Final
Local Environmental Assessment
DART Rail to Rowlett
Dallas Area Rapid Transit (DART)

Appendices

April 2007

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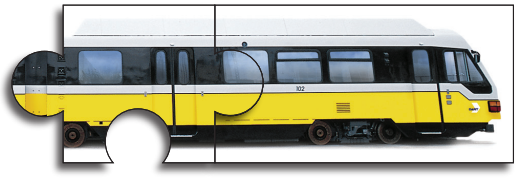
DART RAIL TO ROWLETT | Connecting Communities



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Final Local Environmental Assessment
DART Rail to Rowlett

Appendices

Prepared For:
Dallas Area Rapid Transit
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Dallas, Texas 75207

May 2007

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Appendix A
Public and Agency Involvement

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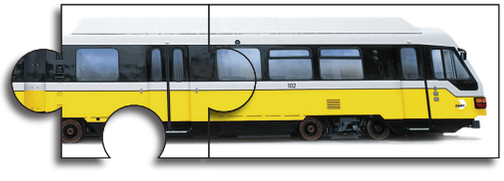


Rowlett Corridor (R-1)
Task 3.0 Alternative Analysis
Meeting Minutes #1
April 27, 2005
1:30 PM

Attendees:
Cheri Bush – DART
Reza Shirmanesh - DART
Diane Cowin – LGGROUP
Peng Zhao – LGGROUP
Rod Kelly – Parsons Transportation Group
Larry Gaul – Trains Operations
Kala Krishnan – Wilbur Smith
Kevin St. Jacques – Wilbur Smith
Ann Bagley – Wilbur Smith

- **Pre- meeting**

- Obtained Track Map from Cheri
- Create for Rowlett
-
- Nathan's move station
- Track reconstruction
- System reconstruction
- Require construction staging
- Impact operations
    - Would have to single tack for a time period
- Could keep canopies and existing station portions for bus
- 4% slope desirable maximum.

- **Rowlett Station**

    - Peng reviewed the alternatives that are being considered to date.
    - Freight 22' clearance
    - Street 16 ½' clearance
    - Design exception – Approval okayed
    - What about freight speed? If rebuilding?
    - Meet with Nathan about Alternative 4 "reconstruction of freight"
    - Tangent coming out of station.

- **Site Grading Plan**
    - End of line station

- What needed for operations
  1) Interlocking as close to station plat on inbound side as possible
  2) Storage tracks beyond (NE) of station
     a. Use Garland as example
  3) Crew Room (check CD)
     a. Talk to David Erlicker about new standard.
  4) Platform Access – Center Platform
     a. Center walkway always problem with end station
     b. Track lights

- Design access to station from one-side or other of platform.
- How far back station in the property could restrain.
- If become a remote storage location, might be more like Parker Road, talk to Tim Newby.
- Access for emergency vehicles
- Future –
  - Additional parking expansion
  - Shared uses
- Turnpike shift in ridership
- Electric transmission – GP & L
- Freight track- if touch FP
- H & H -
  - Bridge Structures (piers)
  - Storage loss areas
- Plats and surveys to Wilbur Smith
- Preliminary number of parking spaces (Tim Newby at bus planning)
- Bus service, etc. (Tim Newby at bus planning)

Rowlett Corridor (R-1)
Task 3.0 Alternative Analysis
Meeting Minutes #2
August 16, 2005

Attendees:
Doug Allen
David Euhlicker
Cheri Bush – DART
Reza Shirmanesh - DART
Diane Cowin – LGGROUP
Peng Zhao – LGGROUP
Rod Kelly – Parsons Transportation Group

- **Shifting Station**
    - Three girder bridge
    - 23.5' over KCS (22'-23')
    - 14' from center of track (10')
    - 4% slope (try using 5%)
    - 102' station platform shift
    - 420' station keeping (platform 460' for ADA)
    - Last phase station
    - Obtain system and operations from Fariba at DART

- **Use platform** – practice problems to anticipate design exceptions
- Train doors/verticle curve (distance 6 or 7 inches)
    - Verticle curve
    - Door
    - Jim – raising platform to make difference
    - (ADA, platform length, slope, KCS over clearance)
    - (Modification of station square feet)
    - Not, move street
    - 85' move platform
    - Higher than 5% curve (can achieve)

- **ADA** – 385 before ramps start
    - 10' crosswalk
    - Doug – plan for 3 SLRVs [420' station]
    - 6% curve – okay [check differential platform/vertical height of door]
    - Platform adjustment/rail adjustment
    - Reiza – wheels on verticle curve
    - Do not focus on ADA [GEC will]
    - Vehicle profiles in criteria

  - List of design changes
  - Below top of rail
  - Examine ultimate configuration
  - 12/04 Plan 830001 maybe 385' 3SLRVs
  - Platform –
    - 310'
    - 410'
  - KCS
    - 23.5'
    - 22'
- Next meeting September 22, 2005 KCS Crossing

Rowlett Corridor (R-1)
Task 3.0 Alternative Analysis
Meeting Minutes #3
August 30, 2005

Subject: Downtown Garland Station Platform Location/Modification
Attendees:
DART – Doug Allen, Eduardo Ugarte, Cheri Bush, David Ehrlicher, Reza Shirmanesh
LGGROUP – Diane Cowin, Peng Zhao, Joel Massey
PTG - Rod Kelly

- PZ started with a brief review of the GPC's PE study process based on the aerial topo. While the aerial topo generally provided good base information, it was not accurate enough for platform modification which was to be measured in inches. Therefore, during the Alternative Study, the GPC reserved a slight margin in defining/determining the combination of variables in the design to ensure our recommendations to DART would remain practical/viable.

- PZ explained that ground survey was requested early on. Survey control point data was received from the GEC and DGNO flagger was used in early July for the KCS crossing survey. The survey was not completed because our surveyors were ordered to leave DART ROW where the station platform and the survey control points are located. Over the previous week CB helped streamline the efforts and John Gault came out to flag; survey between the KCS crossing and the platform was completed.

- PZ explained that the ground survey information revealed that the KCS crossing is 6" higher than previously thought. This would make the crossing over the KCS track even more challenging.

- PZ described an alternative with a 6% slope which will overcome the 6" aerial topo discrepancy. This would result in a 5½ inch platform change at the end of the platform where the crosswalk is located. Referring to the existing Design Criteria based on three 95' LRV cars configuration, the location for the wheels of the car will not be affected.

- RS inquired about the slope of the crosswalk. PZ said it was approximately 1¼% at the crosswalk, less than ADA's 2% limit.

- DE asked if the crosswalk would be at a different elevation. PZ responded that the crosswalk would be at the same (slightly raised) elevation as the adjusted top of rail. Since it would be located in the vertical curve, it would not be at a uniform slope with the rest of the platform.

- It was asked if there would be any ramification to raising the platform 7 ½ inches. PZ responded that the relationship between the car and the platform would be the same as

the other conversions, since the top of rail would remain unchanged within the main platform area.

- DA added that in the crosswalk, the ramp will need to change slope but not the active portion of the platform.

- RS asked which platform level this alternative takes into consideration. PZ responded that the top of rail would not change, so either platform will work.

- PZ explained the alternative further by mentioning that, with the 6% slope, a thru-girder bridge with direct fixation for the tracks would be necessary. The span over the KCS is approximately 140' long.

- EU mentioned that that the bridge needs to be 500' long at a minimum to justify direct fixation. PZ clarified that the span over the KCS is 140' and the total bridge length is well over 500'. PZ further explained that direct fixation would be used for all spans. EU requested that we confirm before committing to direct fixation. (After the meeting, PZ checked the length of bridge and found it to be approximately 950' long)

- DA asked if 5% was used how far back would the vertical curve go into the platform? PZ responded it would be approximately 60'.

- DA asked what the implications are if we use 6%. EU responded that for the Garland Station he recommends 6%.

- DA asked if the LRV's would function well with 6%. EU responded that it would work and that they are using it on the NW Corridor at Mockingbird.

- CB asked if DE was ok with this alternative. DE responded that he wouldn't know until further review of the proposed configuration.

- DA mentioned that the existing handicap parking is across the street and a few spaces at the opposite end of the platform. DE confirmed the locations of the parking. DA asked if both ends of the station need to be ramped and DE responded that to meet code only one side with access to a public road is necessary.

- DE asked if considering future geometry of a three car station or four car station? PZ responded that typically design of stations have a platform that is 410' from high block to high block, but that the Garland Station is not 410'. EU suggested LGGROUP review the design report for Garland Station. CB will request it and give it to LGGROUP. PZ further explained that he is trying to match what is there today.

- DA mentioned that EU could potentially deal with cleaning up the ramps at a later point in design.

- DA suggested that Tim Newby be contacted about ridership for number of future cars.

- EU stated that the new Rowlett Station needed to be designed for the new standard (raised platform & length, canopy configuration, no high blocks).

DGNO Meeting #1
Tuesday
January 10, 2006
9:00 a.m.

ATTENDEES:

Cheri Bush – DART
Numa Bulot – DART [TRE Liaison]
DGNO Representatives
Diane Cowin – LGGROUP
Rod Kelly – Parsons

MINUTES

- **Introduction**
  - Freight rail in center of ROW challenge to fit LRT as well.
  - Commuter on North; freight on South.
  - Tight extra siding and rail track.
    - Three tracks in one area.
    - 138kV on Northside on edge of ROW.
    - Displace siding on north, move to south, main line stays (middle.)
    - Add additional siding on south.
    - Constraint deep drainage channel along track.
    - Residential area adjacent on Southside.
    - 15' from ROW line. Public concerns about noise and vibration have been raised.

- **Northside to Centerville (up and over)**
  - Centerville and DGNO track to be on the south.
  - Maintain separation between 20' -25', minimum 20' centerline to centerline average 22'.
  - Southside doesn't interfere with Foxworth galbreath.
  - DGNO – Elevated? Through Ellis track.
  - Rod – Visual, vibration and noise increase with elevated, however, have thought about moving all operations and City of Garland to landfill area including station.
  - DGNO – Are there environmental concerns in area?
  - Cheri – Garland plans to extend 6th Street through to other side.
  - DGNO – Approves of moving the operations, maintenance, depot and yard.
  - Cheri – Need cost to give to DART.
    - Property
    - Listing of needs (size of building, length of track)
    - Length of time to move.
  - Rod – If can relocate prior to LRT construction to minimize impact.
  - Numa – Out of Garland, quad-gated?
  - Rod – Have some open information on operations. We will contact Numa offline.

Rowlett GP&L/TMPA Meeting #2
Wednesday
June 21, 2006
11:30 a.m.
Garland City Hall

ATTENDEES:

Cheri Bush – DART
GP & L Representatives
Rod Kelly – Parsons

Diane Cowin – LGGROUP
Peng Zhao - LGGROUP
TMPA Representatives

MINUTES

- **Catenary 6' clearance to transmission line.**
  - Clearance okay on TMPA line.
  - What clearance is needed from construction standpoint?
    - May request an outage.
    - Construction at night in off-peak hours.

- **1st Street transmission – dead end spot.**

- **GP & L will need to take design to investigate poles.**
  - Go to pole fabricator and get 10' extension.
  - Corner foundations are not able to move – water lines placed

- **Parsons: Lowest line can be 16' about rail (contact wire – 20' other wire) (catenary?).**
  - Need to raise transmission line 6'.

- **Problem with distribution being moved underground.**
  - Not enough easement.
  - More complicated than transmission problems.

- **Suggest placement of additional pole.**

- **If cannot bury distribution, cannot bury double circuit.**

- **Take off angle from structures within substation.**

- **May not be able to increase angle.**
  - Distance required with increased angle will be a problem.
  - May be able to increase height on one pole, but may not be able to change other connected poles.
  - 6 feet at 60 feet = 10%

- **Distribution**
  - Easement restrictions – foreign contact
  - Phase wire occupies same space as catenary.
  - Would need to raise poles 15', but not required to put anything underground.
  - Need to work backwards from first pole to see if foundation fails.
  - Ensure foundations can withstand the load.

- **After 10% design report submittal, how much time will GP & L have to provide input?**
  - 15 to 18 months.

- **GP & L will need to begin now to make alterations by 2009.**
  - Design.
  - Bid.
  - Construction
  - Approximately 2 year process.

- **Track/Catenary will not be constructed until 2011.**
  - Will need coordinated construction schedule with GP & L.

- **DART will need shut-down restrictions for power – up to ERCOT.**
  - 5 to 6 sets of plots to GP & L.

- **Follow-up meeting to discuss licenses.**
  - Who pay for what
  - Crossing agreements (mid-August)

DGNO Internal Meeting #1
Monday
May 1, 2006
9:00 a.m.

ATTENDEES:

Cheri Bush – DART
Steve Salin - DART
Diane Cowin – LGGROUP
Peng Zhao – LGGROUP
Rod Kelly - Parsons
Sandy Price-Cox – DGNO
Jim Kuntz - DGNO
Louis Szabo - DGNO
Robert Wunderlich – City of Garland

MINUTES

1. Cost of relocation to City/Landfill area
2. How to move operations (Downtown facility)
3. How to move siding and place elsewhere

Moving Facility (depot, maintenance)

- Need to have an additional track due to rip track
- ≈1,400'
- $4.5 million in 2004. 25% more in 2006

Add siding next to neighborhood

- Noise/vibration
- Potential low income/minority
- Drainage issues
- 2,200'

Shift all operations to City of Garland/Landfill area

- What is the current zoning of landfill?
- DGNO preferred this option
- Almost a mile of track - Commerce to Centerville

2,100' between 1st Street

- Rebuild this track?
  - No-transmission towers cannot move due to Walnut Street
- DGNO – Does this work the same operationally?
- Siding becomes main line.
- Add siding to 2,100'
- Short siding has to be connected at both ends without blockage

- Long siding to North end
  - Away from residential
- Rip track ≈1,400'
  - Could squeeze on South side in same area between 1st and right before residential.

Baseline – Not to move Maintenance and Depot

- Leave rip track and maintenance shack in Downtown Garland
- Future option to move DGNO to same parcels later
- Rip track 15' on either side
  - 3 tracks
  - 25' apart

Yard moved to near end of line in G3 (West End)

- 2 Tracks in existing area
- Road crossing blocks
- Turn out for KCS
- 2 Man crews

- **Yard Option 4 (Base Option)** Δ= $3,020,000

2200	Freight Relocation
1600	
600	2200' of Freight removal
600	
400	Spur – engine storage track
5,400	

Land acquisition – 79,440 sq. ft.

Power poles 9 (2) $100,000 x 2 = $200,000
(7) $50,000 x 7 = $350,000

Drainage issues – redesign

- **Yard Option 3 (Base Option 1)** Δ= $1,324,300

land acquisition	24,580 sq. ft.
power poles	same as above
2000	Freight relocation
400	
400	
2,800	

Drainage – okay

Top	S.A
6	13

- **Rowlett Station**
  - relocate freight (2500') south ($350 per foot 900,000 – 1M)
  - small piece of land – vacant – 10'
  - 60' added
  - No building take

  - Summary of impacts
  - Rowlett Station
  - THC
  - Anticipated Date

Rowlett Corridor (R-1) Station Design Meeting #1
Tuesday
October 3, 2005
10:00 p.m.

ATTENDEES:

Diane Cowin – LGGROUP
Jerry Smiley - LGGROUP
Peng Zhao - LGGROUP
Kevin St. Jacques – WSA

MINUTES

- **10% Design**
  - Send over example from Don Raines
  - Cheri – projected number of parking needed
  - Number of space able to fit
    - Approximately 330
    - Approximately 650
  - 10% Design
    - Three different layouts (5% design)
    - 10% design conceptual layout October 17 - auto, bus, pedestrian, circulation. (LGGROUP ultimate 20%)
    - 600 parking spaces
    - Conceptual urban design plan.
    - Meet with Rowlett after Station Design Layout determined.
  - Progress Report due.
  - 10:00 a.m. Monday, October 17 meet on station.
    - Rowlett
    - Lane configuration
    - Plan

Rowlett Corridor (R-1) Station Design Meeting #2
Tuesday
October 18, 2005
3:00 p.m.

ATTENDEES:

Diane Cowin – LGGROUP
Jerry Smiley - LGGROUP
Peng Zhao - LGGROUP
Kevin St. Jacques – WSA

MINUTES

- **Comments from LGGROUP**
  - 575 spaces parking (944 spaces)
  - Bus bays –divide to make symmetrical.
  - Define existing and proposed.
  - Entertain the possibility of adding a street.
  - Parking handicap
    - 2 van accessible
    - 10 Handicap
  - DART Bus Operations
    - 10 Kiss & Ride
    - Islands combine or reconfigure.
    - Handicap spacing with striping.
    - Possible access entrance? Review with DART.
    - Zoom out with aerial parcels and square footage.
    - Preferably drainage hidden in islands.

Rowlett Corridor (R-1) Station Design Meeting #3
Tuesday
November 8, 2005
3:00 p.m.

ATTENDEES:

Cheri Bush – DART
Steve Salin – DART
Melinda Clary – LGGROUP
Peng Zhao - LGGROUP
Kevin St. Jacques – WSA

MINUTES

- **Rowlett Station Design**
  - Shooting for 944 spaces
  - Parking currently planned north of rail, roundabout south of rail – downtown center
  - Potential extension of Martin Street to roundabout (already under construction)
  - Extension of Martin Street anticipated to carry a lot of traffic (connects to SH 66)
  - This alternative may not be desirable – must analyze traffic movement (Rod Kelly at PTG working on this)
  - Cheri's team checking on land values for potential parking lot expansion north of existing lots.
  - Need to obtain a Thoroughfare Plan from the City of Rowlett (may not exist)
  - Meeting with Rowlett at 3:30 PM, Thursday, November 10, 2005
  - Components of Bus Traffic:
    - Route 412 – out for now, until Station opens
    - Special event/employer shuttle
    - One para-transit
  - City want historic district gone – this may conflict with the Texas Historical Commission's findings.
  - May be some extra room for Station placement (could move the station a bit to the west, which could make it more accessible for parking – would require land acquisitions)
  - Freese and Nichols, Inc. working on Rowlett downtown streetscape (responsible for roundabout)
  - Currently, Martin Street serves as "Gateway into Main Street."
    - Martin Street is a local street with a width of 36' – projected traffic could convert this to a collector street/thoroughfare
  - Steve would like to see several alternative/options for station design, based on city street grids around the station
    - Kevin will bring the presented alternative and other possible alternatives to the meeting on Thursday

- Cheri to send Kevin the frequency of routes and headways
- DART already has a large capital investment in Rowlett
    - The City of Rowlett needs to work with DART
- Need to know Rowlett's bigger plans for access issues
- Steve: land swaps may be possible – should take best advantage of geography. Only rail and roundabout are fixed - current parking lot doesn't have to be utilized as such in the future.
- Peng will contact Rod to see where he is on traffic.

Rowlett Corridor (R-1) Station Design Meeting #4
Monday
February 13, 2006
11:00 a.m.

ATTENDEES:

Doug Allen
Cheri Bush – DART
Steve Salin - DART
Diane Cowin – LGGROUP
Peng Zhao - LGGROUP

MINUTES

- <u>5% PE</u>
  - March 1
  - Move siding track closer.
  - Check on easement on north side transmission lines for grading and drainage.
  - Create section of new transmission lines
  - Centerville – at grade crossing (double track.)
  - Centerville/KCS
    - Freeba check costs for each single and double track operationally cover 20 minutes and 15 minutes.
    - LGG will provide speed and new alignment to Cheri for Freeba.
    - 1,070 to 980
    - 9,000" at 65 mph (3 minutes)
    - North side of floodplain – higher bridge/retaining wall
    - Relocate existing freight to south at 50 mph.
    - ROW to expand ROW to match rest of ROW width.
    - At grade at Dexham.
    - Flood plain up to bridge stay up over Rowlett.
    - Spur track stays as is over at correct clearance.
    - Bush Turnpike – Kathy Waters
    - Dough to see Station area at BT; 66 all of Main Street
    - Flood plain to flood plain (1,150 to 1,110)
    - Technical memorandum
      - Cost
      - Operational
    - Costs from Parsons Transportation
    - Cheri Bush – DGNO shipments at night agreements
    - Cost out shorter bridge with spur track flipped. (never mind)
    - $60 million

        - Financial Plan
        - GP&L close service driveway
        - Centerville – cost to grade separate.
        - Cheri to review policy on closing.

    - Planning Committee
    - Federal process - see if worth exploring.
    - Reduction of parking

- **Funding**
    - $180 million
    - Single track
    - 5 miles

Rowlett Station Design Meeting #5
Monday
February 20, 2006
10:00 a.m.
Rowlett City Hall
4000 Main Street

MINUTES

Two Diagrams

1. DART's current - Cannot come down quick enough for west side of road
   - 944 spaces – 973 spaces
   - Three property spaces between city and existing parking
   - Six bus berths
   - One parcel to acquire for garage – house not needed
   - DART Cost only

2. Martin Street Extension
   - Brings people to Main
   - Bus only entrance
   - Independent capability of not precluding Martin Street extension

TOD Concepts

- Parking garage too small on existing site
- Steve Salin: Is placement of station limited by aerial over Rowlett?
- Over Spur 22 ½ (not 16 as on road)
- Need transition
- Then tangent length

- Steve Salin: On South before
- Yes, but cost on North side
  - Cost of crossing
- If get rid of spur can do
- No, still have the freight to consider

North side

- Stay away from residential
- Acquire ≈25' on North of industrial property
- From Dexham West

Rowlett Maximize Economic Development

Freedom Drive

- Expand existing facility on land
- Craig: Flatten curve of Freedom Drive is good
- They will react to this option and send letter
- Cheri will hold off on
  - Deadlines from Rowlett
  - Two weeks comments from Wednesday
- Sewer line
- 50' away from Station to road

Garland Station Design Meeting #6
Alignment Review
Monday
February 20, 2006
2:00 p.m.
City of Garland
Field Engineering Building
116 Glenbrook

MINUTES

Garland Station

- 6% slope
- KCS allow 22' not 23' typical

Rowlett: Nothing from FRA?

- No, KCS is okay

- Aerial over 1st Street outside of ROW
- Let us know of expansion might need to build with medium with pier or steel span (through girder bridge)

Rowlett: What does retaining wall look like?

- Art program

Rowlett: Does have to be art just look better?

- Can do design

Rowlett: What happens to crew building?

- Moves to Rowlett

- Cross high stay up across Lavon
- Existing railroad bridge to be rebuilt

Rowlett: What type?

- Concrete or possible steel girder

Rowlett: Moves South?

- Correct

Rowlett: Any way to get rid of piers?

- 120' ROW so necessary or go steel girders

Rainbow Estates

- DGNO have siding track
- Take out DGNO
- Give them same length in industrial area

Question: Do they use this?

- Storage
- Switching
- Fairly active

Question: Need for second track (railroad)?

Question: Easement?

- City of Garland
- Can build

Question: What will happen to drainage?

- Culvert to Natural Channel - old CMP pipe running along rail

Comment: Want drainage to look good not trapezoidal ditches.

Garland likes Natural Channel

- Highway 66 aerial same structures

Question: Piers in middle attenuating devices?

- Not fancy

Local Match

Question: How much money if didn't have road at Commerce?

- We will look into.

Question: What type of ditch or easements?

- Drainage ditch (grass.)

Question: Maintenance duties on easement?

- Cross Centerville at-grade have distance and storage track for at-grade.

Question: Someone looking at hydraulic effects of bridge piers?

- In final design look at hydraulic modeling – just floodplain during 5%.

Question: Round piers?

- Yes, 90' spans typically.

Question: Pedestrian fix?

- Looking for money
- As stands right now

Question: Step grant?

- Wider pedestrian paths
- Context sensitive design

1. Functionally to narrow
   - Safety
   - Inviting
2. Looking like barrier
   - Request in writing
   - Not closing 5th Street
   - Sustainable DW Grant for 5th (more inviting) and 6th closure.

   - Garland willing to put some towards pedestrian crossing.
   - Context sensitive design of bridge
     - On record with Board
     - Make landmark and unity point
     - Put in letter with examples

   - Move DGNO
     - Garland suggests vacant land next to new switching yard.
     - They will check zoning.

Rowlett Station Design Meeting #7

August 1, 2006
10:00 AM

MINUTES

Attendees:
LOPEZGACIA GROUP, INC.
Parsons Transportation

- Add second auditor
- Parking required 944/950

Rowlett Station

- Road – 30 spaces – 4 lane undivided
- Building expansion plan
  - 55 spaces
- Kiss and Ride
  - on street both directions
- Bus Bays
  - 3 saw tooth/paratransit (2 vans)
  - 6 bays – run traps with bus
    - Bus routes
      - Formal request for bus routes circulation
    - Variance/ ? bus only
      - 6 in buttons for divide back from

- Cheri/Steve
- Downtown Master Plan
  - 2 Weeks – Cheri
    - Station
    - Construction Impacts
    - Budget
    - Traction Power
    - Engineering Crossover locations (Cheri)
    - Get station with adjustment to Rod/Gretchen

- BRW?
  - LEA copy

Rowlett Corridor (R-1) Station Design Meeting #8
Monday
September 11, 2006
9:30 a.m.

ATTENDEES:

Cheri Bush – DART
Steve Salin – DART
Diane Cowin – LGGROUP
Peng Zhao – LGGROUP
Jack W
Rod Kelley – Parsons
Cleo
Phillip Snoddy – Spectrum Global Solutions
Patricia Houseman – International Equities

MINUTES

Concern on Martin Street Side

- Would like to move west more (another 25')
- The parcel zoned for 4/5 stories (one of few)
- Underground parking for downtown on property
- Martin Street-in process with City; not final
  - Moving is really the City's call
  - Dart has no problem
    - More of a bend in road but doable

Row Adjustment

- Adjust to south – 20'
- They were thinking of place for people to sit/eat outside along property

Cost Analysis – with Mike Shaw (real estate) for different alternatives

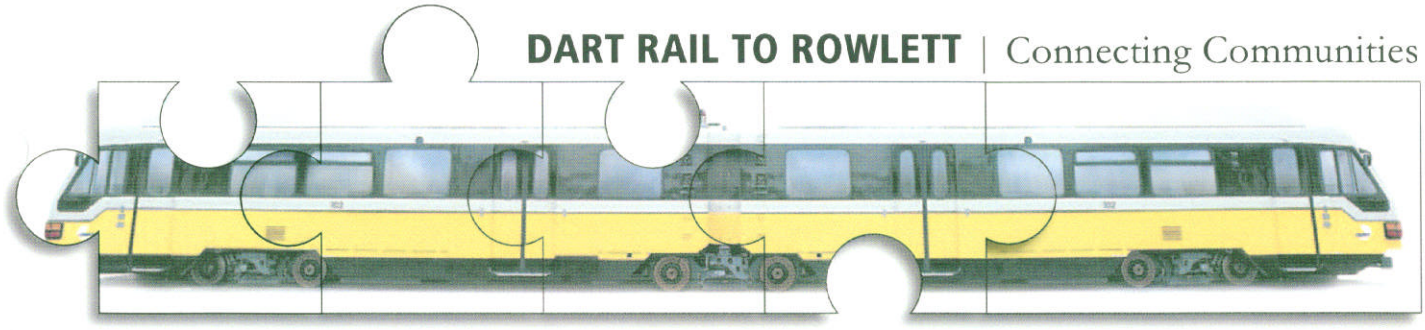
- City purchasing street
- Utilities
  - need to be moved by city
  - Not Dart's responsibilities
  - Stormdrain in roadway - cannot move 60" stormdrain

Architects

- Seltzer
- B&O

Delivery

- drawing of realignment of what possible
- get to city/developer
- setup meeting



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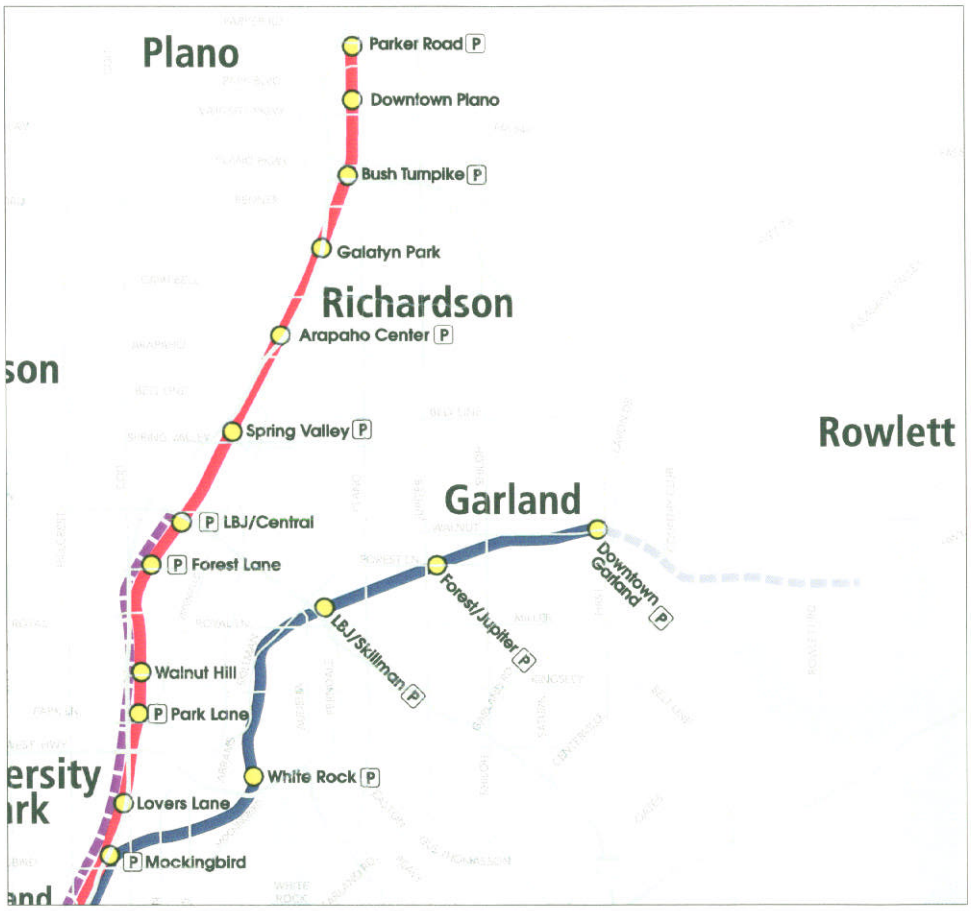
Vol. 1, Issue 1 *April 2005*

The Rowlett Extension

The pieces are coming together to bring DART Rail Service to Rowlett. In 1995, Dallas Area Rapid Transit (DART) identified the Rowlett Corridor with the Northeast Corridor Major Investment Study (MIS). In 1997, the corridor was included as a Phase II project in the DART Transit System Plan. The proposed DART Rail to Rowlett project is an extension of the Blue Line which ...unches off the main Light Rail Transit (LRT) Line at Mockingbird LRT Station in Dallas and ends in downtown Garland.

The study area for the proposed DART Rail to Rowlett extends from the existing Downtown Garland Station into downtown Rowlett. It involves the cities of Garland and Rowlett, which are located within DART's service area. The Rowlett LRT extension will utilize the existing MKT Railroad.

During the Preliminary Engineering/ Environmental Assessment (PE/EA), efforts for the Rowlett LRT Extension line engineering detail will be developed ... the associated environmental impacts will be fully documented.



Public and agency involvement will occur throughout the study process to ensure that the DART Rail to Rowlett PE/EA results are consistent with local guidelines, a public consensus is reached, that impacts are identified and appropriate mitigation measures developed.

Calling on the Community

A community-based work group will be established, consisting of citizens from Garland and Rowlett. This group will be comprised of representatives from organized interest groups, business leaders, and other stakeholders in the corridor. These persons will offer input on issues and potential solutions on behalf of their organization or area. If you are interested in becoming a member of either group, please contact Lawrence Meshack jmeshack@DART.org or Joanna Colvin jcolvin@lggroupinc.

Public Involvement Process

The objective of the public involvement process is to ensure that stakeholder concerns are heard and addressed and that the resulting project has broad public support.

Neighborhood groups, businesses, property owners, residents, public officials, the driving public, and others along the project corridor have an interest in understanding the study, the schedule, and the issues that may affect them. A Public and Agency Involvement Plan was developed to establish a process to keep these stake holders informed and to obtain their input about the project throughout the project.

DART staff and the Project Team will communicate regularly with the DART Board of Directors and its committees through written reports and briefings. The City Councils in the project corridor are also participating in the process through similar reports and meetings. City Council members have a particular interest in issues that affect their cities and districts within and along the corridor.

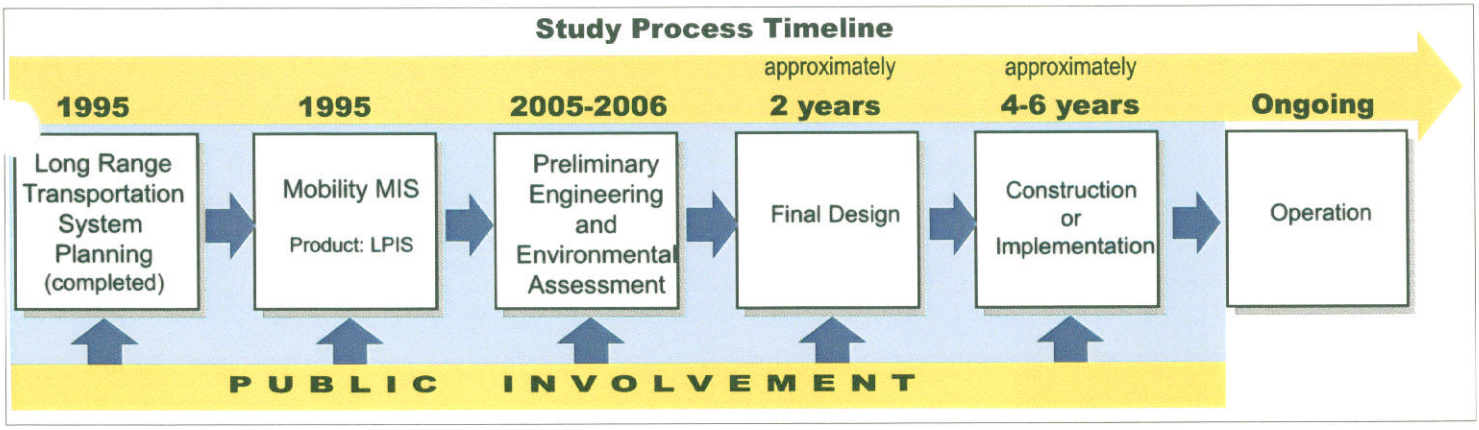
A Community Work Group will be established to provide targeted citizen input to the environmental impact analysis. It will be comprised of representatives of homeowner associations, property owners, business leaders, and others; working together to stay informed about the project and to inform the Project Team about issues that affect them.

The public can also stay current on the study progress and issues of concern, through project newsletters, DART's web site (www.DART.org), and public meetings.

Study Timeline

The Preliminary Engineering process began in April and should be completed by the end of February 2006. The preparation of environmental studies also began in April, and it is anticipated that the Final Environmental Assessment should be completed at the end of March 2006.

Downtown Rowlett Cotton Gin Near Proposed Downtown Station



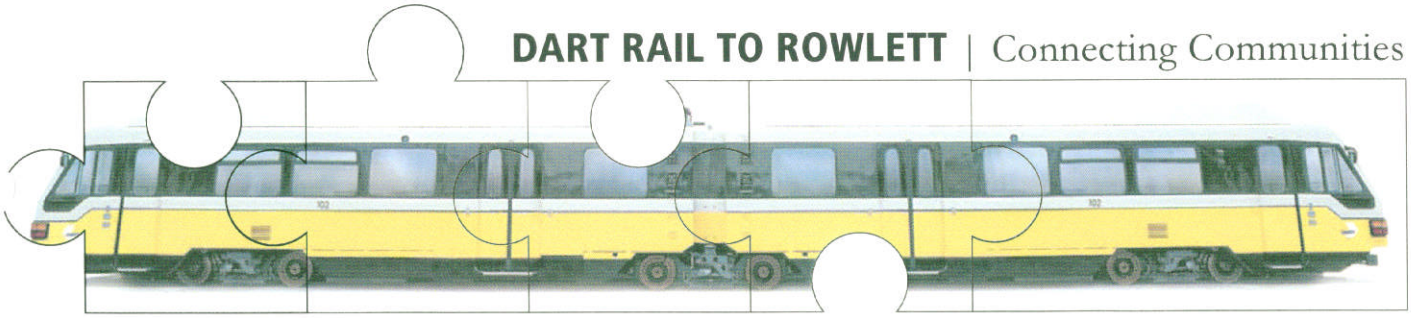
For more information about the DART Rail to Rowlett, please check our website – www.dart.org – or contact:

Lawrence Meshack
DART Community Affairs
jmeshack@dart.org

Or send comments directly to:

DART Community Affairs
Dallas Area Rapid Transit
P.O. Box 660163
Dallas, TX 75266-0163
214-749-2543

DART RAIL TO ROWLETT | Connecting Communities



Vol. 1, Issue 2 August 2005

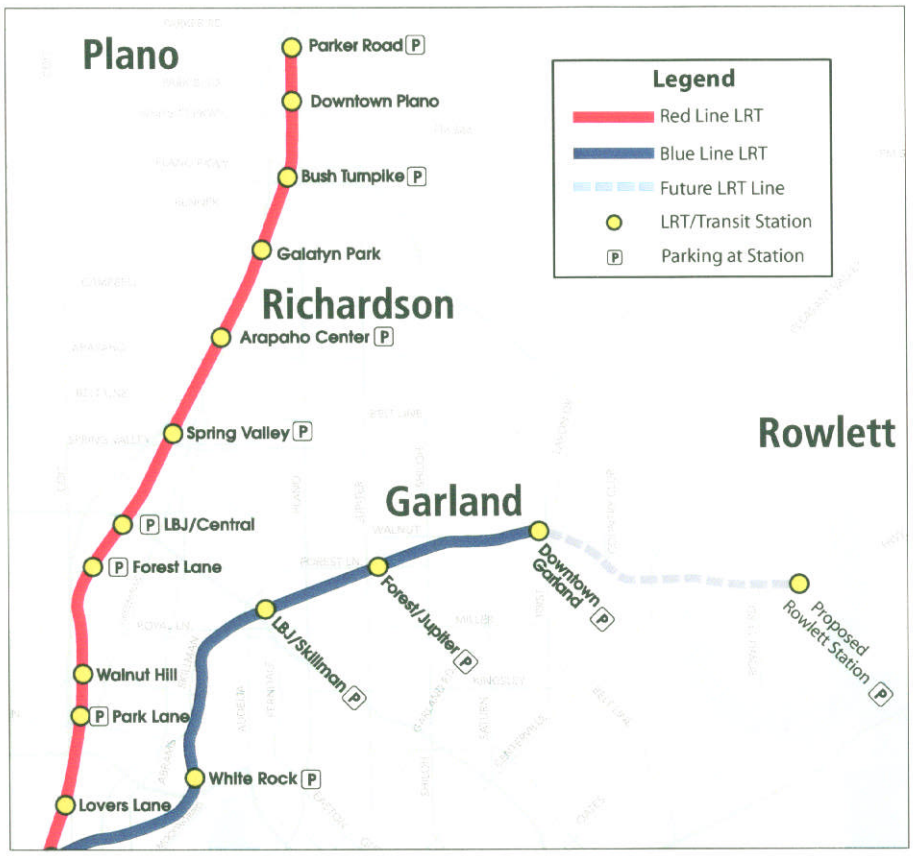
NEXT PUBLIC MEETING
Thursday, 9/22/05 - 6:30 p.m.
Austin Academy for Excellence
1125 Beverly Drive
Garland, TX
(Mapsco Page 29A-F).

The Rowlett Extension

In 1995, Dallas Area Rapid Transit (DART) completed the Northeast Corridor Major investment Study (MIS). In 1997, the Rowlett corridor was included as a Phase II project in the DART Transit System Plan as an extension of the Northeast Corridor, which currently begins at Mockingbird LRT Station in Dallas and ends in downtown Garland.

The Rowlett LRT Exention extends from the existing Downtown Garland Station into downtown Rowlett.

During the Preliminary Engineering /Local Environmental Assessment (PE/LEA), engineering detail will be developed and the associated environmental impacts will be fully documented. Public and agency involvement will occur throughout the study process to ensure that results are consistent with local guidelines; a public consensus is reached; impacts are identified; and appropriate mitigation measures are developed.



Northeast portion of the DART System Plan Map

Public Meeting #1

The first public meeting, held at Rowlett City Hall on the May 12, 2005 was attended by over 40 members of the community. The Project Team gave a presentation describing the study. Several key issues were presented, and include:

- Crossing KCS tracks east of Downtown Garland;
- Rowlett Creek and floodplain issues;
- Noise and vibration issues;
- Historical issues; and
- Coordination efforts with Downtown Garland Planning Initiatives and the Rowlett Main Street Improvements project.

Following the meeting, the City of Rowlett gave a presentation on proposed downtown improvements.

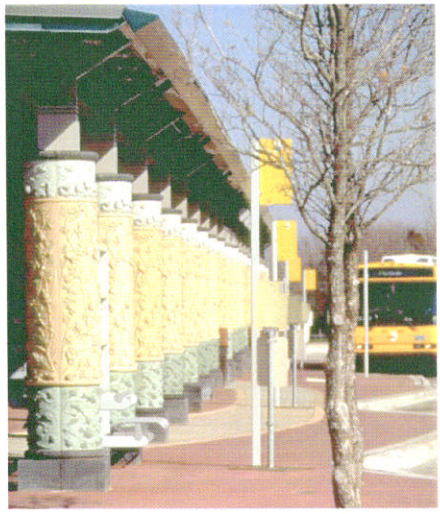
Extending LRT from Downtown Garland Station

One of the challenges discussed during the May public meeting was DART Light Rail Transit (LRT) crossing over the Kansas City Southern (KCS) line just east of the Downtown Garland station. This freight track carries up to seven trains daily and will continue to be a busy corridor for the freight company.

Four options to cross the KCS line were evaluated:

Option A involves relocating the Downtown Garland station to west of 5th Street. This option requires the removal of the current station and the construction of a new light rail station. This alternative also necessitates the reconstruction of the DART light rail track from Glenbrook Drive to 5th Street. The construction effort for this option would need to be phased in several stages to maintain the existing operation during construction. In addition, this option would require passengers who use the bus transfer facility, and those utilizing DART parking, to walk a longer distance and cross both Walnut Street and 5th Street. Because of the extensive rail reconstruction and new station construction required, this is potentially the most expensive option.

Option B entails the construction of an at-grade crossing of the KCS railroad. While this is seemingly the least expensive alternative, it presents the most difficult challenges. The first challenge is safety. Coordinating



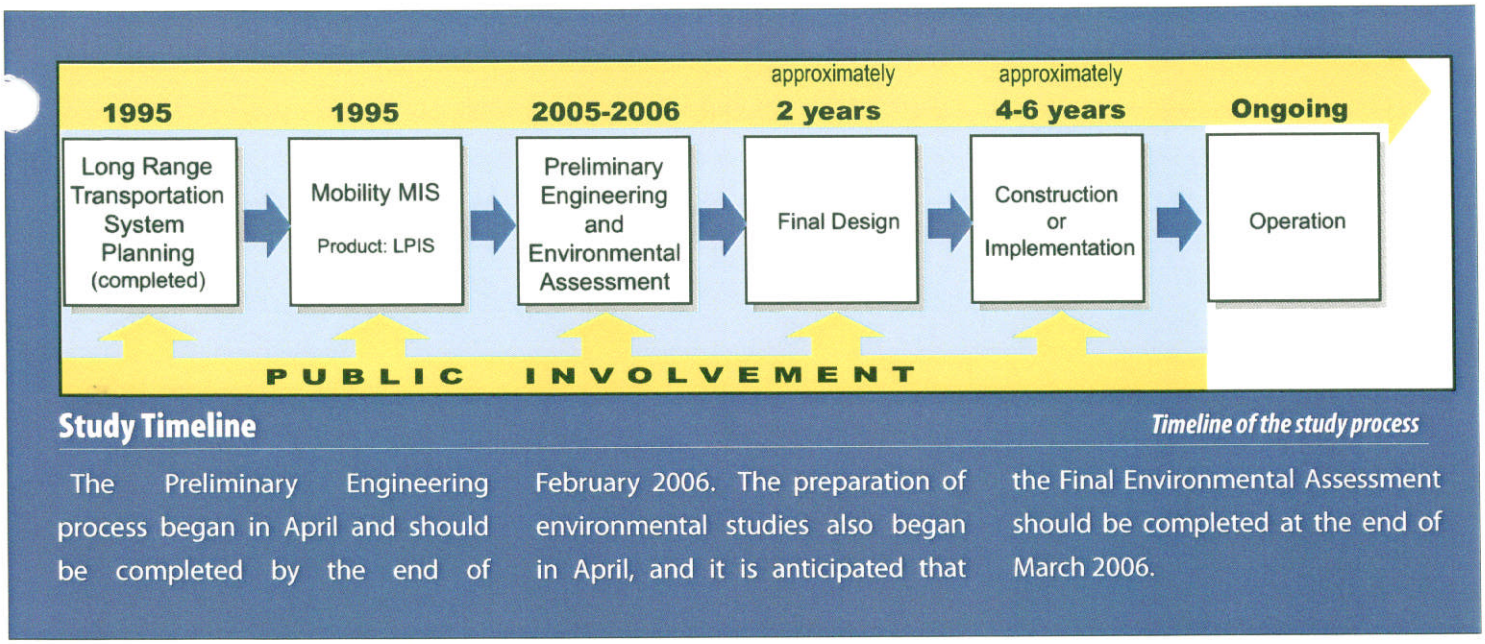
Hampton Station Column Artwork

freight traffic with light rail traffic assumes high risks and requires close communication with freight dispatchers. The other issue is the difficulty of system element design at the crossing. The conventional catenary poles and the overhead wires used to supply electrical power to the light rail vehicle, would have to be rerouted to avoid conflicts with the freight trains. The crossing at 1st Street, a fairly busy street in Garland, would also have to be at-grade since there is not enough distance between the KCS crossing and 1st Street to build the rail with enough clearance over the road.

Option C, the initial alternative established prior to the EA/PE, requires the light rail vehicle to make a left turn and cross over Walnut Street, at-grade. The train would then ascend by looping up and over private properties at 1st Street and then descend at the Walnut Street at-grade crossing. The light rail vehicle would then reenter the existing right-of-way at the bridge area over Highway 78 (Lavon Drive). This is an expensive option that limits the speeds of the train due to the at-grade crossing and multiple sharp turns. The bridge itself would extend over 2,000 feet and several properties would be impacted by this option.

Option D requires extending the current station platform into the existing 5th Street right-of-way. 5th Street would be realigned and the intersection with Walnut Street would be reconstructed with streetscape features. The improved intersection would help enhance the pedestrian connection to the existing bus transit station and could become one of the focal points for the Downtown Garland area, which is becoming a vibrant urban center. This is the second least expensive option available, and it requires minimal impact to not only rail operations, but also DART customers. This option would also require two properties to be purchased for the 5th Street realignment.

These options have been discussed with the City of Garland staff and will be presented at the next public meeting to be held at the end of August or the beginning of September.



Study Timeline

Timeline of the study process

The Preliminary Engineering process began in April and should be completed by the end of February 2006. The preparation of environmental studies also began in April, and it is anticipated that the Final Environmental Assessment should be completed at the end of March 2006.

Frequently Asked Questions

Q Can you get to Rowlett before 2012?

A The planning and design process has many steps that DART must complete to ensure safety and efficient operating and to rush the design process typically only creates future problems. Also, DART is committed to a financial plan that limits how quickly studies and designs can be paid for and when money will be available for construction. As part of the 2030 Transit System Plan, currently being updated, the Rowlett line is compared against other planned lines and must wait for fund availability according to this plan.

Q When can I take the train to Rowlett?

A Revenue service is expected to begin in late 2012.

Q Are there plans to expand past Rowlett to Rockwall?

A DART owns the rail ROW all the way to Fate, Texas. There are currently not any plans to extend to Rockwall, however, DART is working on the 2030 Transit System Plan that is evaluating needs within the DART Service Area and those areas immediatelly adjacent to the service area.

Q What is Transit Oriented Development (TOD)?

A TOD is a mix of high-density land uses that creates a vibrant community and complements or fills a need for the surrounding area(s). This also includes pedestrian/bicycle linkages to and from transit facilities, the development and the surrounding area.

Transit patrons at Mockingbird Station

Eastside Village and Downtown Plano Station

Public Involvement Process

The objective of the public involvement process is to ensure that stakeholder concerns are heard and addressed and that the resulting project has broad public support.

Neighborhood groups, businesses, property owners, residents, public officials, the driving public, and others along the project corridor all have interests in understanding the study, the schedule, and the issues that may affect them. A Public/Agency Involvement Plan was developed to establish a process to keep these individuals and groups informed and to obtain their input about the project throughout the PE/LEA preparation process.

