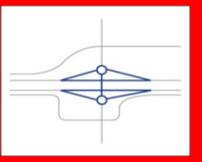
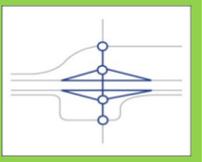
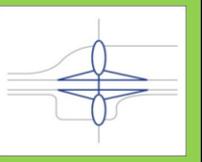
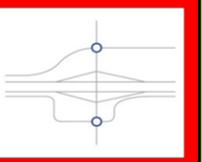
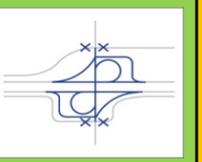
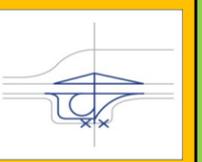
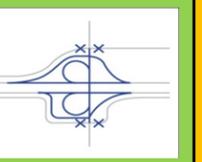
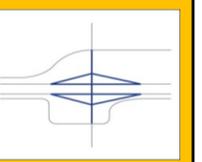


**I-70 Kipling Interchange PEL Study  
Level 1 Screening Matrix**

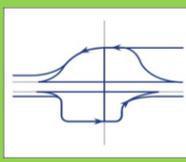
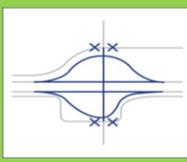
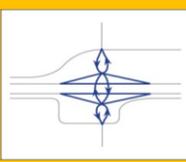
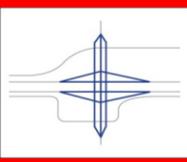
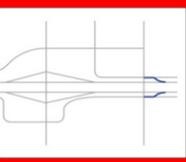
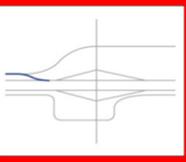
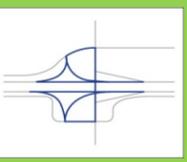
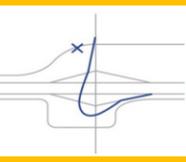
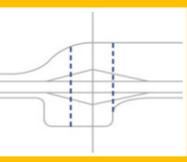
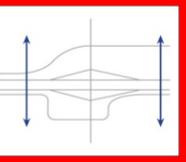
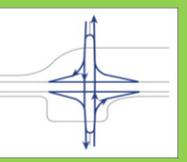


Category	Level 1 Screening Criteria	NA	1	2	3	4	5	6	7	8	9	10
		No Action 	Single Point Urban Interchange (SPUI) 	Diamond with Roundabouts at Ramps 	Diamond with Roundabouts at Ramps & Frontage Roads 	Diamond with Six-Leg Roundabout at Ramps & Frontage Roads 	Diamond with Roundabouts at Frontage Roads 	Fully Directional 	Partial Cloverleaf with Loops SW & NE Quadrants 	Partial Cloverleaf with Loop SW Quadrant 	Partial Cloverleaf with Loops SW & NW Quadrants 	Improved Tight Diamond - Added Lanes on Kipling & Ramps 
Traffic Operations	Can the alternative meet current and future traffic demands?	NO does not meet traffic demands at the interchange	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
	Does the alternative improve operations by addressing the interaction of the Kipling interchange with the frontage road intersections?	NO issues with close signal spacing on the ramp and frontage road intersections level remain	YES	NO issues created by queues from frontage road signals remain	YES roundabouts reduce queues between intersections	YES roundabouts reduce queues between intersections	NO issues created by queues from ramp signals remain	YES	YES	NO issues with close signal spacing on north side remain	YES	NO issues with close signal spacing between ramps and frontage roads remain
Safety	Does the alternative improve existing and future No Action conditions that contribute to higher than expected crash rates?	NO issues with close signal spacing on the ramp and frontage road intersections level remain	YES	NO issues created by queues from frontage road signals remain	YES	YES	NO issues created by queues from ramp signals remain	YES	YES	NO issues with close signal spacing on north side remain	YES	NO issues with close signal spacing between ramps and frontage roads remain
Multimodal Connections	Can the alternative accommodate bicycle, pedestrian, and transit connections through the interchange?	NO No change with connections through the existing interchange	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
<b>SUMMARY OF RESULTS</b>		<b>Carried Forward:</b> Baseline Comparison	<b>Carried Forward</b>	<b>Eliminated:</b> Does not address the operational and safety issues of the frontage road signals with ramp intersections	<b>Carried Forward</b>	<b>Carried Forward</b>	<b>Eliminated:</b> Does not address the operational and safety issues of the frontage road signals with ramp intersections	<b>Carried Forward</b>	<b>Carried Forward</b>	<b>Eliminated as a Stand-Alone:</b> May be carried forward as an element of another alternative	<b>Carried Forward</b>	<b>Eliminated as a Stand-Alone:</b> May be carried forward as an element of another alternative
<b>NOTES</b>			Spacing between ramps and frontage roads signals increased; Wide footprint of ramp terminals generally not pedestrian-friendly	Roundabouts generally not pedestrian-friendly; May impact ability to maintain Kipling signal progression; May have issues with more lanes on Kipling south of I-70 as shown in local plans	Roundabouts generally not pedestrian-friendly; May impact ability to maintain Kipling signal progression; May have issues with more lanes on Kipling south of I-70 as shown in local plans	Roundabouts generally not pedestrian-friendly; May impact ability to maintain Kipling signal progression; May have issues with more lanes on Kipling south of I-70 as shown in local plans	Roundabouts generally not pedestrian-friendly; May impact ability to maintain Kipling signal progression; May have issues with more lanes on Kipling south of I-70 as shown in local plans	Requires modification of frontage road intersections; New safety issues may be created with speed differential on Kipling Street	Requires modification of frontage road intersection without a signal; Loop ramps can be confusing for driver expectancy	Requires modification of south frontage road intersection without a signal; Loop ramp can be confusing for driver expectancy	Loop ramp for freeway exit movement (NW loop ramp) typically not desirable; Loop ramps can be confusing for driver expectancy	

