



Grayson County Tollway Project Evaluation Matrix for Viable Alternatives

ALTERNATIVE ALIGNMENTS									
Note: The No-Build Condition is also an alternative and will be used to compare to Build alternatives. All build alignments are subject to future refinements.									
See the notes for an explanation of the terms and basis for impacts used in this table. →	Item	Units	N1S		N2		N4W Mod	Initial Concept	Notes
			S2E Mod	S10	S2E Mod	S10	S1E	Utilizes N4W Mod from US 75 to SH 289, then S2E Mod from SH 289 to FM 121	
ENGINEERING / DESIGN FEATURES									
Alignment Length	1	miles	33.2	32.6	32.5	31.9	32.5	33.4	The linear distance between south and north termini (e.g., FM 121 to US 75) along the centerline of the alternative.
Length on Existing Parallel Roads	2	miles	17.2	13.2	15.7	11.7	2.4	17.4	The linear distance of each alternative located on existing roadways that are also parallel with the alternative.
Length on New Location	3	miles	16.0	19.4	16.8	20.2	30.1	16.0	The linear distance of each alternative not located on existing roadways (Item 1 less Item 2).
Estimated Total ROW Area	4	acres	1,454.0	1,424.5	1,409.3	1,379.8	1,412.7	1,456.3	The approximate amount of total right-of-way (ROW) area each alignment will require, calculated using a ROW width of 350 feet throughout the entire length of the alternative (i.e., length as shown in Item 1 above). The estimated total ROW area does not include ROW required at interchanges due to ramping and connections.
Area of Existing Road ROW in Proposed ROW	5	acres	553.4	516.0	488.0	450.6	122.5	497.8	The total area of all existing road ROW included within the ROW of the alternative; this includes both parallel roads and cross streets.
Estimated Net ROW Area Needed to Acquire	6	acres	900.6	908.5	921.3	929.2	1,290.2	958.5	The approximate amount of net ROW area each alignment will require, exclusive of the existing road ROW (i.e., Item 3 above minus Item 4).
SAFETY, MOBILITY & CONGESTION RELIEF									
Improves Connection to SH 289	7	Y/N	Y	Y	Y	Y	Y	Y	Does this alternative provide a connection to SH 289?
Provides Alternative Route to US 75	8	Y/N	Y	Y	Y	Y	Y	Y	Does this alternative provide an alternate route to US 75?
Provides Access to Major Cross Streets	9	Y/N	Y	Y	Y	Y	Y	Y	Does this alternative provide access to major cross streets such as FM 120, FM 996, and SH 82?
Improves Access to North Texas Regional Airport	10	Y/N	Y	Y	Y	Y	Y	Y	Does this alternative improve access to the North Texas Regional Airport?
Provides North Texas Regional Airport Airway/Highway Clearance	11	Y/N	Y	Y	Y	Y	Y	Y	Does this alternative avoid potential airway-highway clearance conflicts within the vicinity of the North Texas Regional Airport?
Improves North/South Travel Level of Service	12	Y/N	Y	Y	Y	Y	Y	Y	Does this alternative improve north/south level of service relative to US 75 and/or SH 289? If the alternative provides additional capacity that is parallel to US 75 and/or SH 289, then a "Y" is noted.
Improves Access for Emergency Service & Transit	13	Y/N	Y	Y	Y	Y	Y	Y	Does this alternative improve access for emergency services (e.g., hospitals and police/fire stations) and transit?
Allows Railroad Expansion	14	Y/N	Y	Y	Y	Y	Y	Y	Does this alternative allow railroad expansion by not running parallel to existing tracks?
Existing Railroads Crossed by ROW	15	#	1	1	2	2	2	2	Number of railroads that are crossed by each alternative.
SOCIAL AND ECONOMIC IMPACTS									
Displaced Residential Structures in ROW	16	#	7	7	6	6	9	9	The number of potential residential displacements as a result of the implementation of each alternative. Impacts of the alternatives will be refined and reduced, if possible, upon selection of a preferred route and further refinement of that alignment. Residential structures were identified using 2010 aerial photographs.
