



Lubbock Metropolitan Planning Organization

Working Together



Metropolitan Transportation Plan: 2032

Requested Amendments

Fiscal Constraint

&

Climate Change

DRAFT

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TAC Approved Draft: 01/05/2010

TPC Approved Draft: 01/19/2010

Final Approval: xx/xx/xxxx

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Metropolitan Transportation Plan – Financial Constraint by Category –REVISED ¹					
Category	Description	Funding Source	Statewide Mobility Program ²	25-year Projected Available ³	25-year Project Cost
1	Preventative Maint. & Rehab.	Federal Funding			50,000,000 ⁴
2	Metropolitan Area	Federal State	7,617,224	0	7,617,224
3	Urban Area (Non TMA)		0	0	0
4	Statewide Connectivity	Federal State	0	0	0
5	Congestion Mitigation/Air Quality	Federal Funding	0	0	0
6	Structure Replacement	Federal State	0	0	0
7	Metropolitan Mobility	Federal State	35,402,062	52,196,865	87,598,927
8	Safety	Federal State	0	0	0
9	Enhancements	Federal State	0	0	0
10	Supplemental	State	0	0	0
11	District Discretionary	Federal State			10,000,000 ⁵
12	Strategic Priority	Federal State	0	0	0
State	Prop 12 Funding	State	14,275,000	0	14,275,000
Local	City of Lubbock and Lubbock County	Local Funds		10,675,843 ⁶	10,675,843
Transit	Section 5307, 5309, 5316, 5317	FTA & State	6,104,585	0	6,104,585

¹ Revised to demonstrate fiscal constraint with 2011 – 2014 STIP/UTP
TAC Draft Approval 01/05/10
TPC Draft Approval 01/19/10
Final TPC Approval xx/xx/xx

² 2010 - 2020 Unified Transportation Program funding levels (UTP)

³ 2021 – 2035 Transportation Planning funding levels

⁴ Projected total available for Lubbock District based on historic projections

⁵ Projected total available based on previous project estimate

⁶ Required 20% cash match based on utilization of Cat 2 and Cat 7 allocations for “off system” projects only

LUBBOCK MPO 2032 METROPOLITAN TRANSPORTATION PLAN

PROPOSED 2007 - 2032 ROADWAY IMPROVEMENTS (REVISED)

TAC
APPROVED 1/5/2010
TPC
APPROVED 1/19/2010

MPO Proj #	TxDOT CSJ # City Proj #	Project Name	Project Limits		Description	Year of Expenditure Costs (Thousands)				YOE	YOE Cost	Balance
			From	To		2010 Construction Costs	2010 P.E.& CPS Costs	2010 R-O-W Costs	2010 Cost			
130,166,994												
MPO-001R		114th Street	Slide Road	Quaker Avenue	Widen Non Freeway (7 lanes)	\$7,560,000	\$500,000	\$0	\$8,060,000	2010	\$8,060,000	122,106,994
MPO-002R		N Quaker/LP289/Erskine	1500' SW of LP289/Quaker	1500' NE of LP289/Quaker	Reconfigure Interchange	\$26,500,000	\$2,000,000	\$1,000,000	\$29,500,000	2010	\$29,500,000	92,606,994
MPO-003R	1344-02-019	FM 1730 (Slide Road)	200 ft. N of 98th Street	1000 ft S. of FM 1585	Widen Non Freeway (7 lanes)	10,000,000	\$0	\$4,000,000	\$14,000,000	2014	\$15,757,123	76,849,871
MPO-004R	92215	Slide Road	Marshall Street	US 84 (Clovis Hwy)	Widen Non Freeway	\$0	\$1,141,000	\$0	\$1,141,000	2010	\$1,141,000	75,708,871
MPO-005R		Quaker Avenue	114th Street	FM 1585	Widen Non Freeway (7 lanes)	\$8,017,000	\$500,000	\$0	\$8,517,000	2015	\$9,873,537	65,835,334
MPO-006R		Frankford Ave	98th Street	114th Street	Widen Non Freeway (7 lanes)	\$8,439,000	\$500,000	\$0	\$8,939,000	2017	\$10,993,842	54,841,492
MPO-007R		98th Street	Milwaukee Avenue	Frankford Ave	Widen Non Freeway (7 lanes)	\$7,613,000	\$500,000	\$0	\$8,113,000	2019	\$10,585,625	44,255,867
MPO-008R	Prop 12	E 19th/Idalou Hwy.	Avenue A	U. S. 62	Rehab Existing Roadway	12,500,000	1,775,000	0	14,275,000	2010	\$14,275,000	29,980,867
MPO-009R		98th Street	University Ave	US 87	Widen Non Freeway (7 lanes)	\$11,451,000	\$1,374,000	\$30,000	\$12,855,000	2021	17,794,326	12,186,541
MPO-010R		US 62/82	2,000 ft SW of Loop 193	0.375 miles W. of Loop 289	Phase V convert to Fwy	\$0	\$2,000,000	\$0	\$2,000,000	2010	2,000,000	10,186,541
MPO-011R		Erskine	Quaker/Texas Tech Frwy.	Indiana	Widen Non Freeway (5 lanes)	\$7,144,000	\$1,553,000	\$90,000	\$8,787,000	2015	10,186,541	0
Shading indicates project not in current MTP												
		State Projects		Federal Funding (Cat 2, Cat 7, Cat 11)		105,216,151						
		City Projects		Prop 12 Funding		14,275,000						
				Local contribution 20% cash match for "on system" projects		10,675,843						
				TOTAL FUNDING		130,166,994						

