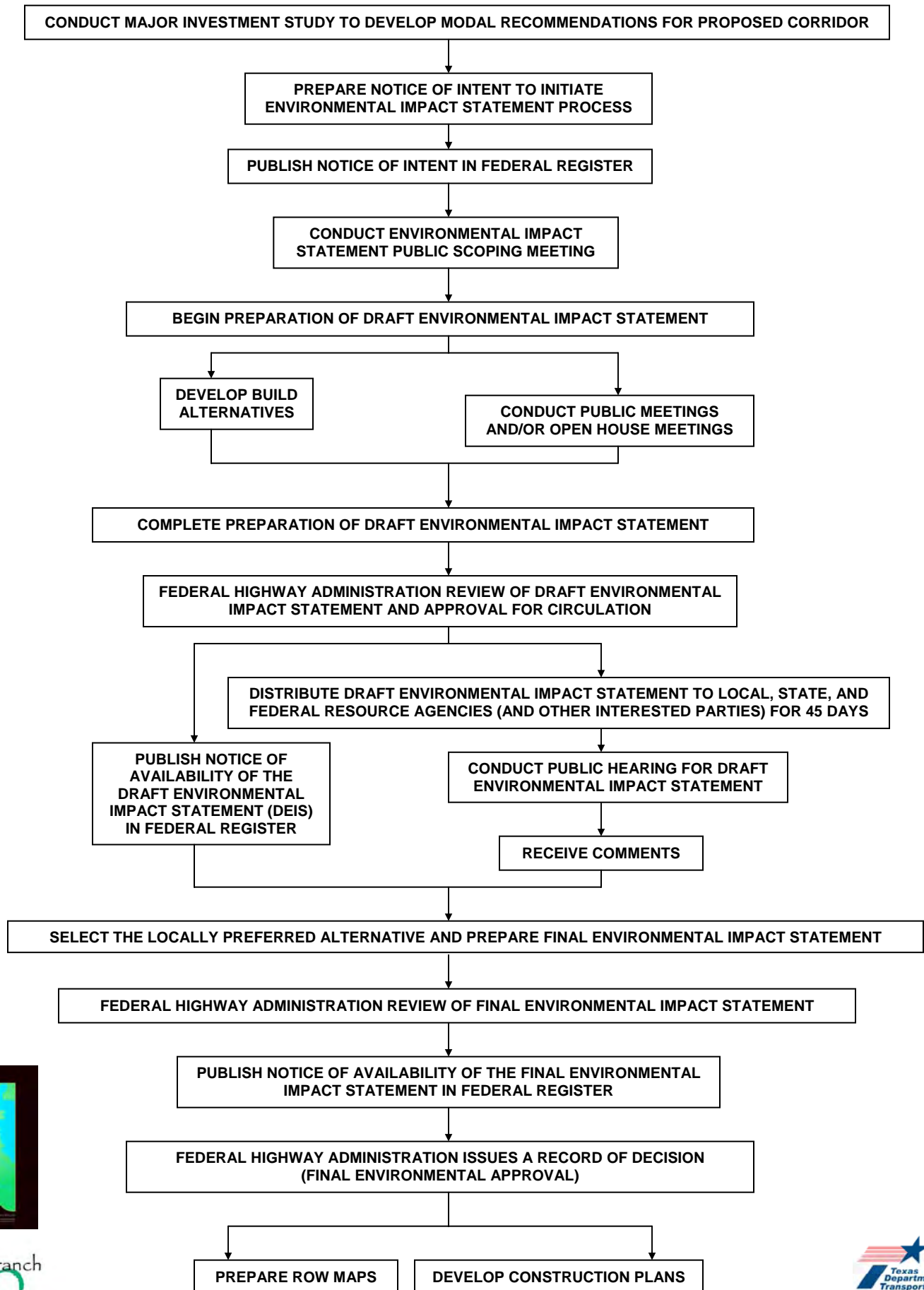


# ENVIRONMENTAL IMPACT STATEMENT PROCESS



The East Branch  
190



# NATIONAL ENVIRONMENTAL POLICY ACT (NEPA)

## Goals of the NEPA Process:

### Federal actions should reflect concern for, and responsibility choices that:

- Preserve communities and the natural environment
- Avoid or address disproportionate impacts to minority and low-income populations;
- Are coordinated with other Federal reviews and approvals, and state, local and tribal government actions;
- Federal transportation and environmental reviews are carried out in a timely fashion;
- Decisions are made through a collaborative process involving Federal, state and local governments and agencies, interest groups, businesses and individuals; and
- Public funds are used to achieve the maximum benefit from the financial investment.