Displaced Commercial & Non-Residential Buildings in ROW	17	#	12	12	8	8	15	15	This is similar to "Displaced Residential Structures" in the evaluation process used to rate alternatives. This applies to commercial enterprises (including agricultural barns) and non-business community facilities such as places of worship. Commercial and non-commercial buildings were identified using 2010 aerial photographs.
Displaced Utility Stations	18	#	0	0	0	0	0	0	The number of known utility stations displaced by each alternative. These were identified using the Texas Commission on Environmental Quality (TCEQ) database.
Additional Residences within 500' of ROW	19	#	99	60	71	32	27	21	The number of additional homes (based on 2010 aerial photographs) that are in close proximity (i.e., within 500 feet) of the alignment's edge of ROW. This distance is expected to include all residences that could potentially be affected by traffic noise from the proposed tollway.
Property Owners within ROW	20	#	131	114	129	112	119	75	This reflects the total number of property owners (based on the 2009 Grayson County Appraisal District database) within the location of the alternative alignment's proposed ROW, excluding city, county and state owned road ROW.
Pipelines Crossed by ROW	21	#	25	25	23	23	22	2	The total number of known petroleum product pipelines (natural gas and/or oil based on the 2008 Railroad Commission [RRC] of Texas database) that the proposed alignment would cross.
Petroleum Product Wells in ROW	22	#	6	7	5	6	7	2	The total number of known petroleum product wells (based on the 2009 Texas Railroad Commission database) within the ROW.
Com. Towers/Trans. Lines in/Crossed by ROW	23	#	3	3	3	3	4	2	The total number of known communication towers (based on the 2008 Federal Communications Commission database) within the ROW, or power transmission lines crossed by the alignment's proposed ROW.
Schools, Golf Courses, Other Public Facilities	24	#	0	0	0	0	0	0	The total number of known school properties (based on the 2008 Texas Education Agency Geographic Information System [GIS] database and information from Grayson County), golf courses (based on the ESRI GIS database and online directories), and other public facilities (based on the Grayson County Appraisal District and North Central Texas Council of Governments) crossed by the alignment's proposed ROW.
HAZMAT Sites in/within 500 feet of ROW	25	#	0	0	1	1	0	0	This identifies possible impacts to known potential hazardous material sites within 500 feet of the proposed ROW. The potential hazardous material sites identified using the Environmental Protection Agency (EPA) and TCEQ's databases.
ENVIRONMENTAL IMPACTS									
Streams Crossed by ROW	26	#	35	39	32	36	42	19	The number of streams crossed by the alignment. Only major waterways shown on U.S. Geological Survey (USGS) topographic maps were counted, as this is an initial approximation of streams that are likely to fall within the jurisdiction of the U.S. Army Corps of Engineers (USACE) under Section 404 of the Clean Water Act.
ROW within 100-Year Floodplain	27	acres	59.3	69.7	59.0	69.4	106.3	40.3	The amount of ROW located within 100-year floodplains as based on Federal Emergency Management Agency Flood Insurance Rate Maps. Bridged sections of highway are more costly to construct.
NRCS-Financed Lakes in ROW	28	acres	0	0	0	0	0	0	The area affected by flood control lakes constructed by the Natural Resources Conservation Service (NRCS).
Other Open Water in ROW	29	acres	6.1	6.7	3.2	3.8	7.1	3.5	The area of bodies of open water (i.e., lakes or ponds), other than NRCS lakes, that would be included within proposed ROW.
Wetlands in ROW	30	acres	0.5	1.2	0.5	1.2	1.7	0	This provides an estimate of impacts on potential emergent wetlands as identified in U.S. Fish and Wildlife Service National Wetland Inventory Maps.
Forest in ROW	31	acres	32.9	43.1	34.7	44.9	68.1	34.9	An estimate of potential impacts to forested areas within the ROW of each alternative. Forests were identified using year 2010 aerial photography of the study area.
Park or Recreation Area in ROW	32	acres	0	0	0	0	0	0	The amount of known/mapped public parks or recreation areas within the ROW of each alternative. Public parks or recreation areas were identified using the 2006 ESRI and 1995 TNRS GIS data.