**FY 2007-2032
Metropolitan Transportation Plan
Illustrative List
Revised**

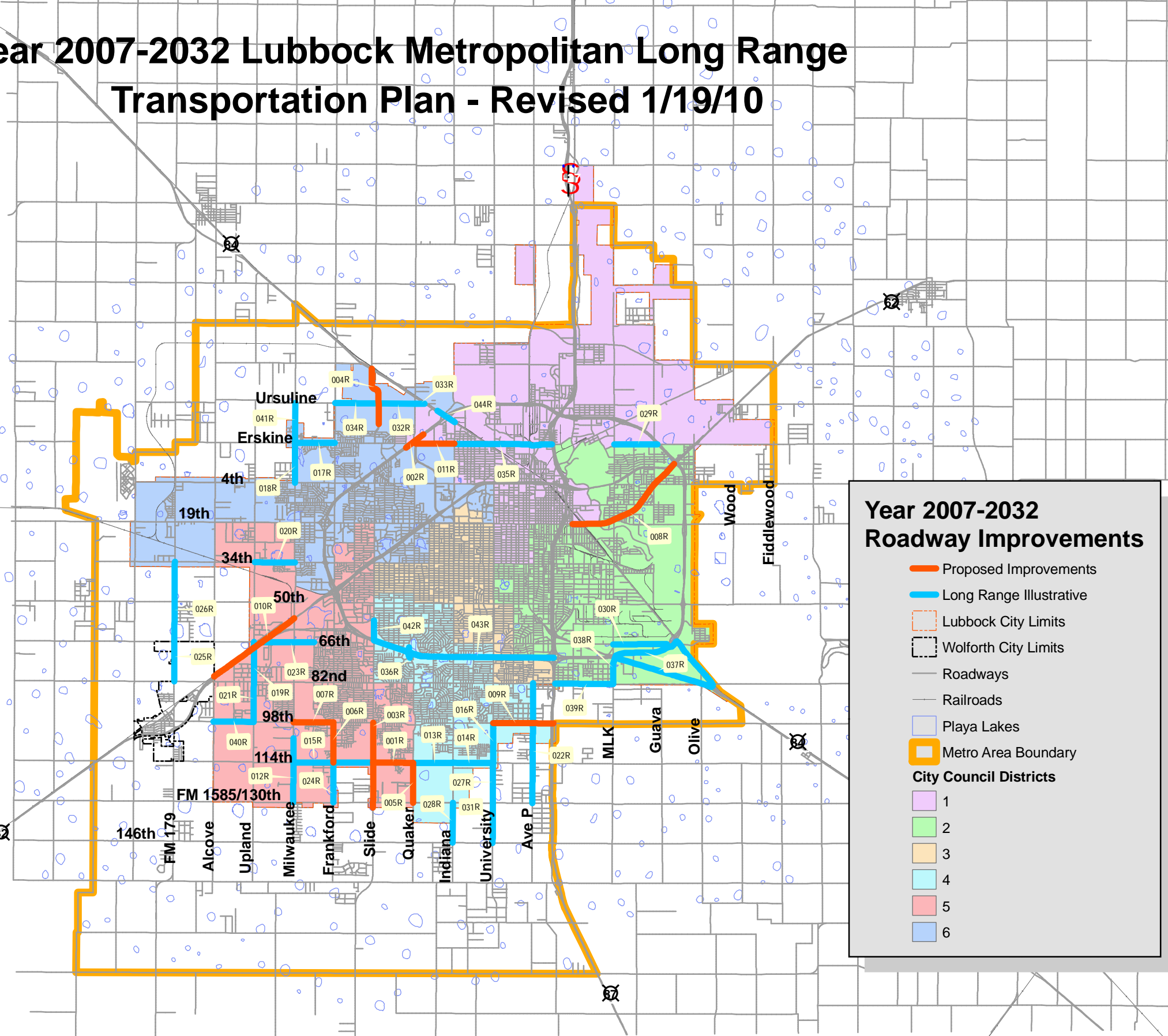
TAC 01/05/2010
TPC 02/19/2010

MPO Proj #	TxDOT CSJ # City Proj #	Project Name	Project Limits		Description	Year of Expenditure Costs (Thousands)				YOE Cost	Balance
			From	To		2010 Construction Costs	2010 P.E.& CPS Costs	2010 R-O-W Costs	2010 Cost		
MPO-012R	92158	Milwaukee Ave	104th Street	FM 1585	Widen Non Freeway (7 lanes)	\$12,241,000	\$2,661,000	\$0	\$14,902,000		
MPO-013R		114th Street	Quaker Avenue	Indiana Avenue	Widen Non Freeway (7 lanes)	\$0	\$895,000	\$15,000	\$910,000		
MPO-014R		114th Street	Indiana Avenue	University Avenue	Widen Non Freeway (7 lanes)	\$0	\$895,000	\$15,000	\$910,000		
MPO-015R		114th Street	Slide Road	Milwaukee Ave	Widen Non Freeway (7 lanes)	\$0	\$895,000	\$15,000	\$910,000		
MPO-016R		University Ave	98th Street	114th Street	Widen Non Freeway (7 lanes)	\$8,439,000	\$1,012,000	\$180,000	\$9,631,000		
MPO-017R		Erskine Street	Milwaukee Avenue	Frankford Ave	Widen Non Freeway (7 lanes)	\$0	\$990,000	\$0	\$990,000		
MPO-018R		Milwaukee Ave	4th Street	Erskine Street	Widen Non Freeway (7 lanes)	\$7,947,000	\$953,000	\$52,000	\$8,952,000		
MPO-019R		Upland Ave	66th Street	82nd Street	Widen Non Freeway (7 lanes)	\$8,379,000	\$981,000	\$740,000	\$10,100,000		
MPO-020R		34th Street	Milwaukee Avenue	Upland	Widen Non Freeway (7 lanes)	\$7,838,000	\$940,000	\$30,000	\$8,808,000		