Green = Carried Forward  
 Yellow = Eliminated as a Stand-Alone Alternative  
 Red = Eliminated

**I-70 Kipling Interchange PEL Study  
Level 1 Screening Matrix**



Category	Level 1 Screening Criteria	11	12	13	14	15	16	17	18	19	20	21
		Texas Frontage Road Diamond 	Traditional Diamond 	Double Crossover Diamond 	Three-Level Diamond 	Half Diamond to East at Garrison 	New WB Off Ramp West of Kipling 	Button Hook Ramps 	SB to EB Flyover Ramp 	Bike Path I-70 Grade Separations at Interchange 	Local Road I-70 Grade Separation at Miller and Independence 	Michigan Lefts for Ramps 
Traffic Operations	Can the alternative meet current and future traffic demands?	YES	YES	YES	YES	NO does not meet traffic demands at the interchange	NO does not meet traffic demands at the interchange	YES	YES	NO does not meet traffic demands at the interchange	NO does not meet traffic demands at the interchange	YES
	Does the alternative improve operations by addressing the interaction of the Kipling interchange with the frontage road intersections?	YES	YES	NO configuration does not improve operations with close adjacent signals	NO issues with close signal spacing on the ramp and frontage road intersections level remain	NO issues with close signal spacing between ramps and frontage roads remain	NO issues with close signal spacing between ramps and frontage roads remain	YES	NO issues with close signal spacing between ramps and frontage roads remain	NO issues with close signal spacing between ramps and frontage roads remain	NO issues with close signal spacing between ramps and frontage roads remain	YES
Safety	Does the alternative improve existing and future No Action conditions that contribute to higher than expected crash rates?	YES	YES	YES	NO issues with close signal spacing on the ramp and frontage road intersections level remain	NO issues at existing interchange configuration remain	NO issues at existing interchange configuration remain	YES	NO issues with congestion along Kipling remain	NO issues with existing interchange configuration remain	NO issues at existing interchange configuration remain	YES
Multimodal Connections	Can the alternative accommodate bicycle, pedestrian, and transit connections through the interchange?	YES	YES	YES	YES	NO No change with connections through the existing interchange	NO No change with connections through the existing interchange	YES	YES	YES	NO No change with connections through the existing interchange	YES
<b>SUMMARY OF RESULTS</b>		Carried Forward	Carried Forward	<b>Eliminated as a Stand-Alone:</b> May be carried forward as an element of another alternative	<b>Eliminated:</b> Traffic operation and safety concerns not addressed	<b>Eliminated:</b> Does not address needs at the interchange	<b>Eliminated:</b> Does not address needs at the interchange	Carried Forward	<b>Eliminated as a Stand-Alone:</b> May be carried forward as an element of another alternative	<b>Eliminated as a Stand-Alone:</b> May be carried forward as an element of another alternative	<b>Eliminated:</b> Does not address needs at the interchange	Carried Forward
<b>NOTES</b>		Frontage roads would be one-way operations at Kipling and may be two-way upstream from slip ramps; May be safety issues where frontage roads and ramps meet	Requires modification of frontage road intersection without signals	Frontage road intersections need to be modified without signals to address traffic operation issues; Crossover movements can be confusing for driver expectancy	Removing minor amount of through traffic on Kipling does not substantially reduce intersection volumes	Removing minor amount of local traffic to/from east of Kipling does not substantially reduce interchange volumes	Removing minor amount of WB I-70 traffic bound for west of Kipling does not substantially reduce interchange volumes	Button hook ramps may also be used for the north or south ramps as an element of an alternative; Button hook off ramps can be confusing for driver expectancy	Removing one movement through the interchange does not substantially reduce congestion, especially with heavy WB off ramp movements			Intersections at frontage roads will need to be relatively large intersections to accommodate u-turn movements