### The NEPA process must be consistent with laws, regulations, executive orders, and amendments such as:

- Title VI of the Civil Rights Act of 1964
- Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1980
- Americans With Disabilities Act
- Executive Order 12898, Environmental Justice
- Clean Air Act and Amendments
- Farmland Protection Policy Act
- Resources Conservation and Recovery Act
- Comprehensive Environmental Resource, Compensation and Liability Act of 1980
- Emergency Planning and Community Right to Know Act of 1986
- Executive Order 13166 on Limited English Proficiency
- Migratory Bird Treaty Act
- National Flood Insurance Act
- National Historic Preservation Act of 1966
- Solid Waste Disposal Act
- Archaeological and Historic Preservation Act
- Archaeological Resources Protection Act
- Federal Water Pollution Act
- Wild and Scenic Rivers Act
- Environmental Protection Agency and Federal Highway Administration regulations and policies
- Rivers and Harbors Act of 1899
- Executive Order 13112 on Invasive Species and the Executive Memorandum on Beneficial Landscaping

### In order to meet the goals of the NEPA process and comply with laws, regulations and policies, projects need to be carried out in such a way that they:

1. **Avoid** adverse (negative) impacts.
2. Where adverse impacts cannot be avoided, they should be **minimized**.
3. Unavoidable adverse impacts should be **mitigated**.
4. Environmental **enhancements** should be developed as appropriate.
5. Mitigation and enhancement measures are eligible for Federal funding.

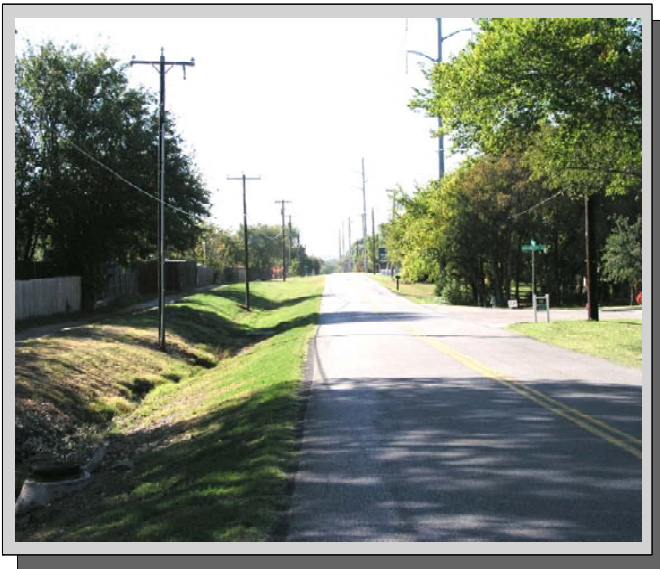
“Avoid, Minimize, Mitigate, Enhance”

# ENVIRONMENTAL PROCESS/NEPA

- Will Discusses the Social, Economic And Environmental Effects of the Proposed Alternatives
- EIS Topics:

- Project History
- Alternative Development
- Land Use Impacts
- Farmland Impacts
- Social Impacts (including Title VI and Environmental Justice)
- Relocation Impacts
- Economic Impacts
- Joint Development
- Considerations Relating to Pedestrian and Bicyclists
- Air Quality Impacts
- Noise Impacts
- Water Quality Impacts

- Water Body Modification and Wildlife Impacts
- Threatened and Endangered Species
- Historic and Archaeological Preservation
- Parklands [Section 4(f) and 6(f)]
- Hazardous Waste and Brownfield Sites
- Visual and Aesthetic Impacts
- Energy
- Construction Impacts
- Relationship of Local Short-Term Uses vs. Long-Term Productivity
- Irreversible and Irretrievable Commitment of Resources
- Public and Agency Involvement