DART staff and the Project Team will communicate regularly with the DART Board of Directors and its committees through written reports and briefings. The city councils in the project corridor are also participating in the process through similar reports and meetings. City council members have a particular interest in issues that affect their cities and districts within and along the corridor.

The public can also stay current on the study progress and issues of concern, through project newsletters like this one, DART's web site (**www.DART.org**), and public meetings.

For more information about the Rowlett Light Rail Transit Extension, please check our website – www.dart.org – or contact:

Lawrence Meshack
DART Community Affairs
jmeshack@dart.org
Or send comments directly to:
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Dallas Area Rapid Transit
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Dallas, TX 75266-7232

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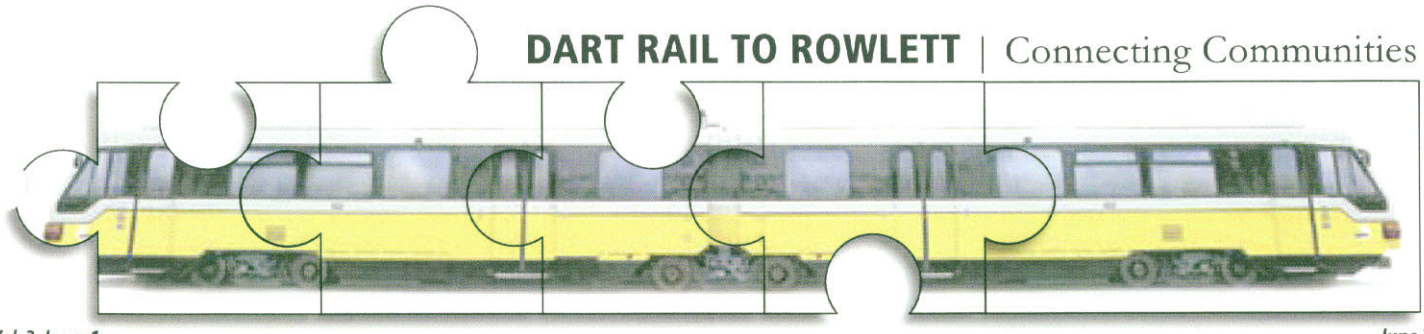

Vol. 2, Issue 1 June 2006

NEXT PUBLIC MEETING

Thursday, 6/28/06 - 6:30 p.m.
Rowlett City Hall
4000 Main Street
Rowlett, TX
(Mapsco Page 30-D)

To arrange for Paratransit services to reach the meeting, please contact Paratransit Scheduling at 214-515-PARA(7272) in advance of the meeting.

Local Environmental Assessment Progress

The first step in implementing light rail service in an area is the local environmental assessment/ preliminary engineering study. A local environmental assessment (LEA) identifies a variety of issues that are important to the cities and neighborhoods that surround a rail corridor. This assessment is conducted for each corridor that is identified for transit. This is also done concurrently with preliminary engineering for the light rail systems and station areas.

The LEA phase for the Rowlett Extension is the next step for construction of light rail transit (LRT) to Rowlett. It follows the Locally Preferred Alternative (LPA) for the Downtown Garland Station that was completed in the late 1990s. The LEA identifies, assesses and documents environmental factors such as air quality, historic resources, visual quality, parkland, socio-economics, noise and vibration, land use and economic development potential along the study area.

During this study period, the public as well as local and county governmental agencies are kept informed of the progress and potential and final findings. This ensures that the LEA results are consistent with local guidelines, impacts are identified, public consensus is reached and appropriate mitigation measures are developed.

In the course of preparing the draft LEA for the Rowlett corridor, various potential environmental issues have been identified, including those associated with historic and natural resources. In addition to field investigations and research of existing documents and data resources, coordination with various local, state and federal agencies provides data for the LEA. Those agencies include:

DART Light Rail at Downtown Garland Station

- Texas Historical Commission – historic structures and archeological resources;
- US Army Corps of Engineers – potential jurisdictional waters;
- Texas Parks and Wildlife & US Fish and Wildlife Service– threatened and endangered species; and
- North Central Texas Council of Governments – demographic and economic data.

Public Meeting #2

The second public meeting, held at Austin Academy for Excellence in Garland on the September 22, 2005, was attended by over 20 members of the community. The Project Team gave a presentation describing the study. Several key issues were presented, and include:

- Crossing KCS tracks east of Downtown Garland;
- Aesthetic considerations of bridge design;
- Project cost and schedule;
- Bridges vs. at-Grade crossings and
- Noise and vibration studies.

Natural Resources

The proposed project crosses five jurisdictional waters of the U.S. including two tributaries of Rowlett Creek, Rowlett Creek, Mills Branch Tributary and Long Branch Creek.

Bridge Crossing Rowlett Creek

Minor impacts are anticipated to the two tributaries of Rowlett Creek, Rowlett Creek, and the Mills Branch tributary as a result of the project. A permit for the proposed action from the U.S. Army Corps of Engineers will be applied for upon completion of design.

There are several publicly owned parks and recreation areas in the Garland to Rowlett rail corridor. Parklands within ½-mile of proposed LRT line were identified and include Heritage Park, Lou Huff Park, Rowlett Creek Preserve, Dallas Off Road Bicycle Association (DORBA) Trail and Herfurth Park.

Noise Sensitive Areas

The basic parameters of environmental noise that affect residents and businesses include

- intensity or level,
- frequency content and
- variation with time.

Intensity or level is determined by how much the sound pressure fluctuates above and below the atmospheric pressure, and is expressed in units of decibels. On a relative basis, a 3-decibel change in sound level generally represents a barely-noticeable change, whereas a 10-decibel change in sound level would typically be perceived as a doubling in the loudness of a sound.

The frequency content of noise is related to the tone or pitch of the sound, and is expressed as Hertz (Hz). The human ear can detect a wide range of frequencies from about 20 Hz to 17,000 Hz. However, because the sensitivity of human hearing varies with frequency, the A-weighting system is commonly used when measuring environmental noise to provide a single number descriptor. Sound levels measured using this weighting system are called "A-weighted" sound levels, and are expressed in decibel notation as "dBA." The A-weighted sound level is widely accepted as a proper unit for describing environmental noise. The extremes are shown to range from 35 dBA in a wilderness environment to 85 dBA in noisy urban area. The average Day-Night sound level is generally found to range between 55 dBA and 75 dBA in most communities.

Noise sensitive areas were identified during the LEA. Typically, noise sensitive areas are buildings or parks where quiet is an essential element of their purpose, residences and buildings where people normally sleep (including homes, hospitals, and hotels), or institutional land uses including schools, libraries, and churches. Areas within 200 ft of the proposed alignment that may be sensitive to potential noise and vibration include 11 single-family residences, one multi-family residence, seven churches and two schools.

Single Family Home Near Railroad Tracks

Structure Type	Location	Preliminary Determination
Formed concrete bridge (1930s)	over Commerce Street	Potentially eligible
Formed concrete bridge (1930s)	over potential wetland	Potentially eligible
Steel pony truss bridge	over Rowlett Creek	Potentially eligible
Formed concrete bridge (1930s)	East of Rowlett Creek	Potentially eligible
Formed concrete bridge (1922)	over Business Hwy 66	Potentially eligible

Potentially Historic Bridges in the Study Area

Historic Resources

A number of state and federal laws are in place to protect potential archeological sites and historic structures. Section 106 of 36 CFR Part 800 is one federal law that requires anyone receiving federal funding or permits to consider the effects of their undertakings on historic properties. The Section 106 process seeks to identify and assess possible effects, and find ways to avoid adverse effects on historic properties.

Texas, all publicly owned archeological sites and historic structures are considered to have intrinsic historic value and should be identified, protected, and preserved. The Antiquities Code of Texas provides some level of protection for those sites or structures and requires that state agencies and political subdivisions of the state notify the Texas Historical Commission (THC) of any action on public land or any project with the potential to disturb recorded historic or archeological sites. The THC determines the protective action if an historically significant site is likely to be present.

There are specific criteria for evaluation under the Antiquities Code and Section 106. Historic structures are considered important if the structure or building is listed in the National Register of Historic Places (NRHP) or if a building fits into at least of one of the following criteria:

(A) It is associated with events that have made a significant contribution to the broad patterns of Texas history.

(B) It is associated with the lives of persons significant in the past.

(C) It is important to a particular cultural or ethnic group.

(D) It is the work of a significant architect, master builder, or craftsman.

(E) It embodies the distinctive characteristics of a type, period or method of construction, possesses high aesthetic value, or represents a significant and distinguishable entity whose components lack individual distinctions.

(F) It yielded or may be likely to yield information important to the understanding of Texas culture or history.

The above criteria, as well as, state and federal laws ensure that no archeological site or historic structure of value is lost during construction. During the planning process for the DART Rail to Rowlett project, historic-age resources will be evaluated by architectural historians to determine if they meet the requirements to qualify them for eligibility under Section 106 and the Texas Antiquities Code.

Bridge Aesthetics

Through several public meetings, DART has heard that the aesthetics, or looks, of major bridges along the corridor are of great concern to citizens of Garland and Rowlett. Many options exist to vary the look and structure of the bridges designed to support the new rail line. One example of the type of bridge structures DART intends to build in the Downtown Garland area is shown below.

Steel Thru Girder Bridge Example

Public Involvement Process

The objective of the public involvement process is to ensure that stakeholder concerns are heard and addressed and that the resulting project has broad public support.

Neighborhood groups, businesses, property owners, residents, public officials, the driving public, and others along the project corridor all have interests in understanding the study, the schedule, and the issues that may affect them.

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Para mas informacion, favor de comunicarse con la Oficina de Asuntos Comunitarios (DART Community Affairs) al (214) 749-2543.

NEXT PUBLIC MEETING
Thursday, 6/28/06 - 6:30 p.m.
Rowlett City Hall
4000 Main Street
Rowlett, TX
(Mapsco Page 30-D)

To arrange for Paratransit services to reach the meeting, please contact Paratransit Scheduling at 214-515-PARA(7272) in advance of the meeting.

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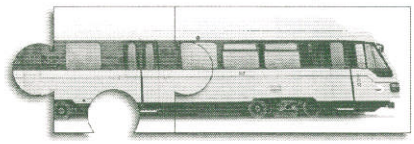

Preliminary Engineering/
Local Environmental Assessment

Agenda
Community Work Group Meeting
July 14, 2005 – 6:30 p.m.

Rowlett City Hall – Council Chambers
4000 Main Street
Rowlett, Texas 75088

I. Welcome and Introductions

II. Project Background

1. DART Service Plan
2. Major Investment Study and Northeast Corridor
3. Environmental Assessment Process
   - Environmental
   - Public Involvement

III. PE/LEA Process and Schedule

IV. Key Project Issues

1. Garland Station
2. Potential Wetlands/Floodplain
3. Potential Historic Structures
4. Noise/Vibration Sensitive Areas

V. Role of Community Work Group

1. Purpose
2. Goals

VI. Next Steps

VII. Adjournment

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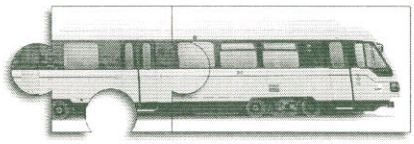


Preliminary Engineering/
Local Environmental Assessment

Rowlett Corridor (R-1) Task 2.0
Minutes
Community Work Group Meeting
July 14, 2005 – 6:30 p.m.

Rowlett City Hall – Council Chambers
4000 Main Street
Rowlett, Texas 75088

Cheri Bush of DART opened the meeting at 6:50 p.m.

Ms. Bush introduced the project team and council members.

The PowerPoint presentation was viewed.

Question: Would the Downtown Rowlett bus station go away?

Answer: Bus would go away (207)

Comment: Takes almost an hour to get to downtown Dallas.

Answer: Looking at nonstop – faster speeds – 20 minute headway off peak.

Question A chance for double track?

Answer: Budget – no, engineering plans to accommodate double tracks.

Question: Where will parking go in Rowlett?

Answer: Stay the same, bus access, no reduction in spaces.

Question: If Garland was locally funded, why did they get double track?

Answer: Initially intermediate service, this corridor will maintain same frequency of service as Downtown Garland.

Question: Main Street Bridge historic?

Answer: Still considered potential – preliminary coordination with THC.

Comment:Came close the collapsing a few years ago.

Question: Council talked about committee to keep design Downtown Rowlett Station, are you open?

Answer: Yes, have members come to these meetings, good forum.

Question: When will you discuss noise?

Answer: Measure Downtown noise to determine whether or not mitigation is necessary, will be disclosed at public meetings.

Question: Have you considered safety – children, backyards?

Answer: Line will be fenced at 45 mph. Row will be fenced.

Comment: People can look and sound wall by Garland Post Office as example.

Comment: Ride train from Garland to Dallas, look at the station design, betterments, barrier, what takes place, plans a good example of TOD.

Question: What local funding is required from Rowlett?

Answer: For construction, nothing. Rowlett's been a member city for a certain number of years. Garland paid in for enhanced station. Richardson shared funds for tunnel.

Comment: When Park'n Ride was put in, not great amenities, promised a really nice station.

Comment: There would not be restrooms in station, landscaping would be just as good as Garland.

Question: What was original date on NW Corridor 2007-2008?

Comment: Sore spot – DART was supposed to be here THIS year. Told to stay in member city 2001 economy got bad. Now 2012, would like to see DART give Rowlett the same respect, original city like Carrollton.

Response: Our funds are from local economy, economy is bad, we are in a tight spot.

Question: Garland station's only access on front side, will Rowlett station have access on both sides?

Answer: Extension of Martin will allow safety - people want to make sure signals are in place.

Comment: Put station on the same side as parking.

Question: Operating funds and construction funds are construction funds in place?

Answer: Yes.

Comment: In the past, underestimated parking and ridership.

Response: Modeling has been done, fortunately, ROW has extended land for expansion.

Question: Does DART take into account ridership and parking with respect to oil prices, connectivity, etc.?

Answer: That will be looked at on the whole as more projects are implemented.

Comment: A difficulty for projections is finding the numbers outside of the service area. Park 'n Rides are used by people outside the service area extensively.

Question: Is Rowlett the end of the line?

Answer: DART owns corridor out to Fate, Texas. 2030 System Plan looks at extending further.

Question: Any plans for a loop?

Answer: That's in the 2030 System Plan, looking at crosstown.

Question: All of these plans are existing rail lines?

Answer: Everything but Irving.

Question: Any interest in non-member cities to join in?

Answer: They have to join, bus service immediately, get in line for LRT.

Question: This Service Plan, is everything for next 15 years?

Answer: All of these promises will be built out by 2012.

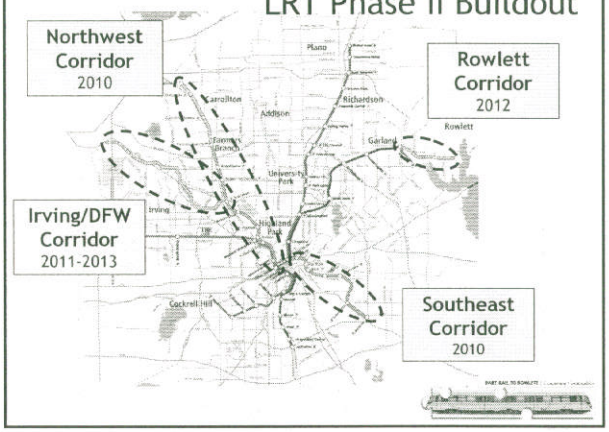
DART

Community Work Group
Thursday, July 14, 2005
Rowlett City Hall – 6:30 p.m.

Agenda

Welcome and Introductions
Project Background
PE/LEA Process and Schedule
Key Project Issues
Role of Community Work Group
Next Steps

LRT Phase II Buildout

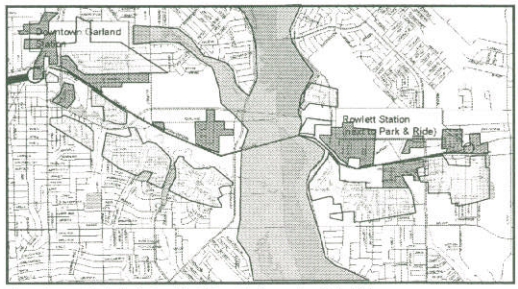


DART

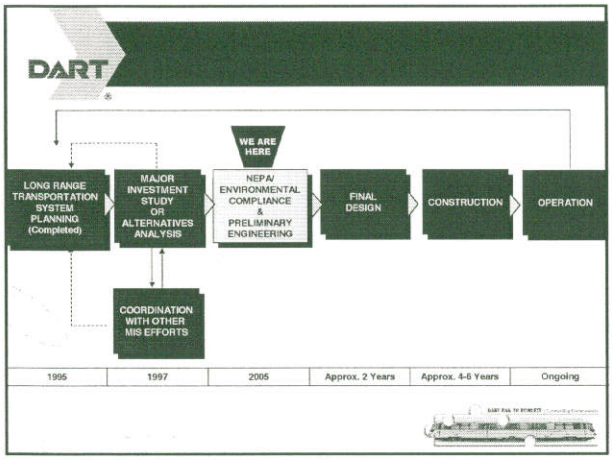
Project	Status
Phase II	
Northwest Corridor	Final Design underway
Southeast Corridor	Final Design underway
Irving/DFW Corridor	PE/EIS underway
Rowlett Extension	PE/LEA underway
Phase III	
South Oak Cliff Extension	Right-of-way preservation; PE/EA TBD
2nd CBD Alignment	Needs & Opportunities in 2030 System Plan; Alternatives Analysis in Fall 2005

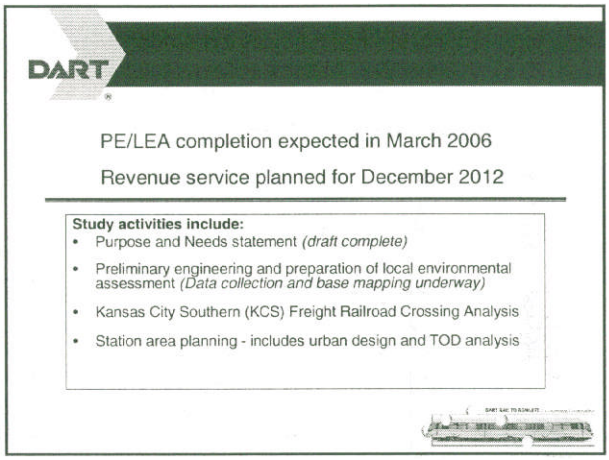
NOTES: PE – Preliminary Engineering; FEIS – Final Environmental Impact Statement; EA – Environmental Assessment; LEA – Local Environmental Assessment

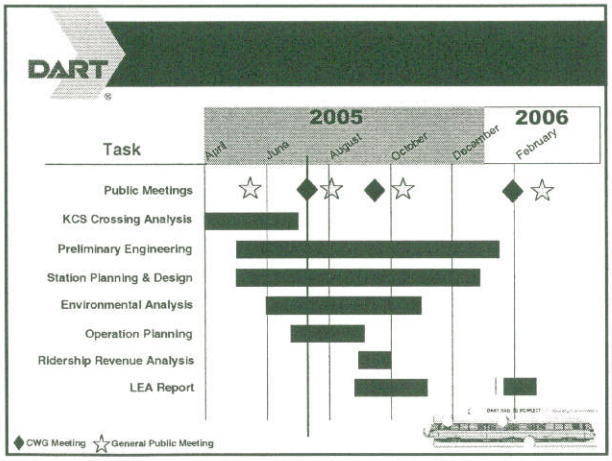
DART

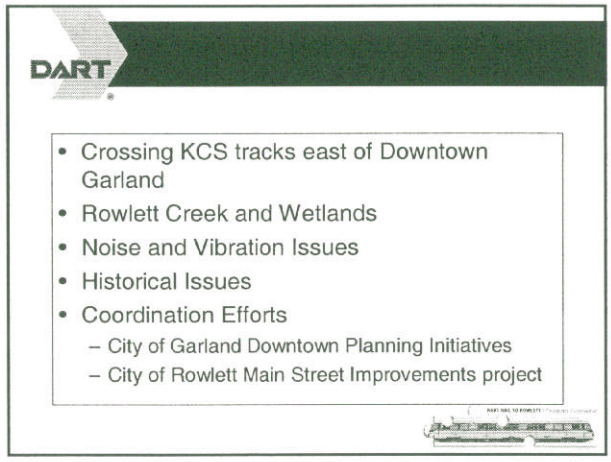


- Land uses include industrial, floodplain and residential
- Route length = 4.5 miles
- Locally funded project

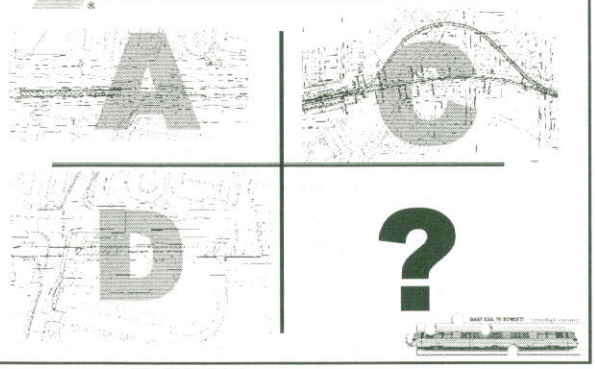

DART
WE ARE HERE
LONG RANGE TRANSPORTATION SYSTEM PLANNING (Completed)
MAJOR INVESTMENT STUDY OR ALTERNATIVES ANALYSIS
NEPA/ ENVIRONMENTAL COMPLIANCE & PRELIMINARY ENGINEERING
FINAL DESIGN
CONSTRUCTION
OPERATION
COORDINATION WITH OTHER MIS EFFORTS
1995
1997
2005
Approx. 2 Years
Approx. 4-6 Years
Ongoing


DART
PE/LEA completion expected in March 2006
Revenue service planned for December 2012
Study activities include:
• Purpose and Needs statement (draft complete)
• Preliminary engineering and preparation of local environmental assessment (Data collection and base mapping underway)
• Kansas City Southern (KCS) Freight Railroad Crossing Analysis
• Station area planning - includes urban design and TOD analysis


DART
2005
2006
Task
April
June
August
October
December
February
Public Meetings
KCS Crossing Analysis
Preliminary Engineering
Station Planning & Design
Environmental Analysis
Operation Planning
Ridership Revenue Analysis
LEA Report
CWG Meeting
General Public Meeting


DART
• Crossing KCS tracks east of Downtown Garland
• Rowlett Creek and Wetlands
• Noise and Vibration Issues
• Historical Issues
• Coordination Efforts
– City of Garland Downtown Planning Initiatives
– City of Rowlett Main Street Improvements project

DART



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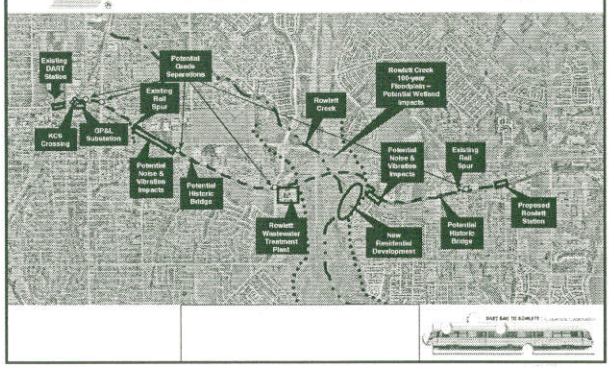


DART

The CWG is intended to provide technical staff with community insight from a broad range of stakeholders.

The responsibilities of the CWG are to:

- Monitor the DART Rail to Rowlett PE/LEA Study from a community perspective;
- Highlight potential issues and concerns specific to their interest group;
- Coordinate DART Rail to Rowlett PE/LEA Study activities for their local interest group;
- Disseminate information and generate project interest throughout the community; and
- Offer strategies to resolve issues between competing interests.

DART

- Public Meeting
  - late August/ early September
- Next CWG Meeting
  - late September

DART

Project Manager:

Cheri Bush

Cbush@dart.org

214.749.2568

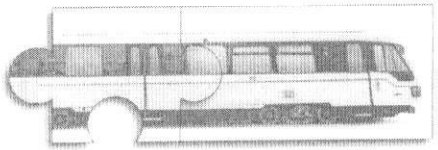
Community Affairs:

Lawrence Meshack

Jmeshack@dart.org

214.749.2590

DART RAIL TO ROWLETT | Connecting Communities



COMMUNITY WORK GROUP MEETING

Rowlett City Hall- July 14, 2005 DART

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1	Last: BRADY First: DAVE Organization/Affiliation: E-BUS / CAC	Address: P.O. Box 472291 Garland, TX 75047	Phone: (972) 276-3926 Fax:	Home E-mail: Work E-mail:
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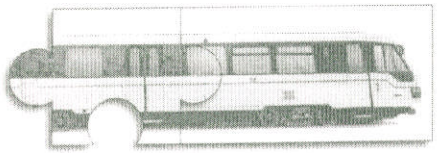
8	Last: Alsup First: Dennis Organization/Affiliation: City of Rowlett Council	Address: 3113 Scott Dr. Rowlett, Tx 75088	Phone: 972 533-1870 Fax: 972-475-3733	Home E-mail: dennisalsup@verizon.net Work E-mail:
9	Last: ZHAO First: PENG Organization/Affiliation:	Address:	Phone: Fax:	Home E-mail: Work E-mail:
10	Last: Kirk First: Sean Organization/Affiliation:	Address: 7810 St. Fillans Ct Rowlett, Tx 75089	Phone: 972-412-7540 Fax:	Home E-mail: Sean@seankirk.Net Work E-mail:

DART RAIL TO ROWLETT | Connecting Communities



COMMUNITY WORK GROUP MEETING

Rowlett City Hall- July 14, 2005 DART

#	Name	Address	Phone/Fax	E-mail
1	Last: Kochi First: John Organization/Affiliation: South First Street	Address: 1808 Concho Garland TX 75040	Phone: 972-494-2378 Fax:	Home E-mail: Work E-mail:
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3	Last: Weiler First: Greg Organization/Affiliation: Keep Rowlett Beautiful	Address: 3606 Rimington Dr. Rowlett, Tx 75088	Phone: 972-412-2176 Fax:	Home E-mail: gweiler19@msn.com Work E-mail: weiler.gregory@epa.gov
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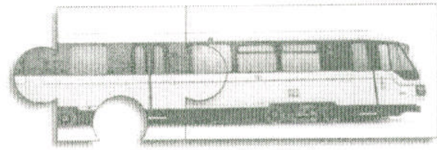
7	Last: First: Organization/Affiliation:	Address:	Phone: Fax:	Home E-mail: Work E-mail:
8	Last: First: Organization/Affiliation:	Address:	Phone: Fax:	Home E-mail: Work E-mail:
9	Last: First: Organization/Affiliation:	Address:	Phone: Fax:	Home E-mail: Work E-mail:
10	Last: First: Organization/Affiliation:	Address:	Phone: Fax:	Home E-mail: Work E-mail:

DART RAIL TO ROWLETT | Connecting Communities



COMMUNITY WORK GROUP MEETING

Rowlett City Hall- July 14, 2005

DART

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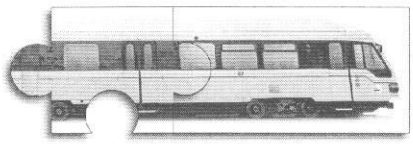
4	Last: Leonard First: Joan Organization/Affiliation: Susquehanna Radio	Address: 6501 Hawthorne Cove Rowlett, TX 75089	Phone: 972-475-4023 Fax:	Home E-mail: gerald.leonard@comcast.net Work E-mail: jleonard@dfwradio.com
5	Last: [illegible] First: [illegible] Organization/Affiliation:	Address: [illegible] Liberty [illegible]	Phone: 972-[illegible] Fax:	Home E-mail: [illegible] Work E-mail:
6	Last: CLARK, JR First: Robert Organization/Affiliation:	Address: 405 DAVIDSON DR GARLAND	Phone: 972 276-7744 Fax:	Home E-mail: Work E-mail:
7	Last: POE First: SHAWN Organization/Affiliation: CITY OF ROWLETT	Address: 4310 INDUSTRIAL	Phone: 972 463 3910 Fax:	Home E-mail: Work E-mail:
8	Last: HARRIS First: GEORGE Organization/Affiliation: CITY OF ROWLETT	Address: P.O. BOX 99 ROWLETT 75030-0099	Phone: 972-412-6110 Fax:	Home E-mail: Work E-mail: GHARRIS@CI.ROWLETT.TX.US
9	Last: First: Organization/Affiliation:	Address:	Phone: Fax:	Home E-mail: Work E-mail:
10	Last: First: Organization/Affiliation:	Address:	Phone: Fax:	Home E-mail: Work E-mail:



Preliminary Engineering/
Local Environmental Assessment

Agenda
Community Work Group Meeting
January 25, 2006 – 6:30 p.m.

The Atrium at the Granville Arts Center
300 N. Fifth Street
Garland, Texas

I. Welcome and Introductions

II. The crossing of the light rail over the KCS alignment, just east of the Downtown Garland station
- Impacts to the existing Downtown Garland Station
- Impacts to the existing utility lines near the crossing

III. The appearance of bridge structures for the new line

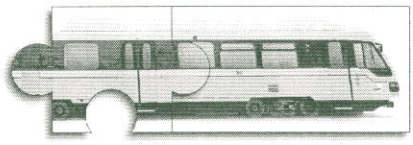
IV. Design and development of the new Rowlett Station

V. Environmental issues including noise and vibration

VI. Next Steps

VII. Adjournment

DART RAIL TO ROWLETT | Connecting Communities



Preliminary Engineering/
Local Environmental Assessment

Rowlett Corridor (R-1) Task 2.0
Minutes
Community Work Group Meeting
January 25, 2006 – 6:30 p.m.

The Atrium at the Granville Arts Center
300 N. Fifth Street
Garland, Texas

Cheri Bush – DART
Lawrence Meshack – DART
Joanna Colvin – LGGROUP
Melinda Clary – LGGROUP
Diane Cowin - LGGROUP
Peng Zhao – LGGROUP
Kevin St. Jacques - WSA
Boro Dedeitch – Parsons

- Introductions – 32 in attendance
- Agenda
- Phase II Build out
- Study Area
- PE/LEA Process – December 2012
- PE/LEA Timeline
  - Public Hearing
- Key Issues
  - KCS – Movement of station
  - SLRV vehicle – raise platforms 8" to allow for a walkway.
  - 2 miles of floodplain
- Aesthetics
  - Enhanced bridge
  - Working with Garland to create design that fits with community aesthetics
  - Shared parking
- Comment – HazMat

- Quick Trip Fuel new station being built – check database

Question: When would construction begin on the bridge over KCS?

Answer: 2009, finishing perhaps by 2012.

Comment: Will there be any bearing on current services?

Answer: No, there will be no interruption in service.

Question Any change west of the current station, will the 5th Street crossing change at all?

Answer: At this time it stays the same.

Question: Will there be noise/vibration issues on the new Community College Campus?

Answer: Assuming there would be no impact, would have to slow down, might hear the train horn, understand people get used to all of the noise.

DART

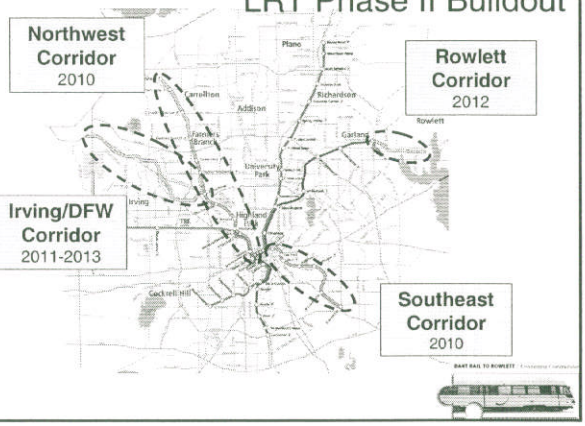
Community Work Group

Wednesday, January 25, 2006
The Atrium at the Granville Arts Center
Garland, Texas

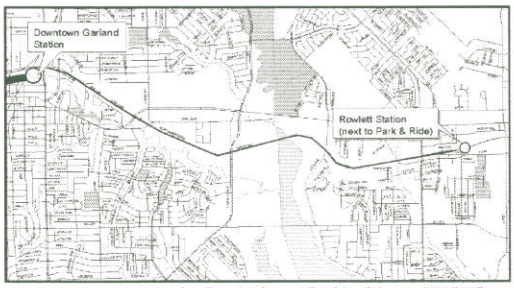
Agenda

- Welcome and Introductions
- Project Background
- The crossing of the light rail over the KCS alignment, just east of the Downtown Garland station
  - Impacts to the existing Downtown Garland Station
  - Impacts to the existing utility lines near the crossing
- The appearance of bridge structures for the new line
- Environmental issues including noise and vibration
- Design and development of the new Rowlett Station

LRT Phase II Buildout



DART



- Land uses include Industrial, Floodplain and Residential
- Route length = 4.5 miles
- Locally funded project

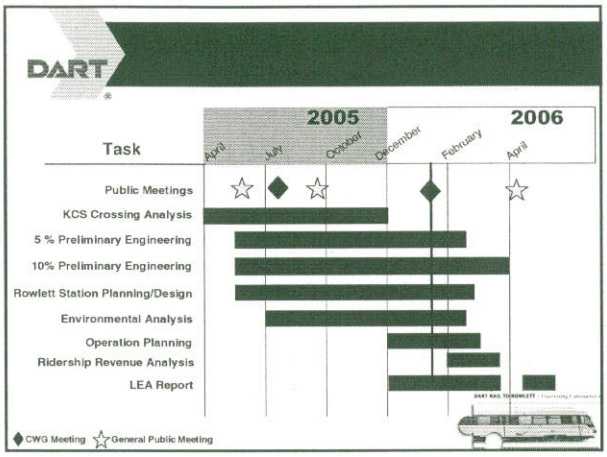
DART

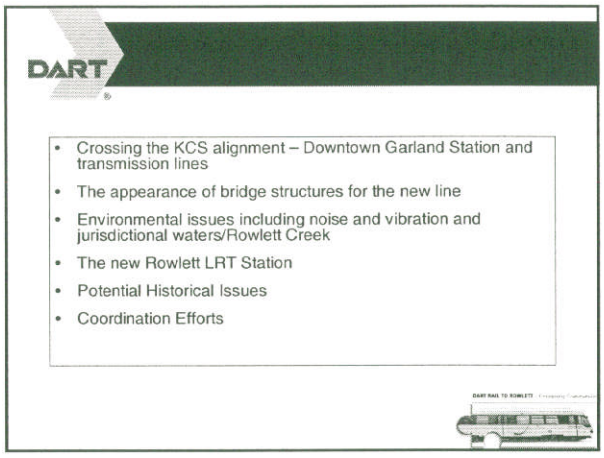
PE/LEA completion expected in March 2006

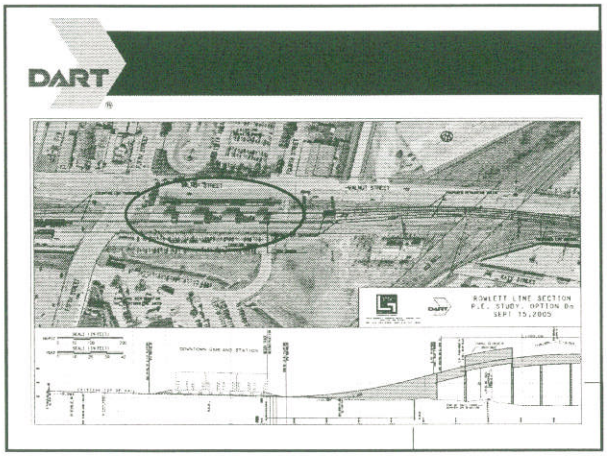
Revenue service planned for December 2012

Study activities include:

- Purpose and Need statement *(draft complete)*
- Preliminary Engineering and preparation of Local Environmental Assessment *(Data collection and base mapping complete; 5% PE and impact analysis underway)*
- Kansas City Southern (KCS) Freight Railroad Crossing Analysis *(complete)*
- Station area planning - includes urban design and TOD analysis *(underway)*


DART
2005
2006
Task
April
July
October
December
February
April
Public Meetings
KCS Crossing Analysis
5 % Preliminary Engineering
10% Preliminary Engineering
Rowlett Station Planning/Design
Environmental Analysis
Operation Planning
Ridership Revenue Analysis
LEA Report
CWG Meeting
General Public Meeting


DART
Crossing the KCS alignment – Downtown Garland Station and transmission lines
The appearance of bridge structures for the new line
Environmental issues including noise and vibration and jurisdictional waters/Rowlett Creek
The new Rowlett LRT Station
Potential Historical Issues
Coordination Efforts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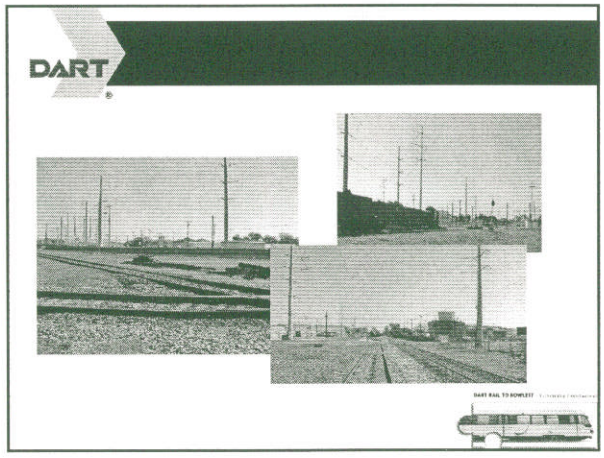
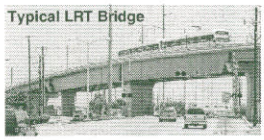
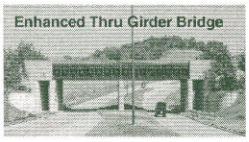

DART

DART

Typical LRT Bridge



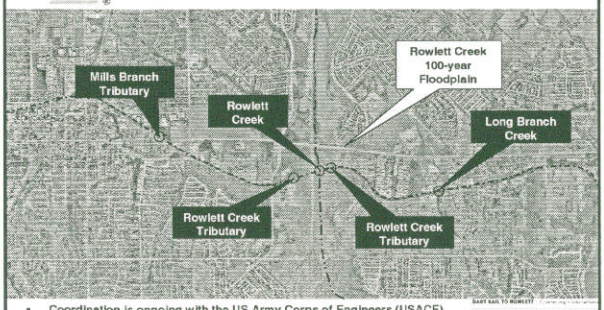
Enhanced Thru Girder Bridge



DART

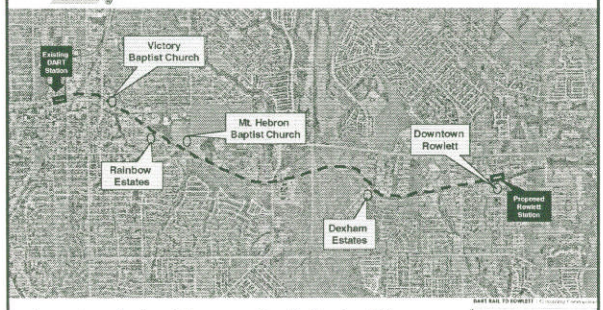
- Jurisdictional Waters
- Noise and Vibration
- Historical Resources
- Hazardous Materials
- Socio-economic Conditions
- Land Use Considerations

DART



- Coordination is ongoing with the US Army Corps of Engineers (USACE).
- A USACE project number and manager have been assigned and further coordination will take place following 5% design.

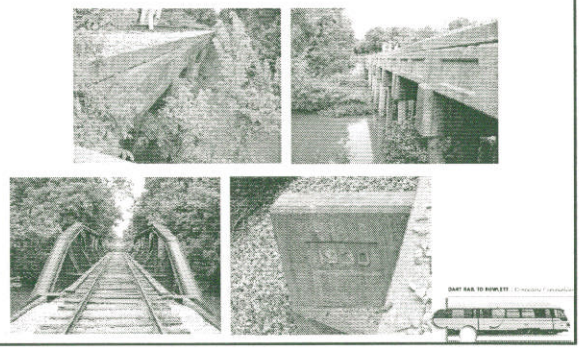
DART



- Impact analysis will be completed following 5% design

Structure Type	Location	Preliminary Determination
Formed concrete bridge (1930s)	over Commerce Street	Potentially eligible
Formed concrete bridge (1930s)	over potential wetland	Potentially eligible
Steel pony truss bridge	over Rowlett Creek	Potentially eligible
Formed concrete bridge (1930s)	East of Rowlett Creek	Potentially eligible
Formed concrete bridge (1922)	over Business Hwy 66	Potentially eligible

- Additional analysis and coordination with the Texas Historical Commission will be initiated following completion of 5% design.



- A review of a hazardous materials database search was conducted along project area.
- No sites were identified directly along railroad.

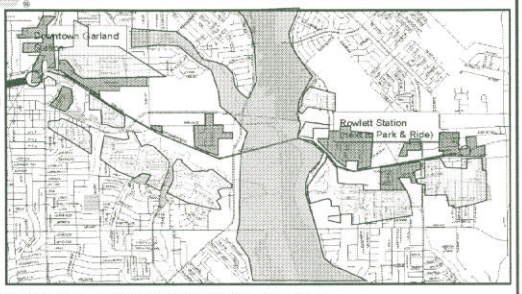
Distance from alignment	# of sites
Within 1/8 mile	69
1/8 to ¼ mile	68
¼ to ½ mile	29

*sites include low, medium and high risk potential

- Analysis indicated that a significant minority population exists in the study area.
- Median household income levels within the project area are higher than the Dallas County average.
- The study area has slightly lower income and higher poverty levels than Dallas County.
- The proposed project would not impact these tracts disproportionately or adversely.

DART

Land uses include Industrial, Floodplain and Residential



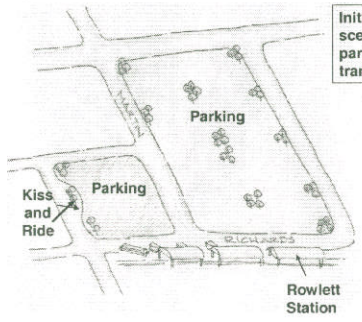
- From 1990 to 2000, Rowlett experienced some of the highest population growth in the region (91 percent increase)
- Rowlett adopted a comprehensive Economic Development Strategic Plan 2002-2003 in order to: foster growth and attract and retain business

DART

Garland	
N. 1st Street	Grade Separation Recommended
Lavon Drive (SH 78)	Already Grade Separated
SH 66	Already Grade Separated
Commerce Street	Already Grade Separated
Centerville Road	Existing At-Grade Crossing acceptable

Rowlett	
Dexham Road	Existing At-Grade Crossing acceptable
Main Street	Already Grade Separated
Rowlett Road	Grade Separation Recommended
Commerce Street/ Richards Street	At-Grade Crossing to be closed
Future Downtown Area Crossing	Not yet analyzed

DART



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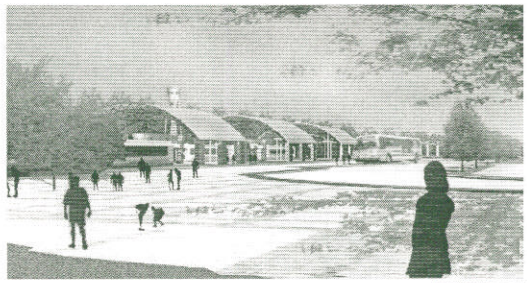
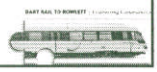


- Complete Environmental Analysis
- Complete Preliminary Engineering
- Complete Rowlett Station design
- Submit Draft Local Environmental Assessment for public review



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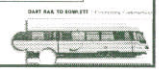
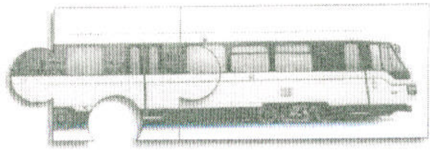


DART RAIL TO ROWLETT | Connecting Communities



COMMUNITY WORK GROUP MEETING

Granville Arts Center- January 25, 2006

DART

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3	Last: POOL First: RODGER Organization/Affiliation: [illegible]	Address: 4014 RANDOM CIRCLE GARLAND, TX	Phone: (972) 240-0965 Fax: —	Home E-mail: rapoolfamily@comcast.net Work E-mail: rodger.pool@dccccd.edu
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5	Last: DOANE First: Claude Organization/Affiliation: MANY !	Address: 849 LILAC DRIVE GARLAND TX 75040-4924	Phone: 972-566-5891 Fax: 972-566-3924	Home E-mail: Work E-mail: Claude.Doane@HCAHealthcare.com
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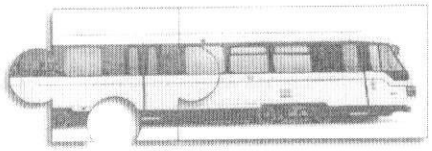
8	Last: First: Organization/Affiliation:	Address:	Phone: Fax:	Home E-mail: Work E-mail:
9	Last: First: Organization/Affiliation:	Address:	Phone: Fax:	Home E-mail: Work E-mail:
10	Last: First: Organization/Affiliation:	Address:	Phone: Fax:	Home E-mail: Work E-mail:

DART RAIL TO ROWLETT | Connecting Communities



COMMUNITY WORK GROUP MEETING

Granville Arts Center- January 25, 2006 DART

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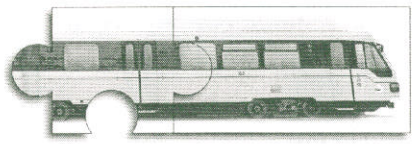
	Organization/Affiliation:			Fax:	Work E-mail:
9	Last:	First:	Address:	Phone:	Home E-mail:
	Organization/Affiliation:			Fax:	Work E-mail:
10	Last:	First:	Address:	Phone:	Home E-mail:
	Organization/Affiliation:			Fax:	Work E-mail:

DART RAIL TO ROWLETT | Connecting Communities



Preliminary Engineering/
Local Environmental Assessment

Agenda
Technical Work Group Meeting 1
Thursday, June 16, 2005 - 11:30 a.m.

The Atrium at the Granville Arts Center
300 N. Fifth Street
Garland, Texas

I. Welcome and Introductions

II. Background/Purpose of the Project

III. Role of Technical Work Group in Decision-Making Process

IV. Description of Preliminary Engineering/Local Environmental Assessment Process and Schedule

V. Review and Discussion of Key Project Issues

VI. Break-out group discussions of Station Area Planning
- **A.** Garland
- **B.** Rowlett

VII. Next Steps

VIII. Adjournment

Rowlett Corridor (R-1)
Technical Work Group Meeting 1
Thursday
June 16, 2005
11:30 a.m.

Cheri Bush opened the meeting at 12:00 p.m.

