

Alternatives Comparison Matrix

Conceptual Alternatives
Project Development Process Step 3

Rating Legend:

5	Best
4	Good
3	Average
2	Fair
1	Poor

Alternative	Description	Safety	Mobility			Environmental		Community			Planning Level Cost	
			Congestion Mitigation	Local Access	Regional Mobility	Air Quality	Noise Levels	Development Benefits	Context Sensitive Design	Minimized Property Impacts	Construction	Life Cycle
Alternatives Recommended for Advancement												
I-75 Mainline Alternatives												
I75-NB	No build, minor improvement, no additional capacity	1	1	3	1	1	2	1	3	5	4	3
I75-A	Four lane continuity with auxiliary lanes	2	2	3	2	2	2	3	3	4	3	3
I75-B	Five lane continuity	3	3	3	3	3	3	4	3	2	2	3
I75-C	Four lane continuity with elevated express lanes	3	4	2	4	3	1	3	1	2	1	1
Interchange Alternatives												
HOP-NB	No build, minor improvement, no additional capacity	1	1	2	2	2	3	3	3	5	5	3
HOP-A	Tight urban diamond interchange (TLDI)	4	4	3	3	3	3	3	3	3	3	2
HOP-B	Offset roundabout diamond interchange	4	4	2	3	4	1	3	3	5	3	2
I74-NB	No build, minor improvement, no additional capacity	1	1	3	1	1	2	2	3	5	5	3
I74-A	Fully directional interchange with local access	2	3	4	3	3	3	3	3	3	1	1
I74-B	Fully directional interchange with no local access	4	5	1	4	4	3	2	3	3	3	3
COL-NB	No build, minor improvement, no additional capacity	2	3	2	3	3	3	3	3	5	5	3
COL-A	Low impact improvement / full movement interchange	3	3	3	3	3	3	3	3	4	4	4
COL-B	Double roundabout diamond interchange (DRDI)	4	4	4	3	4	4	3	4	4	4	4
MIT-NB	No build, minor improvement, no additional capacity	2	1	3	3	1	2	3	3	5	5	4
MIT-A	Tight urban diamond interchange (TLDI)	4	4	3	3	3	3	3	3	5	3	3
NOR-NB	No build, minor improvement, no additional capacity	2	1	3	2	2	3	3	3	5	5	3
NOR-A	Modified interchange, additional ramp lanes	4	4	3	4	4	3	3	3	3	3	3
TOW-NB	No build, minor improvement, no additional capacity	2	2	2	2	3	3	2	3	5	5	3
TOW-A	Interchange closed	5	3	1	3	3	3	3	3	5	5	4
PAD-NB	No build, minor improvement, no additional capacity	3	3	3	3	3	3	3	4	5	5	3
PAD-A	Low impact improvement, spot improvements	3	3	3	3	3	1	3	4	5	4	3
PAD-B	Double roundabout diamond interchange (DRDI)	4	4	3	4	4	4	4	4	3	2	3
Discarded Alternatives												
I-75 Mainline Alternatives												
I75-1	Existing 4 / 3 lanes plus collector-distributor system	3	4	4	4	3	3	3	3	1	1	2
I75-2	Existing 4 / 3 lanes plus elevated express lanes	3	4	3	4	3	1	3	1	2	1	1
I75-3	Existing 4 / 3 lanes plus elevated reverse flow special designation lanes	2	2	3	1	1	1	3	1	2	1	1
I75-4	Existing 4 / 3 lanes plus elevated reverse flow lanes	3	3	3	3	3	2	3	1	2	2	2
I75-5	Four lane continuity plus collector-distributor system	3	2	4	3	3	3	3	3	1	2	3
I75-6	Four lane continuity plus frontage roads	3	3	4	3	3	3	3	3	1	1	3
I75-7	Four lane continuity plus express lanes	3	5	3	3	3	3	3	3	2	1	3
I75-8	Four lane continuity plus reverse flow lanes	3	3	3	3	2	2	3	3	2	1	2
I75-9	Four lane continuity plus elevated reverse flow lanes	3	3	3	3	3	2	3	1	2	1	1
I75-10	Four lane continuity plus elevated reverse flow special designation lanes	3	2	3	3	3	2	3	1	2	1	1
I75-11	Four lane continuity double stack plus collector-distributor system	3	5	3	4	3	1	3	1	3	1	1
I75-12	Four lane continuity plus elevated truck lanes	2	2	4	3	2	2	3	1	2	1	1
I75-13	Five lane continuity double stack	3	3	4	3	3	1	3	1	3	1	1
I75-14	Five lane continuity dual divided freeway	2	2	3	3	2	2	3	3	2	2	3
I75-15	Five lane continuity with separated truck lanes	2	1	2	2	2	2	3	3	2	2	3
I75-16	Six lane continuity with separated truck lanes	3	2	2	2	2	2	3	3	1	2	3
Interchange Alternatives												
HOP-1	Diamond with flyover loop (NSTI Alt D)	2	4	3	3	3	2	3	3	3	2	2
HOP-2	Single point urban interchange (SPUI)	2	4	3	3	3	3	3	3	3	1	2
HOP-3	Single roundabout diamond interchange (SRDI)	4	4	3	3	4	4	3	4	3	3	2
HOP-4	Double roundabout diamond interchange (DRDI)	4	4	3	3	4	4	3	4	3	2	2
HOP-5	Diamond with I-75 SB exit ramp north of I-74	4	3	3	3	3	3	2	3	2	1	2
HOP-6	Diamond with Bates Avenue ramp to I-74	4	4	3	3	3	2	3	2	2	2	2
HOP-7	Diverging diamond interchange (DDI)	4	5	3	3	4	3	3	2	3	3	2
HOP-8	Three-quadrant diamond interchange	4	4	3	3	3	3	3	3	1	2	2
I74-1	Directional ramps with Elmore Street access (NSTI Alt A)	3	2	4	3	3	3	4	3	3	1	2
I74-2	Directional ramps plus Colerain Avenue access (NSTI Alt C)	2	2	4	3	3	3	4	3	3	2	2
COL-1	Single point urban interchange (SPUI)	2	4	4	3	3	3	3	3	5	1	2
MIT-1	Double roundabout diamond interchange (DRDI)	4	4	3	3	4	4	3	3	3	3	3
MIT-2	Single roundabout diamond interchange (SRDI)	4	4	3	3	4	4	3	3	4	2	2
MIT-3	Partial cloverleaf interchange (NSTI Alt B)	3	3	3	3	3	3	3	3	1	1	2
MIT-4	Diverging diamond interchange (DDI)	4	4	3	3	4	3	3	3	3	3	3
MIT-5	Single point urban interchange (SPUI)	3	4	3	3	3	3	3	3	5	1	2
PAD-1	Diamond interchange with collector-distributor system (NSTI Alt B)	3	3	3	3	3	3	3	3	2	2	2
PAD-2	Single point urban diamond interchange (SPUI)	2	2	3	3	3	3	3	3	3	1	2