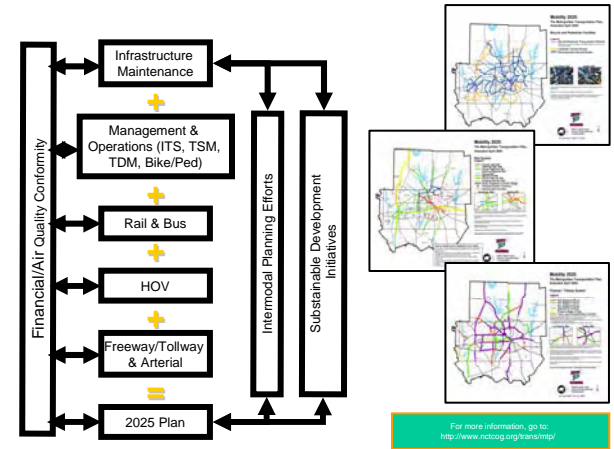


# THE TRANSPORTATION PLANNING PROCESS



## Step 1 & 2 include:

- The Transportation Needs of the Dallas-Fort Worth Area are Identifying through the Development of a Metropolitan Transportation Plan (MTP)
  - MTP is required for the region to receive federal transportation funding
  - MTP is financially-constrained
  - Effort is led by the North Central Texas Council of Governments (NCTCOG)
  - Local governments, transit agencies, tolling authorities & TxDOT are involved in the process



## Step 3 Elements (where we are today) include:

- Development of Alternatives
- Travel Demand Studies & Analysis
- Environmental Studies & Documentation
- Public Involvement
- Agency Involvement
- Preliminary Engineering

# SH 190 (THE EAST BRANCH) TRANSPORTATION NEEDS & ISSUES

- Adding Capacity to Serve Transportation Demand for 2030 & Beyond Based on

## Increasing Population...

| City/Town     | 1970      | 1980      | 1990      | 2000      | Estimated 2030 | Change from 1970 to 2000 | Change from 2000 to 2030 |
|---------------|-----------|-----------|-----------|-----------|----------------|--------------------------|--------------------------|
| Garland       | 81,437    | 138,857   | 180,650   | 215,768   | 241,767        | 134,331<br>165%          | 25,999<br>12%            |
| Sunnyvale     | 995       | 1,404     | 2,228     | 2,693     | 11,554         | 1,698<br>171%            | 8,861<br>329%            |
| Mesquite      | 55,131    | 67,053    | 101,484   | 124,523   | 157,259        | 69,392<br>126%           | 32,736<br>26%            |
| Heath         | 520       | 1,459     | 2,108     | 4,149     | 17,669         | 3,629<br>698%            | 13,520<br>326%           |
| Balch Springs | 10,464    | 13,746    | 17,406    | 19,375    | 34,247         | 8,911<br>85%             | 14,872<br>77%            |
| Forney        | 1,745     | 2,483     | 4,070     | 5,588     | 43,825         | 3,843<br>220%            | 38,237<br>684%           |
| Rockwall      | 3,121     | 5,939     | 10,486    | 17,976    | 53,265         | 14,855<br>476%           | 35,289<br>196%           |
| Dallas County | 1,327,321 | 1,556,390 | 1,852,810 | 2,218,372 | 2,817,191      | 891,051<br>67%           | 598,819<br>27%           |

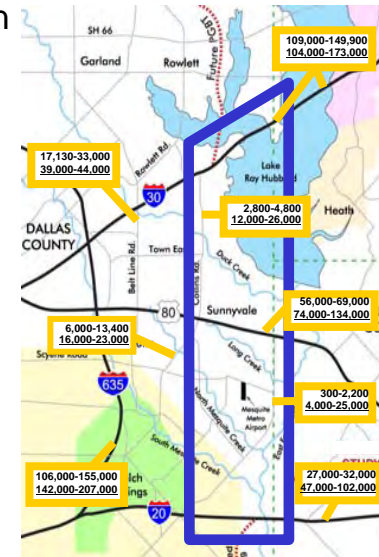
Source: 1970 through 2000 data from US Census Bureau; Projected 2030 data from the North Central Texas Council of Governments.