- Project team introductions
- Cheri began PowerPoint
- Break-out Sessions

Garland break-out session notes

- Peng Zhao presented KCS crossing alternatives
    - Garland Station - is enhanced station - $2M more
    - 2 options most feasible – from 7-8 first considered

Option A – Station to rest side of 5th
Option D – realign 5th Street, extend station, demo portion

- Option A is most expensive option
    - Presented alternatives that were eliminate prior to meeting
- Option D
    - Pedestrian friendly crossing opportunity
    - Bring new community college closer to rail

Robert Wunderlich

- Station area important: redevelop downtown area
- Catalyst: community college placement
- Key redevelopment area – change character – tie together with master plan
- Didn't do a good job the first time integrating the station into downtown
- Shifting to west – more visible from downtown (benefit)
- No long term plans to widen 5th Street on either side of Walnut
- Community College – urban style / transit orientated

Anita:

- When will station construction begin? – 2009-2010
- 50,000 foot building – Community college start, open 2007 – 2008
- Timing construction activities on all four corners of intersection is critical
- Opportunity to widen sidewalks

Rod:

- Get together with RKL: to talk about downtown revitalization plan and staiotn

GP+L

- 23 ½ ft for train
- 19 ft. for centenary
- 5-6 ft for clearance – voltage envelope consideration ~ 20 ft

Crossing: TNPA line (Tom Chambers – contact)

- Start grading 1-2 structures back
- Line parallel to station being redone (within ROW)
- Bring up to 138
- Name: Walnut to Fairdale
- Minimum separation 14ft – 138 kv
- Distribution issues all along corridor
- At grad may not be a problem – but aerial will not have enough clearance
- Can under build distribution
  - Comcast / Verizon may be under currently (5 ft above them for neutral)
- Transmission cannot dip under
- Cost Estimate
  - Commodities change – steel etc.
  - Need exact elevation to give realistic number
- Line within ROW by license – based on agreement
  - Who covers cost?
- Most GP&L trans lines will be 138 kv in next 10 years
- Hold on active rebuild of transmission line
- Wait for DART final plan
- Concern with the way the aerial structure looks – gateway to downtown - steel bridge – don't care what Dallas looks like – has to work for Garland

*DART has review these plans

Rowlett break-out session notes

- **Extended City Building**
- **Certain properties cleared**
- **Cotton Gin, not historical – not stable and most likely will be raised**
- **Move Commerce Street Crossing**
- **Historical Society Building near Ponder**
- **City owns block where City Building now stands – future retail development (with Round about) on 9 ½ acres of city property**
- **Large water tower on park property**
- **Historical downtown – west of city block connected buildings – across the structure – buildings are not related**
- **East of Cityblock - residential buildings converted to commercial**

- East & West of station site – lots of non-conforming uses and structures – zoned to north west are mixed use
- 4 story minimum higher density desired
- New building to east is public works, police and fleet services

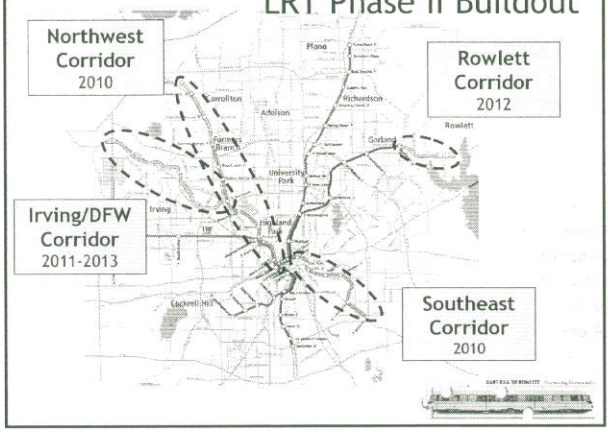
DART

Technical Work Group
Thursday, June 16, 2005
Granville Arts Center, Atrium

Agenda

Welcome and Introductions
Project Background
Role of Technical Work Group
PE/LEA Process and Schedule
Key Project Issues
Station Area Breakout Discussions
Next Steps

LRT Phase II Buildout

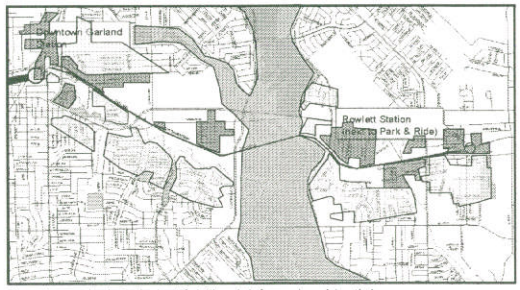


DART

Project	Status
Phase II	
Northwest Corridor	Final Design underway
Southeast Corridor	Final Design underway
Irving/DFW Corridor	PE/EIS underway
Rowlett Extension	PE/LEA underway
Phase III	
South Oak Cliff Extension	Right-of-way preservation; PE/EA TBD
2nd CBD Alignment	Needs & Opportunities in 2030 System Plan; Alternatives Analysis in Fall 2005

NOTES: PE – Preliminary Engineering FEIS – Final Environmental Impact Statement; EA – Environmental Assessment; LEA – Local Environmental Assessment

DART

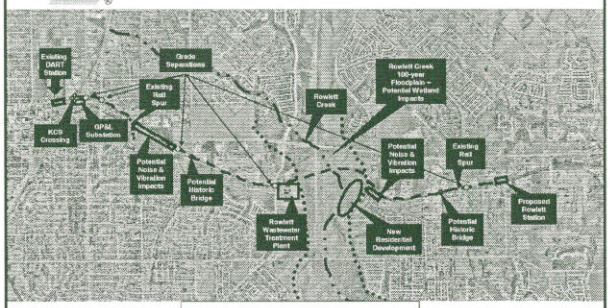


- Land uses include industrial, floodplain and residential
- Route length = 4.5 miles
- Locally funded project

DART

- Crossing KCS tracks east of Downtown Garland (break out discussion)
- Rowlett Creek and Wetlands
- Noise and Vibration Issues
- Historical Issues
- Coordination Efforts
  - City of Garland Downtown Planning Initiatives
  - City of Rowlett Main Street Improvements project

DART



DART

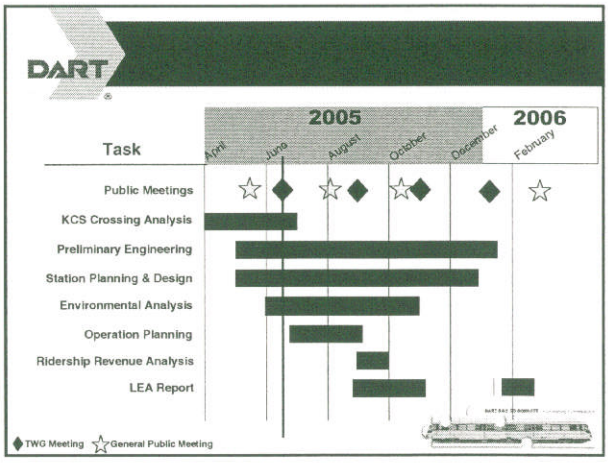
PE/LEA completion expected in March 2006

Revenue service planned for December 2012

Study activities include:

- Purpose and Needs statement *(draft complete)*
- Preliminary engineering and preparation of local environmental assessment *(Data collection and base mapping underway)*
- Kansas City Southern (KCS) Freight Railroad Crossing Analysis *(MATRIX comments due 6/24/05)*
- Station area planning - includes urban design and TOD analysis

DART



DART

The TWG is intended to provide technical staff support from a broad range of affected agencies.

The charge of the TWG is to:

- Assist in the definition and evaluation of project alternatives;
- Review technical studies and staff recommendations;
- Coordinate agency activities and review functions for the DART Rail to Rowlett PE/LEA;
- Provide requested data to study team; and
- Coordinate and arrange briefings with their elected officials.

DART

City of Garland

City of Rowlett

DART

- Data Needs
- Matrix Feedback
- Public Meeting – late August
- Next TWG Meeting – September

DART

Project Manager:

Cheri Bush

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214.749.2568

Community Affairs:

Lawrence Meshack

Jmeshack@dart.org

214.749.2590

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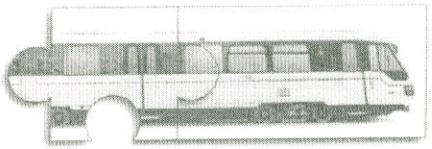

TECHNICAL WORK GROUP MEETING

Granville Arts Center- June 16, 2005 DART

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10	Last: Brasselman	First: Chris	Address: MSMS 600 Main 2nd Floor Garland	Phone: 972-205-2449	Home E-mail:
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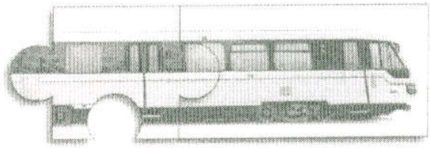

DART RAIL TO ROWLETT | Connecting Communities

TECHNICAL WORK GROUP MEETING

Granville Arts Center- June 16, 2005

DART

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2	Last: BANERJEE	First: SUKU	Address: 1401 PACIFIC AVE DALLAS, Tx 75266	Phone: 214-749-2981	Home E-mail:
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4	Last: St. Jacques	First: Kevin	Address:	Phone:	Home E-mail:
	Organization/Affiliation: WSA			Fax:	Work E-mail:
5	Last: Shirmand	First: Reza	Address:	Phone:	Home E-mail:
	Organization/Affiliation: DAL?			Fax:	Work E-mail:
6	Last:	First:	Address:	Phone:	Home E-mail:
	Organization/Affiliation:			Fax:	Work E-mail:
7	Last:	First:	Address:	Phone:	Home E-mail:
	Organization/Affiliation:			Fax:	Work E-mail:
8	Last:	First:	Address:	Phone:	Home E-mail:
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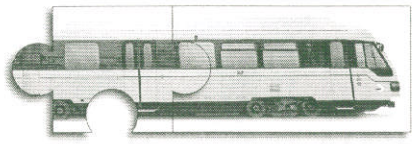


Preliminary Engineering/
Local Environmental Assessment

Agenda
Technical Work Group Meeting 2

Thursday, November 17, 2005
11:30 - 1:00 p.m.
Rowlett Community Centre
4002 Main St.
Rowlett

I. Welcome and Introductions

II. Data Collection Efforts

III. Coordination Efforts

IV. Next Steps

V. Station Area Breakout Sessions

A. Garland Station Alternatives for Crossing KCS Railroad

B. Rowlett Station Concept Design

VI. Adjournment

Technical Work Group Meeting #2
Thursday
November 17, 2005
11:30 a.m. – 1:00 p.m.
Rowlett Community Centre
4002 Main Street
Rowlett

Attendees:

City of Rowlett
City of Garland
Cheri Bush – DART
Suku Banerjee – DART
Lawrence Meshab – DART
Reza Shirmanesh – DART
Melinda Clary – LGGROUP
Diane Cowin – LGGROUP
Lori Lively – LGGROUP
Peng Zhao – LGGROUP
Rod Kelly – Parsons
Kevin St. Jacques – WSA

MINUTES

Welcome & Introductions -Cheri Bush

- Add total schedule for process PE/EA to Operating Service.
- Reminder of other DART lines in progress
- Overview of Study Area
- Project Work Summary
  - Revenue SVC 12/12/2012
  - Purpose & Need Statement done
  - 2-3 weeks from 5% PE Submittal

- **Data Collection Efforts**
  - Last bridge on CR list – it's been taken off the system. Highway 66 is no longer part of the State Highway System, it's just Main Street now.
  - Schedule slide
  - Jurisdictional waters slide and other Environmental slides.
  - Patrick B. – What is to be presented at Z/OU PM? Concerned about giving the public too much information, especially if everything is not final.
    - Cheri – Some will be final; will state what is not final.
    - City of Rowlett want to be privy to what will be presented before it is made known to the general public.

- **Breakout Sessions – GARLAND**
- **GP & L**
- **KCS Issue**
  - Going through analysis, ranked alternatives based on various criteria, particularly the transmission lines – check if DART already has an agreement with Garland Power & Light (GP & L).
    - Major city planning obstacles (GP & L) – lack of communication.

- Cheri – we have been talking w/ GP & L representative in prior meetings.
- Will elaborate during breakout session.

- Cheri – Have huge budget constraints. Obtained permission to go over 22' KCS track and were aware of transmission lines.
- Power line
  - Why cross up and over KCS? Cars cannot cross at grade.
  - Not FA? approved. Would disrupt service; have to go over and under, no other option.
  - Light rail cannot combine with heavy rail. These two systems can't exist within same track system. (Same in Fort Worth.)
- At prior meetings GP & L expressed concerns – we're expressing them again. Art Martinez – we've only been to the July meeting, we presented our concerns then, we'll say them again today.
- Cliff Parker - Has a consultant or anyone from DART contacted TNPA? Peng received drawings/communication from TNPA. Two lines in addition to GP & L lines would need relocating. The final design phase will require more coordination from them (5% will have more work to do.)
- Cheri – call me at anytime, even for an update. Gave everyone a card before meeting's end.
- Next TWG in January. Very important for you to be on the invitee list. Public meeting in February.
- Check the MOA from original blue line.
- Rowlett and Garland Fire Departments to review 5% for access.
- Meet with Garland staff.
- TMPA – 345 heavily loaded one-side. 138 other – any -?- on that line must be coordinated with ERCOT.
- Peng – Will see what agreements have been set with the real estate group.
- Cannot take transmission lines down without coordinating permission with ERCOT (SW-TX).
- Will be expensive. Peng - This is already part of project's cost.
- GP & L revealed in prior discussions that approximately three towers would have to be removed.
- Need to ascertain that it is still okay to take out or move the lines.
- Do not proceed much farther in the project without permission from ERCOT!! [Ken Donohue at ERCOT]
- Peng – GP & L people have directed him to consultant.
  - Double circuit at 1st Street will possibly be impacted as well. Tracks going right between the lines.
  - 138 kV – Walnut to Castle and Walnut to Newman impacted.
  - TOTAL – three 138 kV and one 345 kV, heavily loaded from Royse to Arlington. 345 kV Loop
  - Why not at grade?
  - Safety – cars aren't cleared for safety; light rail cars are not built to collide with freight cars (DART Safety Policy.) Not negotiable, no matter the speed. Cannot upgrade car class.
  - Cheri – We promised Rowlett that we'd build this DART line. Have to do it most cost effectively.
  - Catarary (?) cable equals 16'. Pole is 19'. From existing grade to top of cat. Cable is approximately 40'.
  - Require 200' pole costing GP & L about $2 to $3 million.

- Check National Electric Safety Code to get clearance number for swag between cat. cable.
- Contacts at GP & L are Cliff Parker and Johnny Carlock.
- Figure horizontal limits without transmission lines.
- Elevated areas are main concern.
- Problem is dropping it into Rowlett substation after elevation; 1st Street problem.
  - False rumor circulating that we're moving the station.
  - Retaining wall at end of station and raising it up.
  - Cheri – Need to talk to other City personnel about 6th Street.
    - Will set up a separate meeting.
  - 345 kV heavy loading, sag increases (20'/segment) must determine appropriate clearance.
  - At the existing grade, we're already at 135'.
  - Underground not an option for 345kV.

- Reza – Who's under license to cross whom?
  - GP & L has permits to cross DART's ROW. Cheri will discuss with real estate folks.
- ? GP & L is within City of Garland; they've previously been reimbursed for utility relocation. TXU and other private CO's typically pay for relocation if crossing a privately owned ROW.
- Scheduling June through August October, note for construction that none of the transmission will be taken out of service during (peak load)
- Allow six weeks for construction, probably cannot shut down a line that long.
- Cannot build parallel – no ROW, clearance or existing easement.
- New poles have to be in perfect alignment with existing ones. Most likely will have to take the existing down.
- Resolve issue during final design phase – construction in 2009.
- Lower voltages will not be problematic as long as you get TMPA and ERCOT's permission. You can have alternate back-ups, but not 345kV. Not regulated by PUC.
- Does GP & L require a separate meeting? Peng – Let us send a set of 5% design plans to GP & L in order to avoid a conflict.
  - Let us know if GP & L sees any additional conflicts.
  - Suku – Can we send that to GP & L now before the 5%? Peng – We won't have everything together before 5% (things still shifting.)
  - Rick Gurly – TMPA owner of 345 kV; obtain contact information from GP & L for future correspondence.
  - TMPA has an agreement with the KCS Railroad of which we need to know the details.
  - Cannot angle the line for more strength, steel too expensive.
  - Keep it at bridge at 1st Street; challenge is how to get line back down to Rowlett Substation.
  - Would have to lift ends and drop steel to station.
  - Would have to raise lines prior to construction start.
  - Burying lines in order of magnitude.
  - Cost increase may be prohibited.
    - 345 if underground, oil-pumping station, outages out for weeks.
  - Cannot take track underground, it would have to go down and up too steeply due to proximity of the H_2O table.

- **Breakout Sessions – ROWLETT**
  - Kevin drew on DART property lines.
  - Basic Criteria:
    - 460' platform
    - Six bus bays
    - 944 parking places (total)
  - Rod Kelly – The 'close 2 to open one new' street policy is still an issue.
  - Citywide trail plan.
  - Access to neighboring parcel – 1B could provide two ways, another roundabout could reduce attractiveness for cut thru traffic.
  - Parking – structured parking – why not? - Costs are very high, estimated at $10 million.
  - Our estimated cost for buying property saves us $5 million.
  - Option 1B:
    - Pat – Let's move some (300-400) parking spaces to downtown government center so that people will walk through retail center and be exposed to opportunities to spend money in Rowlett.
    - Rod – Can City commit to having those spaces ready on December 12, 2012?
    - Result: set 1A aside, 1B preferred.
  - Option 2:
    - C – Most realistic property acquisition option.
    - Pat – We all like this one a lot.
  - Option 3:
  - Getting to far away from 'heartbeat' of downtown.
  - Option 2C:
    - Disadvantages:
      - Acquisition of property.
      - Grade changes with LRT bridge.
      - Have to cross Martin Street to access one-half of parking.
    - Advantages:
    - Providing additional ? with tie into downtown theme.
    - Better potential for getting Callongen property for TOD.

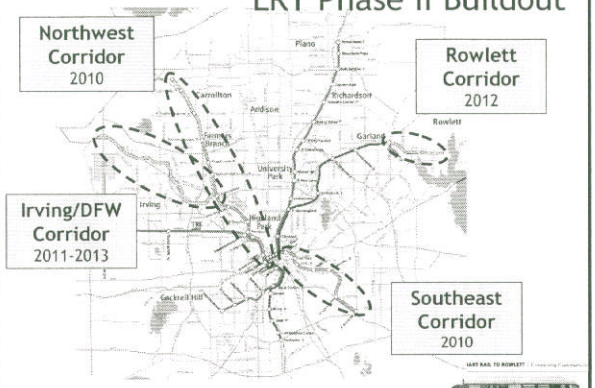
DART

Technical Work Group
Thursday, November 17, 2005
Rowlett Community Centre

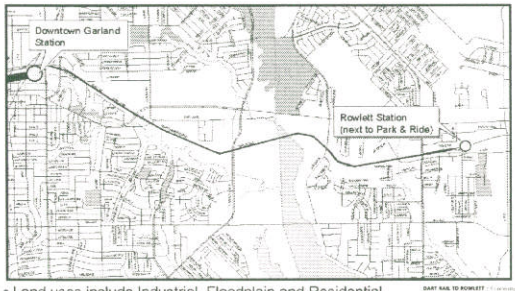
Agenda

- Welcome and Introductions
- Overview
- Data Collection Efforts
- Coordination Efforts
- Garland Station Alternatives for Crossing KCS Railroad
- Rowlett Station Concept Design
- Next Steps

LRT Phase II Buildout



DART



- Land uses include Industrial, Floodplain and Residential
- Route length = 4.5 miles
- Locally funded project

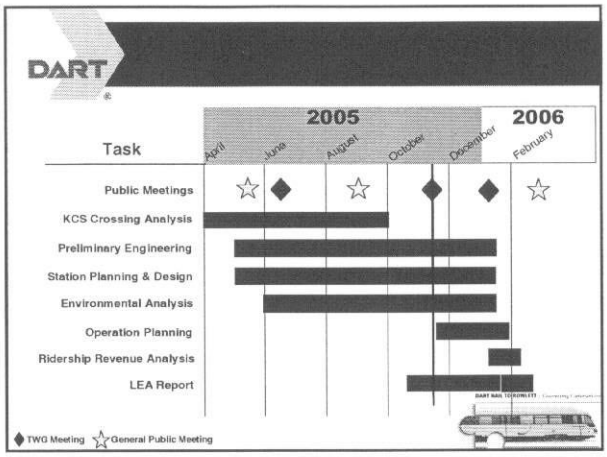
DART

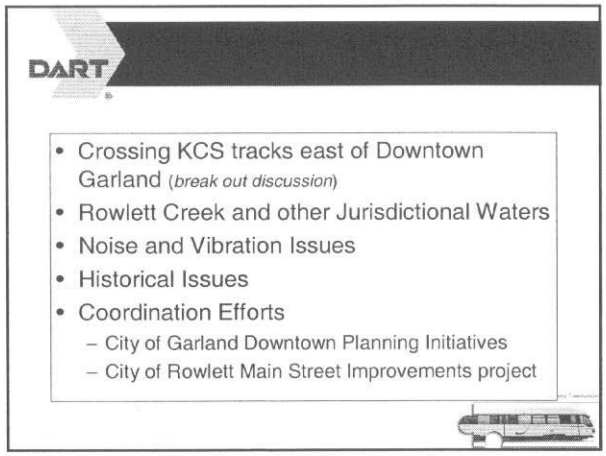
PE/LEA completion expected in March 2006

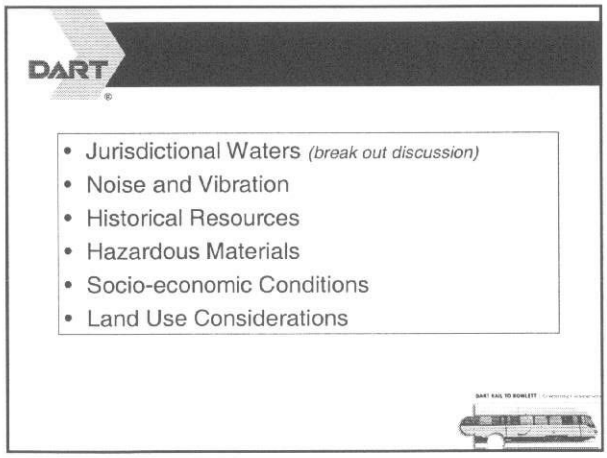
Revenue service planned for December 2012

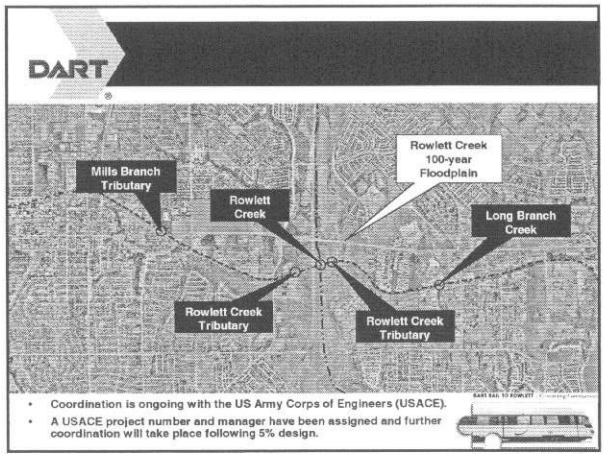
Study activities include:

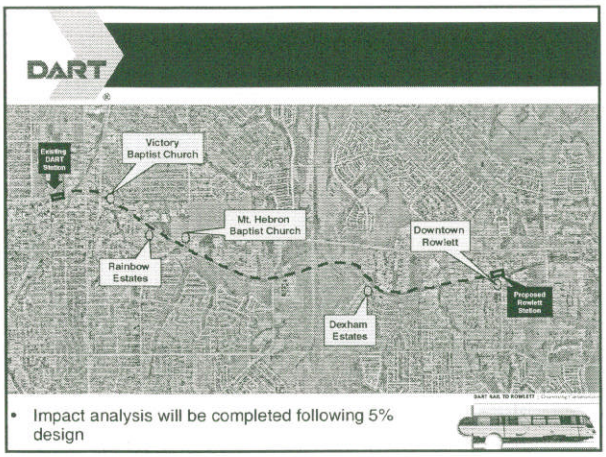
- Purpose and Need statement *(draft complete)*
- Preliminary engineering and preparation of local environmental assessment *(Data collection and base mapping complete; 5% PE and impact analysis underway)*
- Kansas City Southern (KCS) Freight Railroad Crossing Analysis *(complete)*
- Station area planning - includes urban design and TOD analysis *(underway)*


DART
2005
2006
Task
April
June
August
October
December
February
Public Meetings
KCS Crossing Analysis
Preliminary Engineering
Station Planning & Design
Environmental Analysis
Operation Planning
Ridership Revenue Analysis
LEA Report
TWG Meeting
General Public Meeting


DART
• Crossing KCS tracks east of Downtown Garland (break out discussion)
• Rowlett Creek and other Jurisdictional Waters
• Noise and Vibration Issues
• Historical Issues
• Coordination Efforts
– City of Garland Downtown Planning Initiatives
– City of Rowlett Main Street Improvements project


DART
• Jurisdictional Waters (break out discussion)
• Noise and Vibration
• Historical Resources
• Hazardous Materials
• Socio-economic Conditions
• Land Use Considerations


DART
Mills Branch Tributary
Rowlett Creek
Rowlett Creek 100-year Floodplain
Long Branch Creek
Rowlett Creek Tributary
Rowlett Creek Tributary
• Coordination is ongoing with the US Army Corps of Engineers (USACE).
• A USACE project number and manager have been assigned and further coordination will take place following 5% design.



- Impact analysis will be completed following 5% design

Structure Type	Location	Preliminary Determination
Formed concrete bridge (1930s)	over Commerce Street	Potentially eligible
Formed concrete bridge (1930s)	over potential wetland	Potentially eligible
Steel pony truss bridge	over Rowlett Creek	Potentially eligible
Formed concrete bridge (1930s)	East of Rowlett Creek	Potentially eligible
Formed concrete bridge (1922)	over Business Hwy 66	Potentially eligible

- Additional analysis and coordination with the Texas Historical Commission will be initiated following completion of 5% design.

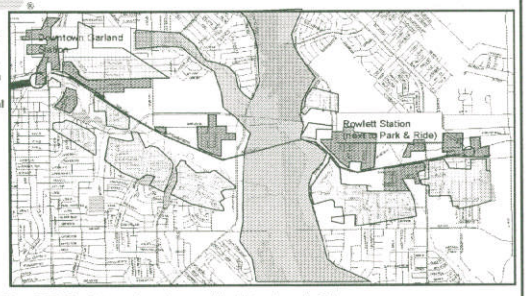
- A review of a hazardous materials database search was conducted along project area.
- No sites were identified directly along railroad.

Distance from alignment	# of sites
Within 1/8 mile	69
1/8 to ¼ mile	68
¼ to ½ mile	29

- Analysis indicated that a significant minority population exists in the study area
- Median household income levels within the project area are higher than the Dallas County average.
- The study area has slightly lower income and higher poverty levels than Dallas County
- The proposed project would not impact these tracts disproportionately or adversely.

DART

Land uses include Industrial, Floodplain and Residential



- From 1990 to 2000, Rowlett experienced some of the highest growth in the region (91 percent increase)
- Rowlett adopted a comprehensive Economic Development Strategic Plan 2002-2003 in order to: Foster Growth and Attract and retain business

DART

Garland	
N. 1st Street	Grade Separation Recommended
Lavon Drive (SH 78)	Already Grade Separated
SH 66	Already Grade Separated
Commerce Street	Already Grade Separated
Centerville Road	Existing At-Grade Crossing acceptable

Rowlett	
Dexham Road	Existing At-Grade Crossing acceptable
Main Street	Already Grade Separated
Rowlett Road	Grade Separation Recommended
Commerce Street/ Richards Street	At-Grade Crossing to be closed
Future Downtown Area Crossing	Not yet analyzed

DART

- Complete 5% Design
- Complete Impact Analysis
- Public Meeting – February 2006
- Next TWG Meeting – January 2006

DART

Project Manager:

Cheri Bush

Cbush@dart.org

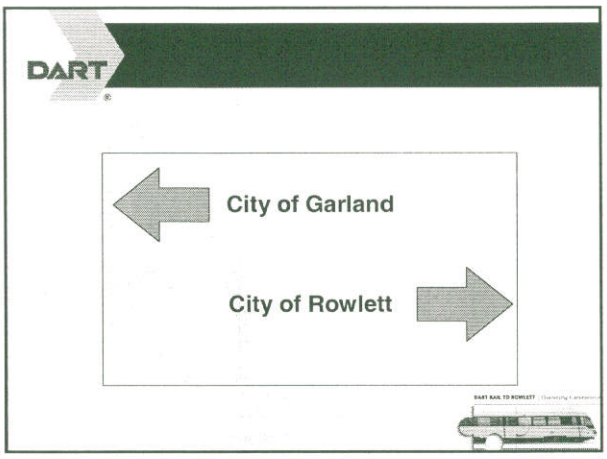
214.749.2568

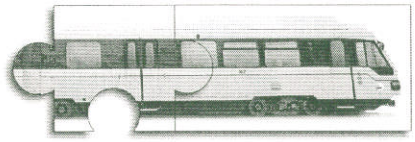
Community Affairs:

Lawrence Meshack

Jmeshack@dart.org

214.749.2590


DART
City of Garland
City of Rowlett



Agenda
Technical Work Group Meeting 3

Wednesday, June 14, 2006
11:30 - 1:00 p.m.
Rowlett City Hall Conference Room
4000 Main St., Rowlett, Texas

I. Welcome and Introductions

II. Schedule and Progress

III. Local Environmental Assessment

IV. Right-of-Way

V. Rowlett Station Concept Design

VI. Next Steps

Technical Work Group Meeting #3A
Wednesday
June 14, 2006
11:30 a.m. – 1:00 p.m.
Rowlett City Hall Conference Room
4000 Main Street
Rowlett

Attendees:

Robert Wunderlich - City of Garland
Dave Schultz – COG Transportation
Johnny Carlock – GP & L
Steve Foster – GP & L
Jim Harder – GP & L
Art Martinez – GP & L
Frank Owens – GP & L
Clifton Parker – GP & L
Melinda Clary – LGGROUP
Joanna Colvin – LGGROUP
Diane Cowin – LGGROUP
Bo Dedeitch – Parsons
Rick Gurley – TMPA

MINUTES

P & R at Dalrock at I30
TxDOT Transportation Study over the next 10 years.
(Unified Development Code UDC on City Planning Website)
TxDOT managed lanes

Will see LEA (give to cities)

Aesthetics expected at building abutments (like TxDOT).

Dexham Road Noise/Vibration Impacts

- 15' Noise Analysis difference?
- Be prepared to discuss at the public meeting
- Vegetation
- Existing berm
- Need to explain report findings that Dexham did not trigger impact
- HMMH (Lance Meister) in attendance?
- Four houses on big lots back up to that
- Discuss minimum efforts
- Increased distance
- Residents in area are vocal about noise impacts to the north side.
- Quadgate/wayside horn example

No build/build scenario

- Based on 2025
- GB –B
- 66 –C, D

Less than an acre
Need response from THC regarding Cotton Gin
Update THC schedule to the City ASAP

Implement integrated Southwest Stormwater Management Plan

- From NCTCOG
- To offset detention
- Ft. Worth is first to adopt new

Peng discussed ROW acquisition fro drainage easements

- Left 90% set with City

Kevin presented Station Design

- Mark apparently showed this at the Commerce Meeting
- "Worried faces" – "My building is now a parking lot."
- Want to take a closer look, especially at intersection radii. "Looks hard for emergency vehicles." (have until June 30)

Finalizing Traffic (Build/No Build) from George Bush

- Looking at ridership effects from George Bush.

UDC – online
Doubletrack
Theresa getting a TOD RFQ

Visual Aesthetic Treatments to bridge

- No piers across Rowlett Road to bridges
- City would consider paying portion

Foxworth Galbreth – spur potentially leaving

DART

DART RAIL TO ROWLETT Connecti... ...unities

DART Rail to Rowlett
Technical Work Group Meeting 3

Name	Representing	Phone	Email
Melinda Cleary	LopezGarcia...	214-741-7777	mcleary@lgaroup.com
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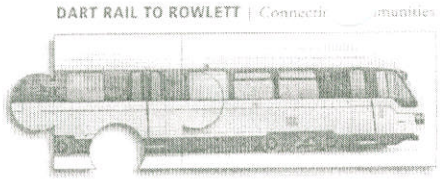
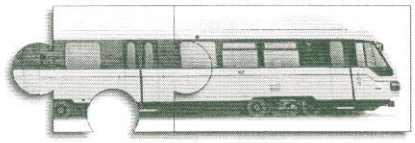
Art Martinez	GP+L	972-205-2669	amartinez@garlandpower light.org
Boro Dedeitch	Parsons	972-991-1900	boro.dedeitch@parsons.com
Jim Horder	GP&L	972-205-2651	jhorder@garlandpower-light.org
Johnny Carlock	GP&L	972-205-3532	jcarlock@garlandpower-light.org
Clifton Parker	GP&L	972-205-3508	cparker@garlandpower-light.org

Rowlett
June 14, 2006



DART Rail to Rowlett
Technical Work Group Meeting 3

Name	Representing	Phone	Email
Rick Gurley	TMPA	936-873-1119	rgurley@texasmpa.org
Dave Schultz	COG Transportation	972.205.2434	DSCHULTZ@CI.GARLAND.TX.U
Frank Owens	GPL	972-205-3003	frankO@gplgpl.org
Robert Winkelmann	City of Garland	972-205-2432	rwinkelmann@ci.garland.tx.u
Steve Foster	GPL	972 205 3170	Sfoster@Garlandpower... Light.org



Agenda
Technical Work Group Meeting 3

Thursdaysday, June 15, 2006
11:30 - 1:00 p.m.
Garland City Hall, Austin State Room
200 North 5th Street, Garland, Texas

VII. Welcome and Introductions

VIII. Schedule and Progress

IX. Local Environmental Assessment

X. Right-of-Way

XI. Drainage Design

XII. Rainbow Estates

XIII. Next Steps

Technical Work Group Meeting #3B
Thursday
June 15, 2006
11:30 a.m. – 1:00 p.m.
Austin State Room
Garland City Hall
200 North 5th Street
Garland

Attendees:

Robert Wunderlich – City of Garland
Patrick Baugh - City of Rowlett
Teresa Biddich - City of Rowlett
Shawn Poe - City of Rowlett
Cheri Bush - DART
Melinda Clary – LGGROUP
Joanna Colvin – LGGROUP
Diane Cowin – LGGROUP
Lori Lively - LGGROUP
Peng Zhao - LGGROUP
Bo Dedeitch – Parsons
Kevin St. Jacques – WSA

MINUTES

Question: You have a final decision not to move the Garland Station, correct?
- Yes, Cheri explained extension of platform and KCS crossing saving considerable amount of water (22 ft clearance).
- 6% internal adjustment.

Exhibited a steel-girder bridge sample.

Question: Are there any other examples?
- No.
- There are other bridges, but steel is required.

Question: Is this the only (low-cost) design alternative for the bridge?
- It is structurally -- Steel-through girder is the only way to span KCS.
- (Rob requested copy of bridge picture).

Cheri: This is locally funded, not federally funded.

Robert: Does this mean we're less concerned?
- Cheri: No, we're trying t be as fair as we can across the whole system, while staying within the cost constraints. If there is another desirable bridge that works within the costs constraints, we'll look at it.

Question: Was historical effort made during GIS on DGNO rail depot?
- Not at this level

Robert: Not thinking it should be determined as eligible.

Question: When will we hear from THC?
- 45 to 60 days.

Question: What is the decision in the response to THC?
- We can make recommendations, but THC will decide.

Robert: How much hydraulic work has been done?
- At 10% level, 95% done.
-

Robert: Is there a Hydraulic Report?
- Yes, will have one soon.
- Will copy the cities of Rowlett and Garland on the submittal to DART which will be based on zoning, drainage (existing).
- For FP, was not considered part of our scope.

Question: Can you roll the map out to show what we are doing along the Ellis yard area?

Question: Is there is a conflict just east of existing station at roughly 1st Street?
- Yes, problem area just at that zone.
- Sewer line crossings will be encased – biggest problem is with the electrical lines.

Question: No elevation?
- Peng explained vertical (grade verses at grade) alignment/construction scenario.

Is the area with physical facilities conflicting with existing pole line? GP & L
- Not exactly, line is within ROW 1-2 ft, systems said, 'Okay', - no physical barriers.

13' ROW acquired at properties for drainage.

Question: Are you draining along the same line?
- Yes, 10 year or below storms all could handle overflow.
- Come up with 74-80" pipe to take water along the south side underground.
- Still have open ditch.

Question: How do you maintain access to power line?
- Open drainage.

Question: Is that an access problem? That's why we are here.
- We can go from 13' to 8', need to know where fence/poles are to know how much room is available to maneuver.
- Peng Zhao: let me know how wide that access easement needs to be. Could put fence on top of wall to meet minimum 8' the requirement.
- Easement is 50'. Asking for 13' of this.
- Drainage easement is right up against pole

Question: Will we have enough space on the north side to drive our equipment?

Comment: If you fence ROW – restricts GP & L access (just a real consideration)
- DART has to have 8 ft.
- GP & L has 50 ft. easement (DART is asking for 13 ft.)
- Not enough room for another pole line
- May overhang DART ROW during maintenance

Peng will meet with GP & L to determine required maintenance (single-pole line usually requires 50')

GP & L line crosses Centerville at Commerce.

Question: Will GP & L need permission each time they enter DART ROW for maintenance? Having to obtain a permit to access DART ROW is going to be a problem.

Robert: More helpful to see cross-sections.

Peng: We are placing a ballast wall for mitigation.
- Need 8' for safety (2').

Question: Are wall and fence going in easement?

Question: What is the height of catenary at the bridge over KCS?
- This is a TMPA and GP & L issue.
- Approximately 50' to top of catenary – need 10 – 12' which totals 62' at least (considerably less at midspan) between that and the line (345 kV).
- Induction current caused by two lines crossing.
- Peng: We don't have much choice, can not cross at grade.
- 70' differential.
- Lines are 212, don't want to be derailed.
- Shoot for a minimum of 12 ft. clearance, but better off with 15 ft.

Question: What about SH66 Bridge? Line crosses there and rail only slightly higher.

Cheri: Issue too important to wait until final design; need to resolve these issues soon.

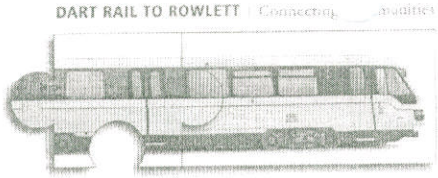
Tentative meeting set for next Thursday, June 22 at GP & L with Rod and Systems.

May need to raise the TMP.

Assume your funding responsibilities for moving the line is DART's.

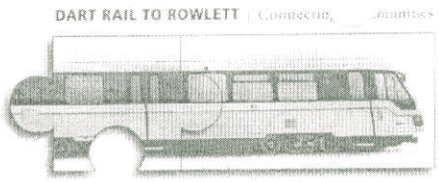
Please mark up critical areas that you see as flags.

Garland
6/15/06



DART Rail to Rowlett
Technical Work Group Meeting 3

Name	Representing	Phone	Email
Diane Lavin	LGGROUP	214 741-7777	dlavin@lggroup.com
Melissa Clary	"	"	MCLARY@LGGROUP.COM
Boro Dedeitch	Parsons	972-991-1900	boro.dedeitch@parsons.com
Joanna Colvin	LGGROUP	214 741 7777	jcolvin@lggroup.com
Teresa Biddick	Rowlett	972-463-3904	tbiddick@ci.rowlett.tx.us
Peng Zhao	LGGROUP	214-672-2928	PZHAO@LGGROUP.com
Patrick Baugh	City Rowlett	9724633919	pbaugh@ci.rowlett.tx.us



DART Rail to Rowlett
Technical Work Group Meeting 3

Name	Representing	Phone	Email
SHAWN POE	CITY OF ROWLETT	972 463 3910	spoe@ci.rowlett.tx.us
Cheri Bush	DART	214.749.2568	cbush@dart.org
Kevin St Jacques	Wilbur Smith Assoc.	214-890-4460	kstjacques@wilbursmith.com
LORI LIVELY	LGGROUP	214-672-2982	llively@lggroup.com

DART

Technical Work Group
Wednesday, June 14, 2006
Rowlett

Agenda

Welcome and Introductions
Schedule and Progress
Local Environmental Assessment
Right-of-Way
Rowlett Station Concept Design
Roadway
Next Steps

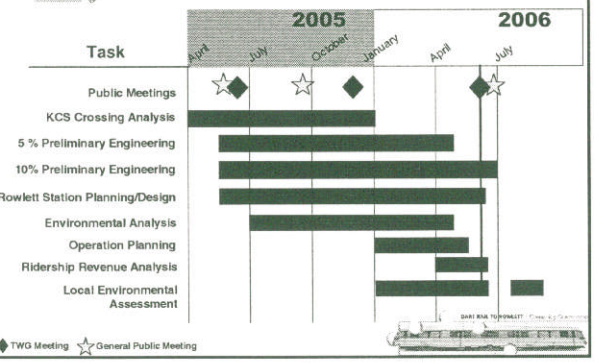
DART

Technical Work Group
Thursday, June 15, 2006
Garland

Agenda

Welcome and Introductions
Schedule and Progress
Local Environmental Assessment
Right-of-Way
Drainage Design
Rainbow Estates
Next Steps

DART



DART

PE/LEA completion expected in August 2006

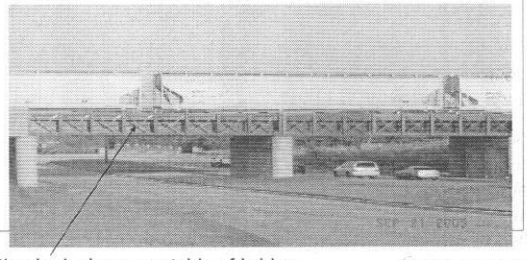
Revenue service planned for December 2012

Study activities include:

- Purpose and Need Statement *(Draft complete)*
- Preliminary Engineering *(10% PE submittal 90% complete)*
- Local Environmental Assessment *(Draft 90% complete)*
- Kansas City Southern (KCS) Freight Railroad Crossing Analysis *(complete)*
- Station area planning - includes urban design and Transit-Oriented Development analysis *(underway)*

- Crossing KCS tracks east of Downtown Garland
  - *Downtown Garland station will remain in existing location, bridge structure design will incorporate aesthetic considerations*
- Jurisdictional Waters
  - *Design minimizes potential impacts (less than 500 linear feet of impacts to Mills Branch, spanning the Rowlett Creek floodplain and Long Branch Creek – minor impacts at piling locations)*

- Steel Thru Girder Bridge-example



Simple design on outside of bridge

- Noise and Vibration Issues
- All noise and vibration impacts are categorized as Moderate
  - *Noise and Vibration Impacts in Garland*
    - *Rainbow Estates Neighborhood*
  - *Noise impacts in Rowlett*
    - *One residence at SH 66 and Main Street*
    - *One residence north of Main Street and Richards Street*
    - *Four residences south of Main Street, just east of Rowlett Road*
    - *Proposed Rail Head Village Apartments, north of Main Street*
      - *Impact will depend on the exact location of the building, which was not available at the time of the assessment.*
  - *Mitigation determined feasible and reasonable at the Rainbow Estates Neighborhood*

- Historical Issues
  - Potential historic structure impacts:
    - *Railroad depot in Garland*
    - *Cotton gin in downtown Rowlett*
    - *Rowlett Central Business District*
    - *Potentially locally significant railroad bridges and culverts dating from ca. 1900 to 1930*
  - Needing to receive final eligibility determination from the Texas Historical Commission

DART

- Hazardous Materials Issues
  - ***Ray Boyd Construction Systems, just southeast of the intersection of the MKT and KCS***
    - *LUST with groundwater impacts within 200 feet of the rail centerline; TCEQ clean-up and assessment underway*
    - *Design elevated at this point, topography heading to the southeast, away from the rail corridor*
    - *Extent of the impacts at this time is uncertain – groundwater monitoring is ongoing*

DART

- Jurisdictional Waters – *minor impacts anticipated*
- Noise and Vibration – *mitigation required at Rainbow Estates*
- Historical Resources – *eligibility of historic structures not yet confirmed*
- Hazardous Materials – *one site of high concern in project study area, TCEQ assessment and clean-up underway*
- Socioeconomic Conditions – *no issues*
- Land Use Considerations – *no issues*

DART

- Utility Relocation
  - *DART currently working with Garland Power & Light and Texas Municipal Power Agency*
- ROW Acquisition
  - *Required at six properties along the project corridor, primarily along Dexham Estates (platted, but not built)*

DART

- Complete 10% Design
- Complete LEA
- Public Meeting – June 29, 2006

Project Manager:

Cheri Bush

Cbush@dart.org

214.749.2568

Community Affairs:

Lawrence Meshack

Jmeshack@dart.org

214.749.2590

Rowlett Corridor: GP&L/TMPA Transmission Line Concerns
Technical Work Group Meeting
City of Garland
June 15, 2006

In the Technical Work Group meeting last Thursday with the City of Garland (including Garland Power and Light - GP&L) and TMPA, we discussed our guideway to be elevated over the KCS track and First Street, and our proposed ROW acquisition (13' wide) along GP&L's 50' ROW to avoid replacement of a DGNO siding track at their Ellis Yard. TMPA and GP&L indicated their main concerns are at two locations, the first at the KCS crossing where TMPA's 345 kV transmission lines are running along the KCS ROW, and the second at the First Street crossing where GP&L's 138 kV transmission lines are running along the north ROW line of First Street.

Since our guideway will be elevated with the top of rail elevations at approximately 30' above ground at the KCS crossing and 25' above ground at the First Street crossing, TMPA and GP&L are concerned that our catenary cables will be encroaching or getting too close to their transmission lines. They wanted to know the exact clearance requirements between our catenary cables and their transmission lines. We advised the group that we would have to bring in our Systems consultants to provide the accurate information and adequately assess the situations.

After our meeting, we obtained the as-built information for the TMPA line and investigated the GP&L line information again. The top of rail will be approximately 36' below the lowest TMPA transmission line, while the top of rail at the First Street crossing will be approximately 24' below the lowest GP&L transmission line. Please refer to the attached sketches, which depict the crossing situations at these two locations.

While costs were not discussed in the Technical Work Group meeting, I wanted to point out that initially we had made provisions to cover costs of raising the transmission lines at both locations in our estimates. On a later date, we were told that the licensing agreement at the KCS crossing requires the TMPA to raise the lines at their own expenses. Therefore the cost at TMPA has been taken out from our most recent estimate.

While the GPC team expects these to be resolved during the final design phase, it would be beneficial to all parties to clearly understand and identify the issues, including those related to systems elements. We therefore would like to request support from the Systems group.

Subject: Rowlett Corridor LRT Extension
Public Meeting

Place: Rowlett City Hall - 4000 Main Street
Rowlett, Texas

Date & Time: Thursday, May 12, 2005, 6:30 p.m.

Preparer: Jerry Smiley Date: May 18, 2005

The following is our understanding of the items discussed in this meeting. If this differs from your understanding, please notify Jerry Smiley at (214) 672-2970 or jsmiley@lggroupinc.com within five working days.

The first round of public meetings for the Rowlett Corridor LRT Extension was held in Rowlett on May 12, 2005.

Meeting Date	Location	Meeting Time	Attendance	Questions/ Comments
5-12-05	Rowlett City Hall 4000 Main Street Rowlett, TX 75088	6:30 p.m. to 8:30 p.m.	50	8

An open house was held prior to a formal PowerPoint presentation. This was followed by a question and answer session. A presentation on proposed improvements from the City of Rowlett followed the DART presentation.

Lawrence Meshack, DART Community Affairs, brought the meeting to order and introduced the project team.

Cheri Bush, DART Project Manager, gave a brief overview of the presentation and began the formal PowerPoint presentation describing the study currently underway. A copy of the presentation is provided as an attachment.

Ms. Bush opened the floor for comments/questions.

Question: Will the underpass at Main Street be widened?

Answer: That has not been determined at this time; however, the grade separation at Main Street will be maintained.

Question: Since the track is currently used by freight, won't that make the environmental easier?

Answer: The environmental documentation must be completed like any other corridor. The fact that freight currently operates on the track will not change the environmental analyses that will be required.

Question: Will you have to widen the ROW?

Answer: That has not been determined at this time. DART owns the ROW throughout the corridor. Some additional ROW may be required at station areas or areas where the freight track will be required to move.

Question: Since the LRT is planned to be installed on the north side of the freight track, will you keep the freight sidings open?

Answer: Yes, the freight sidings will remain open. DART will coordinate with businesses so that they may continue to receive shipments during construction.

Question: Can you get here faster?

Answer: DART is planning and design in accordance with the Transit System Plan and Financial Plan.

Question: Will you have multi-phased construction? Do you have preliminary cost estimates for construction?

Answer: Those issues have not been determined at this time.

Question: Are there plans to expand beyond Rowlett to Rockwall?

Answer: DART owns the rail ROW all the way to Fate, Texas. There are not any current plans to extend to Rockwall; however, DART is completing a 2030 Transit System Plan that considers transportation impacts from outside of the DART Service Area.

Question: Have you looked at noise reduction?

Answer: That will be examined during the environmental analysis phase of the project.

At this point, DART adjourned its portion of the presentation and the City of Rowlett began a presentation on proposed downtown improvements.

