

Santa Fe Screening Matrix Legend

LEGEND		Santa Fe Interchange Alternatives		
		Most Desirable	→	Least Desirable
QUANTITATIVE SCREENING ANALYSIS		○	◐	●
Congestion / Delay				
1	Optimize interchange traffic operations.	all movements LOS D or better	any movement LOS E, but no movements LOS F	any movement LOS F
2	Optimize adjacent intersection traffic operations.	all movements LOS D or better	any movement LOS E, but no movements LOS F	any movement LOS F
Reliability				
1	Reduce signalized intersections or signal phases.	eliminates 1 or more traffic signals	eliminates 1 or more traffic signal phases	requires additional traffic signals or no reduction in signals or phases
2	Accommodate higher ramp volumes at interchange.	2 or more free movements ; or best access to C-470 ramps	1 free movement	0 free movements
Implementation				
1	Minimize project costs: raw construction cost range.	\$0 M - \$44 M (high end of range)	\$45 M - \$50 M (high end of range)	\$51 M or more (high end of range)
	Minimize project costs: Right of Way acquisition cost range.	\$0 M - \$3.5 M (high end of range)	\$3.6 M - \$5.5 M (high end of range)	\$5.6 M or more (high end of range)
2	Provide a constructable solution.	no construction; or early phased elements can be constructed outside of traffic, immediately removing traffic traveling across the existing interchange	early phased elements can be constructed outside of traffic, reducing demand on signals and/or be used for the method of handling traffic in latter phases	elements must be constructed under traffic, increasing the phases for the method of handling traffic, and forcing elements to be constructed in smaller phases
3	Provide long-term phasability/implementation.	elements can be constructed early as stand alone improvements, along with capacity elements that can be easily implemented in the future	elements can be constructed early as stand alone improvements, without opportunity for additional capacity elements in the future	all interchange elements must be constructed as a whole for interchange to be considered operational
Environment				
<i>Note: Values listed are for the interchange concepts only.</i>				
1	Minimize impacts to adjacent bicycle and pedestrian trail system.	0 to 0.5 miles	0.6 to 1.0 miles	1.1 or more miles
2	Minimize noise impacts to the built environment.	no impact	1 to 5 areas above threshold	6 or more areas above threshold
3	Ensure compatibility with local land use plans.	yes	in some places	no
4	Minimize visual impacts to neighboring communities.	no impact	some impact	more impact
5	Minimize acquisition of additional Right of Way.	0 to 10 partial parcels ; 0 to 3.0 acres	11 to 15 partial parcels ; 3.1 to 5.0 acres	16 or more partial parcels ; 5.1 or more acres
6	Minimize floodplain impacts.	meets FEMA regulations	---	does not meet FEMA regulations
7	Minimize impacts to wetlands and waters of the U.S. (acres of wetland)	0 to 0.5 acres total	0.6 to 1.0 acres total	1.1 or more acres total
	Minimize impacts to wetlands and waters of the U.S. (square feet of Waters of the U.S.)	0 to 0.5 acres total	0.6 to 1.0 acres total	1.1 or more acres total
8	Minimize impacts to critical water sources that degrade surface and ground water quantity and quality.	0 to 25.0 acres	25.1 to 50.0 acres	50.1 or more acres
9	Minimize impact to potential Threatened or Endangered habitat. (acres of Threatened or Endangered species habitat)	0 to 1.0 acres	1.1 to 3.0 acres	3.1 or more acres
	Minimize impact to potential Threatened or Endangered habitat. (acres of Colorado Species of Special Concern habitat)	0 to 1.0 acres	1.1 to 3.0 acres	3.1 or more acres
10	Minimize encroachment on hazardous material sites.	0 to 2 sites with high impact	3 to 5 sites with high impact	6 or more sites with high impact
11	Minimize impacts to cultural resources. (historical, archaeological, and paleontological)	no adverse impacts, or diminish integrity by indirect effects such as visual or noise impacts	alter resource or change character by a direct physical impact	obliteration of part of resource or relocation of resource to alternative site
12	Minimize impacts to recreation and parkland resources.	0 to 1.0 acres	1.1 to 2.0 acres	2.1 or more acres
13	Minimize impacts to riparian habitat.	0 to 2.5 acres total	2.6 to 5.0 acres total	5.1 or more acres total
14	Enhance the opportunity for wildlife movement across the corridor.	increases opportunities or decreases restrictions	no additional opportunities or restrictions	decreases opportunities or increases restrictions
15	Minimize impacts to minority and low-income populations.	no impact	minimal impact	moderate impact
16	Minimize economic impacts to local businesses and residencies.	no impact	minimal impact	moderate impact
Ease of Movement				
1	Integrate multi-modal solutions: provides ease of movement for transit options / does not preclude or alter transit options considered or planned.	does not preclude multi-modal improvements	precludes multi-modal improvements minimally	precludes multi-modal improvements moderately
	Integrate multi-modal solutions: number or length of structures required to fully grade-separate trail through Santa Fe Interchange.	1 grade separation required	2 grade separations required	more than 2 grade separations required, or trail remains at grade
2	Provide a high degree of driver expectancy.	signage/vehicle maneuvers similar to existing	1 or 2 movements require advance signage	more than 2 movements require advance signage
Safety				
1	Address existing interchange safety issues.	meets AASHTO geometric criteria with minimal variances	meets AASHTO geometric criteria with moderate variances	does not meet AASHTO geometric criteria
2	Reduce conflicting vehicular movements.	eliminates 2 or more conflicting movements	eliminates 1 conflicting movement ; or much of conflicting traffic eliminated	no elimination or increases conflicting movements