About the Matrix

The Alternatives Comparison Matrix provides a concise summary of significant differentiating factors regarding performance and cost of each alternative. The ratings are relative with mainline alternatives and interchange alternatives independent of each other, for instance, cost rating of a mainline alternative is not comparable to an interchange alternative, but only to other mainline alternatives.

Ratings Guide

Safety - A broad measure of relative safety performance of the alternative based upon such factors as interchange spacing (mainline), traffic weaving and other vehicle interactions, historical evidence, and engineering judgment.

Mobility - The operational performance of the alternative in terms of expected level of service, ease of providing local access opportunities, and promotion of traffic moving through the network. The mobility rating is subdivided into the following three categories:

Congestion Mitigation - A measure of the predicted level of service and operational efficiency of the alternative.

Local Access - Ease and convenience of local access opportunity. For mainline alternatives, this measure indicates relative convenience and spacing of service interchanges. For interchange alternatives, the rating provides an indication of whether the interchange is full or partial, or whether the alternative gives improved arterial operation.

Regional Mobility - This rating is a measure of travel ease for traffic entering and exiting the network from freeway segments. For interchanges, this measure is an indication of expected congestion on the freeway caused by poor interchange performance.

Environmental - This category is included as a broad indication of expected air quality and noise levels generated by the alternative.

Air Quality - Higher congestion and stop-n-go operation generate higher levels of emissions.

Noise Levels - Higher traffic volumes and elevated roadways increase noise levels.

Community - Impacts to communities, parks, public buildings, and private property are summarized by the following three subcategories:

Development Benefits - A measure of improved local access, increase/decrease in developable lands, and negative impacts of relocating businesses.

Context Sensitive Design - This rating indicates relative negative visual impact of the alternative, opportunity for aesthetic treatment, and how well the alternative fits the context of the site.

Minimized Property Impacts - An indication of additional right-of-way needs, impacts to non-roadway lands and public facilities.

Planning Level Cost - Relative monetary cost to build and maintain the alternative.

Construction - Includes all financial costs associated with implementing the alternative including construction, right-of-way acquisition, utility relocation, and engineering.

Life Cycle - Cost to maintain constructed infrastructure. This is a relative measure that is dependent on extent of built structures such as bridges and retaining walls.

Exhibit D

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