DART Rowlett Extension
Public Meeting 1 – May 12, 2005

List of Exhibits

#	Title	Description
1	Study Area	Aerial photo printed on glossy paper with general study area – to be used throughout study
2	System Map	DART map – show entire service area
3	Public Involvement	Contact info, how to submit comments, describe work groups, future public meetings, etc.
4.	Issues to Address	Zoom in on Melinda's slide at Garland Station
5	Corridor Issues	Use Melinda's slide as a template
6	Land Use & Activity Centers	Corridor
7	Frequently Asked Questions	- What is the timeframe? 2012 - What is TOD? - Noise/Vib - Study Process
8	Betterments	Pretties
9	Rowlett Station	Land Use, nearby activity centers
10	Art Program/Typical Station	

DART

Thursday, May 12, 2005

Rowlett City Hall

Agenda

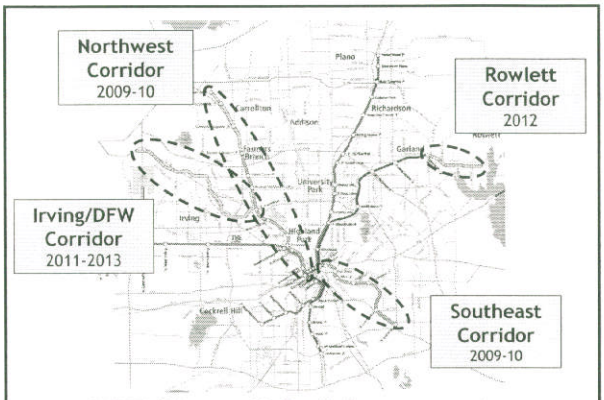
Welcome and Introductions

Project Presentation

Questions and Answers

Next Steps

Adjournment

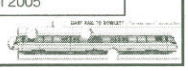


LRT Phase II Buildout

DART

Project	Status
Phase II	
Northwest Corridor	Waiting for Final Design approval
Southeast Corridor	Waiting for Final Design approval
Irving/DFW Corridor	Advanced Planning for PE/EIS underway
Rowlett Extension	PE/EA underway
Phase III	
South Oak Cliff Extension	Right-of-way preservation; PE/EA TBD
2nd CBD Alignment	Needs & Opportunities in 2030 System Plan; Alternatives Analysis in Fall 2005

NOTES: PE – Preliminary Engineering; FEIS – Final Environmental Impact Statement; EA – Environmental Assessment



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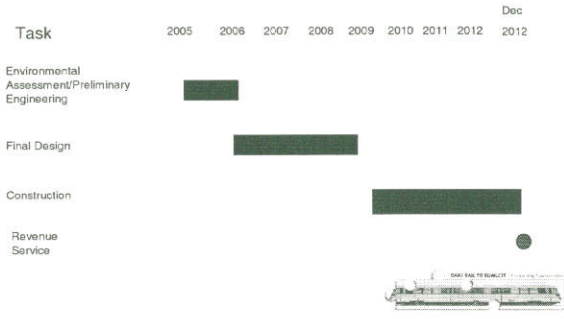
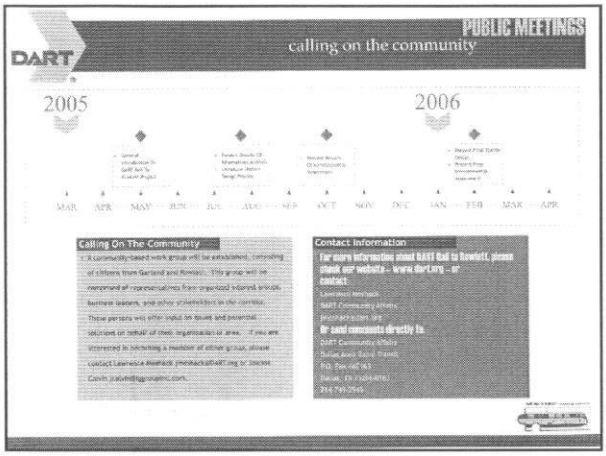
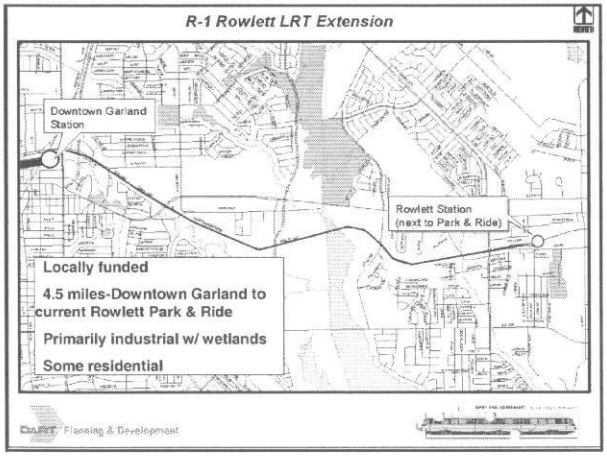




DART

- Art & Design committees created for each LRT station
  - Develop unique visual identity
- Final Design
  - Community volunteers sought
- Process
  - Community Orientation Meeting
  - Two collaborative workshops
  - Final presentation of art & design plan



DART

- Crossing KCS tracks east of Downtown Garland
- Rowlett Creek and Wetlands
- Noise and Vibration Issues
- Historical Issues
- Coordination Efforts
  - City of Garland Downtown Planning Initiatives
  - City of Rowlett Main Street Improvements project

- Project Manager: Cheri Bush
  - Cbush@dart.org
  - 214.749.2568
- Community Affairs: Lawrence Meshack
  - Jmeshack@dart.org
  - 214.749.2590

DART Public Meeting Sign In List May 12, 2005

Last Name	First Name	Organization / Affiliation	Address	City	State	Zip Code	Phone	Fax	Home Email	Work Email
Brady	Dave	GBUS/CAC	PO Box 472291	Garland	Texas	75047				
Martin	Hazel		4210 Keele	Garland	Texas	75041				
Lokken	Owen	Law Office	3201 Main Street	Rowlett	Texas	75088	972 475 5650			
Fitts	Joel	Parsons	15770 N. Dallas Pkwy	Dallas	Texas	75035	972 991 1900			
Forema	Melissa	NCTLOG	616 Six Flags Dr.	Arlington	Texas		817 608 2307			
Dreyer	Melanie		1922 Stallion Cr	Rowlett	Texas	75088	972 412 9130			
Slator	Charles		4117 Coyle				972 270 2473	972 475 1169	cislator@yahoo.com	
Hatley	Trish	Freese & Nichols	1701 N. Market St.	Dallas	Texas	75202	214 217 2217	214 920 2565	thh@freese.com	
Schrade	Lorene		PO Box 88	Rowlett	Texas	75030	972 475 3347			
Schrade	Vernon	Schrade Properties	PO Box 88	Rowlett	Texas	75088	972 475 3347	972 463 3545		
Allender	Tony	Wilbur Smith Assoc.	9800 Richmond Ave., Ste.400	Houston	Texas	77042	713 785 0080	713 785 8797	tallender@wilbursmith.com	
McPhail	Karen	Lily B's on Main	3811 Main St.	Rowlett	Texas	75088	972 475 5558	972 475 5558	lilybsonmain@aol.com	
Rose	Bobby	FUMC	4405 Main	Rowlett	Texas	75088	972 475 3667			
Baugh	Patrick	City of Rowlett	4310 Industrial St.	Rowlett	Texas	75088	972 463 3919		pbaugh@ci.rowlett.tx.us	
Duncan	Patti	Lily B's on Main	3811 Main St.	Rowlett	Texas		972 475 5558	972 475 5558	lilybsonmain@aol.com	kmsduncan@aol.com
Morales	Jorge	City of Rowlett	716 Blossom Road	Garland	Texas		469 366 1120			
Roberts	David	KRB	14 Victoria	Rowlett	Texas		972 412 2254			
Galvan	Adelaida		3609 Main	Rowlett	Texas		972 412 3052			
Curtis	Anita & Ken		3817 Main	Rowlett	Texas		972 475 1848		kcurtis@engineer.com	
Swinney	J R	Swinco	4113 Coyle	Rowlett	Texas		972 475 4303		swinjl@aol.com	
Gipson	Jack	Business Owner	3010 West Main				214 549 6471		zhab@koyote.com	
Doane	Claude	Private Citizen	849 Lilac Drive	Garland	Texas	75040	972 272 3958			
Lott	Paul	Investor	6711 Eastview	Sachse			214 532 5833			
Leonard	Joan	Susquehanna Radio Corp	6501 Hawthorne Cove	Rowlett	Texas	75089	972 475 4073			
Payne	Richard	Foxworth Galbraith Lumber Co.	4817 Rowlett Road			75088	972 475 7782	972 412 0363	rpayne@goxgal.com	
Butler	Barry	Main St. Dental Care	3613 Main St.	Rowlett	Texas	75088	972 475 3995		txhear55@yahoo.com	
Bell	Michael	First Methodist Trustee	6309 Lakeshore Dr	Rowlett	Texas	75089	972 475 3457		mcb8460@dcccd.edu	
Poe	Shawn	City of Rowlett	4310 Industrial St.	Rowlett	Texas	75089	972 463 3910	972 463 3907	spoe@cirowlett.tx.us	
Wallace	Bertha		1926 Chiesa Rd	Rowlett	Texas	75088	972 412 5701			
Meisner	Sam	Freese & Nichols	1701 N. Market St., Ste.500,LB51	Dallas	Texas	75202	214 217 2235		sam@freese.com	
McCann	Ian	The Dallas Morning News	114 San Jacinto	Rockwall	Texas	75087	972 771 5191 x106	972 722 6920	imccann@dallasnews.com	
Bagley	Ann		Walker Smith				214 890 4460			
Fulton	Suzan	Actor & Raymond James	3809 Main	Rowlett	Texas	75088	972 475 4330	972 463 4009	manofdrama@actortx.com	suzan.fulton@raymondjames.com
DeLeon	Manuel	Home Owner	3810 Main St	Rowlett	Texas	75087	972 272 2583			
Johnson	Kevin	Freese & Nichols	7506 Pacific Dr	Rowlett	Texas	75088	469 443 9811			krj@freese.com
Schroy	John	Downtown committee	7802 Princeton Rd	Rowlett	Texas	75089	972 475 2310			schroy5@verizon.net
Brelsford	Barry	3811 main St. LLC	3811 Main St., Ste. 200	Rowlett	Texas	75088	214 507 7168			access.realty@att.net
DeLatte	Brian		5606 San Marino Dr	Rowlett	Texas	75089	972 463 1576			
Tullos	Shirley	Rowlett Florist	3820 Main, 3830 Main				972 475 2098	972 475 0551	Home fone 972 276 1939	
Dalzell	William	Hydro-Mart	3841 Main St.				972 475 6114			

Rowlett Public Meeting #2

Lawrence Meshack called the meeting to order at 6:40PM

Welcome and introductions… team

I----------PPT----------I

Where is the Bush Turnpike extension?

Cheri — Showed vicinity + increased service likely

Annie Dickson

Where is the Rainbow Addison/addition?
- (Identified) Has been tagged as an area of concern, if you know of anyone that is effected, but not yet a part of the project – let us know.

+ Herfurth Park is quite a bit south… Will it be effected?
- No, we look at noise issues within a 1/2 mile buffer.

+ My business is at the end of Richards Street… will the station area run through my parking lot?
- All DART property, all conceptual.

+ Will you use existing rail?
- Yes, the row will not be expanded at Richards Street.

+ Is Garland Station similar to the exit at Lover's Station?
- 6% maybe higher at Garland – Lover's is at 5%

Annie Dickson

What intersection is Garland Station bridge descending?
- Lavon & 1st (After Lavon)
- Descent between 1st & Lavon

+ Similar to Forest Lane?
- Garland would be longer.

+ What is the center structure of the bridge?
- Steel

+ The concrete base at each end is solid concrete like Forest / Jupiter? Can it look nicer?
- It is something to consider – façade.

+ Suggest that the community request an 'artwork' on the bridge concrete?

+ Since Garland Station is not being moved – can this line be built faster?

- We still have steps in place and must follow the timeline.

+ In design / planning have you considered boarding train on both sides?

- Still center platform, LRV inititile

+ Are bridges constructed for double track?

- Yes.

+ What is the cost? What's the difference?

- No answer for that.

+ If we are that close to full double track, why can't we initially build both?

- Will be considered. Look at differences.

+ We see increase in ridership – any idea what the % is at Garland?

- No solid numbers yet.

+ When will we get more parking?

- Being suspended

+ When will construction begin?

- 2009

+ Has DART decided that the schedule will meet 2012 deadline?

- Typical for design to take longer than construction.

+ Freight trains make more noise now than LRT – why study noise?

- FTA guidelines required

+ Is this the concept that DART board recommends? Will it free extra money?

- In realigning 5th Street, we would need to find 5 million – rebuild station – 15 million.
- In order to do more, you would need to take the money from something else.

+ Has Rowlett considered at grade crossings?

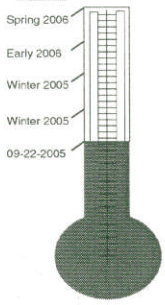
- Rowlett impact analysis say too much traffic

+ Will center will be at grade?

- Undecided – traffic says at grade – but need to elevate for floodplain.

Welcome and Introductions

Project Status



Public Meeting 3
10% Engineering & Env. Documentation
5% Engineering
Station Design
Public Meeting 2
Data Collection
KCS Crossing Alternatives
Public Meeting 1
Purpose & Needs

Agenda

Thursday, September 22, 2005

Austin Academy for Excellence

Data Collection Efforts
Station Development
Questions and Answers
Adjournment

Data Collection Efforts

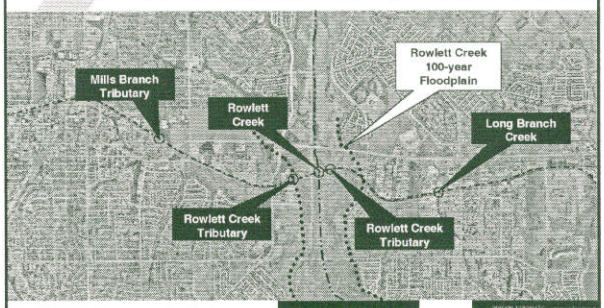
- Jurisdictional Waters
- Noise and Vibration
- Historic Resources
- Coordination Efforts
  - Preliminary Coordination with Texas Historical Commission, U.S. Army Corps of Engineers, Texas Parks and Wildlife, and U.S. Fish and Wildlife Service

Jurisdictional Waters

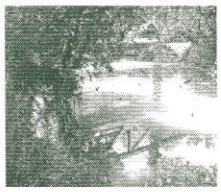
The proposed project crosses five jurisdictional waters of the U.S.:

- Two tributaries of Rowlett Creek
- Rowlett Creek
- Mills Branch Tributary
- Long Branch Creek

Jurisdictional Waters



Jurisdictional Waters



- Minor impacts are anticipated to the two tributaries of Rowlett Creek, Rowlett Creek, and the Mills Branch tributary as a result of the project.
- A permit for the proposed action from the U.S. Army Corps of Engineers will be applied for upon completion of design.

Noise and Vibration

Sensitive receptors identified within 200 ft of the proposed alignment:

- 11 single-family residences
- 1 multi-family residence*
- 7 churches*
- 2 schools

** Future developments*

Noise and Vibration

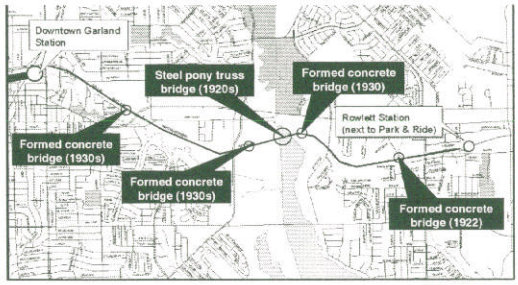
Legend
- Potential Noise Sensitive Receptors
- Existing DART LRT
- Planned Extension

Potential Noise and Vibration Sensitive Areas

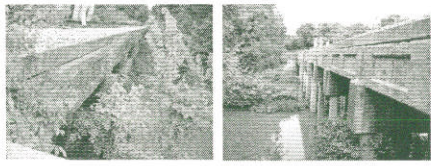
Historic Resources

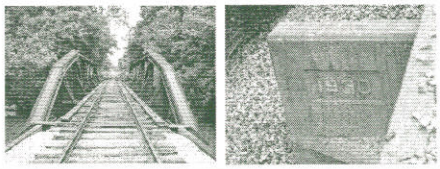
Structure Type	Location	Preliminary Determination
Formed concrete bridge (1930s)	Over Commerce Street	Potentially eligible
Formed concrete bridge (1930s)	Over potential wetland	Potentially eligible
Steel pony truss bridge (1920s)	Over Rowlett Creek	Potentially eligible
Formed concrete bridge (1930)	East of Rowlett Creek	Potentially eligible
Formed concrete bridge (1922)	Over Business Hwy. 66	Potentially eligible

Historic Resources



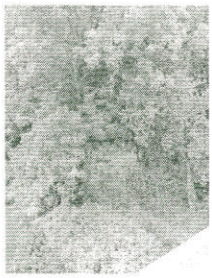
Historic Resources





Parkland

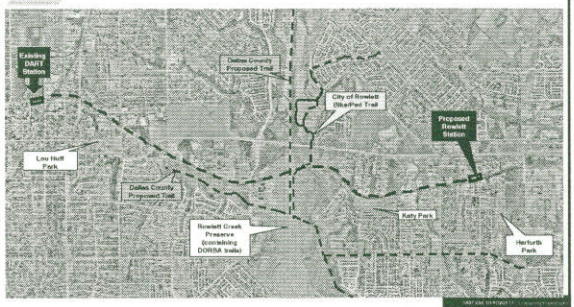
Parklands within ½-mile of proposed LRT line include:



DORBA Trail

- Heritage Park
- Lou Huff Park
- Rowlett Creek Preserve
- Dallas Off Road Bicycle Association (DORBA) Trail
- Herfurth Park

Parkland



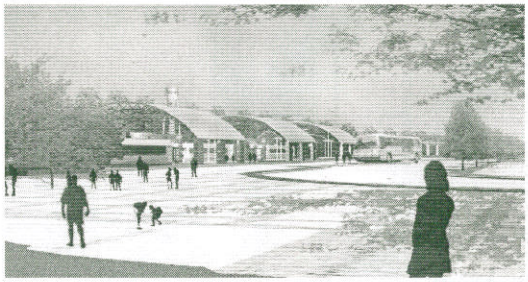
Coordination Efforts

- Texas Historical Commission - historic structures and archeological resources
- US Army Corps of Engineers
- Texas Parks and Wildlife
- US Fish and Wildlife Service

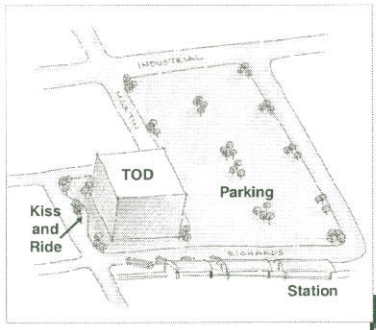
Station Development

- Rowlett Station Concept Design
- Garland Station Alternatives for Crossing KCS Railroad
- Transit Oriented Development

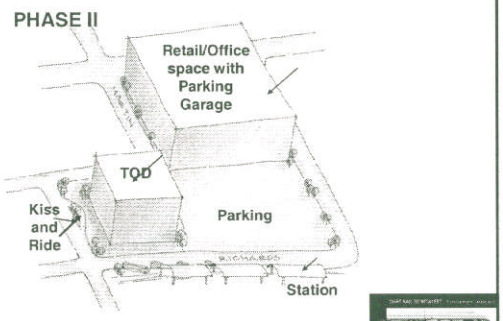
Rowlett Station Concept



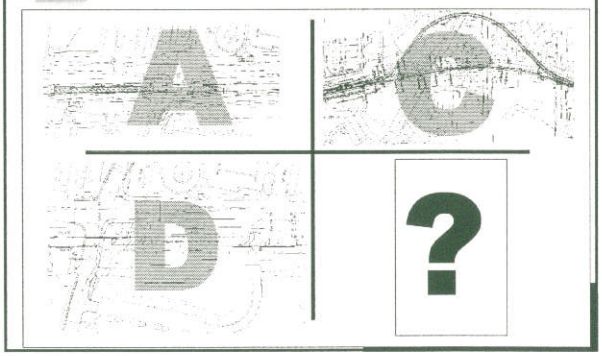
Station Design Transitions



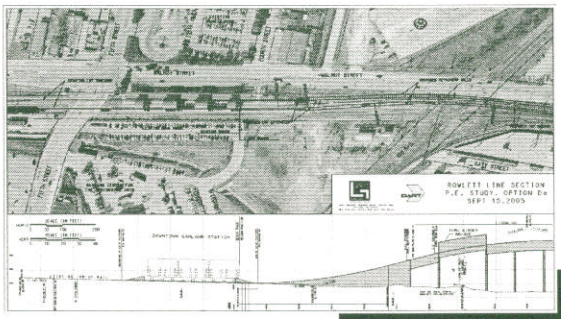
Station Design Transitions



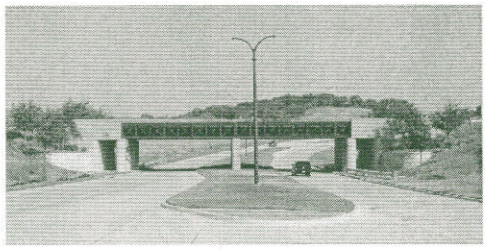
Garland Station Alternative



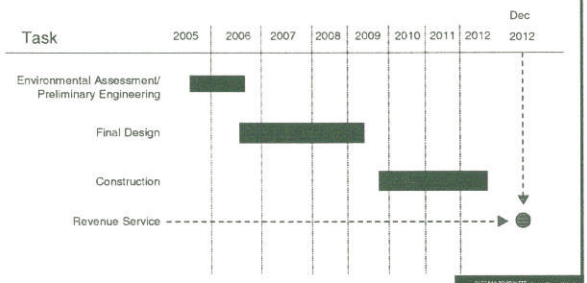
Garland Station Alternative



Garland Station Alternative



Project Timeline



Next Steps

- Complete preliminary engineering design to 5%
  - LRT track alignment
  - Conceptual design for Rowlett Station
- Complete impact assessment
- Complete preliminary engineering design to 10%
- Continue Technical/Community Work Group meetings
- Continue coordination with regulatory agencies and member cities

Contact Information

- Project Manager: Cheri Bush
  - Cbush@dart.org
  - 214.749.2568
- Community Affairs: Lawrence Meshack
  - Jmeshack@dart.org
  - 214.749.2590

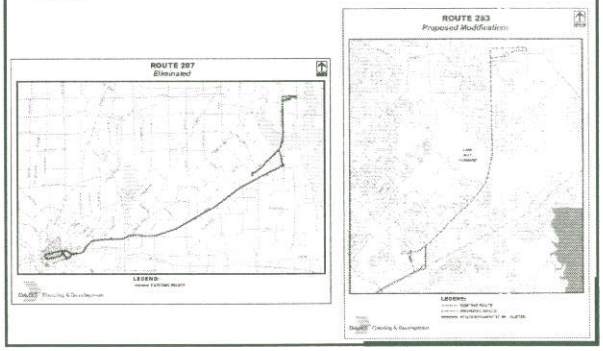
DART Bus Service

Route 207

Proposal:

1. Consolidate routes 207 and 283 into single express route, providing service to Downtown Dallas from both Rowlett Park and Ride and Lake Ray Hubbard Transit Center.

Routes 207 and 283



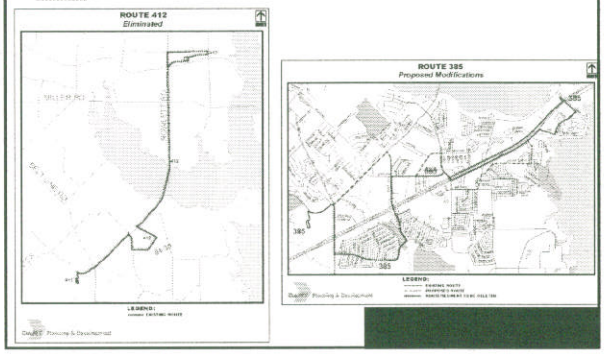
Routes 412 and 385

Route 412 (.2)

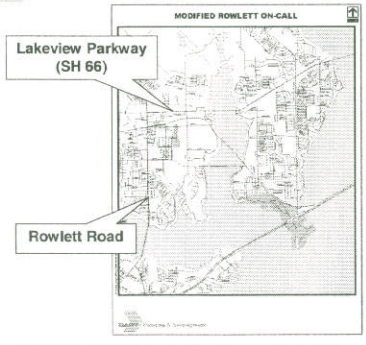
Proposals:

1. Consolidate routes 412 and 385 into single route serving productive portion of 412 and new demand at Harbor Point, while operating closer to multi-family housing south of I-30.
2. Expand Rowlett On-Call to pick up dropped 412 coverage.

Routes 412 and 385



Rowlett On-Call Area



DART Rail To Rowlett

Public Meeting #3
Thursday, June 29, 2006
6:30 p.m.
Rowlett City Hall
4000 Main Street
Rowlett, Texas

MEETING SUMMARY

Lawrence Meshack, DART Community Affairs, brought the meeting to order at 6:35 p.m. and welcomed all 26 attendees.

A Powerpoint presentation entitled "LRT Phase II Buildout" was shown illustrating the project's **Schedule and Progress, Key Issues, Local Environmental Assessment, Rowlett Station Concept Design, and Next Steps.**

Points discussed in the presentation included:

- DART plans to double their LRT system by 2012, which will include the Rowlett Extension.
- The Draft Purpose and Need Statement is completed and the Local Environmental Assessment (LEA) is to be completed in August 2006. The LEA will be submitted to the Cities of Garland and Rowlett for their review.
- 10% Preliminary Engineering is 90% complete.
- Station area planning is underway – the station design is still in its conceptual state and may be influenced by ongoing communication with the public.
- Key Issues include: Crossing the KCS track, bridge aesthetics, and utility relocation.
    - KCS Crossing
        - The KCS Crossing Analysis is complete
        - The downtown Garland station will remain in its existing location
        - The bridge structure design will incorporate simple aesthetic considerations
    - Bridge Aesthetics
        - Concrete form liners are being considered for Rowlett retaining walls
    - Utility Relocation
        - Coordination ongoing with GP&L, design currently under review
        - Transmission and distribution lines are an issue
        - Final resolution requires more detailed track design
- The current design minimizes impacts to jurisdictional waters – coordination with the US Army Corps of Engineers is ongoing; mitigation and permitting for impacts to waters will be determined upon completion of final design
- Noise impacts were recorded in 24 areas while vibration impacts were recorded in 13 areas along the project alignment.
    - None of these impacts were considered severe.

- Currently proposing to construct a noise wall at the Rainbow Estates neighborhood.

- Historical Issues were noted at various buildings, historic districts and bridges in both Garland and Rowlett; coordination with the Texas Historical Commission is ongoing.
- One Leaking Underground Storage Tank was recorded within 200 feet of the rail centerline in Garland. The extent of the impacts at this time is uncertain – groundwater monitoring is ongoing

Ms. Bush completed the presentation and opened the floor for comments/questions.

Question: You did say you will recommend double-tracking the whole way?

Answer: Yes.

Question: I own the red brick buildings just west of here. Will my property be affected by the rail ROW?

Answer: Not at the crossing, but further east, yes.

Question: Will Lambert's garage be impacted?

Answer: Yes, the garage parking lot encroaches on DART's ROW.

Question: Didn't we talk about crossing at grade over Centerville?

Answer: Yes, but it was not warranted due to traffic.

Question: How many feet of ROW would be taken from Lambert's?

Answer: More than 10', less than 100'.

Question: But it's 25' to 30' from edge of track to lot.

Answer: That's the existing track; our new line must be 20' from the existing track plus some.

Question: What it would cost me to buy a new building, relocate my business, etc., would cost more than what you are willing to pay.

Answer: We only identify structures. You must work with DART Real Estate people to negotiate the take.

Question: The auto building is the only building to be impacted, not the old house?

Answer: At this time, no. However, again, this is preliminary engineering. We'll work out these details as we get closer to final design.

Question: When will property take negotiations be?

Answer: 2007. Contact me (Ms. Bush) and I can give you names and numbers of DART's ROW people.

Question: Are you taking the historical building for the extension of Martin Street?

Answer: ROW is already owned by the City of Rowlett for Main Street project – next to the Cotton Gin. None of the exact design decisions have been made (don't know exactly where to punch through).

Question: Where will there be parking for downtown businesses?

Answer: Parking will be in forefront of the city's mind as we get closer to final design.

Question: In the 3-D fly-through, what building is that on the north side of Coyle Street?

Answer: It's just representation of structures – we'll tweak this presentation to provide more accurate representations of structures.

Question: Will there be any betterments planned for Dexham Estates due to noise?

Answer: A berm already exists between the estates and the rail; sound walls are not in Preliminary Engineering at this time. We do know that the noise impact at Dexham was due to the bells and whistles at the intersection itself, not along the rail. However, we'll coordinate as design gets closer.

Question: Will they get a safety fence?

Answer: Yes, along the length of the ROW.

Question: If they'll plan on taking the garage and closing Richards Street, how will we access the house?

Answer: That's something to determine during final design. Design is conceptual at this time, but we know we must keep the area closed due to the track's bridge. DART's policies, though, are to keep access maintained.

Question: 900 to 1,000 cars? Is that an expansion of the existing parking lot?

Answer: We're waiting for the city to decide. The city wants to get developer who's interested in mixed-use development potential.

Question: Multi-level?

Answer: With the proposed development, constructing a multi-level garage would be the likely case.

Question: Will there be other transportation modes in conjunction with the city?

Answer: There will be bus/rail/pedestrian modes and a traffic calming area for safe pedestrian access.

Question: DART has underestimated parking capacity in the past, especially with high gas prices – don't you anticipate a ramping up of LRT use?

Answer: Yes, that is being considered along with the expansion of George Bush Tollway. We're negotiating with the city - we must make sure that the combined development and ample parking are successful (like at Mockingbird Station). DART has also completed a parking study with a newer version of software (the 900# was derived from the new, advanced model) – will be more accurate than past lines.

Comment: I'm a daily rider of DART from Garland. Garland has joined parking with the Arts Center – but it's always full – dual parking doesn't work. Have to go to Forest Lane Station mid-day.

Question: Pretty decorations don't protect me from the rain, heat, or cold – why can't you develop options that protect DART patrons?

Answer: It's the most cost-effective option for DART.

Question: So DART doesn't care about its users' protection?

Answer: We must be functional. This is the DART board's decision – you should talk to your DART Board Representative. The City of Garland did put in extra money for their station and the City of Rowlett might as well. DART must be fair to all member cities.

Comment: Buses are closer to trains than cars are. Take bus from home to station. Thank DART Planning Staff for their routing efforts. Bus from Rowlett to South Dallas is very effective.

Question: Will routes change prior to rail? Frequency changes?

Answer: Not sure of increased/decreased frequency. Both are based on ridership. They're always tweaking.

Question: How will I be notified?

Answer: Bus card on bus, mail-outs, station posters, website, customer service line, etc.

Question: DART Transit Police seems to be stretched thin – what will it be here?

Answer: DART has great relationships with member city police. Will need to hire more.

Question: Issues with auto theft in Richardson. Will you monitor for that in Rowlett?

Answer: We'll install skywatch, private security, undercover and uniformed officers on trains.

Question: Do you have crime statistics on trains?

Answer: Yes, as there have been issues in Dallas. We work with all municipalities to insure transit officers and fee officers.

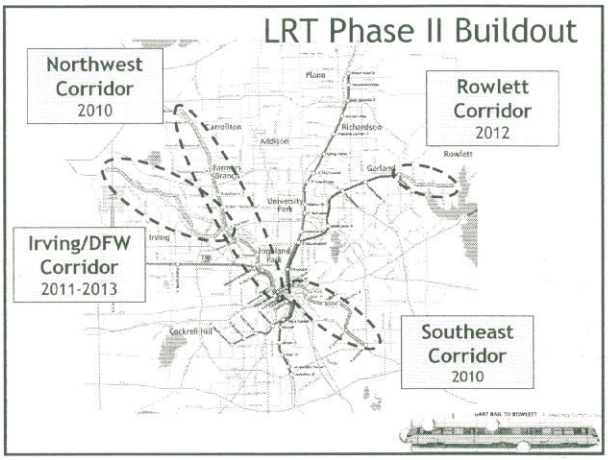
DART

Public Meeting
Thursday, June 29, 2006
Rowlett City Hall

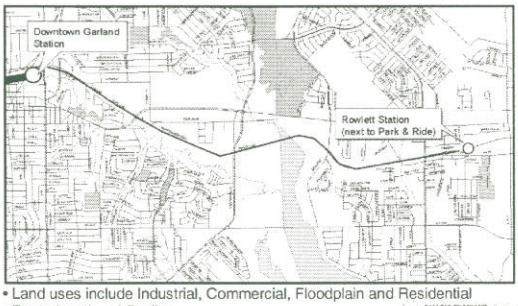
Agenda

Welcome and Introductions
Schedule and Progress
Key Issues
Local Environmental Assessment
Rowlett Station Concept Design
Next Steps

LRT Phase II Buildout

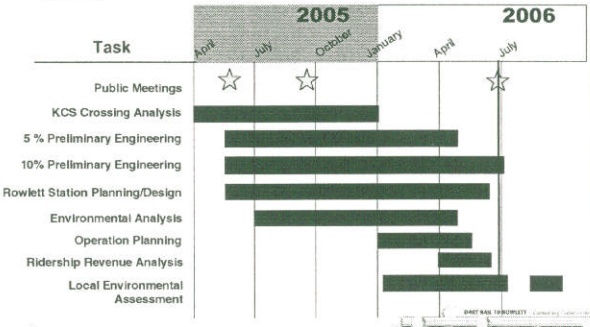


DART



- Land uses include Industrial, Commercial, Floodplain and Residential
- Route length = 4.5 miles
- Locally funded project

DART



Revenue service planned for December 2012

Study activities include:

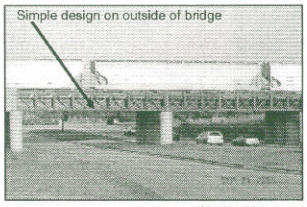
- Purpose and Need Statement *(Draft complete)*
- Preliminary Engineering *(90% complete)*
- Local Environmental Assessment *(Draft 90% complete)*
- Kansas City Southern (KCS) Freight Railroad Crossing Analysis *(complete)*
- Station area planning *(90% complete)*

- Crossing KCS tracks east of Downtown Garland
- Bridge Aesthetics
- Utility Relocation

Crossing KCS RR track east of Downtown Garland

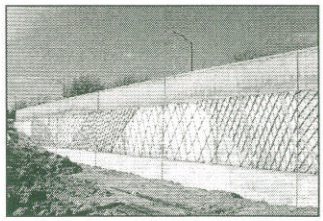
Downtown Garland station will remain at existing location

Bridge structure design will incorporate simple aesthetic considerations



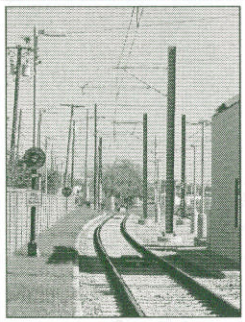
Bridge Aesthetics

Concrete form liners are being considered for retaining walls



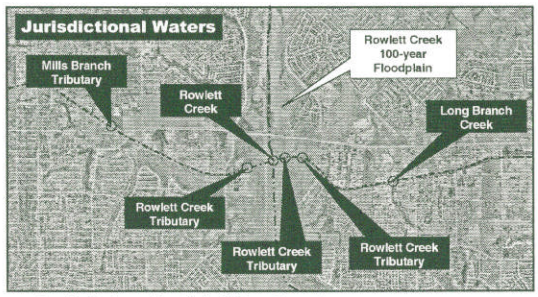
Utility Coordination

- Coordination ongoing with three electric utility providers, design currently under review
- Transmission and distribution lines
- Final resolution requires more detailed track design



Major Analysis Areas in Local Environmental Assessment

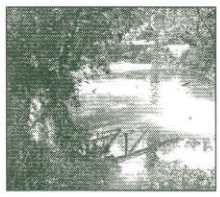
- Socioeconomic Conditions – *no issues*
- Land Use Considerations – *no issues*
- Jurisdictional Waters
- Noise and Vibration
- Historical Issues
- Hazardous Materials



- Coordination is ongoing with the US Army Corps of Engineers (USACE).

Mitigation for Jurisdictional Waters

LRT line design minimizes potential impacts



- Spanning entire length of Rowlett Creek floodplain (contains surface waters and bottomland hardwood systems)
- Less than 500 linear feet of impacts to:
  - Mills Branch
  - Rowlett Creek
  - Long Branch Creek

Coordination with the USACE is ongoing; any potential mitigation requirements will be determined upon completion of final design.

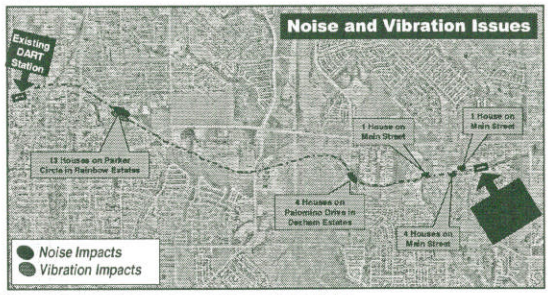
Noise Impacts

- *23 Impacts*
- *None Severe*
- *Impacts due to:*
  - *distance from LRT tracks*
  - *whistles and bells at crossings*
  - *the speed of train in some areas*
  - *the location of bridge structures*

Vibration Impacts

- *13 Impacts*
- *None for damage to structures*
- *Impacts due to distance from LRT tracks*

Noise and Vibration Issues

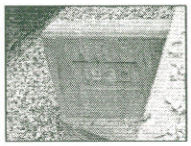


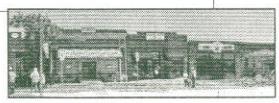
Mitigation: proposing to construct a noise wall for the Rainbow Estates neighborhood.

Historic Resources

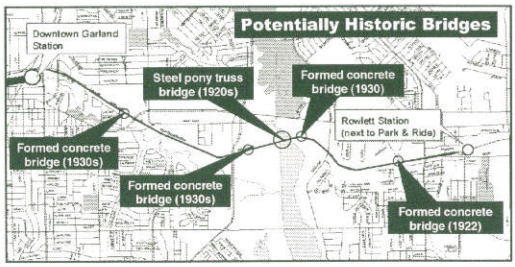
Potential historic structure impacts:

- *Buildings, Districts and Bridges in both Garland and Rowlett*
- *Coordination with Texas Historical Commission regarding these sites is ongoing*



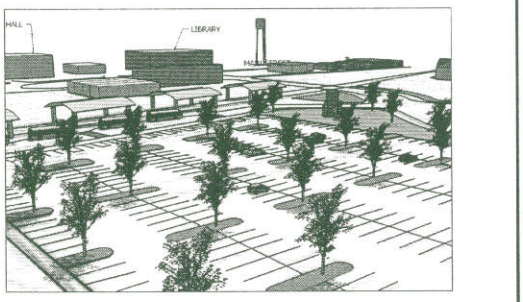


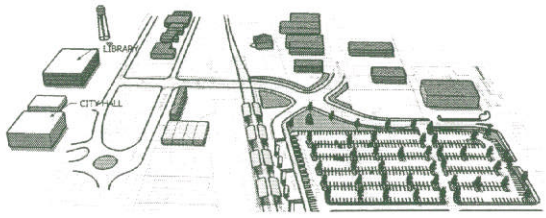
Potentially Historic Bridges



Hazardous Materials Issue

- One Leaking Underground Storage Tank with groundwater impacts within 200 feet of the rail centerline; Texas Commission on Environmental Quality (TCEQ) clean-up and assessment underway by others
- Extent of the impacts at this time is uncertain – groundwater monitoring is ongoing





- Complete Preliminary Design
- Complete LEA
- Begin Final Engineering/Design (early 2007)
- Construction Begins (2009)

Project Manager:

Cheri Bush

Cbush@dart.org

214.749.2568

Community Affairs:

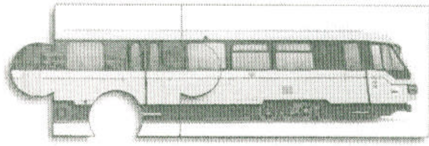
Lawrence Meshack

Jmeshack@dart.org

214.749.2590

Play Video

DART RAIL TO ROWLETT | Connecting Communities



PUBLIC MEETING

Rowlett City Hall - June 29, 2006 DART

#	Name	Address	Phone/Fax	E-mail
1	Last: Toner First: Steve Organization/Affiliation: None	Address: 8765 Ferndale Rd #106	Phone: 214-349-8218 Fax:	Home E-mail: Work E-mail:
2	Last: McCann First: Ian Organization/Affiliation: The Dallas Morning News	Address: 114 San Jacinto Rockwall, TX 75087	Phone: 972-771-5191 Fax: x106	Home E-mail: Work E-mail: imccann@dallasnews.com
3	Last: DOANE First: CLAUDE Organization/Affiliation: C.A.C	Address: 849 LILAC DRIVE GARLAND TX 75040	Phone: 972-566-5891 Fax: 972-566-3924	Home E-mail: Work E-mail:
4	Last: CLARY First: MELINDA Organization/Affiliation: LGGROUP	Address: 1825 MARKET CENTER BLVD. STE 520 DALLAS, TX 75207	Phone: 214-741-7777 Fax: 214-741-9413	Home E-mail: — Work E-mail: MCLARY@LGGROUP.COM
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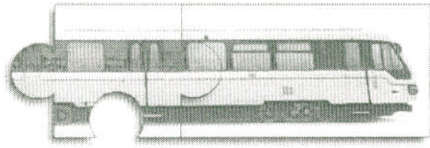
6	Last: BRIMELOW First: TRISA Organization/Affiliation:	Address: 13 Kenton Ct. Heath, TX 75032	Phone: 972 771-1334 Fax:	Home E-mail: Work E-mail:
7	Last: ROBERTS First: DAN Organization/Affiliation: RE	Address:	Phone: Fax:	Home E-mail: Work E-mail:
8	Last: HENNIG First: LARRY Organization/Affiliation:	Address: BOX 538 3614 MAIN ROWLETT	Phone: 9724752183 Fax:	Home E-mail: LHENNIG52@AOL.COM Work E-mail:
9	Last: First: Organization/Affiliation:	Address:	Phone: Fax:	Home E-mail: Work E-mail:
10	Last: First: Organization/Affiliation:	Address:	Phone: Fax:	Home E-mail: Work E-mail:

DART RAIL TO ROWLETT | Connecting Communities



PUBLIC MEETING

Rowlett City Hall - June 29, 2006 DART

#	Name	Address	Phone/Fax	E-mail
1	Last: SCHRADE First: VERNON & LORENE Organization/Affiliation:	Address: 2727 MAIN ST. ROWLETT	Phone: 972-475-3347 Fax: 972-463-3545	Home E-mail: — Work E-mail: —
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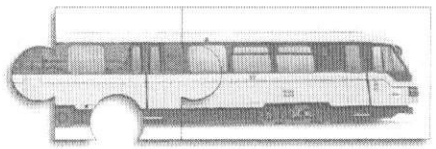
5	Last: Quinn First: Jessie Organization/Affiliation: City of Rowlett	Address: P.O. Box 99 Rowlett, TX 75030-0099	Phone: 972-412-6100 Fax: 972-412-6109	Home E-mail: Work E-mail: Squinn@ci.rowlett.tx.us
6	Last: Grigsby First: Linda Organization/Affiliation: Eastfield College	Address: 3737 Motley Dr Mesquite 75150	Phone: 972-860-7199 Fax: 972-860-8373	Home E-mail: Work E-mail: lgrigsby@dcccd.edu
7	Last: POE First: SHAWN Organization/Affiliation: City of Rowlett	Address: 4310 INDUSTRIAL Rowlett 75088	Phone: 463-3910 Fax: 972 463 3907	Home E-mail: Work E-mail: Spoe@ci.rowlett.tx.us
8	Last: Lambert First: Chris Organization/Affiliation:	Address: 5902 Patriot CT Rowlett TX 75089	Phone: Fax:	Home E-mail: Work E-mail:
9	Last: Dedeitch First: Boro Organization/Affiliation: Rawson	Address:	Phone: Fax:	Home E-mail: Work E-mail:
10	Last: Rose First: Ernest Organization/Affiliation: citizen	Address: Rowlett, 75088 3801 Southridge Dr.	Phone: 972 4758207 Fax:	Home E-mail: ernestrose@verizon.net Work E-mail:

DART RAIL TO ROWLETT | Connecting Communities



PUBLIC MEETING

Rowlett City Hall - June 29, 2006

DART

#	Name		Address	Phone/Fax	E-mail
1	Last: Reeder	First: Ted	Address: 1505 Treefarm Dr Plano Tx 75093	Phone: 214-460-5264	Home E-mail:
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	Organization/Affiliation: —			Fax:	Work E-mail:
3	Last: WILSON	First: KERRIE	Address: 2510 Roughleaf Lane Rowlett 75089	Phone: 972-412-1950	Home E-mail:
	Organization/Affiliation:			Fax: 972-412-9546	Work E-mail:
4	Last: Balcom	First: Daniel	Address: 7902 Meadowlark LANE	Phone: 972-463-1265	Home E-mail:
	Organization/Affiliation:			Fax:	Work E-mail:
5	Last: Rushing	First: Cindy	Address: 7317 Chiesa Rd	Phone: 972-475-0914	Home E-mail: crushing@ci.rowlett.tx.us
	Organization/Affiliation:			Fax:	Work E-mail:
6	Last: Beattie	First: Penny	Address: 7214 North Point Rd Rowlett	Phone: 214-609-4582	Home E-mail: 2beattie@comcast.net
	Organization/Affiliation:			Fax:	Work E-mail:
7	Last: SHELDON	First: JEFF	Address: 7242 LIBERTY GROVE ROWLETT	Phone: 972-475-1836	Home E-mail:
	Organization/Affiliation:			Fax:	Work E-mail:
8	Last: CURRY	First: JAMES	Address: 7302 Liberty Grove Rowlett	Phone: 972-475-5977	Home E-mail:
	Organization/Affiliation:			Fax:	Work E-mail:
9	Last:	First:	Address:	Phone:	Home E-mail:
	Organization/Affiliation:			Fax:	Work E-mail:
10	Last:	First:	Address:	Phone:	Home E-mail:
	Organization/Affiliation:			Fax:	Work E-mail:

DART Rail To Rowlett

Public Meeting #4
Thursday, December 14, 2006
6:30 p.m.
Rowlett City Hall
4000 Main Street
Rowlett, Texas

MEETING SUMMARY

Lawrence Meshack, DART Community Affairs, brought the meeting to order at 6:35 p.m. with an introduction of key attendees.

A Powerpoint presentation and posters describing the current status of the project were presented by Cheri Bush of DART. Ms. Bush announced that copies of the Draft LEA are available for review at Garland and Rowlett libraries and in .pdf format at www.DART.org. She also mentioned that the time allowed for comments on the Draft LEA is 45 days.

Following the presentation, Ms. Bush opened the floor for comments/questions, which are outlined below.

Question: ***Why can't DART raise the KCS?***

Response: The freight rail could not operate at a 6% slope. The percentage of slope would have to be much less and begin as far south as Highway 78. Elevating the freight rail would result in much higher costs as well.

Question: ***Is DGNO going to stay at grade?***

Response: Yes.

Question: ***I'm a resident of the Dexham Estates neighborhood. Currently, I don't see the track due to the berm and trees, but have heard they're removing the trees and putting up a chain-link fence. Is this true?***

Response: At this time, we have not deemed any tree removal necessary. In addition, DART is taking ROW north of the rail, not south where Dexham Estates would be affected.

Question: ***What about a stone wall at Dexham Estates?***

Response: That's a noise wall to which you are referring and our analysis does not indicate any noise impact here. Since the impacts will be north of the existing track, removal of trees to the south will not be likely. In addition, since Rowlett has a city tree ordinance, we will examine the 10% design with City staff.

Question: ***Will the line stay to the north of the DGNO?***

Response: Yes.

Question: ***Have you met with the historic African American community at Rainbow Estates concerning its mitigation?***

Response: Yes, since that neighborhood is directly adjacent to the track, a noise wall will be installed along the neighborhood.

Question: ***Will you extend the train all the way to Lake Ray Hubbard?***

Response: No, not at this time. There are currently no plans for this even though DART does own the ROW. The present line will end at Downtown Rowlett.

Question: ***If the State of Texas does not agree, will you tear down the historic structures?***

Response: We are not anticipating any adverse affect to these structures.

Question: ***Is DART taking any buildings for the Rowlett Station?***

Response: No, just talking small clips of ROW.

Question: ***Will the Centerville Road crossing be at-grade and how will that crossing affect traffic?***

Response: There would be no excessive back up of traffic. Based on the traffic analysis, there will be plenty of time with multiple traffic lanes (6). The intersection will not be closed any longer than a normal intersection (30-45 seconds of delay). Even during peak hours, this was not found to be excessive compared to other station areas where the train speeds are slower. The train will be traveling at 55mph at this crossing, scheduled to cross every 10 to 20 minutes.

Question: ***Will every DART Blue Line go to Rowlett?***

Response: Yes.

Question: ***When you conducted your traffic analysis, did you consider future growth, such as the new fire training academy, for example? Did you talk to City staff? I am concerned about future city facilities.***

Response: Yes, existing and 2025 traffic volumes were used in the analysis. We did not speak directly to the fire marshal, but the City has the 10% design for review. The 2025 traffic analysis was based on projected residential and business growth. Specific facilities were not addressed, but all potential growth was considered. We will talk to the fire marshal, but do not anticipate an impact to our current traffic projections.

Question: ***Are you considering increasing parking at Garland Station with this expansion?***

Response: DART is not planning any increase at present, structured parking requires a massive effort of planning and coordination with the city.

Question: ***Are you dealing with the developers that are planning projects in Downtown Garland?***

Response: These are separate projects where DART is working with developers and is aware of the city's plans.