## Increasing Traffic...

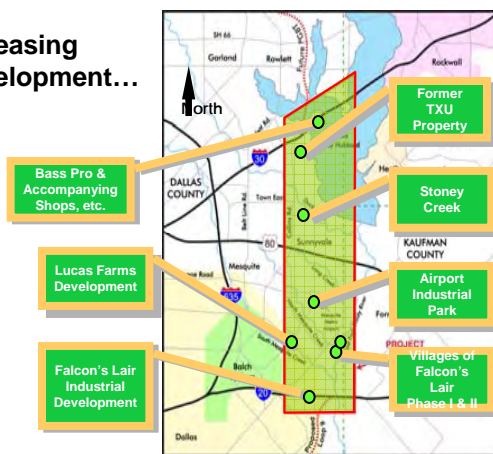
### Daily Traffic Volumes

XX,XXX Existing Traffic Counts\*  
XX,XXX 2030 SH 190 No Build

**Notes:**  
\* Arterial street volumes based on 1995, 1996 or 1999 traffic counts compiled by NCTCOG. Freeway volumes based on 2003 TxDOT traffic counts.



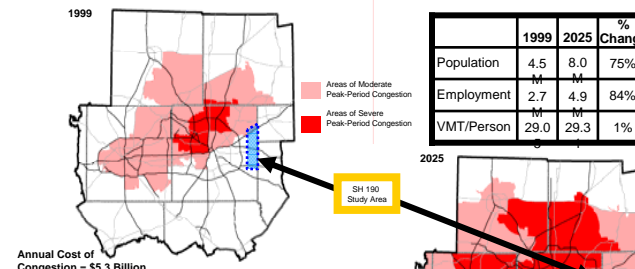
## Increasing Development...



## Increasing Congestion...

### Mobility 2025: The Metropolitan Transportation Plan, Amended April 2005

#### REGIONAL CONGESTION LEVELS



Annual Cost of Congestion = \$5.3 Billion

|                             | 1999   | 2025   | Change |
|-----------------------------|--------|--------|--------|
| Vehicle Miles Traveled      | 125 M  | 233 M  | 86%    |
| Roadway Capacity            | 23.2 M | 34.8 M | 50%    |
| Total Delay (Vehicle Hours) | 1.3 M  | 2.8 M  | 115%   |
| % Roadways Congested        | 38%    | 53%    | 39%    |

Annual Cost of Congestion = \$11.5 Billion

# AIR QUALITY

## Primary Federal Law (s)

- **1990 Clean Air Act Amendments** – This act established specific criteria which must be met for air quality nonattainment areas which criteria are based on the severity of the air pollution problem. The act includes specific timetables for implementing mobile source emission control strategies; requirements for meeting mobile source emission reduction goals; the development and implementation of State Implementation Plans (SIPs) in order to meet the NAAQS (National Ambient Air Quality Standards); and requirements for the EPA to sanction all or part of a state. The previous Clean Air Act and amendments (CAAA) failed to give EPA the authority to impose sanctions. Sanctions are defined as stricter industrial controls and the withholding of Federal highway funds.

**Pollutant Sources** – The source of air pollutants are divided into five major types. The percentage each contributes to air pollution depends on the region, topography, and meteorological conditions.

| Source(s)  | Type            |
|--|-----------------|
| Trees, vegetation  | Biogenics       |
| Industrial emissions                                     | Point Source    |
| Dry cleaners, print shops, car repair shops, lawn mowers | Area Source     |
| Construction equipment, boats, trains                    | Off-Road Mobile |
| Cars, trucks, buses                                      | On-Road Mobile  |

## Air Quality Analyses for Roadway Projects

Two types of air quality analyses will be included in the EIS:

- A project level analysis will determine the Carbon Monoxide (CO) impacts of proposed transportation projects (i.e., will the project affect local air quality such that CO exceeds the NAAQS) using computer models. The worst-case will be analyzed to demonstrate that standards will not be exceeded under the worst possible conditions. This is created by using peak hour traffic volumes in the year 2030, placing the receivers on the right-of-way line, and assuming very stable atmospheric conditions.
- A regional level analysis for Volatile Organic Compounds (VOCs) and Nitrogen Oxide (NOx) is required because the Dallas-Fort Worth region is classified as nonattainment for Ozone. Both VOCs and NOx are precursors to the formation of Ozone. This analysis is to verify that transportation projects using federal money are consistent with objectives of the air quality planning process and the SIP. A qualitative and quantitative analyses was performed for *Mobility 2025: The Metropolitan Transportation Plan – Amended April 2005* by North Central Texas Council of Governments (NCTCOG). This Plan is constrained to available financial resources and has been determined to be in conformity with the SIP for air quality based on requirements in the CAAA.