MPO-021R		Upland Ave	82nd Street	98th Street	Widen Non Freeway (7 lanes)	\$7,405,000	\$958,000	\$740,000	\$9,103,000		
MPO-022R		Avenue P	82nd Street	FM 1585	Widen Non Freeway (5 lanes)	\$10,095,000	\$2,085,000	\$540,000	\$12,720,000		
MPO-023R		66th Street	Iola Avenue	US 62/82	Collector (4 lanes)	\$1,748,000	\$380,000	\$360,000	\$2,488,000		
MPO-024R		Frankford Ave	114th Street	FM 1585	Widen Non Freeway (7 lanes)	\$8,017,000	\$1,743,000	\$120,000	\$9,880,000		
MPO-025R		FM 179	66th Street	Donald Preston Dr	Widen Non Freeway (5 lanes)						
MPO-026R		FM 179	66th Street	34th Street	Widen Non Freeway (5 lanes)						
MPO-027R		University Ave	114th Street	FM 1585	Widen Non Freeway (7 lanes)	\$8,435,000	\$965,000	\$1,100,000	\$10,500,000		
MPO-028R		Indiana Ave	FM 1585	146th Street	Widen Non Freeway (7 lanes)	\$9,611,000	\$1,200,000	\$1,100,000	\$11,911,000		
MPO-029R		Erskine Street	MLK Avenue	Loop 289	Collector (4 lanes)	\$2,780,000	\$695,000	\$150,000	\$3,625,000		
MPO-030R		66th Street	MLK Avenue	E. Loop 289	Collector (4 lanes)	\$3,982,000	\$843,000	\$560,000	\$5,385,000		
MPO-031R		University Ave	FM1585	146th Street	Widen Non Freeway (7 lanes)	\$9,611,000	\$1,200,000	\$1,100,000	\$11,911,000		
MPO-032R		Ursuline Street	Slide Road	Quaker Ave	Widen Non Freeway (7 lanes)	\$7,881,000	\$933,000	\$0	\$8,814,000		
MPO-033R		Ursuline Street	Quaker Avenue	US 84	Widen Non Freeway (5 lanes)	\$1,637,000	\$298,000	\$280,000	\$2,215,000		