Question: ***Are you planning to erect a noise wall in Rainbow Estates? If so, how long?***

Response: Yes, along the entire length of the neighborhood.

Question: ***Will this be a transit center like the Garland station? With restrooms, etc.?***

Response: No, this will be a rail station; DART's policy states restrooms are only a prerequisite at Transit Stations.

Question: ***Will all trees be cleared in DART's ROW at Dexham Estates?***

Response: No, DART is to minimize tree removal as much as possible. The ROW will not be entirely cleared. Details of this will be determined closer to final design. In addition, DART's Betterment policy includes replanting trees where removal was necessary.

Question: ***Are the fences all six-foot chain-link? Do you ever deviate from that? Could you construct a different kind of fence? There is a lot of concern for the visual aesthetics at Dexham Estates.***

Response: Chain-link fences are a typical DART standard. DART encourages Dexham Estates Homeowners Association to work with DART during final design and utilize DART's Betterment policy.

Comment: ***Trees also block view of industrial buildings; currently there are several very tall trees that block much of this.***

Response: DART's Betterment Program will allay these concerns and it is encouraged that citizens work with DART to determine the Betterment policy during the final design.

Question: ***Has DART considered what bus lines would still run?***

Response: Currently, Route 207 is planned to be taken away, but DART will be adding service to Firewheel and the DART On-Call services would be expanded to include the entire city. You should provide comments to DART service planning regarding feeder service.

Question: ***What is planned about the train whistle in residential areas?***

Response: There are currently horn and bell options. DART will work with the cities in final design, but most likely the lesser of the two noise options will be chosen. In addition, by the time this is implemented. there could be new technology.

Question: ***Concerned that cars will be packed by the time the train arrives in Garland from Rowlett. Are you going to have more cars on the trains or consider adding cars?***

Response: DART is currently constrained to full-length, three-car trains, but considering new types of train cars that hold more people. More equipment is being ordered that should arrive before the extension is implemented.

Question: ***What was the rationale for not putting two and three car trains to Garland?***

Response: The Red Line had more ridership than the Blue Line at implementation and DART is limited to the existing equipment. Plans are being implemented to add more train cars and add Super Light Rail Vehicle (SLRV) cars to the Blue Line as soon as the implementation process can be completed.

Question: ***Do you know the timeline for SLRV completion?***

Response: Station modifications will begin next summer. Marketing/Informational campaign will begin in the spring.

Question: ***What is the expected date of arrival of the new cars?***

Response: Do not know yet, will find out.

Question: ***Will the new station be built for flat boarding?***

Response: Yes and this will be ready for SLRVs when built. Design takes into account airport transfers, luggage, etc.

Ms. Bush closed the meeting by stating that if there are no more questions, to please sign in to be added to the database and receive future updates.

Meeting adjourned at 7:30 p.m.

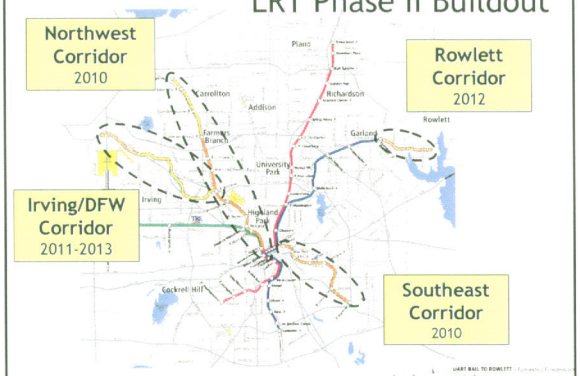
DART Rail To Rowlett

Public Meeting
Thursday, December 14, 2006
Garland City Hall

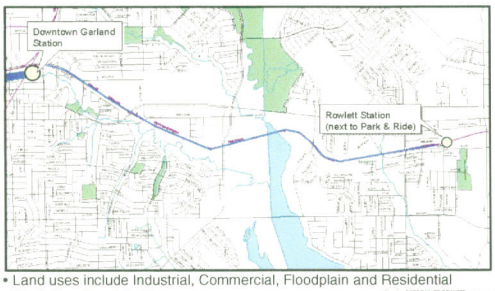
Agenda

Welcome and Introductions
Schedule and Progress
Key Issues
Local Environmental Assessment
Rowlett Station Concept Design
Next Steps

LRT Phase II Buildout

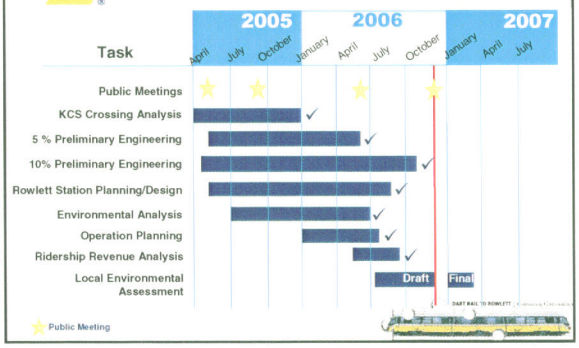


Study Area



- Land uses include Industrial, Commercial, Floodplain and Residential
- Route length = 4.5 miles
- Locally funded project

PE/LEA Timeline



PE/LEA Process

Revenue service planned for December 2012

Study activities include:

- Purpose and Need Statement *(complete)*
- Preliminary Engineering *(complete)*
- Local Environmental Assessment *(draft complete)*
- Kansas City Southern (KCS) Freight Railroad Crossing Analysis *(complete)*
- Station area planning *(complete)*

Update on Key Issues

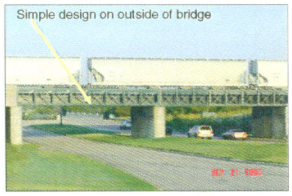
- Crossing KCS tracks east of Downtown Garland
- Bridge Aesthetics
- Utility Relocation

Update on Key Issues

Crossing KCS RR track east of Downtown Garland

Downtown Garland station will remain at existing location

Bridge structure design will incorporate simple aesthetic considerations

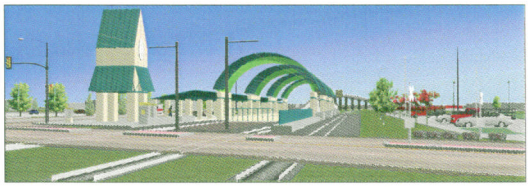


Update on Key Issues

Crossing KCS RR track east of Downtown Garland – View from Granville Arts Center

Update on Key Issues

Crossing KCS RR track east of Downtown Garland – View from Garland Station



Update on Key Issues

Bridge Aesthetics

Concrete form liners are being considered for retaining walls

Update on Key Issues

Utility Coordination

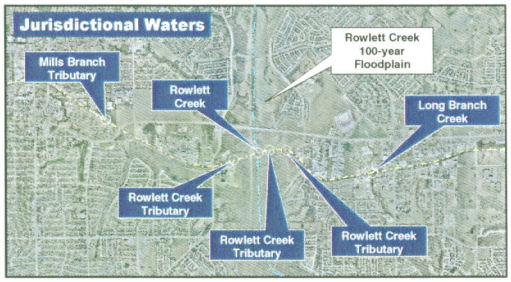
- Coordination ongoing with three electric utility providers, design currently under review
- Transmission and distribution lines
- Final resolution requires more detailed track design

LEA Results

Major Analysis Areas in Local Environmental Assessment

- Socioeconomic Conditions – *no issues*
- Land Use Considerations – *no issues*
- Jurisdictional Waters
- Noise and Vibration
- Historical Issues
- Hazardous Materials

LEA Results



- Coordination is ongoing with the US Army Corps of Engineers (USACE).

LEA Results

Mitigation for Jurisdictional Waters

LRT line design minimizes potential impacts

- Spanning entire length of Rowlett Creek floodplain (contains surface waters and bottomland hardwood systems)
- Less than 500 linear feet of impacts to:
  - Mills Branch
  - Rowlett Creek
  - Long Branch Creek

Coordination with the USACE is ongoing; any potential mitigation requirements will be determined upon completion of final design.

LEA Results

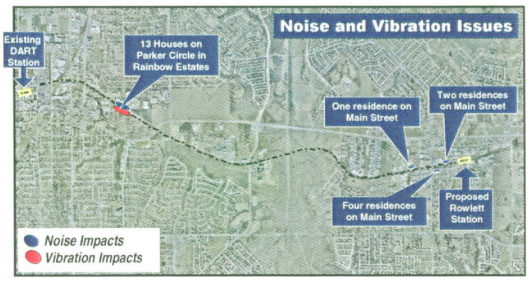
Noise Impacts

- *20 Impacts*
- *None Severe*
- *Impacts due to:*
  - *distance from LRT tracks*
  - *whistles and bells at crossings*
  - *the speed of train in some areas*
  - *the location of bridge structures*

Vibration Impacts

- *13 Impacts*
- *None for damage to structures*
- *Impacts due to distance from LRT tracks*

LEA Results



Mitigation: proposing to construct a noise wall for the Rainbow Estates neighborhood.

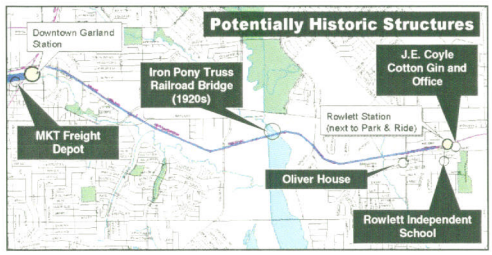
LEA Results

Historic Resources

Potential historic structure impacts:

- *Six resources were recommended eligible*
- *Awaiting final concurrence from the Texas Historical Commission*

LEA Results



LEA Results

Hazardous Materials Issue

- One Leaking Underground Storage Tank with groundwater impacts within 200 feet of the rail centerline; Texas Commission on Environmental Quality (TCEQ) assessment underway
- Groundwater monitoring is ongoing

Rowlett Station Concept

Rowlett Station Concept Alternative A

Rowlett Station Concept Alternative B

Rowlett Station Concept Alternative C

Next Steps

- Finalize LEA (early 2007)
- Begin Final Engineering/Design (early 2007)
- Construction Begins (2009)

Contact Information

Project Manager:

Cheri Bush

Cbush@dart.org

214.749.2568

Community Affairs:

Lawrence Meshack

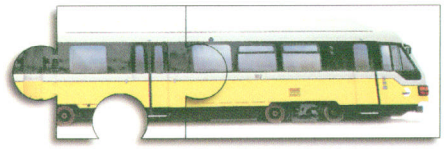
Jmeshack@dart.org

214.749.2590

Corridor Video

Play Video

DART RAIL TO ROWLETT | Connecting Communities



20 total
10 consultants
2 DART Staff
1 City staff

PUBLIC MEETING

Garland City Hall – December 14, 2006

DART

#	Name		Address	Phone/Fax	E-mail
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	Organization/Affiliation: Farmer Creek NA			Fax:	Work E-mail:
3	Last: Lutz	First: Bob	Address: " "	Phone: "	Home E-mail: BobLutz@tx.rr.com
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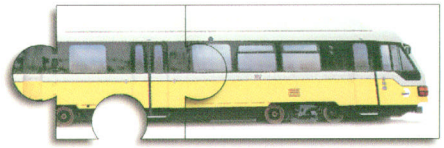
7	Last: Rederich	First: Ron	Address:	Phone: 214-749-3913	Home E-mail:
	Organization/Affiliation: DART / AGT21			Fax:	Work E-mail:
8	Last: Hardy	First: Jason	Address: 621 Carriagehouse Ln #2F Garland, TX 75040	Phone: 972-496-0085	Home E-mail: JASON_M_HARDY@HOTMAIL.COM
	Organization/Affiliation:			Fax:	Work E-mail: JHARDY@GEICO.COM
9	Last: DOANE	First: Glenda	Address: 949 LILAC DR GARLAND 75040	Phone: 972 566 5551	Home E-mail:
	Organization/Affiliation: DALT CAC			Fax:	Work E-mail:
10	Last: Gerder	First: Dennir	Address: 1910 Palomino Rowlett TX	Phone:	Home E-mail:
	Organization/Affiliation:			Fax:	Work E-mail:

DART RAIL TO ROWLETT | Connecting Communities



PUBLIC MEETING

Garland City Hall – December 14, 2006

DART

#	Name		Address	Phone/Fax	E-mail
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	Organization/Affiliation: CITY OF ROWLETT			Fax: 972 463 3907	Work E-mail: pbaugh@rowlett.com
3	Last: Smith	First: Terry	Address: 911 MAIN ST	Phone: 972-276-1159	Home E-mail: SOLSMITH@SWBELL.NET
	Organization/Affiliation: LAKE Cities Assoc of REALTORS		GARLAND TX 75040	Fax: 972-272-6813	Work E-mail: TERRY@LCAR.ORG
4	Last: [redacted]	First: [redacted]	Address:	Phone: 972-271-8401	Home E-mail:
	Organization/Affiliation: Josh + Sons		1053 HWY 66	Fax:	Work E-mail:
5	Last:	First:	Address:	Phone:	Home E-mail:
	Organization/Affiliation:			Fax:	Work E-mail:
6	Last:	First:	Address:	Phone:	Home E-mail:
	Organization/Affiliation:			Fax:	Work E-mail:
7	Last:	First:	Address:	Phone:	Home E-mail:
	Organization/Affiliation:			Fax:	Work E-mail:
8	Last:	First:	Address:	Phone:	Home E-mail:
	Organization/Affiliation:			Fax:	Work E-mail:
9	Last:	First:	Address:	Phone:	Home E-mail:
	Organization/Affiliation:			Fax:	Work E-mail:
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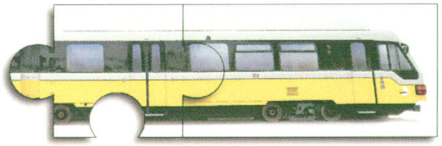
DART RAIL TO ROWLETT | Connecting Communities



PUBLIC MEETING
Garland City Hall – December 14, 2006

DART®

#	Name		Address	Phone/Fax	E-mail
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	Organization/Affiliation:			Fax:	Work E-mail:
3	Last: Sheffield	First: Andrew	Address: 641 A Castle Glen Garland 75043	Phone: 214 356 4159	Home E-mail:
	Organization/Affiliation:			Fax:	Work E-mail:
4	Last:	First:	Address:	Phone:	Home E-mail:
	Organization/Affiliation:			Fax:	Work E-mail:
5	Last:	First:	Address:	Phone:	Home E-mail:
	Organization/Affiliation:			Fax:	Work E-mail:
6	Last:	First:	Address:	Phone:	Home E-mail:
	Organization/Affiliation:			Fax:	Work E-mail:
7	Last:	First:	Address:	Phone:	Home E-mail:
	Organization/Affiliation:			Fax:	Work E-mail:
8	Last:	First:	Address:	Phone:	Home E-mail:
	Organization/Affiliation:			Fax:	Work E-mail:
9	Last:	First:	Address:	Phone:	Home E-mail:
	Organization/Affiliation:			Fax:	Work E-mail:
10	Last:	First:	Address:	Phone:	Home E-mail:
	Organization/Affiliation:			Fax:	Work E-mail:

ROWLETT COMMUNITY UPDATE MEETING

DART has completed the Preliminary Engineering/Local Environmental Assessment phase of the Rowlett Light Rail Transit (LRT) Extension.

DART has held several public meetings throughout the Preliminary Engineering/Local Environmental Assessment to provide information about the project, operations, and potential impacts associated with the project.

This public meeting will address the completion of the draft Local Environmental Assessment. The public will be allowed to provide input and the next steps anticipated for project completion will be discussed.

Rowlett Community Update Meeting
Thursday, December 14, 2006
6:30 p.m.
City of Garland Council Chambers
200 N. Fifth St.
Garland, Texas 75040
MAPSCO 19V

For more information, contact DART Community Affairs at **214.749.2543** or visit **www.DART.org.**

142-006-106 **4.25" x 5"** Rowlett Community Mtg. Update Ad
Dallas Chinese News, Vietnamese News, Korea Daily, Rockwall County News, Garland Journal News

Rowlett
TEXAS

Department of Planning and Community Development

March 13, 2007

Cheri Bush
Dallas Area Rapid Transit
PO Box 660163
Dallas, Texas 75266-7213

Re: Comments; Draft LEA and PE – DART Rail to Rowlett

Dear Ms. Bush;

Thank you for the opportunity to review the Draft Local Environmental Assessment (DLEA) and 10% Preliminary Engineering (PE) plans for DART's rail to Rowlett project. This project will be a highly visible part of the City's development and infrastructure. City of Rowlett (COR) staff review of these documents generated a number of comments, which were dated February 28, 2007 and provided to you via email. The following comment summary represents key issues discussed in our March 2nd meeting with you and DART consultants:

1. The COR preferred alternative is Alternative "B" as depicted in the 10% PE review plans; this was staff's first review of two of the alternatives; preference is due primarily to the reduced number of driveways and increased landscape width.
2. The COR has provided Historic Society contact information to you regarding documenting historic properties within and adjacent to the rail corridor.
3. COR estimates of population projections and employment differ somewhat from the NCTCOG source used in the DLEA and request that COR numbers be used instead; that is, 2025 population is projected to be 72,350 (Table 2-4) and 2005 employment was 6,858 (Table 2-6); the COR is working with NCTCOG to update and utilize the same set of numbers for their 2008 demographics publication.
4. COR requests that proactive efforts be given to the existing residential development east of Dexham Road and immediately adjacent to the rail corridor. Use of design elements provided through the "betterment program", such as quiet gates at the crossing and a sound wall would lessen the impacts of the rail service to the neighborhood. Another consideration could be use of dense evergreen vegetation, which if planted now would allow plant growth and maturity so that visual and noise mitigation will already be in place when operations begin.
5. Design of rail crossings at thoroughfares must provide for right-of-way and bicycle-pedestrian routes as outlined on the Rowlett Thoroughfare Plan, which is available on the COR web site (http://gisweb.rowletttx.org/).
6. Due to the preliminary nature of current plans, the COR requests the opportunity to discuss aesthetic treatments for station, bridge, and abutment, and other design

elements as planning progresses. The DART rail project will be a highly visible element within the downtown district and the city as a whole. COR would like to incorporate existing/planned landmark design style and materials, such as the planned Main Street bridge over the PGBT corridor, into the new DART project in order to unify and compliment these public projects.

7. The COR development process includes a required predevelopment meeting for all new applications. Because of the costs and complexity of this project, COR staff recommends predevelopment meetings for the DART rail to Rowlett project at several stages so as to coordinate COR and DART efforts and to clarify design issues related to bridges, ROW, etc. The first meeting should be scheduled as work begins on the final design and engineering plans, then at the 30% plans stage, and again at the 50% plan stage. Additional predevelopment meetings can be determined as the project progresses.

Please let me know if there are questions or concerns, or if additional information is needed. Again, thank you for the opportunity to review and comment on these plans. The City of Rowlett looks forward to the completion of the DART rail to Rowlett project.

Sincerely,

Keri Samford

Keri Samford
Interim Director Planning & Community Development

Cc: Craig Owen, City Manager, Rowlett

DEPARTMENT OF THE ARMY
U.S. ARMY ENGINEER DISTRICT, FORT WORTH
CORPS OF ENGINEERS
P.O. BOX 17300
FORT WORTH, TEXAS 76102-0300

OFFICIAL BUSINESS

Ms. Diane Cowin
Lopezgarcia Group
1825 Market Center Boulevard, Suite 500
Dallas, Texas 75207

75207+3327-33 C038

DEPARTMENT OF THE ARMY
FORT WORTH DISTRICT, CORPS OF ENGINEERS
P. O. BOX 17300
FORT WORTH, TEXAS 76102-0300

REPLY TO
ATTENTION OF:

September 23, 2005

Planning, Environmental, and Regulatory Division
Regulatory Branch

SUBJECT: Project Number 200500549, DART NORTHEAST CORRIDOR GARLAND-ROWLETT

Ms. Diane Cowin
Lopezgarcia Group
1825 Market Center Boulevard, Suite 500
Dallas, Texas 75207

Dear Ms. Cowin:

Thank you for your letter dated September 20, 2005. Your request has been assigned Project Number 200500549.

Ms. Cheryl Jasper has been assigned as the regulatory project manager for your request and will be evaluating it as expeditiously as possible. However, because of our permit workload it will take a while for us to respond.

You may be contacted for additional information about your request. For your information, please reference the Fort Worth District Regulatory Branch homepage at http://www.swf.usace.army.mil/regulatory/ and particularly guidance on submittals at http://www.swf.usace.army.mil/pubdata/environ/regulatory/introduction/submital.pdf, and mitigation at http://www.swf.usace.army.mil/pubdata/environ/regulatory/permitting/mitigation/fwmitguid.pdf that may help you supplement your current request or prepare future requests.

If you have any questions about the evaluation of your submittal or would like to request a copy of one of the documents referenced above, please contact Ms. Cheryl Jasper at the address above or telephone (817)886-1738 and refer to your assigned project number. Please note that it is unlawful to start work without a Department of the Army permit if one is required.

Wayne A. Lea
Chief, Regulatory Branch

September 20, 2005

Mr. Wayne Lea
Regulatory Branch (CESWF-PER-R)
Ft. Worth District – U.S. Corps of Engineers
P.O. Box 17300
Ft. Worth, Texas 76102-0300

Re: Jurisdictional Waters Review Request - DART Rail to Rowlett

Dear Mr. Lea:

Dallas Area Rapid Transit (DART) is in the process of performing an environmental review, pursuant to the DART Environmental Impact Assessment and Mitigation Policy Guidelines, in order to assess the environmental impacts of the Rowlett Light Rail Transit (LRT) extension from the existing downtown Garland LRT Station to downtown Rowlett, Dallas County, Texas (**Exhibit 1**). The DART guidelines are being utilized as opposed to the guidelines set forth by the National Environmental Policy Act as no federal monies will be funding the project. However, the DART guidelines were developed to ensure the environment is protected during project planning and implementation.

As part of the agency coordination effort during the Preliminary Engineering/Local Environmental Assessment (PE/LEA) phase, we are requesting information concerning jurisdictional waters in the study area. A full biological assessment, the delineation of wetlands and a thorough survey of 4(f) properties will be undertaken during the development of the Draft LEA document. We would appreciate your input to complement our efforts during this phase of work at your earliest convenience.

Background and Scope of Project

In 1995, the *Northeast Corridor Major Investment Study* (*Northeast Corridor MIS*) assessed the transportation issues within the Northeast Corridor and evaluated four alternatives to Garland, with future service to Rowlett with LRT chosen as the Locally Preferred Alternative. The proposed 4.5-mile LRT Extension will share the Missouri-Kansas-Texas (MKT) Railroad right-of-way (ROW), which is owned by DART, from the existing Garland LRT Station into downtown Rowlett. The future Rowlett Station would be situated on undeveloped land currently owned by DART, adjacent to the existing Rowlett Park-and-Ride.

Existing Conditions

Vegetation

The Northeast Corridor is located in the Oaks and Prairies Physiographic Region and the Blackland Prairie ecological subregion of Texas (Fenneman 1938). The Oaks and Prairies Region approximately extends from the Red River of Oklahoma south to San Antonio, Texas, east of the acidic sandy soils of the East Texas Pineywoods and west of the Eastern Cross Timbers. Within this area, the Blackland Prairie represents the southernmost extension of the North American tallgrass prairie. Within this subregion, the principal habitat is tallgrass, which

typically occurs in higher areas with good drainage. The dominant vegetation associated with these habitats includes big bluestem *(Andropogon gerardii Vitman)*, little bluestem *(Andropogen scoparium)*, Indiangrass *(Sorghastrum nutans)*, switchgrass *(Panicum virgatum)*, brownseed paspalum *(Paspalum plicatulum Michx.)*, and gamagrass *(Tripsacum dactyloides)*. Also present within the Oaks and Prairies physiographic area are bottomland hardwood forests. Bur oak *(Quercus macrocarpa)*, Shumard oak *(Quercus shumardii)*, black walnut *(Juglans nigra)*, American elm *(Ulmus Americana)*, cedar elm *(Ulmus crassifolia)*, and white ash *(Fraxinus Americana)* are all common components of these forests. Riparian forests include cottonwood (Populus deltoides), sycamore *(Acer Pseudoplantus L.)*, black willow *(Salix nigra)*, and green ash *(Fraxinus pennsylvanica)*. Upland hardwood forests, which occur on the upper slopes and summits of Austin chalk escarpments include Texas oak *(Quercus texana)*, Mexican plum *(Prunus mexicana)*, and cedar elm *(Ulmus crassifolia)*. There is often an associated dense scrub layer within these forests, including species such as aromatic sumac *(Anacardiaceae Rhus aromatica)*, poison oak *(Toxicodendron diversilobum)*, Carolina buckthorn *(Rhamnus caroliniana)*, and coralberry *(Symphoricarpos orbioulatus)*. There are occasional wetlands and freshwater marshes in the Oaks and Prairies area, primarily associated with the peripheral areas of streams, rivers, and reservoirs.

Although native prairie remnants are found within in the corridor, much of it has been removed or disturbed through agricultural activities and urbanization. The dominance of the urban environment with regard to the vegetation of the area is reflected in TPWD's *Vegetation Types of Texas* (1984), which classifies the areas vegetation as Urban. Photographs of the project area are provided in **Exhibit 2**. Vegetative species observed within the proposed project area during preliminary field surveys are provided in **Table 1**.

Table 1.
Vegetation Observed within the Proposed Project Area

Strata	Common Name	Scientific Name
Trees	Sugar Hackberry	*Celtis Laevigata*
	American elm	*Ulmus americana*
	Black willow	*Salix nigra*
	Cedar elm	*Ulmus crassifolia*
	Bois d'Arc	*Maclura pomifera*
	Red mulberry	*Morus rubra*
	Texas mulberry	*Morus microphylla*
	Box elder	*Acer negundo*
	Eastern redbud	*Cercis canadensis*
	Green ash	*Fraxinus pennsylvanica*
	Eastern red cedar	*Juniperus virginiana*
	Smooth sumac	*Rhus glabra*
	Texas sophora	*Sophora affinis*
	Bur oak	*Quercus macrocarpa*
	Mimosa	*Albizia julibrissin*
	Pecan	*Carya illionensis*
	Chinaberry	*Sapindus drummondii*
	Eastern cottonwood	*Populus deltoides*
Herbs	Great ragweed	*Ambrosia trifida*
	Annual ragweed	*Ambrosia artemisiifolia*
	Common sunflower	*Helianthus annuus*
	Giant goldenrod	*Solidago gigantea*
	Canada wildrye	*Elymus canadensis*
	Indian woodoats	*Chasmanthium latifolium*

Strata	Common Name	Scientific Name
	Dayflower	*Commelina erecta*
	Green foxtail	*Setaria viridis*
	Carolina geranium	*Geranium carolinianum*
	Henbit	*Lamium amplexicaule*
	Johnson grass	*Sorghum halepense*
	Mimosa vine	*Mimosa strugillosa*
	Musk thistle	*Carduus nutans*
	Peppergrass	*Lepidium austinum*
	Pokeweed	*Phytolacca americana*
	Roundleaf spurge	*Euphorbia cordifolia*
	One-seed croton	*Croton monanthogynus*
	Smartweed	*Polygonum hydropiperoides*
	Bermuda grass	*Cynodon dactylon*
	St. Augustine grass	*Stenotaphrum secundatum*
	Annual bedstraw	*Galium aparine*
Vines	Poison ivy	*Toxicodendron radicans*
	Honeysuckle	*Lonicera japonica*
	Virginia creeper	*Parthenocissus quinquefolia*
	Mustang grape	*Vitis mustangensis*
	Saw greenbrier	*Smilax bona-nox*
	Peppervine	*Ampelopsis arborea*

Source: Vegetation recorded during a site reconnaissance completed on July 7, 2005.

Soils and Geography

Ten soil types occur along the proposed DART Rail to Rowlett project area. These include Burleson Clay, Branyon Clay, Frio Silty Clay, Houston Black Clay, Houston Black-Urban, Lewsiville Silty Clay, Lewisville-Urban Complex, Altoga Silty Clay, Heiden Clay and Ferris-Heiden Complex (Soil Conservation Service, 1980). The main properties of these soils are summarized in **Table 2.**

Table 2
Soils Types Along the Project Corridor

Type	Hydric Inclusions	Prime Farmlands	Permeability	Water Capacity
Burleson Clay	No	Yes	Very Slow	High
Branyon Clay	No	Yes	Moderate	High
Frio Silty Clay	No	Yes	Moderately Slow	High
Houston Black Clay	No	Yes	Very Slow	High
Houston Black-Urban Land Complex	No	No	Very Slow	High
Lewisville Silty Clay	No	Yes	Moderate	High
Lewisville-Urban land Complex	No	No	Moderate	High
Altoga Silty Clay	No	No	Moderate	High
Heiden Clay	No	Yes	Very Slow	High
Ferris-Heiden Complex	No	No	Very Slow	High

Source: Dallas County Soil Survey, 1980

According to the Geology of Texas (1981), the underlying geology of the region is almost exclusively Austin Chalk. The base of the chalk overlies the softer Eagle Ford Shale and forms the prominent west-facing White Rock escarpment. Austin Chalk consists of three components: the upper chalk, the middle marl and the lower chalk. Large, two- to five-foot beds of light grey

to tan chalk are interbedded with beds of marl throughout the upper and lower chalks. The middle member is made up of beds of marl interbedded with beds of chalk. Alternating layers of limestone chalk and calcareous marls make up several distinct units of Austin Chalk which are dissected by the proposed project corridor.

Waters of the U.S.

Lake Ray Hubbard, an impoundment of the East Fork of the Trinity River, and its tributaries are the major surface waters found in northeastern Dallas County. Among these tributaries are Mills Branch, Rowlett Creek, and Longbranch Creek. The proposed Rowlett LRT line would pass through the floodplain of Mills Branch, which parallels the project corridor to the south; cross Rowlett Creek, the largest creek in the area; and cross Longbranch Creek, just before entering downtown Rowlett. The majority of surface water runoff in the study area would be intercepted by either storm water drains or surface waters and carried to Lake Ray Hubbard. National Wetland Inventory maps indicate that wetlands may exist within the study area, most of which would surround Rowlett Creek. The proposed Rowlett LRT would pass through approximately 1,980 feet of the 97-acre Rowlett Creek Preserve, a component of the Dallas County Park & Open Space Program. This preserve is within a palustrine system characterized by woody vegetation suited to temporarily flooded conditions. A USGS 7.5-minute Quadrangle map depicting the existing and potential waters of the U.S. within the proposed project area is provided in **Exhibit 3**. A full delineation of the project area will be completed as project design progresses.

Existing Site Development

Approximately 75 percent of the project corridor is currently developed while the remaining 25 percent is vacant land. Industrial and commercial land uses comprise the majority of the land use along the project corridor. Residential development is limited to two neighborhoods in the immediate vicinity of the proposed LRT corridor while large tracts of single family dwellings adjoin the vacant land adjacent to the proposed Rowlett LRT. The residential and commercial areas located along the project corridor appear to be relatively new, although some older structures remain. The condition and style of the newer buildings appear to be modern and consistent with current architecture. The businesses in the project area consist of a variety of industries, including electronics, steel fabrication, aluminum die casting, hat manufacturing, dairy production and food processing. An aerial photograph of the project area is included as **Exhibit 4**.

Historic Use/Function of Site

The presence of the MKT Railroad, built in 1886, and the completion of Lake Ray Hubbard in 1971 have had a strong influence on the historic use and function of the project area. With the completion of Lake Ray Hubbard, a building boom began for the City of Rowlett and the population rose to more than 1,600 by 1973 and to 5,100 by 1978. By the early 1990s, the community had increased to a population of over 20,000 with more than thirty miles of shoreline on Lake Ray Hubbard, a nature trail and Springfield Park (north of State Highway 66) developed along Rowlett Creek, and 200 businesses, mostly light industry and services.

Cultural Resources

There is a potential for the existence of historic structures and archeological resources within the project area. Coordination with the Texas Historical Commission is currently underway.

Wildlife and Threatened and Endangered Species

A list of rare species occurring in Dallas County and their habitat preferences can be found in **Exhibit 5**. At this time, only a preliminary site reconnaissance has taken place. During the

railway including impacts to soils, such as the removal of vegetation, which could cause the mixing of the soil horizons, the loss of topsoil productivity and short-term increased susceptibility to wind and water erosion. Long-term visual and aesthetic resources impacts may occur as a result of the proposed project. In addition, noise impacts may occur at certain areas along the track and potential vehicle delays at some at-grade crossings.

Because more than one acre of land would be disturbed, DART would be required to comply with the Texas Commission on Environmental Quality (TCEQ) Texas Pollution Discharge Elimination System (TPDES) General Permit for construction activity. A Notice of Intent would be filed with the TCEQ Storm Water Division. In accordance with the TPDES permit requirements, a Storm Water Pollution Prevention Plan would be prepared. This plan, to be implemented by the contractor, would prevent, minimize and control the spill of hazardous materials in staging areas.

Planned Beneficial Enhancements
No beneficial enhancements have been planned at this point.

Should you have any questions or need additional information to formulate your response, feel free to contact me at 214-741-7777 or Cheri Bush of DART at 214-749-2568. Thank you in advance for you assistance in this matter.

Sincerely,

Diane Cowin
LOPEZGARCIA GROUP

September 20, 2005

Mr. Tom Cloud
Arlington Ecological Service Office
United States Fish and Wildlife Service
711 Stadium Drive, Suite #252
Arlington, Texas 76011

Re: Threatened and Endangered Species Review Request – City of Irving Bank Stabilization

Dear Mr. Cloud:

Dallas Area Rapid Transit (DART) is in the process of performing an environmental review, pursuant to the DART Environmental Impact Assessment and Mitigation Policy Guidelines, in order to assess the environmental impacts of the Rowlett Light Rail Transit (LRT) extension from the existing downtown Garland LRT Station to downtown Rowlett, Dallas County, Texas (**Exhibit 1**). The DART guidelines are being utilized as opposed to the guidelines set forth by the National Environmental Policy Act as no federal monies will be funding the project. However, the DART guidelines were developed to ensure the environment is protected during project planning and implementation.

As part of the agency coordination effort during the Preliminary Engineering/Local Environmental Assessment (PE/LEA) phase, we are requesting information concerning jurisdictional waters in the study area. A full biological assessment, the delineation of wetlands and a thorough survey of 4(f) properties will be undertaken during the development of the Draft LEA document. We would appreciate your input to complement our efforts during this phase of work at your earliest convenience.

Existing Conditions

Vegetation
The Northeast Corridor is located in the Oaks and Prairies Physiographic Region and the Blackland Prairie ecological subregion of Texas (Fenneman 1938). The Oaks and Prairies Region approximately extends from the Red River of Oklahoma south to San Antonio, Texas, east of the acidic sandy soils of the East Texas Pineywoods and west of the Eastern Cross Timbers. Within this area, the Blackland Prairie represents the southernmost extension of the North American tallgrass prairie. Within this subregion, the principal habitat is tallgrass, which typically occurs in higher areas with good drainage. The dominant vegetation associated with these habitats includes big bluestem *(Andropogon gerardii Vitman)*, little bluestem *(Andropogen scoparium)*, Indiangrass *(Sorghastrum nutans)*, switchgrass *(Panicum virgatum)*, brownseed paspalum *(Paspalum plicatulum Michx.)*, and gamagrass *(Tripsacum dactyloides)*. Also present within the Oaks and Prairies physiographic area are bottomland hardwood forests. Bur oak *(Quercus macrocarpa)*, Shumard oak *(Quercus shumardii)*, black walnut *(Juglans nigra)*, American elm *(Ulmus Americana)*, cedar elm *(Ulmus crassifolia)*, and white ash *(Fraxinus Americana)* are all common components of these forests. Riparian forests include cottonwood (Populus deltoides), sycamore *(Acer Pseudoplantus L.)*, black willow *(Salix nigra)*, and green

ash *(Fraxinus pennsylvanica)*. Upland hardwood forests, which occur on the upper slopes and summits of Austin chalk escarpments include Texas oak *(Quercus texana)*, Mexican plum *(Prunus mexicana)*, and cedar elm *(Ulmus crassifolia)*. There is often an associated dense scrub layer within these forests, including species such as aromatic sumac *(Anacardiaceae Rhus aromatica)*, poison oak *(Toxicodendron diversilobum)*, Carolina buckthorn *(Rhamnus caroliniana)*, and coralberry *(Symphoricarpos orbioulatus)*. There are occasional wetlands and freshwater marshes in the Oaks and Prairies area, primarily associated with the peripheral areas of streams, rivers, and reservoirs.

Although native prairie remnants are found within in the corridor, much of it has been removed or disturbed through agricultural activities and urbanization. The dominance of the urban environment with regard to the vegetation of the area is reflected in TPWD's *Vegetation Types of Texas* (1984), which classifies the areas vegetation as Urban. Photographs of the project area are provided in **Exhibit 2**. Vegetative species observed within the proposed project area during preliminary field surveys are provided in **Table 1**.

Table 1.
Vegetation Observed within the Proposed Project Area

Strata	Common Name	Scientific Name
Trees	Sugar Hackberry	*Celtis Laevigata*
	American elm	*Ulmus americana*
	Black willow	*Salix nigra*
	Cedar elm	*Ulmus crassifolia*
	Bois d'Arc	*Maclura pomifera*
	Red mulberry	*Morus rubra*
	Texas mulberry	*Morus microphylla*
	Box elder	*Acer negundo*
	Eastern redbud	*Cercis canadensis*
	Green ash	*Fraxinus pennsylvanica*
	Eastern red cedar	*Juniperus virginiana*
	Smooth sumac	*Rhus glabra*
	Texas sophora	*Sophora affinis*
	Bur oak	*Quercus macrocarpa*
	Mimosa	*Albizia julibrissin*
	Pecan	*Carya illionensis*
	Chinaberry	*Sapindus drummondii*
	Eastern cottonwood	*Populus deltoides*
Herbs	Great ragweed	*Ambrosia trifida*
	Annual ragweed	*Ambrosia artemisiifolia*
	Common sunflower	*Helianthus annuus*
	Giant goldenrod	*Solidago gigantea*
	Canada wildrye	*Elymus canadensis*
	Indian woodoats	*Chasmanthium latifolium*
	Dayflower	*Commelina erecta*
	Green foxtail	*Setaria viridis*
	Carolina geranium	*Geranium carolinianum*
	Henbit	*Lamium amplexicaule*
	Johnson grass	*Sorghum halepense*
	Mimosa vine	*Mimosa strugillosa*
	Musk thistle	*Carduus nutans*
	Peppergrass	*Lepidium austinum*
	Pokeweed	*Phytolacca americana*

Strata	Common Name	Scientific Name
	Roundleaf spurge	*Euphorbia cordifolia*
	One-seed croton	*Croton monanthogynus*
	Smartweed	*Polygonum hydropiperoides*
	Bermuda grass	*Cynodon dactylon*
	St. Augustine grass	*Stenotaphrum secundatum*
	Annual bedstraw	*Galium aparine*
Vines	Poison ivy	*Toxicodendron radicans*
	Honeysuckle	*Lonicera japonica*
	Virginia creeper	*Parthenocissus quinquefolia*
	Mustang grape	*Vitis mustangensis*
	Saw greenbrier	*Smilax bona-nox*
	Peppervine	*Ampelopsis arborea*

Source: Vegetation recorded during a site reconnaissance completed on July 7, 2005.

Soils and Geography

Ten soil types occur along the proposed DART Rail to Rowlett project area. These include Burleson Clay, Branyon Clay, Frio Silty Clay, Houston Black Clay, Houston Black-Urban, Lewsiville Silty Clay, Lewisville-Urban Complex, Altoga Silty Clay, Heiden Clay and Ferris-Heiden Complex (Soil Conservation Service, 1980). The main properties of these soils are summarized in **Table 2.**

Table 2
Soils Types Along the Project Corridor

Type	Hydric Inclusions	Prime Farmlands	Permeability	Water Capacity
Burleson Clay	No	Yes	Very Slow	High
Branyon Clay	No	Yes	Moderate	High
Frio Silty Clay	No	Yes	Moderately Slow	High
Houston Black Clay	No	Yes	Very Slow	High
Houston Black-Urban Land Complex	No	No	Very Slow	High
Lewisville Silty Clay	No	Yes	Moderate	High
Lewisville-Urban land Complex	No	No	Moderate	High
Altoga Silty Clay	No	No	Moderate	High
Heiden Clay	No	Yes	Very Slow	High
Ferris-Heiden Complex	No	No	Very Slow	High

Source: Dallas County Soil Survey, 1980

According to the Geology of Texas (1981), the underlying geology of the region is almost exclusively Austin Chalk. The base of the chalk overlies the softer Eagle Ford Shale and forms the prominent west-facing White Rock escarpment. Austin Chalk consists of three components: the upper chalk, the middle marl and the lower chalk. Large, two- to five-foot beds of light grey to tan chalk are interbedded with beds of marl throughout the upper and lower chalks. The middle member is made up of beds of marl interbedded with beds of chalk. Alternating layers of limestone chalk and calcareous marls make up several distinct units of Austin Chalk which are dissected by the proposed project corridor.

Waters of the U.S.

Lake Ray Hubbard, an impoundment of the East Fork of the Trinity River, and its tributaries are the major surface waters found in northeastern Dallas County. Among these tributaries are

Mills Branch, Rowlett Creek, and Longbranch Creek. The proposed Rowlett LRT line would pass through the floodplain of Mills Branch, which parallels the project corridor to the south; cross Rowlett Creek, the largest creek in the area; and cross Longbranch Creek just before entering downtown Rowlett. The majority of surface water runoff in the study area would be intercepted by either storm water drains or surface waters and carried to Lake Ray Hubbard. Although wetland delineations have not been completed at this time, National Wetland Inventory maps indicate that wetlands may exist within the study area, most of which would surround Rowlett Creek. The proposed Rowlett LRT would pass through approximately 1,980 feet of the 97-acre Rowlett Creek Preserve, a component of the Dallas County Park & Open Space Program. This preserve is within a palustrine system characterized by woody vegetation suited to temporarily flooded conditions. A USGS 7.5-minute Quadrangle map depicting the existing and potential waters of the U.S. within the proposed project area is provided in **Exhibit 3**.

Existing Site Development

Approximately 75 percent of the project corridor is currently developed while the remaining 25 percent is vacant land. Industrial and commercial land uses comprise the majority of the land use along the project corridor. Residential development is limited to two neighborhoods in the immediate vicinity of the proposed LRT corridor while large tracts of single family dwellings adjoin the vacant land adjacent to the proposed Rowlett LRT. The residential and commercial areas located along the project corridor appear to be relatively new, although some older structures remain. The condition and style of the newer buildings appear to be modern and consistent with current architecture. The businesses in the project area consist of a variety of industries, including electronics, steel fabrication, aluminum die casting, hat manufacturing, dairy production and food processing. An aerial photograph of the project area is included as **Exhibit 4**.

Historic Use/Function of Site

The presence of the MKT Railroad, built in 1886, and the completion of Lake Ray Hubbard in 1971 have had a strong influence on the historic use and function of the project area. With the completion of Lake Ray Hubbard, a building boom began for the City of Rowlett and the population rose to more than 1,600 by 1973 and to 5,100 by 1978. By the early 1990s, the community had increased to a population of over 20,000 with more than thirty miles of shoreline on Lake Ray Hubbard, a nature trail and Springfield Park (north of State Highway 66) developed along Rowlett Creek, and 200 businesses, mostly light industry and services.

Cultural Resources

There is a potential for the existence of historic structures and archeological resources within the project area. Coordination with the Texas Historical Commission is currently underway.

Wildlife and Threatened and Endangered Species

A list of rare species occurring in Dallas County and their habitat preferences can be found in **Exhibit 5**. At this time, only a preliminary site reconnaissance has taken place. During the preliminary site reconnaissance, it was found that habitat elements (streams, creeks, floodplains and poorly drained depressions) for some state and federally listed threatened and endangered species, including the bald eagle (*Haliaeetus leucocephalus*), wood stork (*Mycteria americana*), and timber/canebrake rattlesnake (*Crotalus horridus*), exist within the project area. No threatened or endangered species were detected during the preliminary site reconnaissance.

Potential Negative Impacts

Since the proposed Rowlett LRT extension would occur within existing ROW, few impacts to wildlife are anticipated. Short-term negative impacts would occur during the construction of the

preliminary site reconnaissance, it was found that habitat elements (streams, creeks, floodplains and poorly drained depressions) for some state and federally listed threatened and endangered species, including the bald eagle (*Haliaeetus leucocephalus*), wood stork (*Mycteria americana*), and timber/canebrake rattlesnake (*Crotalus horridus*), exist within the project area. No threatened or endangered species were detected during the preliminary site reconnaissance.

Potential Negative Impacts

Since the proposed Rowlett LRT extension would occur within existing ROW, few impacts to wildlife are anticipated. Short-term negative impacts would occur during the construction of the railway including impacts to soils, such as the removal of vegetation, which could cause the mixing of the soil horizons, the loss of topsoil productivity and short-term increased susceptibility to wind and water erosion. Long-term visual and aesthetic resources impacts may occur as a result of the proposed project. In addition, noise impacts may occur at certain areas along the track and potential vehicle delays at some at-grade crossings.

Because more than one acre of land would be disturbed, DART would be required to comply with the Texas Commission on Environmental Quality (TCEQ) Texas Pollution Discharge Elimination System (TPDES) General Permit for construction activity. A Notice of Intent would be filed with the TCEQ Storm Water Division. In accordance with the TPDES permit requirements, a Storm Water Pollution Prevention Plan would be prepared. This plan, to be implemented by the contractor, would prevent, minimize and control the spill of hazardous materials in staging areas.

Planned Beneficial Enhancements

No beneficial enhancements have been planned at this point.

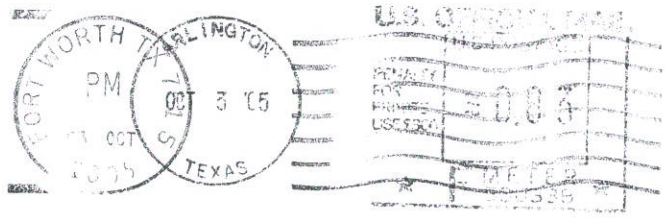
Should you have any questions or need additional information to formulate your response, feel free to contact me at 214-741-7777 or Cheri Bush of DART at 214-749-2568. Thank you in advance for you assistance in this matter.

Sincerely,

Diane Cowin
LOPEZGARCIA GROUP

UNITED STATES
DEPARTMENT OF THE INTERIOR
FISH AND WILDLIFE SERVICE
711 STADIUM DRIVE, SUITE 252
ARLINGTON, TX 76011

OFFICIAL BUSINESS
PENALTY FOR PRIVATE USE, $300



OCT 04 2005

Ms. Diane Cowin
Lopez Garcia Group
1825 Market Center Blvd., Suite 500
Dallas, Texas 75207

75207-3327

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Ecological Services
WinSystems Center Building
711 Stadium Drive, Suite 252
Arlington, Texas 76011

2-12-05-I-437

October 3, 2005

Ms. Diane Cowin
Lopez Garcia Group
1825 Market Center Blvd., Suite 500
Dallas, Texas 75207

Dear Ms. Cowin:

This responds to your September 20, 2005, letter requesting information regarding Dallas Area Rapid Transit's (DART) proposed construction of the 4.5-mile Rowlett Light Rail Transit (LRT) extension from the existing downtown Garland LRT Station to downtown Rowlett, Dallas County, Texas. We understand that the project would have no federal involvement and appreciate the fact that you are seeking our input regardless. We are providing this information to assist you in assessing and avoiding impacts to federally listed threatened and endangered species, wetlands, and other fish and wildlife resources.

An updated county-by-county list of federally threatened, endangered, and candidate species, critical habitat designations, as well as information on the general biology of these species can be found at our website at http://ifw2es.fws.gov/EndangeredSpecies. Please refer to this website for any future need for species lists. Currently, we do not have any information on listed species occurring within the project area. However, it is unlikely that the listed species for Dallas County would occur in a railroad corridor within a highly urbanized area.

Your letter and maps indicate that the proposed 4.5-mile LRT extension will share the Missouri-Kansas-Texas Railroad right-of-way (ROW), which is owned by DART, from the existing Garland LRT Station into downtown Rowlett and that the future Rowlett Station would be situated on undeveloped land currently owned by DART. You have also indicated that this route would cross Rowlett Creek, Longbranch Creek, and pass through the floodplain of Mills Branch, each of which would require bridge construction.

Excavation and clearing of vegetation from riparian areas associated with railway and bridge construction can result in impacts to fish and wildlife habitat. These impacts can include direct habitat loss, habitat fragmentation, soil erosion, increased sedimentation, and alteration of the hydrology of the impacted area. Numerous species of resident and migratory wildlife depend on riparian corridors for food, water, nesting habitat, and often as dispersal and/or travel corridors.