USACE Wildlife Management Area in ROW	33	acres	0	0	0	0	0	0	The amount of area within the wildlife management area surrounding Lake Texoma that would be within proposed ROW. This property is owned by the USACE.
Historic Sites in/within 500 feet of ROW	34	#	0	0	0	0	0	0	This identifies the number of listed historic sites located in or near (i.e., within 500 feet, or area of potential effects) of the proposed ROW for each alternative. The listed historic sites were identified by Ecological Communications Corporation (ECOMM).
Areas of High Probability for Archeological Sites in/within 500 Feet of ROW	35	acres	536.9	536.9	701.3	701.3	1,006.2	343.4	This identifies the acreage of known or high probability locations of archeological sites located in or near (i.e., within 500 feet) the proposed ROW for each alternative. The areas of high probability archeological sites were identified by (ECOMM).
Cemeteries in/within 500 feet of ROW	36	#	0	0	0	0	0	0	This identifies the number of known/mapped cemeteries located within or near (i.e., within 500 feet) the proposed ROW for each alternative. The known/mapped cemeteries were identified by using the Texas Historical Commission Atlas, USGS topographic maps, Grayson County's Computer-Aided Design and Drafting (CADD) data, and the TXGenWeb Cemetery data for Grayson County.
EQUITY, FINANCE, EFFICIENCY & COSTS									
Length to be Tolled	37	miles	TBD	TBD	TBD	TBD	TBD	TBD	TBD = To be determined.
Estimated Construction Costs	38	\$M	TBD	TBD	TBD	TBD	TBD	TBD	Estimated costs for each alternative in 2011 dollars. Includes agency soft and administrative costs. Also includes 30% contingency.
Estimated Right-of-Way (ROW) Costs	39	\$M	TBD	TBD	TBD	TBD	TBD	TBD	These costs estimates are based on property values obtained from county appraisal district in 2009/2010, adjusted to reflect ROW acquisition costs, relocation assistance costs, condemnation costs and contingencies. The costs would not reflect any potential donations of ROW. Costs in 2011 dollars.
Estimated Total Costs	40	\$M	TBD	TBD	TBD	TBD	TBD	TBD	Estimated Total Costs are the addition of Estimated Construction Costs and the Estimated ROW Costs.
OTHER FEATURES/IMPACTS									
Compatibility with SDMPO Regional Plan	41	*	+	+	+	+	+	++	This is a measure of the alternatives compatibility with the Sherman-Denison Metropolitan Planning Organization (SDMPO) plan for the Grayson County Tollway in Grayson County. If the alternative follows the SDMPO alignment, then "++", if not then "o".
Compatibility with Local Thoroughfare Plans	42	*	+	+	+	+	+	++	This is a measure of the alternatives compatibility with the local cities and Grayson County's plans for the Grayson County Tollway in Grayson County. If the alternative follows a local city's or Grayson County's thoroughfare plan, then "++", if very near to their thoroughfare plan, then "+"; otherwise, "o".
Ease of Future Expansion	43	*	-	-	-	-	+	-	This is a measure of the alternative's future expansion capability. If the alternative is along existing US 75 or SH 289, then the future expansion capability is somewhat restricted or more difficult and "-" is noted; if alternative is on new location, then "+".
Construction Difficulty or Disruption	44	*	-	--	-	--	O	--	This is an evaluation of the potential impacts of constructing each alternative on neighboring businesses, residential areas, and the travelling public. Construction impacts can be reduced with a well-managed sequence of work. If along existing US 75 of SH 289, then "-"; if on new location, then "--" or "O". The highest rating in this category is "No Effect, Neutral" "O".
Public Acceptance	45	*	TBD	TBD	TBD	TBD	TBD	TBD	This is a measure of the positive and negative feedback provided by the public at the June 21, 2011 public meeting.

* Legend:

Major Negative Effect	Some Negative Effect	No Effect, Neutral	Some Positive Effect	Major Positive Effect
--	-	O	+	++