MPO-034R		Ursuline Street	Frankford Avenue	Slide Road	Widen Non Freeway (7 lanes)	\$8,221,000	\$1,787,000		\$10,008,000		
MPO-035R		Erskine Street	University Avenue	IH - 27	Widen Non Freeway (5 lanes)	\$8,332,000	\$1,811,000	\$210,000	\$10,353,000		
MPO-036R		Quaker Ave & Loop 289	500 ft Aprch. N. Quaker Ave	500 ft Aprch. S. Quaker Ave	Add through lanes at intersection	\$354,000	\$63,000	\$190,000	\$607,000		
MPO-037R		US 84	Loop 289/Spur 331/US 84	US 84/FM3020	Reroute SE portion/w interchg						
MPO-038R		MLK Avenue	US 84	82nd Street	Widen Non Freeway (7 lanes)	\$5,175,000	\$1,125,000	\$240,000	\$6,540,000		
MPO-039R		82nd Street	US 87	MLK Avenue	Widen Non Freeway (7 lanes)	\$6,406,000	\$1,393,000	\$1,110,000	\$8,909,000		
MPO-040R		98th Street	Alcove Avenue	Upland Avenue	Widen Non Freeway (7 lanes)	\$7,395,000	\$1,564,000	\$180,000	\$9,139,000		
MPO-041R		Milwaukee Ave	Erskine Street	Ursuline Street	Widen Non Freeway (7 lanes)	\$7,492,000	\$1,631,000	\$180,000	\$9,303,000		
MPO-042R		Slide Road	57th Street	Loop 289	Widen Non Freeway (7 lanes)	\$4,542,000	\$545,000	\$10,000	\$5,097,000		
MPO-043R	0783-02-082	Loop 289	FM1730	IH 27	Miscellaneous Construction						
MPO-044R		Loop 289	Interchange NW US84&289	In City of Lubbock	Interchange						

State Projects
City Projects
County Projects
City/County Projects

Year 2007-2032 Lubbock Metropolitan Long Range Transportation Plan - Revised 1/19/10