TEXAS HISTORICAL COMMISSION
The State Agency for Historic Preservation

RICK PERRY, GOVERNOR
JOHN L. NAU, III, CHAIRMAN
F. LAWERENCE OAKS, EXECUTIVE DIRECTOR

May 1, 2006

Nicky DeFreece
Lopez Garcia Group
1825 Market Center Blvd., Ste 500
Dallas TX 75207

Re: APE concurrence under the Texas Antiquities Code and Section 106Rowlett Light Rail Transit Extension, Dallas Area Rapid Transit, Dallas County, TX .

Dear Ms. DeFreece,

The Texas Historical Commission History Programs Staff, led by Hannah Vaughan, has reviewed your letter regarding the above reference project. We concur with your Area of Potential Effect (APE) of 150 feet on either side of the right of way, 300 feet for new bridge locations, and 500 feet for stations. We also concur with the proposed survey and report methodology.

If you have any questions, or we may be of further assistance, please contact Hannah Vaughan at hannah.vaughan@thc.state.tx.us or 512/463-6046.

Sincerely,

Hannah Vaughan
Historian

Riparian corridors often furnish some of the best wildlife habitat in an area and may provide the only suitable habitat for certain urban wildlife species. For these reasons, we strongly recommend that construction activities near such areas be carefully designed to avoid and/or minimize impacts to the maximum extent practicable.

If vegetation clearing is needed in riparian areas, these areas should be revegetated with native wetland and riparian vegetation to prevent erosion, reduce sedimentation, and restore impacted habitat. Revegetation efforts should be monitored to ensure disturbed stream banks are adequately stabilized. Species commonly used for soil stabilization are listed in the Texas Department of Agriculture's (TDA) Native Tree and Plant Directory, available from TDA at P.O. Box 12847, Austin, Texas, 78711.

Your letter also indicates that although wetland delineations have not been completed at this time, your review of National Wetlands Inventory maps has identified that wetlands may exist within the study area, most of which surround Rowlett Creek. If you anticipate unavoidable impacts to wetlands, you should contact the appropriate U.S. Army Corps of Engineers office to determine if a permit is required by that Agency prior to commencement of construction activities.

Thank you for the opportunity to provide information on the proposed project. If you have any questions, please contact Sean Edwards of my staff at (817) 277-1100.

Sincerely,

Tom Cloud

Thomas J. Cloud, Jr.
Field Supervisor

Appendix B - KCS Garland to Rowlett Vertical Clearance Approval

KANSAS CITY SOUTHERN

427 WEST 12TH STREET • KANSAS CITY, MISSOURI 64105

FOUNDED 1887

John E. Day
816-983-1620 office
816-983-1186 fax

September 27, 2005

Ms. Cheri M. Bush
DART
P.O. Box 660163
Dallas, TX 75266-0163

Re: Garland-to-Rowlett Vertical Clearance Approval

Dear Ms. Bush:

Kansas City Southern Railway Company (KCSR) received your plans dated September 15, 2005 regarding the above-referenced project. KCSR understands that there are special circumstances with your project that will require a maximum vertical clearance of 22 feet (as measured 10 feet from centerline of tracks). Due to these circumstances, KCSR approves of this vertical clearance.

If further revisions to the proposed clearance occur, it will be necessary for KCSR to review them for approval. Please contact me if you have any questions or comments.

Sincerely,

John E. Day
Assistant Director Engineering

18 April 2006

Hannah Vaughan
Texas Historical Commission
1511 Colorado Street
Austin, Texas 78701

re: APE coordination under the Texas Antiquities Code for the Rowlett Light Rail Transit Extension, Dallas Area Rapid Transit, Dallas County, Texas (LGGROUP Project Number 210059.35)

Dear Ms. Vaughan:

LopezGarcia Group (LGGROUP) has been contracted by Dallas Area Rapid Transit (DART) to perform historic-age resources coordination. DART seeks concurrence from the Texas Historical Commission (THC) for an undertaking that is governed by the Texas Antiquities Code. A Local Environmental Assessment is currently being prepared; no federal funding or permitting is currently requested for the proposed undertaking. The project area encompasses approximately four miles of existing right-of-way (ROW), drainage easements to be acquired, and associated infrastructure. This letter presents a description of the proposed undertaking, identification of known historic-age resources near the location of the proposed undertaking, and a request for concurrence on a proposed area of potential effects (APE) from the THC.

Description of Undertaking

The area that is the topic of this letter lies within the cities of Garland and Rowlett, Texas, and extends along the existing ROW of the Missouri, Kansas, and Texas Railroad (MKT) between the two cities. The project area is currently occupied by industrial, commercial, warehouse, rural and residential areas.

The specific undertaking addressed in this letter is the extension of the DART Blue Line LRT track, construction of a new transit station in Rowlett, improvements to the existing Garland Station, along with construction of new bridges and improvements to existing bridges along the rail line (Exhibit 1). The preliminary proposed design for the transit station consists of a platform station with bus bays, a bus circulation area, kiss-and-ride spaces and park-and-ride spaces. The site of the proposed Rowlett station is roughly bound by Industrial Street and Melcer Drive on the north, the existing rail line on the south, Martin Drive on the west and an unnamed street on the east. New light rail track will be constructed on the north side of the existing freight track within the existing ROW. Improvements will also be made to the existing Garland station, bound on the north by the boundary of the existing station parking lot, on the south by existing rail line, on the west by North Fifth Street and on the east by North Fourth Street. The improvements to the station are under consideration and could include, but are not limited to widening or improving pedestrian connections to the street. Improvements will also be made to existing bridges along the ROW.

Background Information

The project area is located in a region that has historically served as a cotton and wheat producing area (TSHA 2006a). The MKT rail line came through the area in 1886 (TSHA 2006b). Garland was later established in 1887 and Rowlett in 1889 (TSHA 2006a; TSHA 2006b).

The Texas Historic Sites Atlas was consulted to determine if any buildings, structures, objects, or state historic markers lie within or near the APE. One Texas Sesquicentennial historical marker was found for the City of Rowlett. It is located approximately 940 feet from the proposed site of the Rowlett Station. Several neighborhood surveys conducted by Hardy in June 1982 cited historic-age resources within the project area. Six historic-age resources were located during these surveys and are listed in Table 1 below.

Table 1. Previously Documented Historic-Age Resources Within Proposed APE

Address	*Name and Date of Construction*	*NRHP Significance*	*Comments*
3700 block Main Street	Sacred Heart Catholic Church, 1922	N/A	THC Neighborhood survey. Serial #NRS79-11249* approximately 430 feet from proposed site of Rowlett Station
3613 Main Street	Guthrie House, ca.1911	N/A	THC Neighborhood survey. Serial #NRS79-11248* approximately 510 feet from proposed site of Rowlett Station
3809 Main Street	Old Citizens Bank of Rowlett Building, 1908/1918	N/A	THC Neighborhood Survey. Serial # NRS79-11250* approximately 510 feet from proposed site of Rowlett Station
3910 Main Street	First Christian Church, 1923	N/A	THC Neighborhood Survey. Serial #NRS79-11251* approximately 740 feet from proposed site of Rowlett Station
4002 East Main Street	Old Rowlett Elementary School, 1939	N/A	THC Neighborhood Survey. Serial #NRS79-11252* approximately 970 feet from proposed site of Rowlett Station
4000 Main Street	City of Rowlett	N/A	Historical Marker # 6852* approximately 940 feet from proposed site of Rowlett Station

* Source: Texas Historic Sites Atlas (THSA) 2006.

Recommendations for Historic Architectural Resource Investigations

It is proposed that a reconnaissance-level survey of historic-age resources within the proposed APE be performed. The recommended APE for the reconnaissance survey is 150 feet on either side of the proposed ROW, 300 feet around the areas where new bridge construction is proposed to take place and a 500 foot area around the transit stations (see Exhibit 1). This APE will take into account potential physical and visual impacts that may result from the proposed undertaking. The reconnaissance survey will be performed by an architectural historian meeting the Secretary of the Interior's qualifications. The resulting survey report will include, but is not limited to, the following information:

- Project description;
- Project area background and historic context that may include research carried out at the following places:
    - local and county histories (obtained at the Dallas Public Library, and municipal libraries in the project area);
    - Dallas County Appraisal District Online Records;
    - Dallas County plat records;
    - various internet resources; and
    - maps and aerial photographs (including USGS maps).;
- Previously documented historic-age resources within and immediately adjacent to the APE;
- Documentation of each historic-age resource within the APE; including
    - Address or location,
    - Historic and current name, if any,
    - Date of construction,
    - Style,
    - Historic and current use,
    - Property type and subtype,
    - Preliminary NRHP eligibility recommendations,
    - Condition, and
    - Digital photographs (minimum of two views) of each historic-age resource; and
- Summary and Recommendations.

A draft report will be submitted to the THC for comment. Upon receipt of these comments, a final report will be drafted and sent to the THC.

Request for Concurrence

On behalf of DART, LGGROUP respectfully requests the concurrence of the THC regarding the proposed APE, consisting of 150 feet on either side of the proposed ROW, 300 feet around the areas where new bridge construction will take place, and a 500 foot area around the transit stations. We also request concurrence for the proposed survey and report methodology. If the proposed undertaking is altered such that it has the potential to affect the adjacent historic-age resources either physically, or by changing the setting in ways not covered by this coordination letter, DART will cease construction activities and will not proceed with their undertaking until additional review and clearance by the THC has been completed.

References

City of Rowlett

2003 History of Rowlett. Electronic document, http://www.ci.rowlett.tx.us/rowlett/, accessed 31 March 2006.

Texas State Historical Association (TSHA)

2006a Garland, Texas. In *The Handbook of Texas Online*. Accessed 29 March 2006, available at http://www.tsha.utexas.edu/handbook/online/articles/GG/hdg2.html

2006b Rowlett, Texas. In *The Handbook of Texas Online*. Accessed 27 March 2006, available at http://www.tsha.utexas.edu/handbook/online/articles/RR/hfr10.html

Texas Historic Sites Atlas (THSA)

2005 Various. Electronic document, http://atlas.thc.state.tx.us. Accessed 31 March 2006.

Sincerely,
LGGROUP

Nicky DeFreece Emery
Architectural Historian

Renée L. Hutter
Architectural Historian

encs.

September 20, 2005

Ms. Celeste Brancel-Brown
Texas Parks and Wildlife Department
Wildlife Habitat Assessment Program
Threatened and Endangered Species
3000 S. IH-35, Suite 100
Austin, Texas 78704

Re: Rare Resources Review Request - DART Rail to Rowlett

Dear Ms. Brancel-Brown:

Dallas Area Rapid Transit (DART) is in the process of performing an environmental review, pursuant to the DART Environmental Impact Assessment and Mitigation Policy Guidelines, in order to assess the environmental impacts of the Rowlett Light Rail Transit (LRT) extension from the existing downtown Garland LRT Station to downtown Rowlett, Dallas County, Texas (**Exhibit 1**). The DART guidelines are being utilized as opposed to the guidelines set forth by the National Environmental Policy Act as no federal monies will be funding the project. However, the DART guidelines were developed to ensure the environment is protected during project planning and implementation.

As part of the agency coordination effort during the Preliminary Engineering/Local Environmental Assessment (PE/LEA) phase, we are requesting information concerning parkland resources, listed or potential species and critical habitat in the study area. A full biological assessment, the delineation of wetlands and a thorough survey of 4(f) properties will be undertaken during the development of the Draft LEA document. Although the federal 4(f) process is not applicable within LEA procedures, we are aware that the Texas Parks and Wildlife Department (TPWD) requires an assessment similar to the 4(f) process. Therefore, the 4(f) process will be followed to ensure a comprehensive assessment of potential impacts. We would appreciate your input to complement our efforts during this phase of work at your earliest convenience.

Background and Scope of Project

In 1995, the *Northeast Corridor Major Investment Study* (*Northeast Corridor MIS*) assessed the transportation issues within the Northeast Corridor and evaluated four alternatives to Garland, with future service to Rowlett with LRT chosen as the Locally Preferred Alternative. The proposed 4.5-mile LRT Extension will share the Missouri-Kansas-Texas (MKT) Railroad right-of-way (ROW), which is owned by DART, from the existing Garland LRT Station into downtown Rowlett. The future Rowlett Station would be situated on undeveloped land currently owned by DART, adjacent to the existing Rowlett Park-and-Ride.

Existing Conditions

Vegetation

The Northeast Corridor is located in the Oaks and Prairies Physiographic Region and the Blackland Prairie ecological subregion of Texas (Fenneman 1938). The Oaks and Prairies

Region approximately extends from the Red River of Oklahoma south to San Antonio, Texas, east of the acidic sandy soils of the East Texas Pineywoods and west of the Eastern Cross Timbers. Within this area, the Blackland Prairie represents the southernmost extension of the North American tallgrass prairie. Within this subregion, the principal habitat is tallgrass, which typically occurs in higher areas with good drainage. The dominant vegetation associated with these habitats includes big bluestem *(Andropogon gerardii Vitman)*, little bluestem *(Andropogen scoparium)*, Indiangrass *(Sorghastrum nutans)*, switchgrass *(Panicum virgatum)*, brownseed paspalum *(Paspalum plicatulum Michx.)*, and gamagrass *(Tripsacum dactyloides)*. Also present within the Oaks and Prairies physiographic area are bottomland hardwood forests. Bur oak *(Quercus macrocarpa)*, Shumard oak *(Quercus shumardii)*, black walnut *(Juglans nigra)*, American elm *(Ulmus Americana)*, cedar elm *(Ulmus crassifolia)*, and white ash *(Fraxinus Americana)* are all common components of these forests. Riparian forests include cottonwood (Populus deltoides), sycamore *(Acer Pseudoplantus L.)*, black willow *(Salix nigra)*, and green ash *(Fraxinus pennsylvanica)*. Upland hardwood forests, which occur on the upper slopes and summits of Austin chalk escarpments include Texas oak *(Quercus texana)*, Mexican plum *(Prunus mexicana)*, and cedar elm *(Ulmus crassifolia)*. There is often an associated dense scrub layer within these forests, including species such as aromatic sumac *(Anacardiaceae Rhus aromatica)*, poison oak *(Toxicodendron diversilobum)*, Carolina buckthorn *(Rhamnus caroliniana)*, and coralberry *(Symphoricarpos orbioulatus)*. There are occasional wetlands and freshwater marshes in the Oaks and Prairies area, primarily associated with the peripheral areas of streams, rivers, and reservoirs.

Although native prairie remnants are found within in the corridor, much of it has been removed or disturbed through agricultural activities and urbanization. The dominance of the urban environment with regard to the vegetation of the area is reflected in TPWD's *Vegetation Types of Texas* (1984), which classifies the areas vegetation as Urban. Photographs of the project area are provided in **Exhibit 2**. Vegetative species observed within the proposed project area during preliminary field surveys are provided in **Table 1**.

Table 1.

Vegetation Observed within the Proposed Project Area

Strata	Common Name	Scientific Name
Trees	Sugar Hackberry	*Celtis Laevigata*
	American elm	*Ulmus americana*
	Black willow	*Salix nigra*
	Cedar elm	*Ulmus crassifolia*
	Bois d'Arc	*Maclura pomifera*
	Red mulberry	*Morus rubra*
	Texas mulberry	*Morus microphylla*
	Box elder	*Acer negundo*
	Eastern redbud	*Cercis canadensis*
	Green ash	*Fraxinus pennsylvanica*
	Eastern red cedar	*Juniperus virginiana*
	Smooth sumac	*Rhus glabra*
	Texas sophora	*Sophora affinis*
	Bur oak	*Quercus macrocarpa*
	Mimosa	*Albizia julibrissin*
	Pecan	*Carya illionensis*
	Chinaberry	*Sapindus drummondii*
	Eastern cottonwood	*Populus deltoides*
Herbs	Great ragweed	*Ambrosia trifida*
	Annual ragweed	*Ambrosia artemisiifolia*

Strata	Common Name	Scientific Name
	Common sunflower	*Helianthus annuus*
	Giant goldenrod	*Solidago gigantea*
	Canada wildrye	*Elymus canadensis*
	Indian woodoats	*Chasmanthium latifolium*
	Dayflower	*Commelina erecta*
	Green foxtail	*Setaria viridis*
	Carolina geranium	*Geranium carolinianum*
	Henbit	*Lamium amplexicaule*
	Johnson grass	*Sorghum halepense*
	Mimosa vine	*Mimosa strugillosa*
	Musk thistle	*Carduus nutans*
	Peppergrass	*Lepidium austinum*
	Pokeweed	*Phytolacca americana*
	Roundleaf spurge	*Euphorbia cordifolia*
	One-seed croton	*Croton monanthogynus*
	Smartweed	*Polygonum hydropiperoides*
	Bermuda grass	*Cynodon dactylon*
	St. Augustine grass	*Stenotaphrum secundatum*
	Annual bedstraw	*Galium aparine*
Vines	Poison ivy	*Toxicodendron radicans*
	Honeysuckle	*Lonicera japonica*
	Virginia creeper	*Parthenocissus quinquefolia*
	Mustang grape	*Vitis mustangensis*
	Saw greenbrier	*Smilax bona-nox*
	Peppervine	*Ampelopsis arborea*

Source: Vegetation recorded during a site reconnaissance completed on July 7, 2005.

Soils and Geography

Ten soil types occur along the proposed DART Rail to Rowlett project area. These include Burleson Clay, Branyon Clay, Frio Silty Clay, Houston Black Clay, Houston Black-Urban, Lewsiville Silty Clay, Lewisville-Urban Complex, Altoga Silty Clay, Heiden Clay and Ferris-Heiden Complex (Soil Conservation Service, 1980). The main properties of these soils are summarized in **Table 2.**

Table 2

Soils Types Along the Project Corridor

Type	Hydric Inclusions	Prime Farmlands	Permeability	Water Capacity
Burleson Clay	No	Yes	Very Slow	High
Branyon Clay	No	Yes	Moderate	High
Frio Silty Clay	No	Yes	Moderately Slow	High
Houston Black Clay	No	Yes	Very Slow	High
Houston Black-Urban Land Complex	No	No	Very Slow	High
Lewisville Silty Clay	No	Yes	Moderate	High
Lewisville-Urban land Complex	No	No	Moderate	High
Altoga Silty Clay	No	No	Moderate	High
Heiden Clay	No	Yes	Very Slow	High
Ferris-Heiden Complex	No	No	Very Slow	High

Source: Dallas County Soil Survey, 1980

According to the Geology of Texas (1981), the underlying geology of the region is almost exclusively Austin Chalk. The base of the chalk overlies the softer Eagle Ford Shale and forms the prominent west-facing White Rock escarpment. Austin Chalk consists of three components: the upper chalk, the middle marl and the lower chalk. Large, two- to five-foot beds of light grey to tan chalk are interbedded with beds of marl throughout the upper and lower chalks. The middle member is made up of beds of marl interbedded with beds of chalk. Alternating layers of limestone chalk and calcareous marls make up several distinct units of Austin Chalk which are dissected by the proposed project corridor.

Waters of the U.S.

Lake Ray Hubbard, an impoundment of the East Fork of the Trinity River, and its tributaries are the major surface waters found in northeastern Dallas County. Among these tributaries are Mills Branch, Rowlett Creek, and Longbranch Creek. The proposed Rowlett LRT line would pass through the floodplain of Mills Branch, which parallels the project corridor to the south; cross Rowlett Creek, the largest creek in the area; and cross Longbranch Creek just before entering downtown Rowlett. The majority of surface water runoff in the study area would be intercepted by either storm water drains or surface waters and carried to Lake Ray Hubbard. Although wetland delineations have not been completed at this time, National Wetland Inventory maps indicate that wetlands may exist within the study area, most of which would surround Rowlett Creek. The proposed Rowlett LRT would pass through approximately 1,980 feet of the 97-acre Rowlett Creek Preserve, a component of the Dallas County Park & Open Space Program. This preserve is within a palustrine system characterized by woody vegetation suited to temporarily flooded conditions. A USGS 7.5-minute Quadrangle map depicting the existing and potential waters of the U.S. within the proposed project area is provided in **Exhibit 3**.

Existing Site Development

Approximately 75 percent of the project corridor is currently developed while the remaining 25 percent is vacant land. Industrial and commercial land uses comprise the majority of the land use along the project corridor. Residential development is limited to two neighborhoods in the immediate vicinity of the proposed LRT corridor while large tracts of single family dwellings adjoin the vacant land adjacent to the proposed Rowlett LRT. The residential and commercial areas located along the project corridor appear to be relatively new, although some older structures remain. The condition and style of the newer buildings appear to be modern and consistent with current architecture. The businesses in the project area consist of a variety of industries, including electronics, steel fabrication, aluminum die casting, hat manufacturing, dairy production and food processing. An aerial photograph of the project area is included as **Exhibit 4**.

Historic Use/Function of Site

The presence of the MKT Railroad, built in 1886, and the completion of Lake Ray Hubbard in 1971 have had a strong influence on the historic use and function of the project area. With the completion of Lake Ray Hubbard, a building boom began for the City of Rowlett and the population rose to more than 1,600 by 1973 and to 5,100 by 1978. By the early 1990s, the community had increased to a population of over 20,000 with more than thirty miles of shoreline on Lake Ray Hubbard, a nature trail and Springfield Park (north of State Highway 66) developed along Rowlett Creek, and 200 businesses, mostly light industry and services.

Cultural Resources

There is a potential for the existence of historic structures and archeological resources within the project area. Coordination with the Texas Historical Commission is currently underway.

Wildlife and Threatened and Endangered Species

A list of rare species occurring in Dallas County and their habitat preferences can be found in **Exhibit 5**. At this time, only a preliminary site reconnaissance has taken place. During the preliminary site reconnaissance, it was found that habitat elements (streams, creeks, floodplains and poorly drained depressions) for some state and federally listed threatened and endangered species, including the bald eagle (*Haliaeetus leucocephalus*), wood stork (*Mycteria americana*), and timber/canebrake rattlesnake (*Crotalus horridus*), exist within the project area. No threatened or endangered species were detected during the preliminary site reconnaissance.

Potential Negative Impacts

Since the proposed Rowlett LRT extension would occur within existing ROW, few impacts to wildlife are anticipated. Short-term negative impacts would occur during the construction of the railway including impacts to soils, such as the removal of vegetation, which could cause the mixing of the soil horizons, the loss of topsoil productivity and short-term increased susceptibility to wind and water erosion. Long-term visual and aesthetic resources impacts may occur as a result of the proposed project. In addition, noise impacts may occur at certain areas along the track and potential vehicle delays at some at-grade crossings.

Because more than one acre of land would be disturbed, DART would be required to comply with the Texas Commission on Environmental Quality (TCEQ) Texas Pollution Discharge Elimination System (TPDES) General Permit for construction activity. A Notice of Intent would be filed with the TCEQ Storm Water Division. In accordance with the TPDES permit requirements, a Storm Water Pollution Prevention Plan would be prepared. This plan, to be implemented by the contractor, would prevent, minimize and control the spill of hazardous materials in staging areas.

Planned Beneficial Enhancements

No beneficial enhancements have been planned at this point.

Should you have any questions or need additional information to formulate your response, feel free to contact me at 214-741-7777 or Cheri Bush of DART at 214-749-2568. Thank you in advance for you assistance in this matter.

Sincerely,

Diane Cowin
LOPEZGARCIA GROUP

For future correspondence please address your letters to:

Mrs. Kathy Boydston,
Wildlife Habitat Assessment Program,
Texas Parks and Wildlife Department
4200 Smith School Road
Austin, TX 78744

December 29, 2006

Mr. Robert Cook
Executive Director
Texas Parks and Wildlife Department
4200 Smith School Road
Austin, Texas 78744

RE: Blue Line Extension to Rowlett

Dear Mr. Cook:

Enclosed, please find a copy of the Draft Local Environmental Assessment (LEA) for the extension of the Blue Line from Downtown Garland to Downtown Rowlett for your information and review. This project encompasses a 4.5 mile railroad right-of-way which travels through mainly industrial and floodplain areas. There will be one new station constructed in Downtown Rowlett.

If you have any comments, please direct them to me at DART, PO Box 660163, Dallas TX 75266-7213. All comments need to be received by January 13, 2007. If you have any questions, please feel free to contact me at 214.749.4568.

Sincerely,

Cheri M. Bush

Cheri M Bush, AICP, PMP
Project Manager

Enclosure

c: Steve Salin
Diane Cowin

TEXAS PARKS & WILDLIFE

Review of the project activity as proposed indicates minimal impacts to fish and wildlife resources.
Reviewed: Karen B. Hardin
Date: 3-14-07

Texas Parks & Wildlife Dept.
JAN 10 2007
Wildlife Habitat Assessment Program

(9)
12245-02
56-2-7

18 April 2006

Hannah Vaughan
Texas Historical Commission
1511 Colorado Street
Austin, Texas 78701

re: draft reconnaissance survey of historic-age resources report for the Rowlett Light Rail Transit Extension from Garland to Rowlett, Dallas County, Texas (LGGROUP project number 210029.35)

Dear Ms. Vaughan:

Please find enclosed for your review a draft report entitled "Reconnaissance Survey of Historic-age Resources: Rowlett Light Rail Transit Extension from Garland to Rowlett, Dallas County, Texas.". This documentation has been prepared on behalf of Dallas Area Rapid Transit (DART) by LOPEZGARCIA GROUP (LGGROUP) and serves to fulfill coordination begun in an APE coordination letter dated 18 April 2006 to the Texas Historical Commission (THC).

The enclosed documentation follows the minimum standards for documentation by the THC.

We look forward to your comments regarding the documentation of the Rowlett Light Rail Transit Extension. Should you require any additional information, please do not hesitate to contact me.

Sincerely,
LGGROUP

Renée L. Hutter
Architectural Historian
(214) 672-2969

encs.

TEXAS HISTORICAL COMMISSION

The State Agency for Historic Preservation

RICK PERRY, GOVERNOR

JOHN L. NAU, III, CHAIRMAN

F. LAWERENCE OAKS, EXECUTIVE DIRECTOR

September 20, 2006

Renee Hutter
Lopez Garcia Group
1825 market Center Blvd
Ste 150
Dallas, TX 75207

RE: *Draft Reconnaissance survey of historic ate resources report of the Rowlett Light Rail Transit Extension from Garland to Rowlett, Dallas County, TX*

Dear Ms. Hutter,

Thank you for your April 18, 2006 letter and report regarding the above referenced project. This letter serves as comment on the determinations of eligibility within the survey from the State Historic Preservation Officer, the Executive Director of the Texas Historical Commission.

Texas Historical Commission staff, led by Hannah Vaughan, has reviewed the report and has the following comments:

- We need to understand the full scope of this project. Is this a single extension to an already completed light rail system, or part of a larger project?
- In the future we prefer a cover letter from the agency responsible for carrying out Section 106 review, in this case DART, accompany reports and correspondence from the consultant.
- We concur with your determinations of eligibility on the six resources you have determined eligible for listing in the National Register of Historic Places (NRHP)
- We concur with your assessment the remaining buildings are not eligible with the exception of the following resources which require additional information to make a determination.
    - Resource 46a-n. You have given an estimated date of 1954-1955, yet you refer to several of the buildings in the complex as non-historic age. Please clarify.
    - Bridges 50, 51, 53, 56. We need more information on your methodology in determining that their design is 'not particularly distinctive'.
    - Resources 66, 67, 69, 70, 71. These five buildings should be evaluated as a potential small commercial district.

We look forward to further consultation with your office as your plans develop. If you have further questions regarding determinations of eligibility, please feel free to contact me at 512/463-6046.

Sincerely,

Hannah Vaughan
Historian

Dallas Area Rapid Transit
P.O. Box 660163
Dallas, Texas 75266-0163
214/749-3278

February 13, 2007

Mr. F. Lawrence Oaks
State Historic Preservation Officer
Texas Historical Commission
P.O. Box 12276
Austin, Texas 78711-2276

RE: Blue Line Extension to Rowlett

Dear Mr. Oaks

Enclosed, please find a printed copy of the Draft Local Environmental Assessment (LEA) for the extension of the Blue Line from Downtown Garland to Downtown Rowlett for your information and review. I apologize for sending your agency the cd-rom, and in the future, will make sure that you have a printed copy of subsequent documents regarding this project.

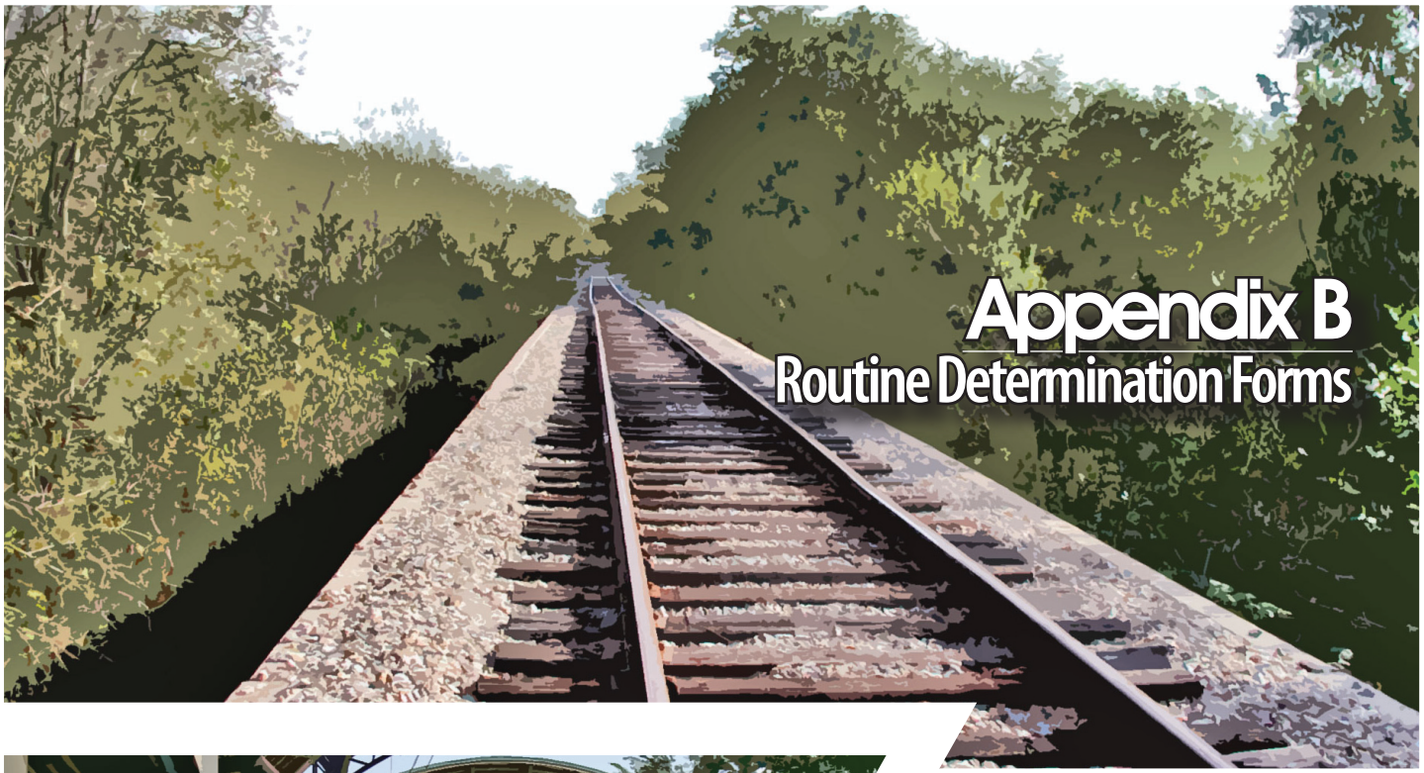
If you have any comments, please direct them to me at DART, P.O. Box 660163, Dallas, TX 75266-7213. All comments need to be received by March 13, 2007. If you have any questions, please feel free to contact me at 214.749.4568.

Sincerely,

Cheri M. Bush

Cheri M Bush, AICP, PMP
Project Manager

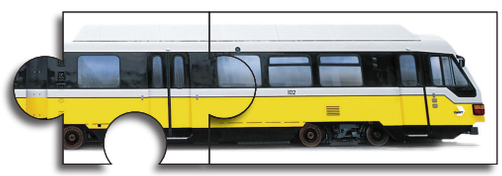
c: Steve Salin
Diane Cowin



Appendix B
Routine Determination Forms

DART®

DART RAIL TO ROWLETT | Connecting Communities



DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site:	Rowlett LRT Extension/West of RC Trib #1, south of existing tracks	**Date:**	06/28/06
Applicant/Owner:	DART	**County:**	Dallas
Investigator:	M. Clary, E. Schieffer, J. Colvin	**State:**	TX

Do Normal Circumstances exist on the site?	**Yes**	X	**No**		**Community ID:** BHW edge
Is the site significantly disturbed (Atypical Situation)?	**Yes**		**No**	X	**Transect ID:**
Is the area a potential Problem Area?	**Yes**		**No**	X	**Plot ID:** Area 1 – BHW
(If needed, explain on reverse)					

VEGETATION

	Dominant Plant Species	Stratum	Indicator		Dominant Plant Species	Stratum	Indicator
1.	*Fraxinus pennsylvanica*	Tree	FACW-	9.			
2.	*Celtis laevigata*	Tree	FAC	10.			
3.	*Smilax rotundifolia*	Vine	FAC	11.			
4.	*Parthenocissus quinquefolia*	Vine	FAC	12.			
5.	*Chasmanthium latifolium*	Herb	FAC	13.			
6.				14.			
7.				15.			
8.				16.			

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 5/5 = 100%

Remarks: Hydrophytic vegetation criterion is met.

HYDROLOGY

X	**Recorded Data (Describe in Remarks):**	**Wetland Hydrology Indicators:**	
	Stream, Lake or Tide Gauge	**Primary Indicators:**	
X	**Aerial Photographs**		**Inundated**
	Other		**Saturated in Upper 12 inches**
	No Recorded Data Available	X	**Water Marks**
		X	**Drift Lines**
Field Observations:			**Sediment Deposits**
Depth of Surface Water:	None observed **(in.)**		**Drainage Patterns in Wetlands**
Depth to Free Water in Pit:	None observed **(in.)**	**Secondary Indicators (2 or more required):**	
Depth to Saturated Soil:	None observed **(in.)**		**Oxidized Root Channels in Upper 12 inches**
			Water-Stained Leaves
			Local Soil Survey Data
			FAC-Neutral Test
			Other (Explain in Remarks)

Remarks: 2005 aerial photographs suggest a likelihood of wetland hydrology being present. The wetland hydrology criterion is met.

SOILS

Map Unit Name
(Series and Phase): Frio Silty Clay, frequently flooded **Drainage Class:** Well-drained

Taxonomy (Subgroup): Cumulic Haplustolls **Field Observations Confirm Mapped Type? Yes ___ No ___**

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
2-16		10 YR 3/1	7.5 YR 5/8	Few, Fine, Distinct	Slty loam

Hydric Soil Indicators:

__ Histosol	__ Concretions
__ Histic Epipedon	__ High Organic Content in Surface Layer in Sandy Soils
__ Sulfidic Odor	__ Organic Streaking in Sandy Soils
__ Aquic Moisture Regime	__ Listed on Local Hydric Soils List
__ Reducing Conditions	__ Listed on National Hydric Soils List
X Gleyed or Low-Chroma Colors	__ Other (Explain in Remarks)

Remarks: Hydric soils criterion is met. Lots of rubble/debris in the first two inches of sample. Crawfish mound at surface.

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	X **Yes**	___ **No**	
Wetland Hydrology Present?	X **Yes**	___ **No**	
Hydric Soils Present?	X **Yes**	___ **No**	**Is this Sampling Point Within a Wetland?** X **Yes** ___ **No**

Remarks: All three wetland criteria were met.

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site:	Rowlett LRT Extension/West of RC Trib #1, south of existing tracks	**Date:**	06/28/06
Applicant/Owner:	DART	**County:**	Dallas
Investigator:	M. Clary, E. Schieffer, J. Colvin	**State:**	TX

Do Normal Circumstances exist on the site?	**Yes** X	**No**	**Community ID:**	Emergent W/L
Is the site significantly disturbed (Atypical Situation)?	**Yes**	**No** X	**Transect ID:**	
Is the area a potential Problem Area?	**Yes**	**No** X	**Plot ID:**	Area 1 – W/L
(If needed, explain on reverse)				

VEGETATION

	Dominant Plant Species	Stratum	Indicator		Dominant Plant Species	Stratum	Indicator
1.	*Fraxinus pennsylvanica*	Tree	FACW-	9.			
2.	*Fraxinus pennsylvanica*	Sapling	FACW-	10.			
3.	*Phyla lanceolata*	Herb	FACW	11.			
4.	*Salix nigra*	Sapling	FACW+	12.			
5.				13.			
6.				14.			
7.				15.			
8.				16.			

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 4/4 = 100%

Remarks: Hydrophytic vegetation criterion is met.

HYDROLOGY

X **Recorded Data (Describe in Remarks):**
- ____ **Stream, Lake or Tide Gauge**
- X **Aerial Photographs**
- ____ **Other**

____ **No Recorded Data Available**

Field Observations:

Depth of Surface Water: None observed **(in.)**

Depth to Free Water in Pit: None observed **(in.)**

Depth to Saturated Soil: To surface **(in.)**

Wetland Hydrology Indicators:

Primary Indicators:
- ____ **Inundated**
- X **Saturated in Upper 12 inches**
- X **Water Marks**
- ____ **Drift Lines**
- ____ **Sediment Deposits**
- ____ **Drainage Patterns in Wetlands**

Secondary Indicators (2 or more required):
- X **Oxidized Root Channels in Upper 12 inches**
- ____ **Water-Stained Leaves**
- ____ **Local Soil Survey Data**
- ____ **FAC-Neutral Test**
- ____ **Other (Explain in Remarks)**

Remarks: 2005 aerial photographs suggest a likelihood of wetland hydrology being present. The wetland hydrology criterion is met.

SOILS

Map Unit Name
(Series and Phase): Frio Silty Clay, frequently flooded **Drainage Class:** Well-drained

Taxonomy (Subgroup): Cumulic Haplustolls **Field Observations Confirm Mapped Type? Yes ___ No ___**

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-12		10 YR 4/1			Clay

Hydric Soil Indicators:

__ Histosol	__ Concretions
__ Histic Epipedon	__ High Organic Content in Surface Layer in Sandy Soils
__ Sulfidic Odor	__ Organic Streaking in Sandy Soils
__ Aquic Moisture Regime	__ Listed on Local Hydric Soils List
__ Reducing Conditions	__ Listed on National Hydric Soils List
X Gleyed or Low-Chroma Colors	__ Other (Explain in Remarks)

Remarks: Hydric soils criterion is met.

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	X **Yes**	___ **No**	
Wetland Hydrology Present?	X **Yes**	___ **No**	
Hydric Soils Present?	X **Yes**	___ **No**	**Is this Sampling Point Within a Wetland?** X **Yes** ___ **No**

Remarks: All three wetland criteria were met.

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site:	Rowlett LRT Extension/West of RC Trib #1, south of existing tracks	**Date:**	06/28/06
Applicant/Owner:	DART	**County:**	Dallas
Investigator:	M. Clary, E. Schieffer, J. Colvin	**State:**	TX

Do Normal Circumstances exist on the site?	**Yes**	X	**No**		**Community ID:** Upland Berm
Is the site significantly disturbed (Atypical Situation)?	**Yes**		**No**	X	**Transect ID:**
Is the area a potential Problem Area?	**Yes**		**No**	X	**Plot ID:** Area 1 – UPL
(If needed, explain on reverse)					

VEGETATION

	Dominant Plant Species	Stratum	Indicator		Dominant Plant Species	Stratum	Indicator
1.	*Celtis laevigata*	Tree	FAC	9.			
2.	*Celtis laevigata*	Sapling	FAC	10.			
3.	*Rhus glabra*	Shrub	N/A	11.			
4.	*Clematis pitcheri*	Vine	FACU	12.			
5.	*Parthenocissus quinquefolia*	Vine	FAC	13.			
6.				14.			
7.				15.			
8.				16.			

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 3/5 = 60%

Remarks: Hydrophytic vegetation criterion is met.

HYDROLOGY

X	**Recorded Data (Describe in Remarks):**		**Wetland Hydrology Indicators:**
	Stream, Lake or Tide Gauge		**Primary Indicators:**
X	**Aerial Photographs**		**Inundated**
	Other		**Saturated in Upper 12 inches**
	No Recorded Data Available		**Water Marks**
			Drift Lines
			Sediment Deposits
			Drainage Patterns in Wetlands
Field Observations:			**Secondary Indicators (2 or more required):**
Depth of Surface Water:	None observed **(in.)**		**Oxidized Root Channels in Upper 12 inches**
Depth to Free Water in Pit:	None observed **(in.)**		**Water-Stained Leaves**
			Local Soil Survey Data
Depth to Saturated Soil:	None observed **(in.)**		**FAC-Neutral Test**
			Other (Explain in Remarks)

Remarks: 2005 aerial photographs suggest an upland area. The wetland hydrology criterion is not met.

SOILS

Map Unit Name
(Series and Phase): Frio Silty Clay, frequently flooded **Drainage Class:** Well-drained

Taxonomy (Subgroup): Cumulic Haplustolls **Field Observations Confirm Mapped Type? Yes** ___ **No** ___

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-12		10 YR 3/1	10 YR 5/4	Few, Common, Prominent	Silty clay

Hydric Soil Indicators:

__ Histosol	__ Concretions
__ Histic Epipedon	__ High Organic Content in Surface Layer in Sandy Soils
__ Sulfidic Odor	__ Organic Streaking in Sandy Soils
__ Aquic Moisture Regime	__ Listed on Local Hydric Soils List
__ Reducing Conditions	__ Listed on National Hydric Soils List
X Gleyed or Low-Chroma Colors	__ Other (Explain in Remarks)

Remarks: Hydric soils criterion is met. Lots of trash/debris in sample

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	X **Yes**	___ **No**	
Wetland Hydrology Present?	___ **Yes**	X **No**	
Hydric Soils Present?	X **Yes**	___ **No**	**Is this Sampling Point Within a Wetland?** ___ **Yes** X **No**

Remarks: All three wetland criteria were not met.

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site:	Rowlett LRT Extension/West of RC Trib #1, north of existing tracks	**Date:**	06/28/06
Applicant/Owner:	DART	**County:**	Dallas
Investigator:	M. Clary, E. Schieffer, J. Colvin	**State:**	TX

Do Normal Circumstances exist on the site?	**Yes** X	**No**	**Community ID:**	Bottomland HW
Is the site significantly disturbed (Atypical Situation)?	**Yes**	**No** X	**Transect ID:**	
Is the area a potential Problem Area?	**Yes**	**No** X	**Plot ID:**	Area 2 – BHW
(If needed, explain on reverse)				

VEGETATION

	Dominant Plant Species	Stratum	Indicator		Dominant Plant Species	Stratum	Indicator
1.	*Ulmus americana*	Tree	FAC	9.			
2.	*Ulmus americana*	Sapling	FAC	10.			
3.	*Chasmanthium latifolium*	Herb	FAC	11.			
4.	*Ambrosia trifida*	Herb	FAC	12.			
5.				13.			
6.				14.			
7.				15.			
8.				16.			

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 4/4= 100%

Remarks: Hydrophytic vegetation criterion is met.

HYDROLOGY

X **Recorded Data (Describe in Remarks):**	**Wetland Hydrology Indicators:**
Stream, Lake or Tide Gauge	**Primary Indicators:**
X **Aerial Photographs**	**Inundated**
Other	**Saturated in Upper 12 inches**
No Recorded Data Available	X **Water Marks**
	X **Drift Lines**
Field Observations:	**Sediment Deposits**
	Drainage Patterns in Wetlands
Depth of Surface Water: None observed **(in.)**	**Secondary Indicators (2 or more required):**
	Oxidized Root Channels in Upper 12 inches
Depth to Free Water in Pit: None observed **(in.)**	**Water-Stained Leaves**
	Local Soil Survey Data
Depth to Saturated Soil: None observed **(in.)**	**FAC-Neutral Test**
	Other (Explain in Remarks)

Remarks: 2005 aerial photographs suggest a bottomland area. The wetland hydrology criterion is met.

SOILS

Map Unit Name
(Series and Phase): Frio Silty Clay, frequently flooded **Drainage Class:** Well-drained

Taxonomy (Subgroup): Cumulic Haplustolls **Field Observations Confirm Mapped Type? Yes ___ No ___**

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-12		10 YR 3/1			Silty clay

Hydric Soil Indicators:

__ Histosol	__ Concretions
__ Histic Epipedon	__ High Organic Content in Surface Layer in Sandy Soils
__ Sulfidic Odor	__ Organic Streaking in Sandy Soils
__ Aquic Moisture Regime	__ Listed on Local Hydric Soils List
__ Reducing Conditions	__ Listed on National Hydric Soils List
X Gleyed or Low-Chroma Colors	__ Other (Explain in Remarks)

Remarks: Hydric soils criterion is met.

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	X **Yes**	___ **No**	
Wetland Hydrology Present?	X **Yes**	___ **No**	
Hydric Soils Present?	X **Yes**	___ **No**	**Is this Sampling Point Within a Wetland?** X **Yes** ___ **No**

Remarks: All three wetland criteria were met.

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site:	Rowlett LRT Extension/West of RC Trib #1, north of existing tracks	**Date:**	06/28/06
Applicant/Owner:	DART	**County:**	Dallas
Investigator:	M. Clary, E. Schieffer, J. Colvin	**State:**	TX

Do Normal Circumstances exist on the site?	**Yes** X	**No**	**Community ID:**	Emergent W/L
Is the site significantly disturbed (Atypical Situation)?	**Yes**	**No** X	**Transect ID:**	
Is the area a potential Problem Area?	**Yes**	**No** X	**Plot ID:**	Area 2 – W/L
(If needed, explain on reverse)				

VEGETATION

	Dominant Plant Species	Stratum	Indicator		Dominant Plant Species	Stratum	Indicator
1.	*Alternanthera philoxeroides*	Herb	OBL	9.			
2.	*Phyla lanceolata*	Herb	FACW	10.			
3.	*Ambrosia trifida*	Herb	FAC	11.			
4.				12.			
5.				13.			
6.				14.			
7.				15.			
8.				16.			

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 3/3= 100%

Remarks: Hydrophytic vegetation criterion is met.

HYDROLOGY

X	**Recorded Data (Describe in Remarks):**	**Wetland Hydrology Indicators:**	
	Stream, Lake or Tide Gauge	**Primary Indicators:**	
X	**Aerial Photographs**	X	**Inundated**
	Other	X	**Saturated in Upper 12 inches**
	No Recorded Data Available	X	**Water Marks**
			Drift Lines
			Sediment Deposits
			Drainage Patterns in Wetlands
Field Observations:		**Secondary Indicators (2 or more required):**	
Depth of Surface Water:	0.5 **(in.)**		**Oxidized Root Channels in Upper 12 inches**
Depth to Free Water in Pit:	To surface **(in.)**	X	**Water-Stained Leaves**
			Local Soil Survey Data
Depth to Saturated Soil:	To surface **(in.)**		**FAC-Neutral Test**
			Other (Explain in Remarks)

Remarks: 2005 aerial photographs suggest a likely presence of wetland hydrology. The wetland hydrology criterion is met.

SOILS

Map Unit Name
(Series and Phase): Frio Silty Clay, frequently flooded **Drainage Class:** Well-drained

Taxonomy (Subgroup): Cumulic Haplustolls **Field Observations Confirm Mapped Type? Yes** ___ **No** ___

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-12		10 YR 4/1			Silty clay

Hydric Soil Indicators:

__ Histosol	__ Concretions
__ Histic Epipedon	__ High Organic Content in Surface Layer in Sandy Soils
X Sulfidic Odor	__ Organic Streaking in Sandy Soils
__ Aquic Moisture Regime	__ Listed on Local Hydric Soils List
__ Reducing Conditions	__ Listed on National Hydric Soils List
X Gleyed or Low-Chroma Colors	__ Other (Explain in Remarks)

Remarks: Hydric soils criterion is met.

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	X **Yes**	___ **No**	
Wetland Hydrology Present?	X **Yes**	___ **No**	
Hydric Soils Present?	X **Yes**	___ **No**	**Is this Sampling Point Within a Wetland?** X **Yes** ___ **No**

Remarks: All three wetland criteria were met.

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site:	Rowlett LRT Extension/West of RC Trib #1, north of existing tracks	**Date:**	06/28/06
Applicant/Owner:	DART	**County:**	Dallas
Investigator:	M. Clary, E. Schieffer, J. Colvin	**State:**	TX

Do Normal Circumstances exist on the site?	**Yes** X	**No**	**Community ID:**	Forest Edge
Is the site significantly disturbed (Atypical Situation)?	**Yes**	**No** X	**Transect ID:**	
Is the area a potential Problem Area?	**Yes**	**No** X	**Plot ID:**	Area 2 – UPL
(If needed, explain on reverse)				

VEGETATION

	Dominant Plant Species	Stratum	Indicator		Dominant Plant Species	Stratum	Indicator
1.	*Ulmus americana*	Tree	FAC	9.			
2.	*Celtis laevigata*	Tree	FAC	10.			
3.	*Ulmus crassifolia*	Tree	FAC	11.			
4.	*Ambrosia trifida*	Herb	FAC	12.			
5.				13.			
6.				14.			
7.				15.			
8.				16.			