**National Ambient Air Quality Standards** – These are the maximum allowable concentration limits for pollutants established by the EPA to protect public.

| Pollutant        | Primary Standard (Public Health) |                |   | Secondary Standard (Public Welfare) |                |                         |
|------------------|----------------------------------|----------------|---|-------------------------------------|----------------|-------------------------|
|                  | Level                            | Averaging Time | Form  | Level                               | Averaging Time | Form                    |
| 1-Hour Ozone     | 0.12 ppm                         | 1-hour         | More than 3 days over 3 years                         | Same as Primary Standard            |                |                         |
| 8-Hour Ozone     | 0.08 ppm                         | 8-hour         | 3-year average of annual fourth highest daily maximum | Same as Primary Standard            |                |                         |
| PM10             | 150 ug/m3                        | 24-hour        | 3-year average of annual 99th percentiles             | Same as Primary Standard            |                |                         |
|                  | 50 ug/m3                         | Annual         | Not to be exceeded                                    | Same as Primary Standard            |                |                         |
| PM2.5            | 15ug/m3                          | 24-hour        | 3-year average of annual averages                     | Same as Primary Standard            |                |                         |
|                  | 65 ug/m3                         | Annual         | 3-year average of 98th percentile                     | Same as Primary Standard            |                |                         |
| Carbon Monoxide  | 35 ppm                           | 1-hour         | More than once per year                               | No secondary standard               |                |                         |
|                  | 9 ppm                            | 8-hour         |   |                                     |                |                         |
| Sulfur Dioxide   | 0.14 ppm                         | 24-hour        | More than once per year                               | 0/50 ppm                            | 3-hr           | More than once per year |
|                  | 0.03 ppm                         | Annual         | Not to be exceeded                                    |                                     |                |                         |
| Nitrogen Dioxide | 0.053 ppm                        | Annual         | Not to be exceeded                                    | Same as primary standard            |                |                         |
| Lead             | 1.5 ug/m3                        | Quarterly      | Not to be exceeded                                    | Same as primary standard            |                |                         |

# HAZARDOUS MATERIALS



## Primary Federal Law(s):

- Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (42 U.S.C 9601 et. seq.);
- Superfund Amendments and Reauthorization Act of 1986 (42 U.S.C. 9601 et. seq.)
- Emergency Planning and Community-Right-To-Know Act (Title III of SARA) (42 U.S.C. 11001 et. seq.)
- Resource Conservation and Recovery Act of 1976 (42 U.S.C. 6901 et. seq.)
- Hazardous and Solid Waste Amendments of 1984 (42 U.S.C. 6901 et. seq.)

The investigation will identify and assess the potential hazard(s) contamination by:

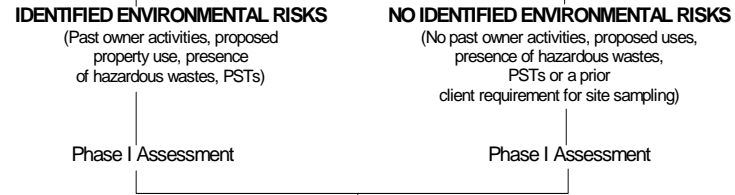
- Land use/records search
- Site Reconnaissance
- Data Evaluation



## GENERAL ASSESSMENT METHODOLOGY

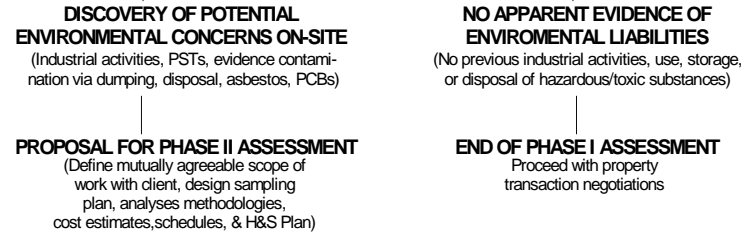
### PRELIMINARY DISCUSSION WITH OWNER /OPERATOR/AGENT

(To determine specific site features, scheduling/closing deadline requirements, client/site contacts and other pertinent data)



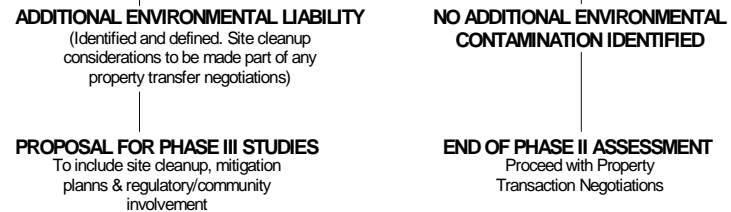
### PHASE I ASSESSMENT

Historical records review, agency file check, questionnaires, site inspection/reconnaissance, confidential client meeting, & Phase I Report



### PHASE II ASSESSMENT

(Site exploration, sampling of soil gas, soil, surface/groundwater, Report to address adjacent properties, soil condition, tanks, waste disposal practices, water issues, etc., confidential meeting to discuss results/options)



# NOISE

Traffic noise studies are required by Federal Highway Administration (FHWA) regulations.