MPO ID	2007-2032 Roadway Projects – Revised 1/19/10
001R	114 th St from Slide Rd to Quaker Ave
002R	N Quaker/LP 289/Erskine 1500' SW of LP 289/Quaker to 1500' NE of LP 289/Quaker
003R	FM 1730 (Slide) from 200' N of 98 th St to 1000' S of FM 1585
004R	Slide Rd from Marshall St to US 84
005R	Quaker Ave from 114 th St to FM 1585
006R	Frankford Ave from 98 th St to 114 th St
007R	98 th St from Milwaukee to Frankford Ave
008R	E 19 th /Idalou Hwy from Ave A to US 62
009R	98 th St from University Ave to US 87
010R	US 62/82 2000' SW of Loop 193 to .375 mi W of LP 289
011R	Erskine from Quaker/TT Pkwy to Indiana
Illustrative Projects List	
012R	Milwaukee from 104 th St to FM 1585
013R	114 th St from Quaker Ave to Indiana Ave
014R	114 th St from Indiana Ave to University Ave
015R	114 th St from Slide Rd to Milwaukee Ave
016R	University Ave from 98 th St to 114 th St
017R	Erskine from Milwaukee Ave to Frankford Ave
018R	Milwaukee Ave from 4 th St to Erskine St
019R	Upland Ave from 66 th St to 82 nd St
020R	34 th St from Milwaukee Ave to Upland Ave
021R	Upland Ave from 82 nd St to 98 th St
022R	Ave P from 82 nd St to FM 1585
023R	66 th St from Lola Ave to US 62/82
024R	Frankford Ave from 114 th St to FM 1585
025R	FM 179 from 66 th St to Donald Preston Dr
026R	FM 179 from 34 th to 66 th St
027R	University Ave from 114 th St to FM 1585
028R	Indiana Ave from FM 1585 to 146 th St
029R	Erskine St from MLK Ave to Loop 289
030R	66 th St from MLK Ave to E Loop 289
031R	University Ave from FM 1585 to 146 th St
032R	Ursuline St from Slide Rd to Quaker Ave
033R	Ursuline St from Quaker Ave to US 84
034R	Ursuline St from Frankford Ave to Slide Rd
035R	Erskine St from University Ave to IH-27
036R	Quaker/LP 289 from 500' approach N of Quaker to 500' approach S of Quaker
037R	US 84 from LP 289/Spur 331/US 84 to US 84/FM 3020
038R	MLK Ave from US 84 to 82 nd St
039R	82 nd St from US 87 to MLK Ave
040R	98 th St from Alcove Ave to Upland Ave
041R	Milwaukee Ave from Erskine St to Ursuline St
042R	Slide Rd from 57 th St to Loop 289
043R	Loop 289 from FM 1730 to IH-27
044R	Loop 289 NW US 84/LP 289 intx



**Year 2007-2032
Roadway Improvements**

- Proposed Improvements
- Long Range Illustrative
- Lubbock City Limits
- Wolforth City Limits
- Roadways
- Railroads
- Playa Lakes
- Metro Area Boundary

City Council Districts

- 1
- 2
- 3
- 4
- 5
- 6



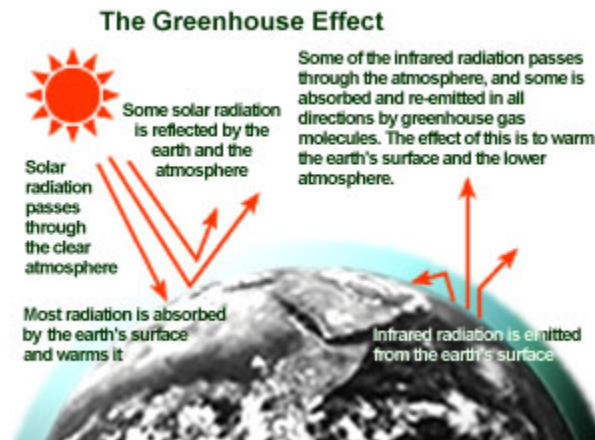
Climate Change

Introduction:

There is some scientific agreement that the earth is experiencing a warming trend and that human-induced atmospheric Green House Gases (GHGs) may be linked to this trend. In the United States, transportation is the second largest source of GHGs after electrical generation. Within the transportation sector, cars and trucks account for the majority of emissions. The issue, currently and into the foreseeable future, is that more GHGs are being added into the atmosphere. The additional GHGs are causing more heat to be trapped and the earth's surface to warm even more.