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 4/4= 100%

Remarks: Hydrophytic vegetation criterion is met.

HYDROLOGY

X **Recorded Data (Describe in Remarks):**
- ____ **Stream, Lake or Tide Gauge**
- X **Aerial Photographs**
- ____ **Other**

____ **No Recorded Data Available**

Field Observations:

Depth of Surface Water: None observed **(in.)**

Depth to Free Water in Pit: None observed **(in.)**

Depth to Saturated Soil: None observed **(in.)**

Wetland Hydrology Indicators:

Primary Indicators:
- ____ **Inundated**
- ____ **Saturated in Upper 12 inches**
- ____ **Water Marks**
- ____ **Drift Lines**
- ____ **Sediment Deposits**
- ____ **Drainage Patterns in Wetlands**

Secondary Indicators (2 or more required):
- ____ **Oxidized Root Channels in Upper 12 inches**
- ____ **Water-Stained Leaves**
- ____ **Local Soil Survey Data**
- ____ **FAC-Neutral Test**
- ____ **Other (Explain in Remarks)**

Remarks: 2005 aerial photographs suggest an upland forest edge system. The wetland hydrology criterion is not met.

SOILS

Map Unit Name
(Series and Phase): Frio Silty Clay, frequently flooded **Drainage Class:** Well-drained

Taxonomy (Subgroup): Cumulic Haplustolls **Field Observations Confirm Mapped Type? Yes ___ No ___**

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-12		10 YR 4/2			Silty clay

Hydric Soil Indicators:

__ Histosol
__ Histic Epipedon
__ Sulfidic Odor
__ Aquic Moisture Regime
__ Reducing Conditions
__ Gleyed or Low-Chroma Colors
__ Concretions
__ High Organic Content in Surface Layer in Sandy Soils
__ Organic Streaking in Sandy Soils
__ Listed on Local Hydric Soils List
__ Listed on National Hydric Soils List
__ Other (Explain in Remarks)

Remarks: Hydric soils criterion is not met.

WETLAND DETERMINATION

Hydrophytic Vegetation Present? X **Yes** ___ **No**
Wetland Hydrology Present? ___ **Yes** X **No**
Hydric Soils Present? ___ **Yes** X **No**

Is this Sampling Point Within a Wetland? ___ **Yes** X **No**

Remarks: All three wetland criteria were not met.

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site:	Rowlett LRT Extension/In-channel system in Trib #1, north of tracks	**Date:**	06/28/06
Applicant/Owner:	DART	**County:**	Dallas
Investigator:	M. Clary, E. Schieffer, J. Colvin	**State:**	TX

Do Normal Circumstances exist on the site?	**Yes** X	**No**	**Community ID:**	Bottomland HW
Is the site significantly disturbed (Atypical Situation)?	**Yes**	**No** X	**Transect ID:**	
Is the area a potential Problem Area?	**Yes**	**No** X	**Plot ID:**	Area 3 – BHW
(If needed, explain on reverse)				

VEGETATION

	Dominant Plant Species	Stratum	Indicator		Dominant Plant Species	Stratum	Indicator
1.	*Ulmus americana*	Tree	FAC	9.			
2.	*Celtis laevigata*	Tree	FAC	10.			
3.	*Smilax bona-nox*	Vine	FAC	11.			
4.				12.			
5.				13.			
6.				14.			
7.				15.			
8.				16.			

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 3/3= 100%

Remarks: Hydrophytic vegetation criterion is met.

HYDROLOGY

X	**Recorded Data (Describe in Remarks):**	**Wetland Hydrology Indicators:**	
	Stream, Lake or Tide Gauge	**Primary Indicators:**	
X	**Aerial Photographs**		**Inundated**
	Other	X	**Saturated in Upper 12 inches**
	No Recorded Data Available	X	**Water Marks**
			Drift Lines
			Sediment Deposits
			Drainage Patterns in Wetlands
Field Observations:		**Secondary Indicators (2 or more required):**	
Depth of Surface Water:	None observed **(in.)**		**Oxidized Root Channels in Upper 12 inches**
Depth to Free Water in Pit:	None observed **(in.)**		**Water-Stained Leaves**
			Local Soil Survey Data
Depth to Saturated Soil:	8 **(in.)**		**FAC-Neutral Test**
			Other (Explain in Remarks)

Remarks: 2005 aerial photographs suggest the presence of a bottomland hardwood system. The wetland hydrology criterion is met.

SOILS

Map Unit Name
(Series and Phase): Frio Silty Clay, frequently flooded **Drainage Class:** Well-drained

Taxonomy (Subgroup): Cumulic Haplustolls **Field Observations Confirm Mapped Type? Yes ___ No ___**

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-6		10 YR 3/2			Clay
6-12		10 YR 3/2	5 YR 6/8	Few, Fine, Faint	Silty clay

Hydric Soil Indicators:

__ Histosol	__ Concretions
__ Histic Epipedon	__ High Organic Content in Surface Layer in Sandy Soils
__ Sulfidic Odor	__ Organic Streaking in Sandy Soils
__ Aquic Moisture Regime	__ Listed on Local Hydric Soils List
__ Reducing Conditions	__ Listed on National Hydric Soils List
__ Gleyed or Low-Chroma Colors	__ Other (Explain in Remarks)

Remarks: Hydric soils criterion is met.

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	X **Yes**	___ **No**	
Wetland Hydrology Present?	X **Yes**	___ **No**	
Hydric Soils Present?	X **Yes**	___ **No**	**Is this Sampling Point Within a Wetland?** X **Yes** ___ **No**

Remarks: All three wetland criteria were met.

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site:	Rowlett LRT Extension/In-channel system in Trib #1, north of tracks	**Date:**	06/28/06
Applicant/Owner:	DART	**County:**	Dallas
Investigator:	M. Clary, E. Schieffer, J. Colvin	**State:**	TX

Do Normal Circumstances exist on the site?	**Yes** X	**No**	**Community ID:**	Emergent W/L
Is the site significantly disturbed (Atypical Situation)?	**Yes**	**No** X	**Transect ID:**	
Is the area a potential Problem Area?	**Yes**	**No** X	**Plot ID:**	Area 3 – W/L
(If needed, explain on reverse)				

VEGETATION

	Dominant Plant Species	Stratum	Indicator		Dominant Plant Species	Stratum	Indicator
1.	*Alternanthera philoxeroides*	Herb	OBL	9.			
2.	*Phyla lanceolata*	Herb	FACW	10.			
3.	*Eleocharis palustris*	Herb	OBL	11.			
4.	*Ambrosia trifida*	Herb	FAC	12.			
5.				13.			
6.				14.			
7.				15.			
8.				16.			

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 4/4= 100%

Remarks: Hydrophytic vegetation criterion is met.

HYDROLOGY

X **Recorded Data (Describe in Remarks):**
- ____ **Stream, Lake or Tide Gauge**
- X **Aerial Photographs**
- ____ **Other**

____ **No Recorded Data Available**

Field Observations:

Depth of Surface Water: 1 **(in.)**

Depth to Free Water in Pit: To surface **(in.)**

Depth to Saturated Soil: To surface **(in.)**

Wetland Hydrology Indicators:

Primary Indicators:
- X **Inundated**
- X **Saturated in Upper 12 inches**
- X **Water Marks**
- ____ **Drift Lines**
- ____ **Sediment Deposits**
- ____ **Drainage Patterns in Wetlands**

Secondary Indicators (2 or more required):
- ____ **Oxidized Root Channels in Upper 12 inches**
- ____ **Water-Stained Leaves**
- ____ **Local Soil Survey Data**
- ____ **FAC-Neutral Test**
- ____ **Other (Explain in Remarks)**

Remarks: 2005 aerial photographs suggest a likelihood of wetland hydrology. The wetland hydrology criterion is met.

SOILS

Map Unit Name
(Series and Phase): Frio Silty Clay, frequently flooded **Drainage Class:** Well-drained

Taxonomy (Subgroup): Cumulic Haplustolls **Field Observations Confirm Mapped Type? Yes ___ No ___**

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-12		10 YR 3/1			Silty clay

Hydric Soil Indicators:

__ Histosol	__ Concretions
__ Histic Epipedon	__ High Organic Content in Surface Layer in Sandy Soils
__ Sulfidic Odor	__ Organic Streaking in Sandy Soils
__ Aquic Moisture Regime	__ Listed on Local Hydric Soils List
__ Reducing Conditions	__ Listed on National Hydric Soils List
X Gleyed or Low-Chroma Colors	__ Other (Explain in Remarks)

Remarks: Hydric soils criterion is met.

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	X **Yes**	___ **No**	
Wetland Hydrology Present?	X **Yes**	___ **No**	
Hydric Soils Present?	X **Yes**	___ **No**	**Is this Sampling Point Within a Wetland?** X **Yes** ___ **No**

Remarks: All three wetland criteria were met.

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site:	Rowlett LRT Extension/In-channel system in Trib #1, north of tracks	**Date:**	06/28/06
Applicant/Owner:	DART	**County:**	Dallas
Investigator:	M. Clary, E. Schieffer, J. Colvin	**State:**	TX

Do Normal Circumstances exist on the site?	**Yes** X	**No**	**Community ID:**	Disturbed edge
Is the site significantly disturbed (Atypical Situation)?	**Yes**	**No** X	**Transect ID:**	
Is the area a potential Problem Area?	**Yes**	**No** X	**Plot ID:**	Area 3 – UPL
(If needed, explain on reverse)				

VEGETATION

	Dominant Plant Species	Stratum	Indicator		Dominant Plant Species	Stratum	Indicator
1.	*Ulmus crassifolia*	Tree	FAC	9.			
2.	*Cynodon dactylon*	Herb	FACU+	10.			
3.	*Smilax bona-nox*	Vine	FAC	11.			
4.	*Ambrosia trifida*	Herb	FAC	12.			
5.				13.			
6.				14.			
7.				15.			
8.				16.			

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 3/4= 75%

Remarks: Hydrophytic vegetation criterion is met.

HYDROLOGY

X **Recorded Data (Describe in Remarks):**
- **Stream, Lake or Tide Gauge**
- X **Aerial Photographs**
- **Other**

No Recorded Data Available

Field Observations:

Depth of Surface Water: None observed **(in.)**

Depth to Free Water in Pit: None observed **(in.)**

Depth to Saturated Soil: None observed **(in.)**

Wetland Hydrology Indicators:

Primary Indicators:
- **Inundated**
- **Saturated in Upper 12 inches**
- **Water Marks**
- **Drift Lines**
- **Sediment Deposits**
- **Drainage Patterns in Wetlands**

Secondary Indicators (2 or more required):
- **Oxidized Root Channels in Upper 12 inches**
- **Water-Stained Leaves**
- **Local Soil Survey Data**
- **FAC-Neutral Test**
- **Other (Explain in Remarks)**

Remarks: 2005 aerial photographs suggest an upland area at the forest edge. The wetland hydrology criterion is not met.

SOILS

Map Unit Name
(Series and Phase): Frio Silty Clay, frequently flooded **Drainage Class:** Well-drained

Taxonomy (Subgroup): Cumulic Haplustolls **Field Observations Confirm Mapped Type? Yes ___ No ___**

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
2-12		10 YR 4/2			Clay

Hydric Soil Indicators:

__ Histosol
__ Histic Epipedon
__ Sulfidic Odor
__ Aquic Moisture Regime
__ Reducing Conditions
__ Gleyed or Low-Chroma Colors
__ Concretions
__ High Organic Content in Surface Layer in Sandy Soils
__ Organic Streaking in Sandy Soils
__ Listed on Local Hydric Soils List
__ Listed on National Hydric Soils List
__ Other (Explain in Remarks)

Remarks: Fill material and debris throughout first two inches of sample. Hydric soils criterion is not met.

WETLAND DETERMINATION

Hydrophytic Vegetation Present? ___ Yes X No
Wetland Hydrology Present? ___ Yes X No
Hydric Soils Present? ___ Yes X No

Is this Sampling Point Within a Wetland? ___ Yes X No

Remarks: All three wetland criteria were not met.

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site:	Rowlett LRT Extension/east of Trib #1, south of tracks	**Date:**	06/28/06
Applicant/Owner:	DART	**County:**	Dallas
Investigator:	M. Clary, E. Schieffer, J. Colvin	**State:**	TX

Do Normal Circumstances exist on the site?	**Yes**	X	**No**		**Community ID:** Bottomland HW
Is the site significantly disturbed (Atypical Situation)?	**Yes**		**No**	X	**Transect ID:**
Is the area a potential Problem Area?	**Yes**		**No**	X	**Plot ID:** Area 4 – BHW
(If needed, explain on reverse)					

VEGETATION

	Dominant Plant Species	Stratum	Indicator		Dominant Plant Species	Stratum	Indicator
1.	*Fraxinus pennsylvanica*	Sapling	FACW-	9.			
2.	*Celtis laevigata*	Tree	FAC	10.			
3.	*Quercus muehlenbergii*	Tree	FAC*	11.			
4.	*Celtis laevigata*	Sapling	FAC	12.			
5.	*Chasmanthium latifolium*	Herb	FAC	13.			
6.				14.			
7.				15.			
8.				16.			

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 5/5= 100%

Remarks: Hydrophytic vegetation criterion is met.

HYDROLOGY

X	**Recorded Data (Describe in Remarks):**	**Wetland Hydrology Indicators:**	
	Stream, Lake or Tide Gauge	**Primary Indicators:**	
X	**Aerial Photographs**		**Inundated**
	Other		**Saturated in Upper 12 inches**
	No Recorded Data Available	X	**Water Marks**
		X	**Drift Lines**
Field Observations:			**Sediment Deposits**
			Drainage Patterns in Wetlands
Depth of Surface Water:	None observed **(in.)**	**Secondary Indicators (2 or more required):**	
			Oxidized Root Channels in Upper 12 inches
Depth to Free Water in Pit:	None observed **(in.)**		**Water-Stained Leaves**
			Local Soil Survey Data
Depth to Saturated Soil:	None observed **(in.)**		**FAC-Neutral Test**
			Other (Explain in Remarks)

Remarks: 2005 aerial photographs suggest the likely presence of a bottomland hardwood system. The wetland hydrology criterion is met.

SOILS

Map Unit Name
(Series and Phase): Frio Silty Clay, frequently flooded **Drainage Class:** Well-drained

Taxonomy (Subgroup): Cumulic Haplustolls **Field Observations Confirm Mapped Type? Yes ___ No ___**

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-12		10 YR 3/1			Silty clay

Hydric Soil Indicators:

__ Histosol	__ Concretions
__ Histic Epipedon	__ High Organic Content in Surface Layer in Sandy Soils
__ Sulfidic Odor	__ Organic Streaking in Sandy Soils
__ Aquic Moisture Regime	__ Listed on Local Hydric Soils List
__ Reducing Conditions	__ Listed on National Hydric Soils List
X Gleyed or Low-Chroma Colors	__ Other (Explain in Remarks)

Remarks: Hydric soils criterion is met. Crawfish mounds near sample.

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	X Yes	___ No	
Wetland Hydrology Present?	X Yes	___ No	
Hydric Soils Present?	X Yes	___ No	**Is this Sampling Point Within a Wetland?** X Yes ___ No

Remarks: All three wetland criteria were met.

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site:	Rowlett LRT Extension/west of Rowlett Creek, north of tracks	**Date:**	06/28/06
Applicant/Owner:	DART	**County:**	Dallas
Investigator:	M. Clary, E. Schieffer, J. Colvin	**State:**	TX

Do Normal Circumstances exist on the site?	**Yes**	X	**No**		**Community ID:** Easement Edge
Is the site significantly disturbed (Atypical Situation)?	**Yes**		**No**	X	**Transect ID:**
Is the area a potential Problem Area?	**Yes**		**No**	X	**Plot ID:** Area 5 – BHW
(If needed, explain on reverse)					

VEGETATION

	Dominant Plant Species	Stratum	Indicator		Dominant Plant Species	Stratum	Indicator
1.	*Fraxinus pennsylvanica*	Tree	FACW-	9.			
2.	*Chasmanthium latifolium*	Herb	FAC	10.			
3.	*Celtis laevigata*	Tree	FAC	11.			
4.				12.			
5.				13.			
6.				14.			
7.				15.			
8.				16.			

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 3/3= 100%

Remarks: Hydrophytic vegetation criterion is met.

HYDROLOGY

X	**Recorded Data (Describe in Remarks):**	**Wetland Hydrology Indicators:**	
	Stream, Lake or Tide Gauge	**Primary Indicators:**	
X	**Aerial Photographs**		**Inundated**
	Other		**Saturated in Upper 12 inches**
	No Recorded Data Available	X	**Water Marks**
			Drift Lines
			Sediment Deposits
			Drainage Patterns in Wetlands

Field Observations:

Depth of Surface Water:	None observed	**(in.)**
Depth to Free Water in Pit:	None observed	**(in.)**
Depth to Saturated Soil:	None observed	**(in.)**

Secondary Indicators (2 or more required):

- **Oxidized Root Channels in Upper 12 inches**
- X **Water-Stained Leaves**
- **Local Soil Survey Data**
- **FAC-Neutral Test**
- **Other (Explain in Remarks)**

Remarks: 2005 aerial photographs suggest the potential presence of a bottomland hardwood system. The wetland hydrology criterion is met.

SOILS

Map Unit Name
(Series and Phase): Frio Silty Clay, frequently flooded **Drainage Class:** Well-drained

Taxonomy (Subgroup): Cumulic Haplustolls **Field Observations Confirm Mapped Type? Yes ___ No ___**

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-12		10 YR 3/1	7.5 YR 6/1	Few, Fine, Prominent	Clay
			7.5 YR 5/8	Few, Fine, Faint	Clay

Hydric Soil Indicators:

__ Histosol	__ Concretions
__ Histic Epipedon	__ High Organic Content in Surface Layer in Sandy Soils
__ Sulfidic Odor	__ Organic Streaking in Sandy Soils
__ Aquic Moisture Regime	__ Listed on Local Hydric Soils List
__ Reducing Conditions	__ Listed on National Hydric Soils List
X Gleyed or Low-Chroma Colors	__ Other (Explain in Remarks)

Remarks: Hydric soils criterion is met.

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	X **Yes**	___ **No**	
Wetland Hydrology Present?	X **Yes**	___ **No**	
Hydric Soils Present?	X **Yes**	___ **No**	**Is this Sampling Point Within a Wetland?** X **Yes** ___ **No**

Remarks: All three wetland criteria were met.

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site:	Rowlett LRT Extension/west of Rowlett Creek, north of tracks	**Date:**	06/28/06
Applicant/Owner:	DART	**County:**	Dallas
Investigator:	M. Clary, E. Schieffer, J. Colvin	**State:**	TX

Do Normal Circumstances exist on the site?	**Yes**	X	**No**		**Community ID:** Arrowhead W/L
Is the site significantly disturbed (Atypical Situation)?	**Yes**		**No**	X	**Transect ID:**
Is the area a potential Problem Area?	**Yes**		**No**	X	**Plot ID:** Area 5 – W/L
(If needed, explain on reverse)					

VEGETATION

	Dominant Plant Species	Stratum	Indicator		Dominant Plant Species	Stratum	Indicator
1.	*Polygonum hydropiperoides*	Herb	OBL	9.			
2.	*Sagittaria brevirostra*	Herb	OBL	10.			
3.	*Fraxinus pennsylvanica*	Tree	FACW-	11.			
4.	*Fraxinus pennsylvanica*	Sapling	FACW-	12.			
5.				13.			
6.				14.			
7.				15.			
8.				16.			

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 4/4= 100%

Remarks: Hydrophytic vegetation criterion is met.

HYDROLOGY

X	**Recorded Data (Describe in Remarks):**		**Wetland Hydrology Indicators:**
	Stream, Lake or Tide Gauge		**Primary Indicators:**
X	**Aerial Photographs**		**Inundated**
X	**Other**		**Saturated in Upper 12 inches**
	No Recorded Data Available		**Water Marks**
		X	**Drift Lines**
Field Observations:			**Sediment Deposits**
			Drainage Patterns in Wetlands
Depth of Surface Water:	None observed **(in.)**		**Secondary Indicators (2 or more required):**
			Oxidized Root Channels in Upper 12 inches
Depth to Free Water in Pit:	None observed **(in.)**		**Water-Stained Leaves**
			Local Soil Survey Data
Depth to Saturated Soil:	4 **(in.)**		**FAC-Neutral Test**
			Other (Explain in Remarks)

Remarks: 2005 aerial photographs and topographic maps suggest the potential presence of a jurisdictional system. The wetland hydrology criterion is met.

SOILS

Map Unit Name
(Series and Phase): Frio Silty Clay, frequently flooded **Drainage Class:** Well-drained

Taxonomy (Subgroup): Cumulic Haplustolls **Field Observations Confirm Mapped Type? Yes ___ No ___**

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-12		10 YR 3/1	7.5 YR 4/6	Few, Fine, Distinct	Silty clay

Hydric Soil Indicators:

__ Histosol	__ Concretions
__ Histic Epipedon	__ High Organic Content in Surface Layer in Sandy Soils
__ Sulfidic Odor	__ Organic Streaking in Sandy Soils
__ Aquic Moisture Regime	__ Listed on Local Hydric Soils List
__ Reducing Conditions	__ Listed on National Hydric Soils List
X Gleyed or Low-Chroma Colors	__ Other (Explain in Remarks)

Remarks: Hydric soils criterion is met.

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	X Yes	___ No	
Wetland Hydrology Present?	X Yes	___ No	
Hydric Soils Present?	X Yes	___ No	**Is this Sampling Point Within a Wetland?** X Yes ___ No

Remarks: All three wetland criteria were met.

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site:	Rowlett LRT Extension/ west of Rowlett Creek, north of tracks	**Date:**	06/28/06
Applicant/Owner:	DART	**County:**	Dallas
Investigator:	M. Clary, E. Schieffer, J. Colvin	**State:**	TX

Do Normal Circumstances exist on the site?	**Yes**	X	**No**		**Community ID:** R. Creek Edge
Is the site significantly disturbed (Atypical Situation)?	**Yes**		**No**	X	**Transect ID:**
Is the area a potential Problem Area?	**Yes**		**No**	X	**Plot ID:** Area 6 – BHW
(If needed, explain on reverse)					

VEGETATION

	Dominant Plant Species	Stratum	Indicator		Dominant Plant Species	Stratum	Indicator
1.	*Fraxinus pennsylvanica*	Tree	FACW-	9.			
2.	*Chasmanthium latifolium*	Herb	FAC	10.			
3.	*Elymus canadensis*	Herb	FAC+	11.			
4.	*Ligustrum sinense*	Shrub	UPL*	12.			
5.				13.			
6.				14.			
7.				15.			
8.				16.			

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 3/4= 75%

Remarks: Hydrophytic vegetation criterion is met.

HYDROLOGY

X	**Recorded Data (Describe in Remarks):**	**Wetland Hydrology Indicators:**	
	Stream, Lake or Tide Gauge	**Primary Indicators:**	
X	**Aerial Photographs**		**Inundated**
	Other		**Saturated in Upper 12 inches**
	No Recorded Data Available	X	**Water Marks**
			Drift Lines
			Sediment Deposits
			Drainage Patterns in Wetlands

Field Observations:

Depth of Surface Water:	None observed	**(in.)**
Depth to Free Water in Pit:	None observed	**(in.)**
Depth to Saturated Soil:	None observed	**(in.)**

Secondary Indicators (2 or more required):

- **Oxidized Root Channels in Upper 12 inches**
- **Water-Stained Leaves**
- **Local Soil Survey Data**
- **FAC-Neutral Test**
- **Other (Explain in Remarks)**

Remarks: 2005 aerial photographs suggest the potential presence of a bottomland hardwood system. The wetland hydrology criterion is met.

SOILS

Map Unit Name
(Series and Phase): Frio Silty Clay, frequently flooded **Drainage Class:** Well-drained

Taxonomy (Subgroup): Cumulic Haplustolls **Field Observations Confirm Mapped Type? Yes ___ No ___**

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-12		10 YR 3/2	7.5 YR 6/2	Many, Fine, Faint	Silty clay

Hydric Soil Indicators:

__ Histosol
__ Histic Epipedon
__ Sulfidic Odor
__ Aquic Moisture Regime
__ Reducing Conditions
__ Gleyed or Low-Chroma Colors
__ Concretions
__ High Organic Content in Surface Layer in Sandy Soils
__ Organic Streaking in Sandy Soils
__ Listed on Local Hydric Soils List
__ Listed on National Hydric Soils List
__ Other (Explain in Remarks)

Remarks: Hydric soils criterion is met.

WETLAND DETERMINATION

Hydrophytic Vegetation Present? X **Yes** ___ **No**
Wetland Hydrology Present? X **Yes** ___ **No**
Hydric Soils Present? X **Yes** ___ **No**

Is this Sampling Point Within a Wetland? X **Yes** ___ **No**

Remarks: All three wetland criteria were met.

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site:	Rowlett LRT Extension/ east of Rowlett Creek, south of tracks	**Date:**	06/28/06
Applicant/Owner:	DART	**County:**	Dallas
Investigator:	M. Clary, E. Schieffer, J. Colvin	**State:**	TX

Do Normal Circumstances exist on the site?	**Yes** X	**No**	**Community ID:**	R. Creek Edge
Is the site significantly disturbed (Atypical Situation)?	**Yes**	**No** X	**Transect ID:**	
Is the area a potential Problem Area?	**Yes**	**No** X	**Plot ID:**	Area 7 – BHW
(If needed, explain on reverse)				

VEGETATION

	Dominant Plant Species	Stratum	Indicator		Dominant Plant Species	Stratum	Indicator
1.	*Fraxinus pennsylvanica*	Tree	FACW-	9.			
2.	*Elymus canadensis*	Herb	FAC+	10.			
3.	*Chasmanthium latifolium*	Herb	FAC	11.			
4.	*Ulmus crassifolia*	Tree	FAC	12.			
5.				13.			
6.				14.			
7.				15.			
8.				16.			

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 4/4= 100%

Remarks: Hydrophytic vegetation criterion is met.

HYDROLOGY

X **Recorded Data (Describe in Remarks):**
- ____ **Stream, Lake or Tide Gauge**
- X **Aerial Photographs**
- ____ **Other**

____ **No Recorded Data Available**

Field Observations:

Depth of Surface Water: None observed **(in.)**

Depth to Free Water in Pit: None observed **(in.)**

Depth to Saturated Soil: None observed **(in.)**

Wetland Hydrology Indicators:

Primary Indicators:
- ____ **Inundated**
- ____ **Saturated in Upper 12 inches**
- X **Water Marks**
- ____ **Drift Lines**
- ____ **Sediment Deposits**
- ____ **Drainage Patterns in Wetlands**

Secondary Indicators (2 or more required):
- ____ **Oxidized Root Channels in Upper 12 inches**
- ____ **Water-Stained Leaves**
- ____ **Local Soil Survey Data**
- ____ **FAC-Neutral Test**
- ____ **Other (Explain in Remarks)**

Remarks: 2005 aerial photographs suggest the potential presence of a bottomland hardwood system. The wetland hydrology criterion is met.

SOILS

Map Unit Name
(Series and Phase): Frio Silty Clay, frequently flooded **Drainage Class:** Well-drained

Taxonomy (Subgroup): Cumulic Haplustolls **Field Observations Confirm Mapped Type? Yes ___ No ___**

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-12		10 YR 3/1	7.5 YR 6/1	Few, Fine, Faint	Clay

Hydric Soil Indicators:

__ Histosol
__ Histic Epipedon
__ Sulfidic Odor
__ Aquic Moisture Regime
__ Reducing Conditions
__ Gleyed or Low-Chroma Colors
__ Concretions
__ High Organic Content in Surface Layer in Sandy Soils
__ Organic Streaking in Sandy Soils
__ Listed on Local Hydric Soils List
__ Listed on National Hydric Soils List
__ Other (Explain in Remarks)

Remarks: Hydric soils criterion is met.

WETLAND DETERMINATION

Hydrophytic Vegetation Present? X **Yes** ___ **No**
Wetland Hydrology Present? X **Yes** ___ **No**
Hydric Soils Present? X **Yes** ___ **No**

Is this Sampling Point Within a Wetland? X **Yes** ___ **No**

Remarks: All three wetland criteria were met.

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site:	Rowlett LRT Extension/ east of Trib #2, north of tracks	**Date:**	06/28/06
Applicant/Owner:	DART	**County:**	Dallas
Investigator:	M. Clary, E. Schieffer, J. Colvin	**State:**	TX

Do Normal Circumstances exist on the site?	**Yes** X	**No**	**Community ID:**	Trib #2 Edge
Is the site significantly disturbed (Atypical Situation)?	**Yes**	**No** X	**Transect ID:**	
Is the area a potential Problem Area?	**Yes**	**No** X	**Plot ID:**	Area 8 – BHW
(If needed, explain on reverse)				

VEGETATION

	Dominant Plant Species	Stratum	Indicator		Dominant Plant Species	Stratum	Indicator
1.	*Fraxinus pennsylvanica*	Tree	FACW-	9.			
2.	*Fraxinus pennsylvanica*	Sapling	FACW-	10.			
3.	*Ulmus crassifolia*	Tree	FAC	11.			
4.	*Smilax bona-nox*	Vine	FAC	12.			
5.				13.			
6.				14.			
7.				15.			
8.				16.			

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 4/4= 100%

Remarks: Hydrophytic vegetation criterion is met.

HYDROLOGY

X **Recorded Data (Describe in Remarks):**
- ____ **Stream, Lake or Tide Gauge**
- X **Aerial Photographs**
- ____ **Other**

____ **No Recorded Data Available**

Field Observations:

Depth of Surface Water: None observed **(in.)**

Depth to Free Water in Pit: None observed **(in.)**

Depth to Saturated Soil: None observed **(in.)**

Wetland Hydrology Indicators:

Primary Indicators:
- ____ **Inundated**
- ____ **Saturated in Upper 12 inches**
- X **Water Marks**
- ____ **Drift Lines**
- ____ **Sediment Deposits**
- ____ **Drainage Patterns in Wetlands**

Secondary Indicators (2 or more required):
- ____ **Oxidized Root Channels in Upper 12 inches**
- ____ **Water-Stained Leaves**
- ____ **Local Soil Survey Data**
- ____ **FAC-Neutral Test**
- ____ **Other (Explain in Remarks)**

Remarks: 2005 aerial photographs suggest the potential presence of a bottomland hardwood system. The wetland hydrology criterion is met.

SOILS

Map Unit Name
(Series and Phase): Frio Silty Clay, frequently flooded **Drainage Class:** Well-drained

Taxonomy (Subgroup): Cumulic Haplustolls **Field Observations Confirm Mapped Type? Yes ___ No ___**

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-12		10 YR 3/1	7.5 YR 6/1	Few, Fine, Faint	Clay

Hydric Soil Indicators:

__ Histosol
__ Histic Epipedon
__ Sulfidic Odor
__ Aquic Moisture Regime
__ Reducing Conditions
__ Gleyed or Low-Chroma Colors
__ Concretions
__ High Organic Content in Surface Layer in Sandy Soils
__ Organic Streaking in Sandy Soils
__ Listed on Local Hydric Soils List
__ Listed on National Hydric Soils List
__ Other (Explain in Remarks)

Remarks: Hydric soils criterion is met.

WETLAND DETERMINATION

Hydrophytic Vegetation Present? X **Yes** ___ **No**
Wetland Hydrology Present? X **Yes** ___ **No**
Hydric Soils Present? X **Yes** ___ **No**

Is this Sampling Point Within a Wetland? X **Yes** ___ **No**

Remarks: All three wetland criteria were met.

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site:	Rowlett LRT Extension/ mid-channel system in Trib #2, north of tracks	**Date:**	06/28/06
Applicant/Owner:	DART	**County:**	Dallas
Investigator:	M. Clary, E. Schieffer, J. Colvin	**State:**	TX

Do Normal Circumstances exist on the site?	**Yes**	X	**No**		**Community ID:** Emergent W/L
Is the site significantly disturbed (Atypical Situation)?	**Yes**		**No**	X	**Transect ID:**
Is the area a potential Problem Area?	**Yes**		**No**	X	**Plot ID:** Area 7 – W/L
(If needed, explain on reverse)					

VEGETATION

	Dominant Plant Species	Stratum	Indicator		Dominant Plant Species	Stratum	Indicator
1.	*Alternanthera philoxeroides*	Herb	OBL	9.			
2.	*Phyla lanceolata*	Herb	FACW	10.			
3.	*Ambrosia trifida*	Herb	FAC	11.			
4.				12.			
5.				13.			
6.				14.			
7.				15.			
8.				16.			

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 3/3= 100%

Remarks: Hydrophytic vegetation criterion is met.

HYDROLOGY

X	**Recorded Data (Describe in Remarks):**		**Wetland Hydrology Indicators:**
	Stream, Lake or Tide Gauge		**Primary Indicators:**
X	**Aerial Photographs**		**Inundated**
	Other	X	**Saturated in Upper 12 inches**
	No Recorded Data Available	X	**Water Marks**
			Drift Lines
			Sediment Deposits
			Drainage Patterns in Wetlands
Field Observations:			**Secondary Indicators (2 or more required):**
Depth of Surface Water:	None observed **(in.)**		**Oxidized Root Channels in Upper 12 inches**
Depth to Free Water in Pit:	None observed **(in.)**		**Water-Stained Leaves**
			Local Soil Survey Data
Depth to Saturated Soil:	7 **(in.)**		**FAC-Neutral Test**
			Other (Explain in Remarks)

Remarks: 2005 aerial photographs suggest the potential presence of a jurisdictional system. The wetland hydrology criterion is met.

SOILS

Map Unit Name
(Series and Phase): Frio Silty Clay, frequently flooded **Drainage Class:** Well-drained

Taxonomy (Subgroup): Cumulic Haplustolls **Field Observations Confirm Mapped Type? Yes ___ No ___**

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
2-12		10 YR 3/1			Silty clay

Hydric Soil Indicators:

__ Histosol
__ Histic Epipedon
__ Sulfidic Odor
__ Aquic Moisture Regime
__ Reducing Conditions
__ Gleyed or Low-Chroma Colors
__ Concretions
__ High Organic Content in Surface Layer in Sandy Soils
__ Organic Streaking in Sandy Soils
__ Listed on Local Hydric Soils List
__ Listed on National Hydric Soils List
__ Other (Explain in Remarks)

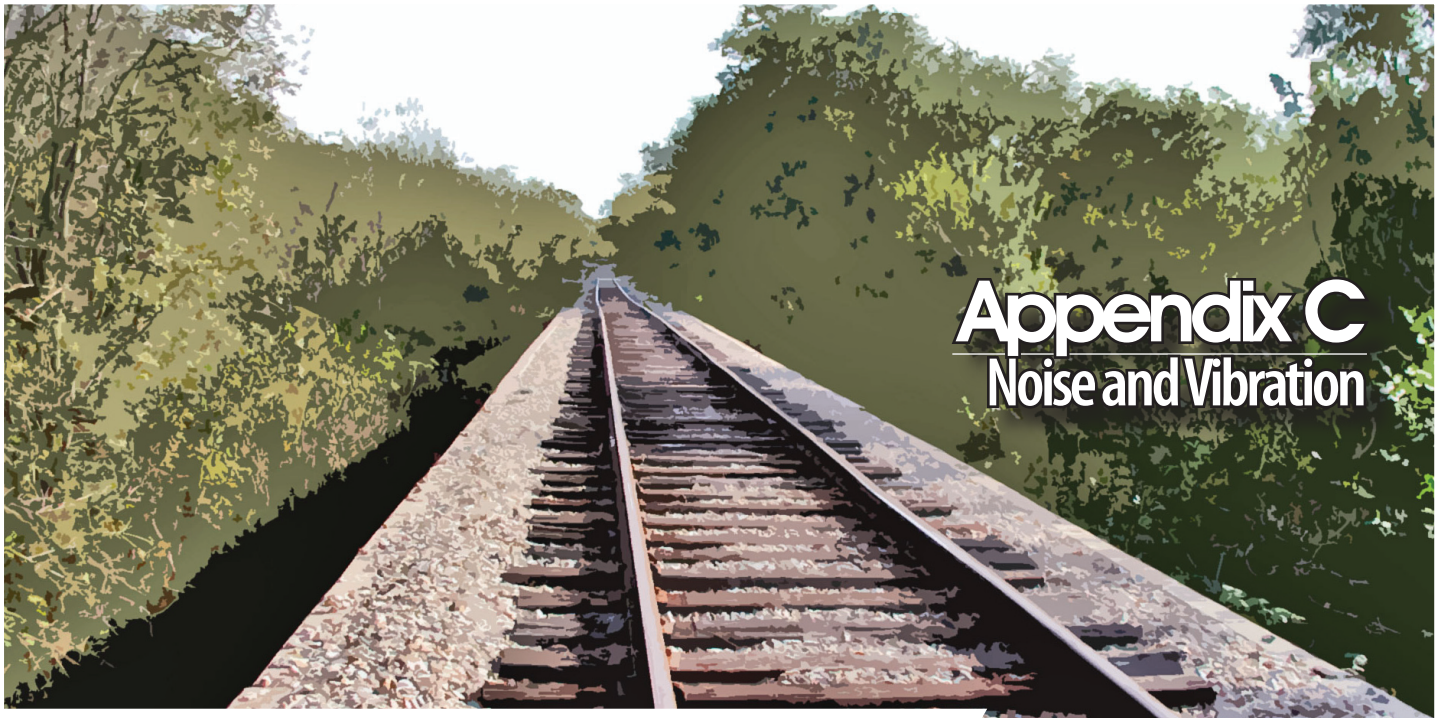
Remarks: Hydric soils criterion is met. Lots of rubble/debris in first two inches of sample – adjacent to disturbed area

WETLAND DETERMINATION

Hydrophytic Vegetation Present? X **Yes** ___ **No**
Wetland Hydrology Present? X **Yes** ___ **No**
Hydric Soils Present? X **Yes** ___ **No**

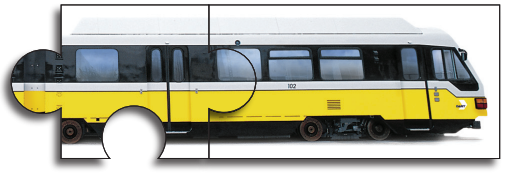
Is this Sampling Point Within a Wetland? X **Yes** ___ **No**

Remarks: All three wetland criteria were met.



Appendix C
Noise and Vibration

DART®



NOISE AND VIBRATION IMPACT ASSESSMENT FOR THE DART NORTHEAST CORRIDOR LRT LINE TO ROWLETT

FINAL

HMMH Report No. 298140-002

April 2007

Prepared for:

LopezGarcia Group

NOISE AND VIBRATION IMPACT ASSESSMENT FOR THE DART NORTHEAST CORRIDOR LRT LINE TO ROWLETT

FINAL

HMMH Report No. 298140-002

April 2007

Prepared for:

LopezGarcia Group

Prepared by:

Lance D. Meister

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Harris Miller Miller & Hanson Inc.
15 New England Executive Park
Burlington, MA 01803

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1 INTRODUCTION AND SUMMARY

This report presents a noise and vibration impact assessment for the Dallas Area Rapid Transit (DART) Northeast Corridor LRT line extension to the town of Rowlett, Texas. Harris Miller Miller & Hanson Inc. (HMMH) carried out this assessment for DART under subcontract to the LopezGarcia Group. The objective of the study was to assess the potential noise and vibration impacts of the planned LRT project at community locations adjacent to the corridor.

The background and results of the assessment are described below. Section 2 provides a discussion of environmental noise and vibration basics, and Section 3 describes the existing noise and vibration conditions and measurement results. The criteria used to assess noise and vibration impact are presented in Section 4, and projections of future noise and vibration conditions are described in Section 5. Section 6 summarizes the impact assessment, and potential mitigation measures are outlined in Section 7. Appendix A includes measurement site photographs, and detailed noise and vibration data are provided in Appendix A and Appendix C, respectively.

1.1 Background

The proposed 4.5-mile LRT Rowlett Extension begins at the downtown Garland LRT Station and ends in downtown Rowlett, east of Rowlett Road. The City of Rowlett is a community primarily located in eastern Dallas County, Texas, on the shores of Lake Ray Hubbard. The easternmost portion of the city lies within Rockwall County. In addition to the City of Garland, the cities of Dallas and Sachse, as well as unincorporated areas of Rowlett and Eastern Dallas County surround Rowlett.

The Rowlett Extension is identified in both the North Central Texas Council of Governments' (NCTCOG) Mobility 2025 Plan - 2004 Update (January 2004) and the DART Transit System Plan (November 1995, updated February 2000) as a priority corridor for transportation improvements. The NCTCOG and DART plans recommend an extension of the LRT line along the Missouri Kansas Texas Railroad (MKT) ROW from the downtown Garland LRT Station to downtown Rowlett, east of Rowlett Road. Based on the constrained DART financial plan, anticipated service to Rowlett is scheduled for 2012.

1.2 Summary of Results

1.2.1 Noise Impact Assessment

The results of the noise analysis indicate that the existing noise environment at locations near the project alignment is dominated by noise from railroad operations and general community activities. Based on Federal Transit Administration (FTA) criteria, it is predicted that without mitigation, the proposed LRT operations will cause noise impact at 19 locations as shown in Table 1. None of these impacts are in the severe category. Detailed information regarding the impacts can be found in Section 6.1.

A number of noise mitigation measures can be considered for the impacts listed in Table 1. The two most likely methods of noise mitigation are noise barriers and sound insulation. Sound insulation treatments are typically applied to buildings in areas where barriers would not be effective. These areas are primarily located near grade crossings, where additional noise impact is caused by train horns and grade-crossing bells. Relocation of crossovers away from noise-sensitive receptors would also reduce the noise impact. The selection of mitigation will depend on more detailed analysis during final design, including input from abutting neighbors.

Table 1. Summary of Noise Impacts

Location	Side of Track	Number of Noise Impacts	
		Impact	Severe
Parker Circle	S	13	0
Davidson Street	S	0	0
Palomino Drive	S	0	0
Vicinity of US 67	N	1	0
Rowlett North of Main Street	N	1	0
Rowlett South of Main Street	S	4	0
Total:		**19**	**0**

1.2.2 Vibration Impact Assessment

Other than very occasional low-speed freight train movements, there is no significant source of existing vibration along the alignment. Based on FTA criteria, it is predicted that without mitigation, the LRT operations will cause vibration impact at 13 locations as shown in Table 2. All of these impacts are related to annoyance effects and not to building damage effects. Detailed information regarding the impacts can be found in Section 6.2.

There are a number of options available for the mitigation of vibration impacts. The most common method is ballast mats. Ballast mats consist of pads made of rubber-like material placed on an asphalt or concrete base with the normal ballast, ties and rail on top. Because the vibration reduction provided by ballast mats is limited at lower frequencies, their effectiveness is dependent on the frequency content of vibration. Relocation of crossovers away from vibration-sensitive receptors would also reduce the vibration impact. Mitigation options will be evaluated in more detail during final design, and the most appropriate measures will be selected based on feasibility, cost effectiveness, and community input.

Table 2. Summary of Vibration Impacts

Segment	Side of Track	Impacts
Parker Circle	S	13
Davidson Street	S	0
Palomino Drive	S	0
Vicinity of US 67	N	0
Rowlett North of Main Street	N	0
Rowlett South of Main Street	S	0
Total:		**13**

2 ENVIRONMENTAL NOISE AND VIBRATION BASICS

2.1 Noise Fundamentals and Descriptors

Noise is typically defined as unwanted or undesirable sound, where sound is characterized by small air pressure fluctuations above and below the atmospheric pressure. The basic parameters of environmental noise that affect human subjective response are (1) intensity or level, (2) frequency content and (3) variation with time. The first parameter is determined by how greatly the sound pressure fluctuates above and below the atmospheric pressure, and is expressed on a compressed scale in units of decibels. By using this scale, the range of normally encountered sound can be expressed by values between 0 and 120 decibels. On a relative basis, a 3-decibel change in sound level generally represents a barely noticeable change outside the laboratory, whereas a 10-decibel change in sound level would typically be perceived as a doubling (or halving) in the loudness of a sound.

The frequency content of noise is related to the tone or pitch of the sound, and is expressed based on the rate of the air pressure fluctuation in terms of cycles per second (called Hertz and abbreviated as Hz). The human ear can detect a wide range of frequencies from about 20 Hz to 17,000 Hz. However, because the sensitivity of human hearing varies with frequency, the A-weighting system is commonly used when measuring environmental noise to provide a single number descriptor that correlates with human subjective response. Sound levels measured using this weighting system are called "A-weighted" sound levels, and are expressed in decibel notation as "dBA." The A-weighted sound level is widely accepted by acousticians as a proper unit for describing environmental noise.

Because environmental noise fluctuates from moment to moment, it is common practice to condense all of this information into a single number, called the “equivalent” sound level (Leq). Leq can be thought of as the steady sound level that represents the same sound energy as the varying sound levels over a specified time period (typically 1 hour or 24 hours). Often the Leq values over a 24-hour period are used to calculate cumulative noise exposure in terms of the Day-Night Sound Level (Ldn). Ldn is the A-weighed Leq for a 24-hour period with an added 10-decibel penalty imposed on noise that occurs during the nighttime hours (between 10 P.M. and 7 A.M.). Many surveys have shown that Ldn is well correlated with human annoyance, and therefore this descriptor is widely used for environmental noise impact assessment. Figure 1 provides examples of typical noise environments and criteria in terms of Ldn. While the extremes of Ldn are shown to range from 35 dBA in a wilderness environment to 85 dBA in noisy urban environments, Ldn is generally found to range between 55 dBA and 75 dBA in most communities. As shown in Figure 1, this spans the range between an “ideal” residential environment and the threshold for an unacceptable residential environment according to U.S. Federal agency criteria.

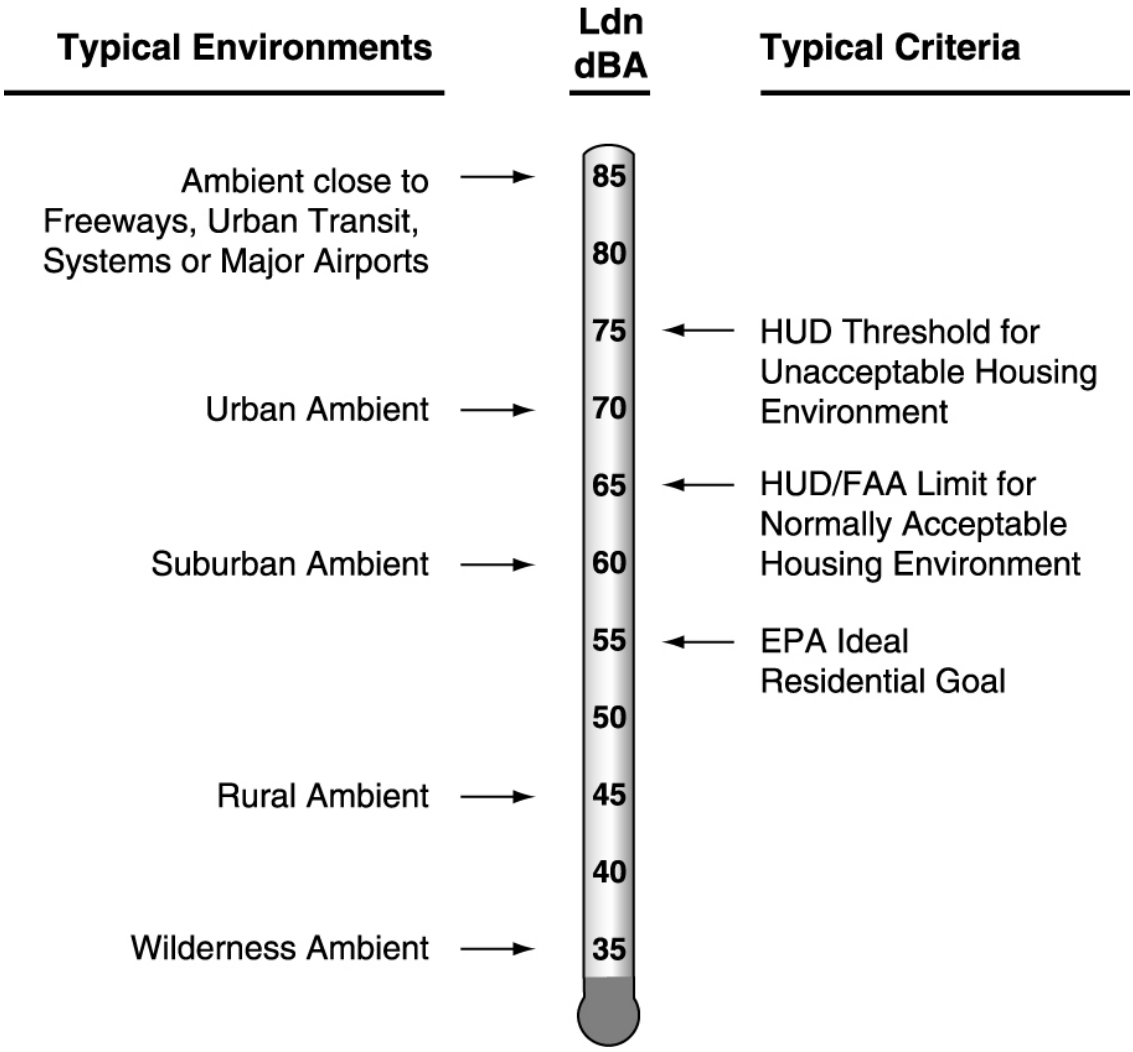

Figure 1. Examples of Typical Outdoor Noise Exposure

2.2 Ground-Borne Vibration Fundamentals and Descriptors

Ground-borne vibration is the oscillatory motion of the ground about some equilibrium position that can be described in terms of displacement, velocity or acceleration. Because sensitivity to vibration typically corresponds to the amplitude of vibration velocity within the low-frequency range of most concern for environmental vibration (roughly 5-100 Hz), velocity is the preferred measure for evaluating ground-borne vibration from transit projects.