A noise study:

- identifies activities that may be impacted by traffic noise;
- determines existing noise levels;
- predicts noise levels 20 years in the future; and
- examines and evaluates ways to reduce noise impacts (abatement measures).

Noise is measured in units called "decibels" (dB).

Not all sound can be heard by the human ear. Equipment is adjusted to measure sound the way the average person hears them. This adjustment is known as the "A-weighting" scale and is measured in "dBA."

Since traffic sound levels change and are not constant, a single value is used to represent the average or equivalent sound level - known as the "Leq."

## Noise Abatement Criteria

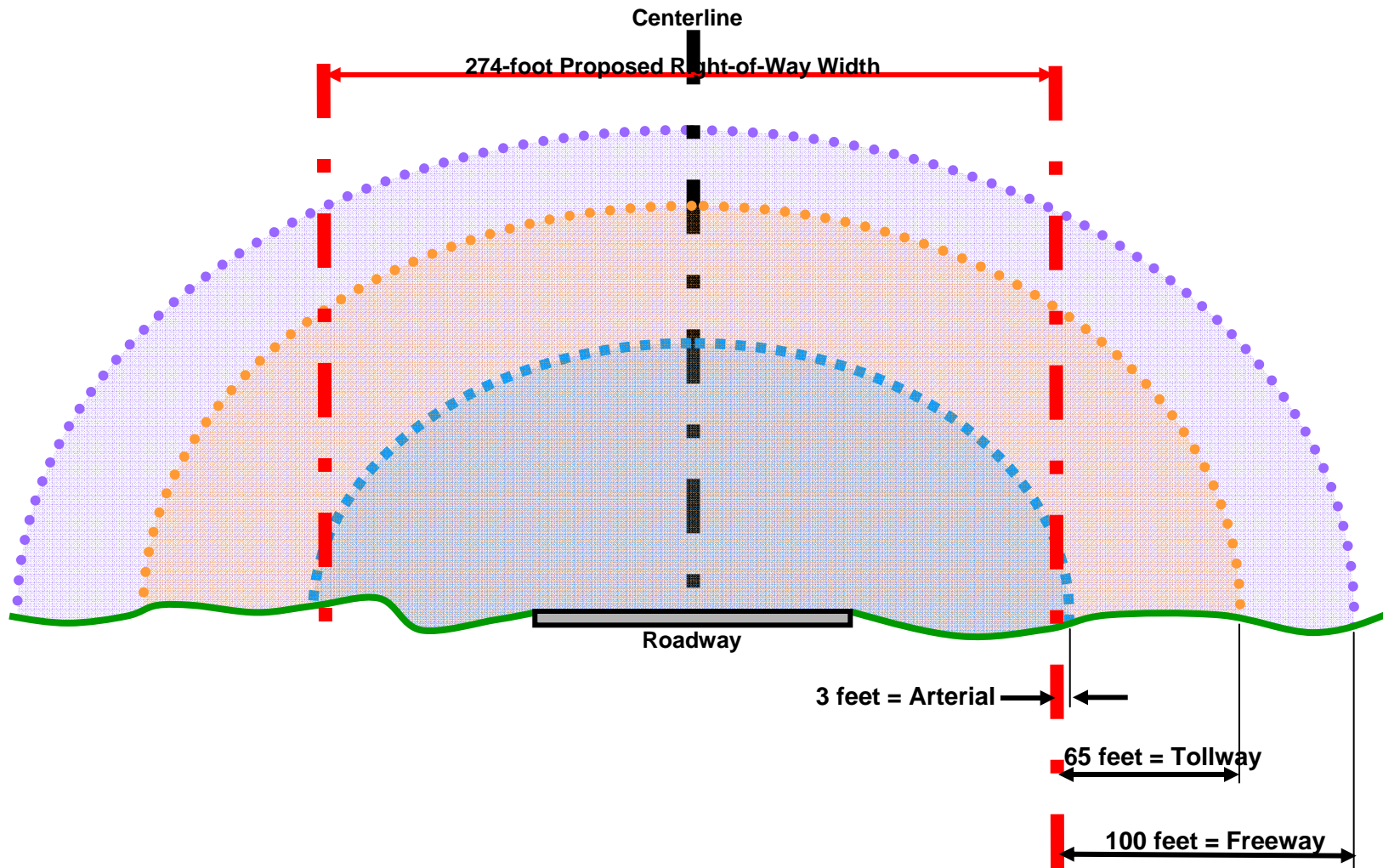
The determination of a need for abatement measures is based on the type of land use or activity that could be affected by traffic noise.