The Green House Gas effect, as shown in the following Exhibit, is a natural process by which GHGs trap heat from the sun. GHGs consist of carbon dioxide (CO₂), methane, nitrous oxide, water vapor and ozone.

Exhibit



Source: U.S. Department of State (1992)

FHWA has published that “The broad geographic scope and time scale of the planning process makes it an appropriate place to consider GHG emissions and the effects of climate change.” Currently, the U.S. government has not adopted a specific GHG reduction goal, though in 2008, representatives from several federal agencies met to discuss opportunities to reduce GHGs from transportation sources. The agencies formed an interagency working group that continues meeting monthly to identify interagency activities that result in reduced growth in vehicle miles of travel (VMT) for cars and trucks. FHWA is coordinating policies, programs, and funding related to transportation, land use, and climate change. The coordination of policy, program and funds can best be described as an incremental approach to reduction of GHGs.

Mitigation Efforts:

Approximately 33% of total GHGs in the United States come from transportation activities; 72% of those GHG emissions are generated by road use, according to EPA. FHWA identifies effective strategies to reduce GHGs. LMPO staff grouped the reduction strategies into 3 groups. These groupings have nothing to do with degree of importance or cost. They were grouped to aid in ease of use and because of their similarities in outcome:

- | | |
|--|---|
| Group 1
Technology Strategies { | <ul style="list-style-type: none">· Increased vehicle efficiency· Reduce carbon content of fuels· Improved vehicle operations |
| Group 2
Planning Strategies { | <ul style="list-style-type: none">· Reduce Vehicle Miles of Travel (VMT)· Land Use· Transportation Planning Adaption· Decision making approaches |
| Group 3
Dynamic Strategies { | <ul style="list-style-type: none">· Climate change integration into regional dynamics· Risk Assessment approach· Scenario Planning |

Group 1 Technology Strategies

Increasing vehicle efficiency, reducing carbon content of fuels, and improving vehicle operations involves improvements in the technology of automobile manufacture. These technological improvements in vehicles occur on a national level and are driven by factors transpiring outside the confines of the Lubbock Metropolitan Area. Improvements to technology in vehicles occur because of free-market competition between auto manufacturers, customer preferences, and threats of intervention from federal policy makers. LMPO recommends that its participating government agencies utilize clean-technology vehicles whenever and wherever possible.

For example, in November, 2009, the City of Lubbock's public transportation service, Citibus, took advantage of Federal Stimulus money, two State of Texas grants, and a portion of Federal Transportation Administration funding to purchase 6 eco-friendly Hybrid Electric buses. This purchase was an initial step in changing the entire Citibus fleet to electric hybrid buses.

The 6 hybrid buses are an example of improvements in vehicular technology. The hybrid's electric drive transmission regenerates electricity as the driver slows the bus down in drive mode. The hybrid buses consume approximately 40% less fuel than existing buses, while providing the same capacity for passenger service.

Citibus' long-term goal is to have an entire fleet of hybrid buses. A citywide fleet of hybrid buses will reduce GHG emissions and improve the Lubbock Metropolitan Area's air quality. LMPO will be analyzing any data obtained from hybrid bus use and reporting upon the progress of this long-term, incremental program in future documents.

Technological innovations have the potential to significantly change GHG emissions produced by the transportation sector (currently, 33% of total). Should the price of plug-in electric automobiles become more affordable to commuters, large declines in GHG emissions will occur.