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**I-70 Kipling Interchange PEL Study  
Level 1 Screening Matrix**



Category	Level 1 Screening Criteria	22	23	24	25	26	27	28	29	30	31	32
		Added Turn Lanes for Ramps	Ramp Meter Modifications	EB Ramp Merge Lane Modifications	Close West Side of 49th Avenue	Remove 49th Avenue Signal (closure or RIRO)	Realign South Frontage Road Further South	Close South Frontage Road at Kipling	Widen/Improve Paths Under I-70 Bridge	Bus Pullouts	Single Roundabout Interchange	Close Driveways Between Ramps and Frontage Roads
Traffic Operations	Can the alternative meet current and future traffic demands?	YES	NO does not meet traffic demands at the interchange	NO does not meet traffic demands at the interchange	NO does not meet traffic demands at the interchange	NO does not meet traffic demands at the interchange	NO does not meet traffic demands at the interchange	NO does not meet traffic demands at the interchange	NO does not meet traffic demands at the interchange	NO does not meet traffic demands at the interchange	YES	NO does not meet traffic demands at the interchange
	Does the alternative improve operations by addressing the interaction of the Kipling interchange with the frontage road intersections?	NO issues with close signal spacing between ramps and frontage roads remain	NO issues with close signal spacing between ramps and frontage roads remain	NO issues with close signal spacing between ramps and frontage roads remain	YES	YES	YES	YES	NO issues with close signal spacing between ramps and frontage roads remain	NO issues with close signal spacing between ramps and frontage roads remain	YES	NO issues with close signal spacing between ramps and frontage roads remain
Safety	Does the alternative improve existing and future No Action conditions that contribute to higher than expected crash rates?	NO issues with close signal spacing between ramps and frontage roads remain	NO issues with close signal spacing between ramps and frontage roads remain	NO issues with close signal spacing between ramps and frontage roads remain	NO issues with close signal spacing between ramps and frontage roads remain	NO issues with congestion on Kipling and EB ramp merge remain	NO issues with congestion on Kipling and EB ramp merge remain	NO issues with congestion on Kipling and EB ramp merge remain	NO issues with close signal spacing between ramps and frontage roads remain	NO issues with close signal spacing between ramps and frontage roads remain	YES	NO issues with close signal spacing between ramps and frontage roads remain
Multimodal Connections	Can the alternative accommodate bicycle, pedestrian, and transit connections through the interchange?	YES	NO No change with connections through the existing interchange	NO No change with connections through the existing interchange	YES	YES						
<b>SUMMARY OF RESULTS</b>		<b>Eliminated as a Stand-Alone:</b> May be carried forward as an element of another alternative	<b>Eliminated as a Stand-Alone:</b> May be carried forward as an element of another alternative	<b>Eliminated as a Stand-Alone:</b> May be carried forward as an element of another alternative	<b>Eliminated as a Stand-Alone:</b> May be carried forward as an element of another alternative	<b>Eliminated as a Stand-Alone:</b> May be carried forward as an element of another alternative	<b>Eliminated as a Stand-Alone:</b> May be carried forward as an element of another alternative	<b>Eliminated as a Stand-Alone:</b> May be carried forward as an element of another alternative	<b>Eliminated as a Stand-Alone:</b> May be carried forward as an element of another alternative	<b>Eliminated as a Stand-Alone:</b> May be carried forward as an element of another alternative	<b>Carried Forward</b>	<b>Eliminated as a Stand-Alone:</b> May be carried forward as an element of another alternative
<b>NOTES</b>											Roundabouts generally not pedestrian-friendly; May have issues with more lanes on Kipling south of I-70 as shown in local plans	May also close or consolidate driveways north and/or south of the frontage roads

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 Yellow = Eliminated as a Stand-Alone Alternative  
 Red = Eliminated