| <u>dBA (Leq)</u> | <u>Activity Center Areas</u>  |
|------------------|---|
| 57               | A - lands on which quiet and serenity are of extraordinary significance (amphitheaters)           |
| 67               | B - picnic areas, recreation areas, parks, libraries, schools, churches, residences and hospitals |
| 72               | C - developed lands, properties not listed above, commercial properties and businesses.           |
| None             | D - Undeveloped land  |
| 52               | E - Interior; libraries, schools, churches, residences, and hospitals                             |





# CORRIDOR ALTERNATIVE PRELIMINARY NOISE EFFECTS



**Residential Noise Impact Contour** is measured in feet from the proposed right-of-way line in the year 2030 to where the noise level equals or exceeds 66 dBA. 67 dBA is the Federal Noise Abatement Criterion (NAC) for Land Use Category B or residential uses. Based on preliminary traffic volumes and level terrain, Traffic Noise Model results show that the 66 dBA noise impact contour for the year 2030 is:

- 3 feet from right-of-way for Arterial Alternative
- 65 feet from right-of-way for Tollway Alternative
- 100 feet from right-of-way for Freeway Alternative

Please note that during project development, more refined models will be produced that account for varying traffic patterns, terrain, and other factors.

# VISUAL AND AESTHETIC

The National Environmental Policy Act (NEPA) and the Council on Environmental Quality (CEQ) identify aesthetics as an element in the human environment that must be considered in determining the effects of a project.

The Environmental Impact Statement (EIS) will address:

- The visual environment
- Visual quality
- Visually sensitive resources
- Description of the viewers of and from the highway
- Potential visual impact
- Potential mitigation measures

## Landscape Components - Examples

Landform - rolling hills, level land, beaches, bluffs

Water - lakes, creeks, streams, wetlands

Vegetation - woods, grasslands, pasture, parks

Man-Made Development - residential development, recreation areas, bridges, billboards, commercial areas



## Groups with a view from the road

- Local traffic
- Commuter traffic
- Tourist traffic

## Groups with a view of the road

- Residents
- Recreational
- Educational
- Commercial
- Industrial





## LAND USE EFFECTS

- Historical development patterns, existing and proposed land uses (urban, agricultural, and recreational), and local government plans and policies will be assessed.
- Land Use Impacts
  - the potential relocation of residences and businesses.
  - loss of agricultural and developable land within the right-of-way.
- Mitigation
  - Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970
  - Housing and Urban Development Act of 1974
- Farmland Protection Policy Act
  - Farmland Conversion Impact Rating Forms will be completed
  - Submitted to the Natural Resource Conservation Service



## SOCIAL EFFECTS

- Communities within the study corridor are characterized by varying degrees of cohesion. Community cohesion can be defined in part by patterns of behavior that individuals or groups of individuals hold in common. Residential subdivisions may develop a sense of community cohesion through social interaction or participation in a neighborhood organization. A local place of worship or school may provide a location where residents of the neighborhood or community can assemble and associate with one another, or a neighborhood association or neighborhood watch program may serve the community and satisfy the residents' economic and social needs. In such cases, some sense of cohesion likely exists. Cohesion may also be based on a common characteristic or interest shared by the members of the community, such as religion, ethnicity, or income level.
- Several different types of adverse impacts to existing and proposed neighborhoods will be assessed. These impacts may include relocations, proximity effects, noise impacts, visual intrusion, or increased traffic on local arterial roadways and residential collector streets.
- Population, demographic, employment, and income of the study corridor will be identified and compared to surrounding cities and counties, and with the State of Texas



## ENVIRONMENTAL JUSTICE

As part of planning under NEPA, it must be determined whether the proposed actions will have disproportionately high and adverse effects on minority and low-income communities.