Group 2 Planning Strategies

Group 2 Strategies which include reduction of Vehicle Miles of Travel (VMT), Land Use, Transportation Planning Adaption, and Decision making approaches are being implemented to varying degrees in the Lubbock Metropolitan Area with the following:

- Reducing Vehicle Miles of Travel (VMT) can be achieved by increasing the usage of alternative modes of transportation such as walking, biking, carpooling, public transportation. LMPO seeks to aid in the reduction of VMT by participating in the following:
 - Lubbock Metropolitan Pedestrian Facilities Planning
 - Bicycle Facility Planning
 - Providing rideshare information to the public, and
 - Participation in Citibus transit planning studies
- Regarding Land Use activities, livability and sustainability are a part of the Lubbock Metropolitan Area's long-range economic development goals. Current activities include:
 - City of Lubbock, through Citibus, provides public transportation by fixed routes circulating throughout the City.
 - City of Lubbock maintains approximately 53 miles of signed bike routes, 7 miles of bike lanes, and 4.5 miles of paved bike trails.
 - City of Lubbock published a Downtown Redevelopment Plan in 2007 for the Central Business District (CBD). The Plan provides guidelines for CBD town home and condominium housing development which

features ground floor retail, designates an area for a destination retail district, and designates areas for CBD recreational parks.

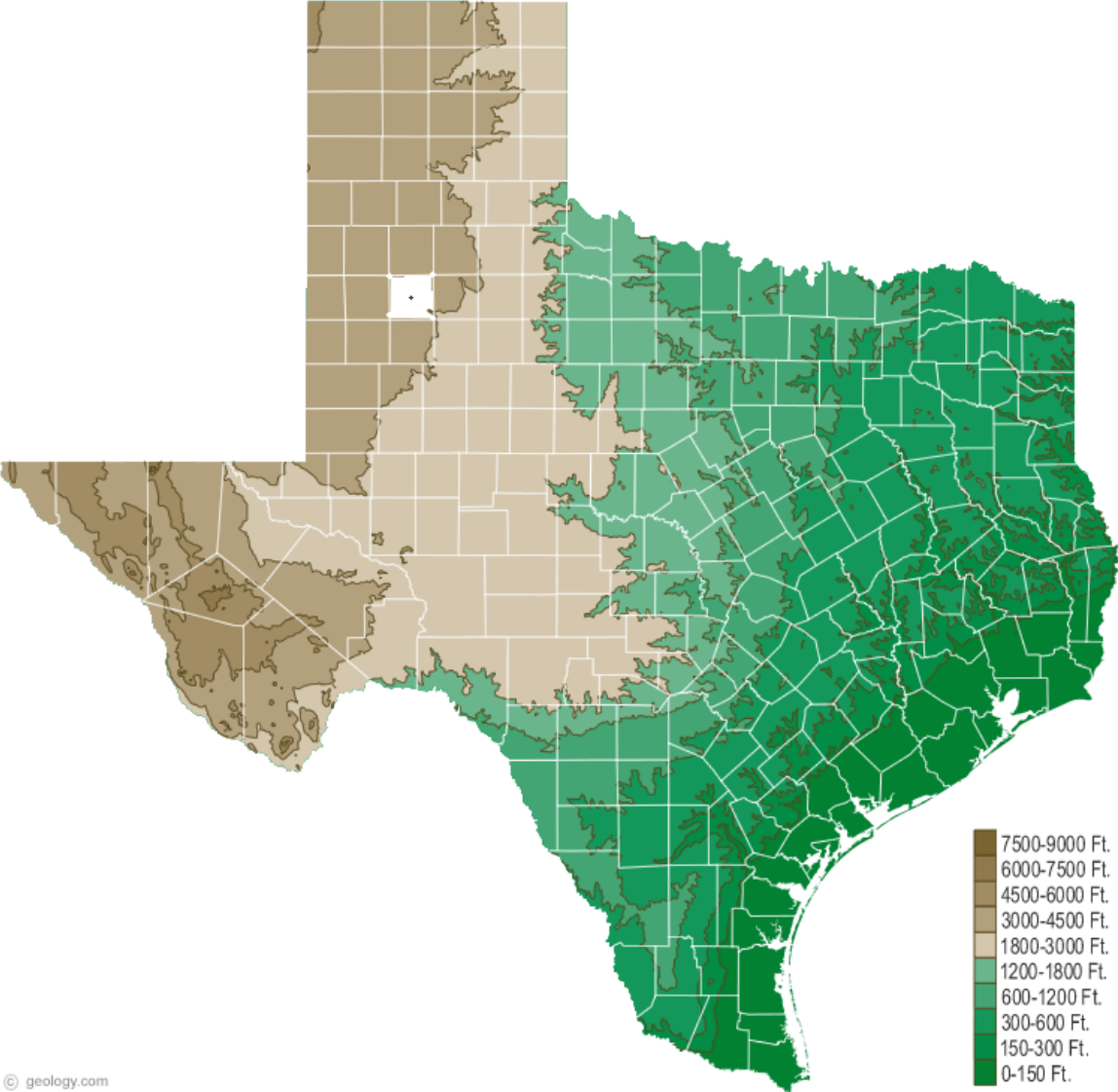
- Transportation Plan Adaption activities include:
 - LMPO maintains a long-range Metropolitan Transportation Plan (MTP).
 - The City of Lubbock maintains a citywide Transportation Plan that is consistent with LMPO's MTP,
 - The City of Wolfforth maintains a Comprehensive Plan that contains a transportation element that is consistent with LMPO's MTP, and
 - Lubbock County has transportation development guidelines that are consistent with the LMPO MTP.

- Decision Making approaches have recently included:
 - The City of Lubbock utilized a local financing option to accelerate the development of high priority corridor development (Marsha Sharp Freeway Phase IV and Northwest Passage Mobility Projects). The financing leveraged state funds (approx. \$47.7 million) with American Resource and Recovery Act funds combined with local funds. Because savings were made on the Phase IV project and additional ARRA funds became available at the State level, improvements to North West and West Loop 289 have been accelerated.
 - Through a combination of local and LMPO study funds, the long-range Outer Loop/Corridor Study continues despite reduced study funding from State of Texas sources.
 - LMPO staff participates in Lubbock Chamber of Commerce Transportation Committee, Citibus Policy Committee, Texas Metropolitan Planning Organization (TEMPO), LMPO Transportation Policy Committee and LMPO Technical Advisory Committee Meetings.

Group 3 Dynamic Strategies

- Climate change integration into regional dynamics can be achieved by analyzing local procedures for natural disasters and adapting steps that mitigate the results of more frequent and violent weather conditions, such as floods, droughts, mudslides, sandstorms, and rising seas predicted by some global warming forecasters. Due to the Lubbock Metropolitan Area's location and elevation (see Exhibit), floods, mudslides and rising seas would produce minimal impact. Droughts and sandstorms are typical for West Texas. Flooding is addressed in Chapter 4 of this document.

Exhibit



© geology.com

Source: geology.com

- Risk Assessment Approach would seek out uncertainties in the Lubbock Metropolitan Area's natural disaster, flooding, or other emergency programs and offer corrective measures.
- Scenario Planning describes and analyzes several different forecasts simultaneously. It works on a system-wide scale and focuses on items surrounding the target issue. TxDOT and LMPO are currently using scenario planning in the development of the Outer Loop/Corridor Study. Various alternatives are being presented to the public regarding this major study. LMPO uses the following tools when analyzing various scenarios:
 - Travel Demand Model
 - Geographic Information System (GIS)
 - LMPO is currently analyzing a potential land-use modeling tool to provide land use forecasts for Lubbock County
 - LMPO coordinates with City, County, State and Federal agencies with regard to its GIS activities

Conclusion:

Climate model equations are approximations of physical processes that occur in the atmosphere. Some approximations are accurate and some are crude. Climate modelers struggle with cloud formation and dissipation and the impact it has on how much sunlight the climate system absorbs. Some long-term weather forecasts have predicted an increase in temperature of 2° to 4° Celsius. Other reports indicate a cooling trend of -.5° C.

The science of GHGs is not settled, at time of publication of this document. The United Nations Climate Conference meeting for December of 2009 in Copenhagen, Denmark resolved nothing regarding GHG emissions. The Environmental Protection Agency recently promulgated that carbon is a pollutant. The implications of this action are unknown, at this time.