Primary Federal Law(s):

- Title VI of Civil Rights Act of 1964
- Executive Order 12898 (U.S. Office of the President, 1994)
  - Minority populations: African-Americans, Hispanics, Asian Americans, and American Indians and Alaskan Natives
  - Low-income persons: Median household incomes are below poverty guidelines (\$19,350 per year for a family of four, US Census Bureau 2005 Poverty Thresholds)

## BIOLOGICAL RESOURCES

### Water Body Modification and Wildlife

#### - Primary Federal Law(s):

- Section 404 of the Federal Water Pollution Control Act (Clean Water Act):  
This section of the CWA protects Waters of the U.S., including wetlands, through a permitting process. Nationwide Permits can generally be obtained for projects with minor impacts, whereas more significant impacts require that an Individual Permit be obtained.

#### - Fish and Wildlife Coordination Act:

Specifically calls for coordination with US Fish and Wildlife Service and State agency (Texas Parks and Wildlife Department) when modifications to water bodies are proposed, permitted or funded by Federal agencies.

### Floodplain

#### - Primary Federal Law(s):

- Executive Order 11988 - Floodplain Management:

Federal agencies are to "take action to reduce the risk of flood loss, to minimize the impact of floods on human safety, health and welfare, and to restore and preserve the natural and beneficial values served by floodplains." Agencies are to determine if planned actions will affect the floodplain and evaluate the potential effects of the intended actions on its functions



## THREATENED AND ENDANGERED SPECIES

Federal agencies must seek to conserve endangered and threatened species

#### - Primary Federal Law(s):

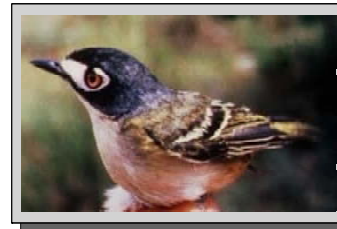
- Endangered Species Act of 1973
- Migratory Bird Treaty Act

#### - Endangered Species for Dallas County:

- Black-capped vireo (*Vireo atricapillus*) - Endangered
- Interior least tern (*Sterna antillarum*) - Endangered
- Mountain plover (*Charadrius montanus*) - Proposed Threatened

It is unlikely that suitable nesting/breeding habitat exists within the corridor for any of these species.

- Habitat evaluation will be performed concurrently with the delineation of Waters of the U.S.
- This will involve detailed descriptions of the habitats along the project corridor and subsequent mapping. Biologists will determine whether habitat exists within the project corridor for any endangered or threatened species.
- It will also ensure that no rookeries or other important habitat exists for birds protected under the Migratory Bird Treaty Act.
- The EIS will compare the amount of habitat, if any, affected by each alternative.



Black-Capped Vireo



Interior Least Tern



Mountain Plover

## HISTORIC PRESERVATION

### Primary Federal Law(s):

National Historic Places Act of 1966

- Identify properties on or eligible for listing in the National Register of Historic Places.  
Potential properties could include:
  - Prehistoric or historic districts
  - Prehistoric or historic sites
  - Buildings
  - Structures
  - Cemeteries
  - Objects
- Criteria for eligibility for listing in the National Register of Historic Places
  - 50 years old or older at the time of construction
  - Location of an historic event
  - Associated with an historic person
  - Place of quality design, craft or landscape
- Consult with the State Historic Preservation Officer (SHPO)
- Identify potential for adverse effects on historic properties including:
  - Physical destruction or damage to all or part of the property;
  - Change of the character of the property
  - Introduction of visual, atmospheric or audible elements



## PUBLIC PARKS AND RECREATIONAL FACILITIES

### Primary Federal Law(s):

Section 4(f) of the Department of Transportation Act of 1966:

"The Secretary may approve a transportation program or project requiring use of publicly owned land of a public park, recreation area, or wildlife/waterfowl refuge, or land of a historic site of National, State, or local significance...only if 1) there is no prudent alternative to such use, and 2) the project includes all possible planning to minimize harm..."

Section 6(f) of the Land and Water Conservation Act:

Recreational facilities that receive funding under the Act may not be converted to non-recreational uses unless approval is granted by the director of the National Park Service