The most common measure used to quantify vibration amplitude is the peak particle velocity (PPV), defined as the maximum instantaneous peak of the vibratory motion. PPV is typically used in monitoring blasting and other types of construction-generated vibration, since it is related to the stresses experienced by building components. Although PPV is appropriate for evaluating building damage, it is less suitable for evaluating human response, which is better related to the average vibration amplitude. Thus, ground-borne vibration from transit trains is usually characterized in terms of the "smoothed" root mean square (rms) vibration velocity level, in decibels (VdB), with a reference quantity of one micro-inch per second. VdB is used in place of dB to avoid confusing vibration decibels with sound decibels.

Figure 2 illustrates typical ground-borne vibration levels for common sources as well as criteria for human and structural response to ground-borne vibration. As shown, the range of interest is from approximately 50 to 100 VdB, from imperceptible background vibration to the threshold of damage. Although the approximate threshold of human perception to vibration is 65 VdB, annoyance is usually not significant unless the vibration exceeds 70 VdB.

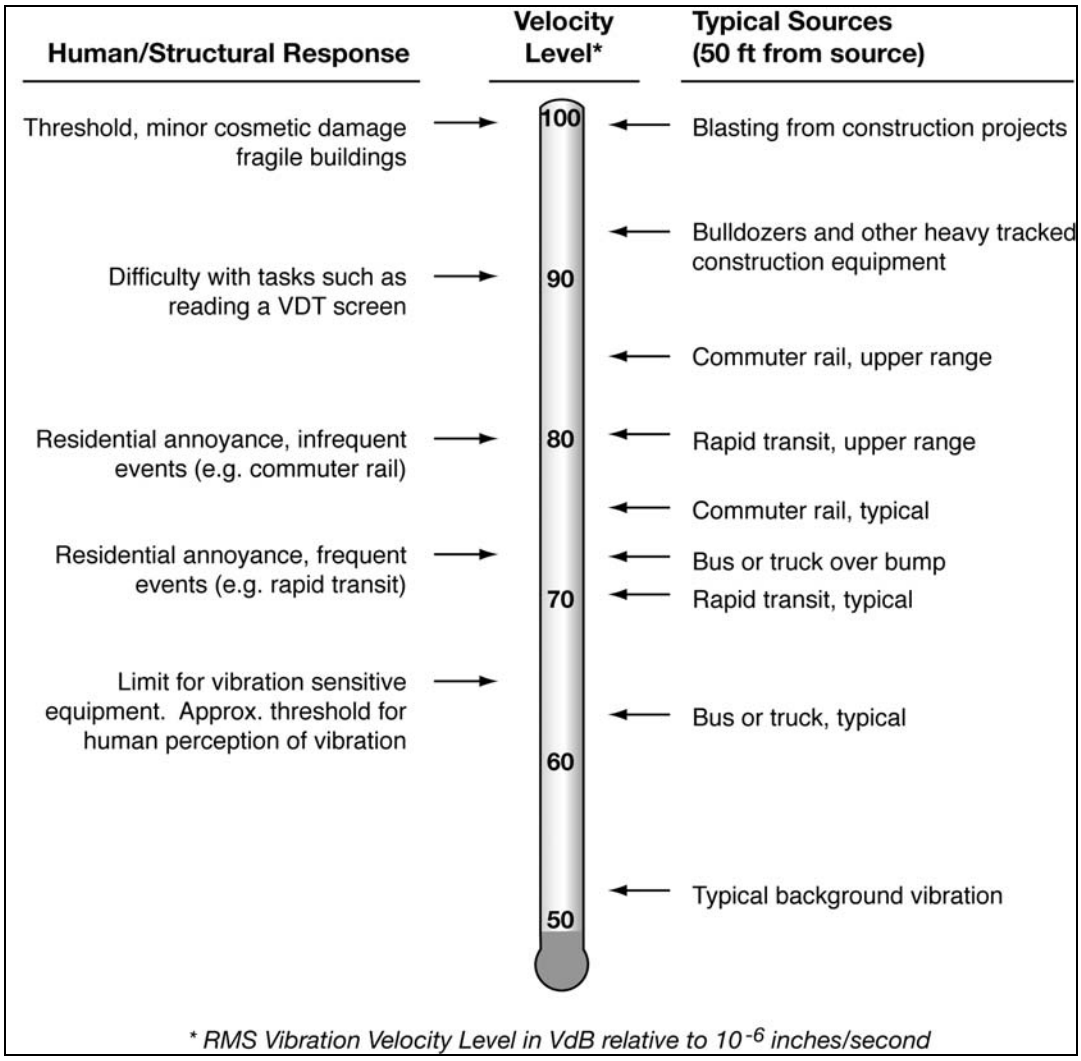

Figure 2. Typical Ground-Borne Vibration Levels and Criteria

3 EXISTING CONDITIONS

3.1 Noise Measurements

3.1.1 Locations and Tests

Noise-sensitive land use along the project corridor was identified based on preliminary alignment drawings, aerial photographs, and visual surveys. Areas adjacent to the proposed corridor include multi-family residences, some non-residential (commercial) and institutional land uses. Summary descriptions of noise-sensitive land use and existing noise sources along the corridor, from west to east, are as follows:

- Victory Baptist Church (Garland). The church is located to the north of East Walnut Street on the north side of the proposed alignment. The noise environment in the area is dominated by traffic on East Walnut Street, and is also affected by noise from freight trains operations.

- Rainbow Estates (Garland). The Rainbow Estates residential neighborhood, along Parker Circle and Davidson Street, is located to the south of the proposed alignment. The existing noise environment is contributed to by local neighborhood activities and by freight train operations on the existing tracks.

- Mt. Hebron Baptist Church (Garland). This church is located to the north of the proposed alignment on Route 66 in Garland. The major noise source in the area is traffic on Route 66. Local traffic on North Country Club Road and freight train operations also contribute to the noise environment.

- Pentecost Church of God parcel (Garland). This land is located to the south of the proposed alignment. While there is currently no building, a church may be built at this location in the future. Noise sources include be traffic on Route 66 and freight train operations.

- Dexham Estates (Rowlett). The proposed alignment is located to the north of this single-family residential development on Palomino Drive. The noise environment is affected by noise from local traffic on Dexham Road and Palomino Drive. Freight train operations also contribute to the noise environment at this location.

- Downtown Rowlett (Rowlett). The proposed alignment is located between Main Street and Melcer Drive in downtown Rowlett. Land use in this area is a mix of residential and commercial. There are scattered single-family residences in this area, both to the north and south of the proposed alignment. Kingdom Hall of Jehovah's Witnesses is also located on Main Street. Two other churches and associated schools, the First Baptist Church of Rowlett and the Rowlett Methodist Church, are located to the east of the Rowlett Station near the tail track.

Existing ambient noise levels in the above areas were characterized through direct measurements at selected sites along the proposed alignment during the period from November 1 through November 3, 2005 along the corridor. Estimating existing noise exposure is an important step in the noise impact assessment since, as indicated in Section 4.1, the thresholds for noise impact are based on the existing levels of noise exposure. The measurements included long-term (24-hour) and short-term (60-minute) monitoring of the A-weighted sound level at representative noise-sensitive locations.

All of the measurement sites were located in noise-sensitive areas, and were selected to represent a range of existing noise conditions along the corridor. Figure 3 shows the general location of the three long-term monitoring sites along the corridor (LT-1 through LT-3) and two short-term monitoring sites (ST-1 and ST-2).

Figure 3. Ambient Noise and Vibration Monitoring Locations

3.1.2 Instrumentation and Procedures

Long-term, ambient noise measurements were conducted at Sites LT-1 through LT-3, as shown in Figure 3. At each of these locations, unattended Larson Davis Model 870 portable, automatic noise monitors were used to continuously sample the A-weighted sound level (with slow response), over a 24-hour period. The noise monitors were programmed to record hourly results, including the maximum sound level (Lmax), the equivalent sound level (Leq) and the statistical percentile sound levels (Ln, denoting the sound level exceeded n percent of the hour). The day-night equivalent sound level (Ldn) was subsequently computed from the hourly Leq data.

The noise measurement equipment described above conforms to ANSI Standard S1.4 for Type 1 (Precision) sound level meters. Calibrations, traceable to the U.S. National Institute of Standards and Technology (NIST) were carried out in the field before and after each set of measurements using acoustical calibrators.

In all cases, the measurement microphone was protected by a windscreen, and supported on a tripod at a height of 4 to 6 feet above the ground. Furthermore, the microphone was positioned to characterize the exposure of the site to the dominant noise sources in the area. For example, microphones were located at the approximate setback lines of the receptors from adjacent roads or rail lines, and were positioned to avoid acoustic shielding by landscaping, fences or other obstructions.

3.1.3 Results

A summary of the existing ambient noise measurement results is provided in Table 3, and detailed data are included in Appendix A. These results were used as a basis for determining the existing noise conditions at all noise-sensitive receptors along the corridor. The resulting characterization of existing ambient noise conditions is described below.

Table 3. Summary of Existing Ambient Noise Measurement Results

Site No.	Measurement Location Description	Start of Measurement		Meas. Time (hrs)	Noise Exposure (dBA)	
		Date	Time		Ldn	Leq
LT-1	318 Davidson Street. – Garland	11-1-05	13:00	24	68 (59)*	--
LT-2	1918 Palamino Drive. – Rowlett	11-1-05	15:00	24	54*	--
LT-3	Jehovah's Witness Church – Rowlett	11-2-05	13:00	24	55*	--
ST-1	Victory Baptist Church – Garland	11-2-05	15:28	1	--	68
ST-2	Mt. Hebron Baptist Church – Garland	11-3-05	7:55	1	--	60

* The noise measurement at Site LT-1 included a freight train after 11 PM, which contributed significantly to the existing noise exposure. There were no freight train events at Sites LT-2 and LT-3. The noise level in parenthesis was used in the analysis for this location in order to be more conservative in assessing noise impact.

- Site LT-1: Single-family residence at 318 Davidson Street, Garland. The measured Ldn at this location was 68 dBA. Without the late night freight train, the Ldn at this location was 59 dBA. The microphone was located behind the home, adjacent to the proposed alignment and the existing freight tracks. Noise sources included local traffic on Davidson Street and Route 66 and freight train operations.

- Site LT-2: Single-family residence at 1918 Palamino Drive, Rowlett. The measured Ldn at this location was 54 dBA. The microphone was located in the back yard of the home. Noise sources included local traffic on Palamino Drive and Dexham Road.

- Site LT-3: Kingdom Hall of Jehovah's Witnesses, Rowlett. The measured Ldn at this location was 55 dBA. The microphone was located behind the parking lot in the back of the church, adjacent to the proposed alignment. Noise sources included local traffic on Main Street in Rowlett.

- Site ST-1: Victory Baptist Church, Garland. The measured one-hour Leq at this location was 68 dBA. The dominant noise source was traffic on East Walnut Street.

- Site ST-2: Mt. Hebron Baptist Church, Garland. The measured one-hour Leq at this location was 60 dBA. The major noise source was traffic on Route 66.

3.2 Vibration Measurements

3.2.1 Locations and Tests

Other than very infrequent freight trains, there are no significant sources of existing vibration along the Rowlett Line of the Northeast Corridor. For that reason the vibration measurements for this project focused on characterizing the vibration propagation properties of the soil at representative locations along

the corridor. Two vibration testing sites, at the locations shown in Figure 3, were selected to represent the range of soil conditions in areas along the corridor that include a significant number of vibration-sensitive receptors. At each of these sites, ground-borne vibration propagation tests were conducted by impacting the ground and measuring the input force and corresponding ground vibration response at various distances. The resulting force-response transfer function can be combined with the known input force characteristics of the DART light rail vehicle to predict future vibration levels at locations along the project corridor. The vibration propagation test sites are described below.

- Site V-1: Mt. Hebron Baptist Church. This site was located in the parking lot of Mt. Hebron Baptist Church. The vibration measurement at this site is representative of the portion of the alignment in Garland.

- Site V-2: DART Park-n-Ride Lot. This site was located in the DART park-and-ride lot on Industrial Street in Rowlett. The vibration measurement at this site is representative of the portion of the alignment in Rowlett.

3.2.2 Instrumentation and Procedures

The ground vibration measurements were made with high-sensitivity accelerometers mounted in the vertical direction on either paved surfaces, or on top of steel stakes driven into soil. The acceleration signals were recorded on a TEAC Model RD-135T 8-channel digital audio tape (DAT) recorder and subsequently analyzed in the HMMH laboratory.

The vibration propagation test procedure is shown schematically in Figure 4. As shown in the cross-section view at the top, the test basically consists of dropping a 60 lb weight from a height of 3 to 4 feet onto the ground. A load cell is used to measure the force of the impact and accelerometers are used to measure the resulting vibration pulses at various distances from the ground. The relationship between the input force and the ground surface vibration, called the transfer mobility, characterizes vibration propagation at this location. It is possible to estimate the ground vibration that would be caused by another source, such as a train, by substituting the train force for the impact force.

The bottom sketch in Figure 4 shows how the dropped weight point source is used to simulate a line vibration source such as a train. Impact tests are made at regular intervals in a line along the rail alignment. For these tests, impacts were done at eleven points, spaced 15 feet apart along a line perpendicular to the line of accelerometers.

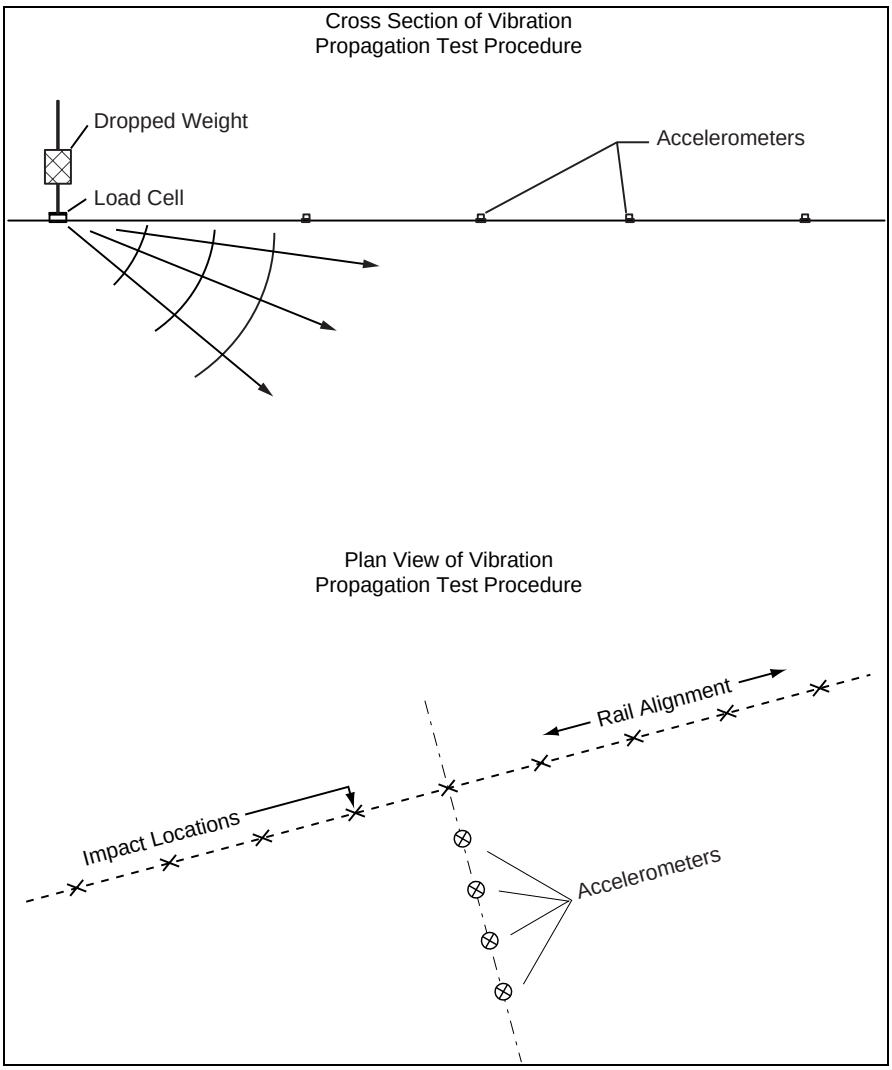

Figure 4. Vibration Propagation Test Procedure

3.2.3 Results

For laboratory analysis of the ground vibration propagation test data, an FFT multi-channel spectrum analyzer was used to obtain the transfer mobility relationship for each accelerometer/impact pair. The basic steps taken to calculate 1/3-octave band transfer functions are summarized below:

1. A multi-channel spectrum analyzer was used to get narrowband transfer functions. A minimum of 20 impacts was used to obtain signal-enhanced transfer functions for each impact site-accelerometer pair. Numerical integration was used to change from acceleration to velocity.

2. The 1/3 octave band transfer mobility was calculated for each accelerometer/impact pair.

3. Each set of 1/3-octave band point-source transfer mobilities was combined using Simpson's Rule for numerical integration to estimate the equivalent line-source transfer mobility.

4. For each 1/3-octave band, a smooth curve was fit to the line source transfer mobility values. The end result is an estimate of line source transfer mobility as a function of distance from the source.

Examples of the resulting smoothed line source transfer mobilities are given in Figure 5, which provides spectra at a distance of 100 feet for both of the test sites. More details on the propagation test and analysis procedures are given in the U. S. Federal Transit Administration (FTA) guidance manual Transit Noise and Vibration Impact Assessment (FTA Report DOT-T-95-16, April 1995). Detailed test data are included in Appendix C of this report.

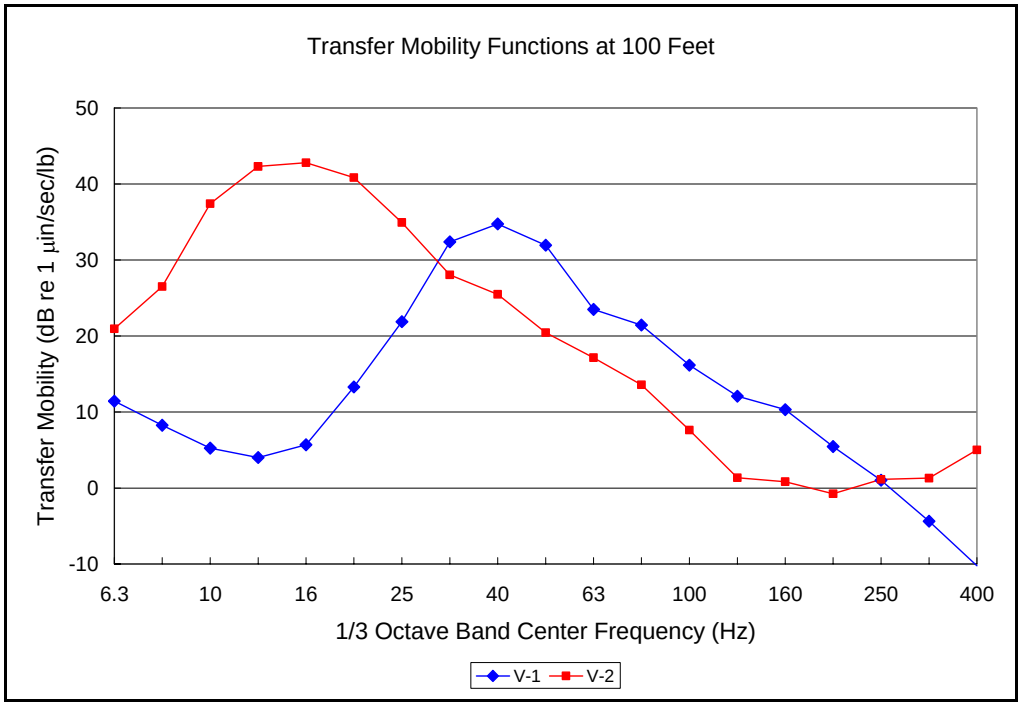

Figure 5. Line Source Transfer Mobilities at Measurement Sites

4 NOISE AND VIBRATION IMPACT CRITERIA

Experience suggests that noise and vibration can be major public concerns with regard to the effects of a rail transportation project. This section summarizes the impact limits as applicable to the DART Northeast Corridor LRT line to Rowlett.

4.1 Transit Noise Criteria

Noise impact for this project is based on the criteria defined in the U. S. Federal Transit Administration (FTA) guidance manual ***Transit Noise and Vibration Impact Assessment*** (FTA-VA-90-1003-06, May 2006). The FTA noise impact criteria are founded on well-documented research on community reaction to noise and are based on change in noise exposure using a sliding scale. Although higher transit noise levels are allowed in neighborhoods with high levels of existing noise, smaller increases in total noise exposure are allowed with increasing levels of existing noise.

The FTA Noise Impact Criteria group noise sensitive land uses into the following three categories:

- Category 1: Buildings or parks where quiet is an essential element of their purpose.
- Category 2: Residences and buildings where people normally sleep. This includes residences, hospitals, and hotels where nighttime sensitivity is assumed to be of utmost importance.
- Category 3: Institutional land uses with primarily daytime and evening use. This category includes schools, libraries, churches and active parks.

Ldn is used to characterize noise exposure for residential areas (Category 2). For other noise sensitive land uses, such as outdoor amphitheaters and school buildings (Categories 1 and 3), the maximum 1-hour Leq during the facility's operating period is used.

There are two levels of impact included in the FTA criteria. The interpretation of these two levels of impact is summarized below:

- Severe: Severe noise impacts are considered "significant" as this term is used in the National Environmental Policy Act (NEPA) and implementing regulations. Noise mitigation will normally be specified for severe impact areas unless there is no practical method of mitigating the noise.
- Moderate: In this range of noise impact, other project-specific factors must be considered to determine the magnitude of the impact and the need for mitigation. These other factors can include the projected increase over existing noise levels, the types and number of noise-sensitive land uses affected, existing outdoor-indoor sound insulation, and the cost effectiveness of mitigating noise to more acceptable levels.

The noise impact criteria are summarized in graphical form in Figure 6. The figure shows the existing noise exposure and the additional noise exposure from the transit project that would cause either moderate or severe impact. The future noise exposure would be the combination of the existing noise exposure and the additional noise exposure caused by the transit project. Figure 7 expresses the same criteria in terms of the increase in total or cumulative noise that can occur in the overall noise environment before impact occurs.

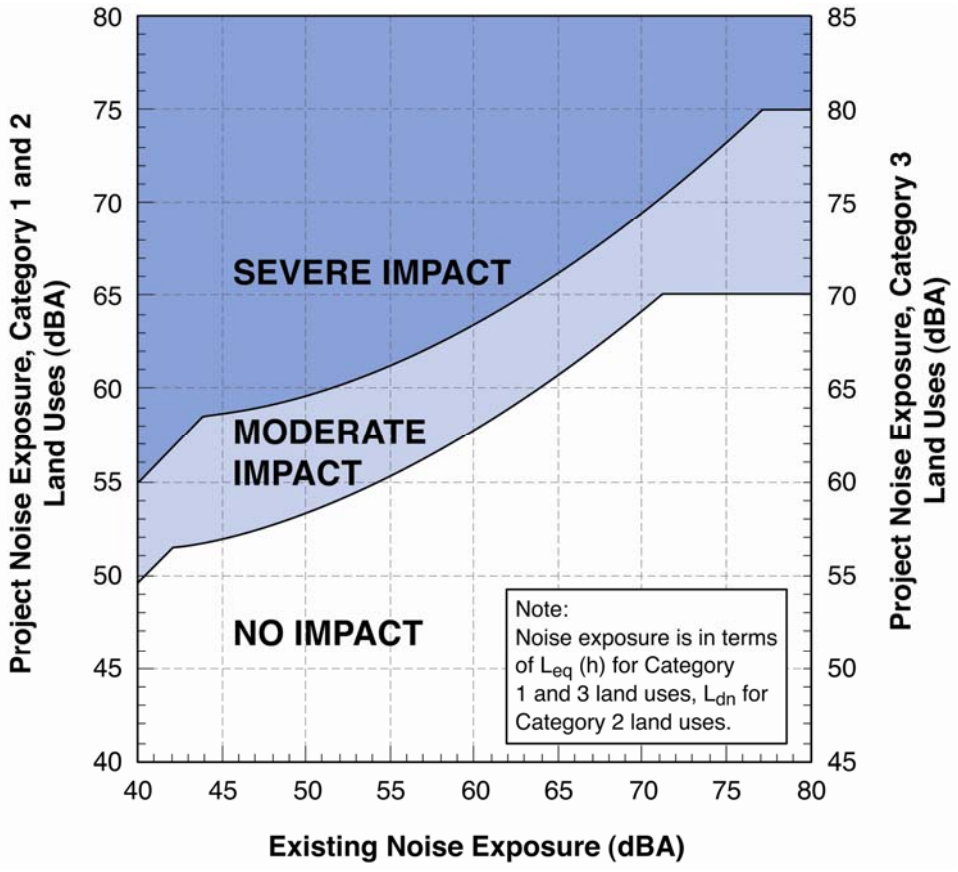

Figure 6. FTA Project Noise Impact Criteria

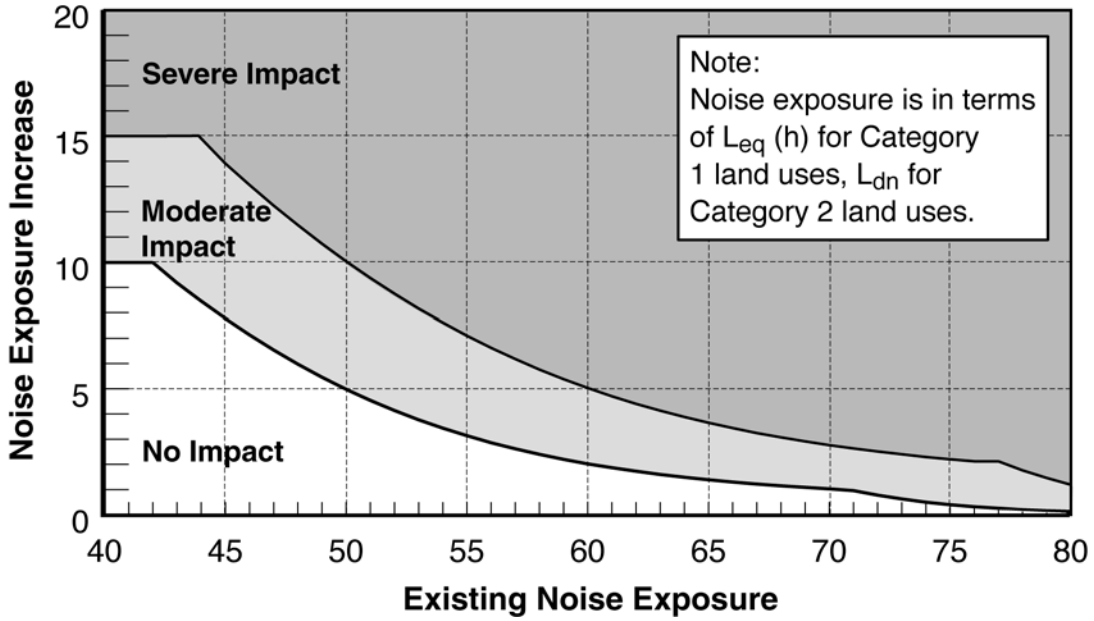

Figure 7. Increase in Cumulative Noise Exposure Allowed by FTA Criteria

4.2 Transit Vibration Criteria

The FTA ground-borne vibration impact criteria are based on land use and train frequency, as shown in Table 4. There are some buildings, such as concert halls, recording studios and theaters, which can be very sensitive to vibration but do not fit into any of the three categories listed in Table 4. Due to the sensitivity of these buildings, they usually warrant special attention during the environmental assessment of a transit project. Table 5 gives criteria for acceptable levels of ground-borne vibration for various types of special buildings.

It should also be noted that there are separate FTA criteria for ground-borne noise, the "rumble" that can be radiated from the motion of room surfaces in buildings due to ground-borne vibration. Such criteria are particularly important for underground transit operations. However, because airborne noise tends to mask ground-borne noise for above ground (i.e. at-grade or elevated) rail systems, ground-borne noise criteria are not applied to this project.

Table 4. Ground-Borne Vibration and Noise Impact Criteria by Land Use Category

Land Use Category	Ground-Borne Vibration Impact (VdB re 1 micro inch/sec)		
	Frequent Events[1]	**Occasional Events[2]**	**Infrequent Events[3]**
Category 1: Buildings where low ambient vibration is essential for interior operations.	65 VdB[4]	65 VdB[4]	65 VdB[4]
Category 2: Residences and buildings where people normally sleep.	72 VdB	75 VdB	80 VdB
Category 3: Institutional land uses with primarily daytime use.	75 VdB	78 VdB	83 VdB

[1] "Frequent Events" is defined as more than 70 vibration events per day. Most rapid transit projects fall into this category.
[2] "Occasional Events" is defined as between 30 and 70 vibration events of the same source per day. Most commuter trunk lines have this many operations.
[3] "Infrequent Events" is defined as fewer than 70 vibration events per day. This category includes most commuter rail systems.
[4] This criterion limit is based on levels that are acceptable for most moderately sensitive equipment such as optical microscopes. Vibration sensitive manufacturing or research will require detailed evaluation to define the acceptable vibration levels. Ensuring lower vibration levels in a building often requires special design of the HVAC systems and stiffened floors.

Table 5. Ground-Borne Vibration and Noise Impact Criteria for Special Buildings

Type of Building or Room	Ground-Borne Vibration Impact Levels (VdB re 1 micro-inch/sec)	
	Frequent Events[1]	Occasional or Infrequent Events[2]
Concert Halls	65 VdB	65 VdB
TV Studios	65 VdB	65 VdB
Recording Studios	65 VdB	65 VdB
Auditoriums	72 VdB	80 VdB
Theaters	72 VdB	80 VdB

[1] "Frequent Events" is defined as more than 70 vibration events per day. Most transit projects fall into this category.
[2] "Occasional of Infrequent Events" is defined as fewer than 70 vibration events per day. This category includes most commuter rail systems.
[3] If the building will rarely be occupied when the trains are operating, there is no need to consider impact. As an example consider locating a commuter rail line next to a concert hall. If no commuter trains will operate after 7 pm, it should be rare that the trains interfere with the use of the hall.

4.3 Construction Noise Criteria

Construction noise criteria are based on the guidelines provided in the FTA Guidance Manual. These criteria, summarized in Table 6 below, are based on land use and time of day and are given in terms of Leq for an 8-hour work shift.

Table 6. FTA Construction Noise Criteria

Land Use	Noise Limit, 8-Hour Leq (dBA)	
	Daytime	Nighttime
Residential	80	70
Commercial	85	85
Industrial	90	90

5 FUTURE BUILD CONDITIONS

This section summarizes the models used to project future noise and vibration levels for potential sources of community impact related to the DART Northeast Corridor LRT line to Rowlett. The projection models for these sources are described below.

5.1 Noise Projections

Noise levels were projected based on the DART LRT vehicle noise specification, the proposed project's operating plan and the prediction model specified in the FTA guidance manual. Significant factors are summarized below:

- Based on the DART vehicle noise specification, the predictions assume that a single 93-foot long vehicle operating at 40 mph on ballast and tie track with continuous welded rail (CWR) generates a maximum noise level of 76 dBA at a distance of 50 feet from the track centerline.

- The operating times of the line would be between 5:30 AM and 12:30 AM. The operating plan for LRT service specifies a peak-hour headway of ten minutes, an off-peak base period headway of 15 minutes and an evening headway of 20 minutes. Two-car trains would operate most of the day, with some three-car trains in peak periods and single-car trains in the evenings.

- Peak hour operations would occur between 6:00 AM and 9:00 AM and between 3:00 PM and 6:00 PM. Evening operations would occur between 8:30 PM and 12:30 AM, and base service would occur during all other time periods. The average number of cars per train would be 2.5 cars during peak hours, two cars during base service, and one car during evening service.

- Vehicle operating speeds are based on information provided by the project design team. The speed limits range from 20 mph to 65 mph along the corridor.

- The projections near grade crossings include noise from train whistles and crossing bells. Based on DART audible warning signal equipment and policy, the estimates assume that the whistles generate a noise level of 78 dBA at 50 feet from the track for a five second period as trains approach each crossing. The bells are estimated to generate a noise level of 72 dBA at 50 feet for 20 seconds prior to and ten seconds following each train. These operating parameters are consistent with current practice on the Starter System and were designed to minimize community noise exposure to the greatest extent possible within the constraints of safe operations.

- There will be no significant shift of freight rail operations from daytime to nighttime periods due to the implementation of the LRT Alternative. Occasional freight service is present today and will continue in the future.

- Wheel impacts at crossovers and other special trackwork typically cause a noise increase of about 6 dBA near such locations.

The projected unshielded Ldn is shown in Figure 8 as a function of distance for several train speeds. The projections are based on the assumptions described above.

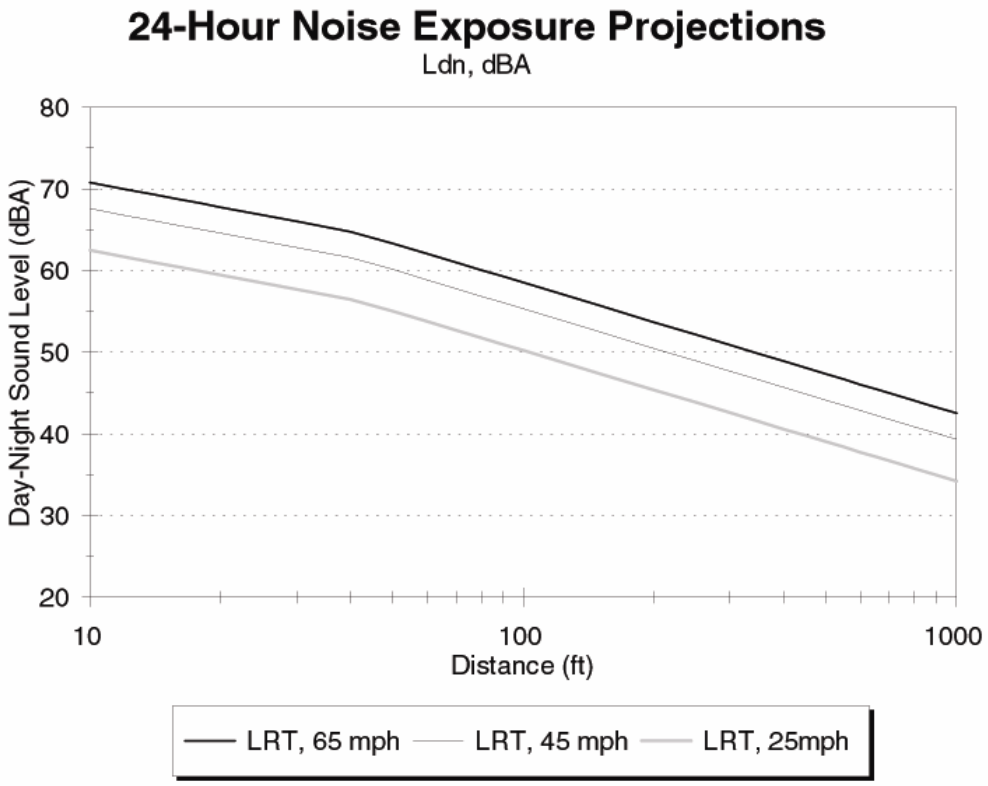

Figure 8. Projected 24-Hour Noise Exposure from LRT Operations

5.2 Vibration Projections

The potential vibration impact from LRT operation was assessed on an absolute basis using the FTA criteria. The same representative sensitive receptors identified in noise impact section were considered for the vibration impact assessment. The following factors were used in determining potential vibration impacts along the project corridor:

- Vibration source levels were based on measurements of the DART LRT vehicles performed during previous DART projects.

- Vibration propagation tests were conducted at two sites along the corridor near sensitive receptors. These tests measured the response of the ground to an input force. The results of these tests were combined with the vibration source level measurements to provide projections of vibration levels from vehicles operating on the Northeast Corridor.

- Vehicle operating speeds are based on information provided by the project design team. The speed limits range from 20 mph to 65 mph along the corridor.

- Wheel impacts at crossovers and other special trackwork typically cause a vibration increase of about 10 VdB near such locations.

The assumed vehicle vibration characteristics (represented by the force density spectrum in Figure 9) were combined with the ground vibration propagation test results (represented by transfer mobility spectra such as those shown in Figure 5) to project vibration levels as a function of distance for each of the two test sites. The results of these transfer mobility tests and the projected LRT vibration spectra at each site are presented in Appendix C. The rail corridor was divided into two regions for the purposes of vibration projection, defined as follows:

- Region A – Mt. Hebron Baptist Church (Represented by Test Site V-1). The results from this site were used in the projections for Garland.

- Region B – DART Park & Ride Lot (Represented by Test Site V-2). The results from this site were used in the projections for Rowlett.

The resulting projections of maximum ground vibration levels from LRT operations at 40 mph for each of the above two regions are provided in Figure 10. Each of the curves has a different level vs. distance characteristic, which determines the impact distance in each of the regions. The results suggest that Region A has the highest projected levels close to the track.

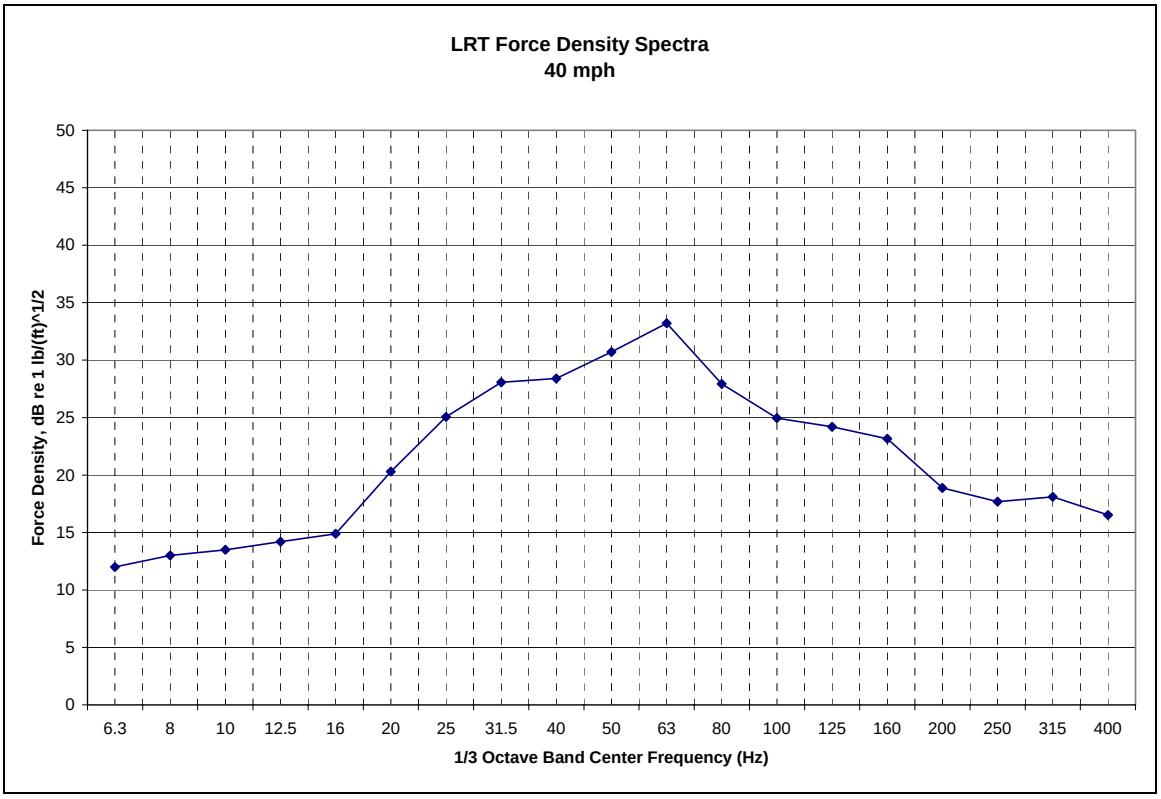

Figure 9. DART Vehicle Force Density Spectrum

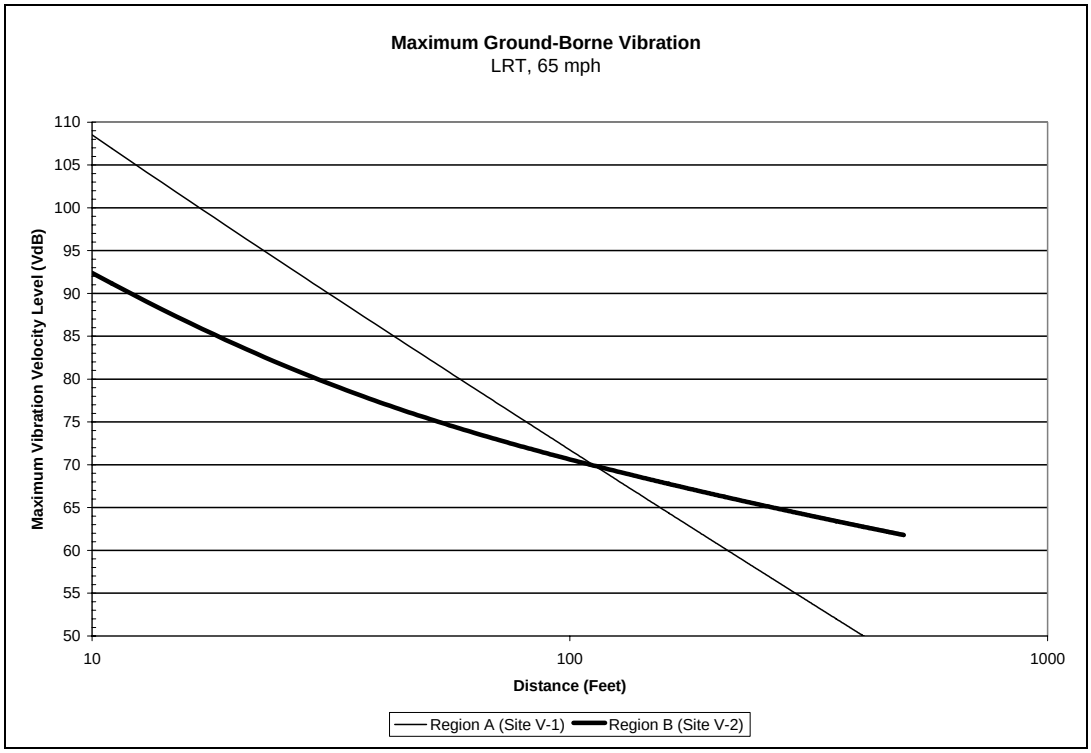

Figure 10. Projected Maximum Vibration Levels for LRT Operations

5.3 Construction Noise Projections

Construction noise varies greatly depending on the construction process, type and condition of equipment used, and layout of the construction site. Many of these factors are traditionally left to the contractor's discretion, which makes it difficult to accurately estimate levels of construction noise. Overall, construction noise levels are governed primarily by the noisiest pieces of equipment. For most construction equipment, the engine, which is usually diesel, is the dominant noise source. This is particularly true of engines without sufficient muffling. For special activities such as impact pile driving and pavement breaking, noise generated by the actual process dominates.

Table 7 summarizes some of the available data on noise emissions of construction equipment from the FTA Guidance Manual. Shown are the averages of the Lmax values at a distance of 50 feet. Although the noise levels in the table represent typical values, there can be wide fluctuations in the noise emissions of similar equipment. Construction noise at a given noise-sensitive location depends on the magnitude of noise during each construction phase, the duration of the noise, and the distance from the construction activities.

Projecting construction noise requires a construction scenario of the equipment likely to be used and the average utilization factors or duty cycles (i.e. the percentage of time during operating hours that the equipment operates under full power during each phase). Using the typical sound emission characteristics, as given in Table 7, it is then possible to estimate Leq or Ldn at various distances from the construction site. The noise impact assessment for a construction site is based on:

- an estimate of the type of equipment that will be used during each phase of the construction and the average daily duty cycle for each category of equipment,

- typical noise emission levels for each category of equipment such as those in Table 7, and
- estimates of noise attenuation as a function of distance from the construction site.

Table 7. Construction Equipment Noise Emission Levels

Equipment Type	Typical Sound Level at 50 ft (dBA)
Backhoe	80
Bulldozer	85
Compactor	82
Compressor	81
Concrete Mixer	85
Concrete Pump	82
Crane, Derrick	88
Crane, Mobile	83
Loader	85
Pavement Breaker	88
Paver	89
Pile Driver, Impact	101
Pump	76
Roller	74
Truck	88

Construction noise estimates are always approximate because of the lack of specific information available at the time of the environmental assessment. Decisions about the procedures and equipment to be used are made by the contractor. Project designers usually try to minimize constraints on how the construction will be performed and what equipment will be used so that contractors can perform construction in the most cost effective manner.

Table 8 is an example of the noise projections for equipment that is often used during tie-and-ballast track construction. For the calculations it is assumed that all the equipment is located at the geometric center of the construction work site. Based on this scenario, an 8-hour Leq of 88 dBA should be expected at a distance of 50 feet from the geometric center of the work site. This calculation in Table 8 does not assume any noise mitigation measures or any limits on the contractor about how much noise can be made. With at-grade track construction, the duration of the activities at a specific location along the alignment will be relatively limited, usually a matter of several weeks. As a result, even when there may be noise impacts, the limited duration of the construction can mean that mitigation is not cost effective.

Table 8. Typical Equipment List, At-Grade Track Construction

Equipment Item	Typical Maximum Sound Level at 50 ft (dBA)	Equipment Utilization Factor (%)	Leq (dBA)
Air Compressor	83	50%	80
Backhoe	80	40%	76
Crane, Derrick	82	10%	72
Dozer	85	40%	81
Generator	81	80%	80
Loader	85	40%	81
Pavement Breaker	84	4%	70
Shovel	80	40%	76
Dump Truck	88	16%	80
Total Workday Leq at 50 feet (8-hour workday)			88

6 NOISE AND VIBRATION IMPACT ASSESSMENT

A detailed noise and vibration impact assessment was performed based on the criteria discussed in Section 4 and on the projections described in Section 5. The assessment methods and results for the various project sources are described below.

6.1 Noise Assessment

The assessment of noise impact from LRT train operations is based on a comparison of existing and projected future noise exposure for different land use categories. The following steps were performed to assess train noise impact:

- A detailed land-use survey was conducted along the project corridor to identify and classify all noise-sensitive receptors according to the categories defined in Section 4.1. The majority of these receptors are multi-family residences, falling under FTA Category 2. The remainder are institutional sites falling under FTA Category 3.

- The receptors were clustered based on distance to the tracks, acoustical shielding between the receptors and the tracks, and location relative to crossovers and grade crossings.

- The existing noise exposure at each cluster of receptors was estimated based on the ambient noise measurements discussed in Section 3.1, and was used to determine the thresholds for impact and severe impact using the FTA criteria presented in Section 4.1.

- Projections of future LRT noise at each cluster of receptors were developed based on distance from the tracks; train schedule and train speed using the methods described in Section 5.1.

- In areas where the projections showed either degree of impact, mitigation options were evaluated and new projections were developed assuming mitigation of all impacts.

For the proposed LRT alignment, detailed comparisons of the existing and future noise levels are presented in Table 9 and Table 10. Table 9 includes results for the Category 2 receptors along the alignment with both daytime and nighttime sensitivity to noise (e.g. residences, hotels, and hospitals). Table 10 is a listing of all Category 3 receptors along the alignment, consisting of institutional sites that are not sensitive to noise at night (e.g. schools, churches, parks and medical offices). In addition to the civil station, distance to the near track and proposed LRT speed, each table includes the existing noise level, the projected noise level from LRT operations and the impact criteria for each receptor or receptor group. Based on a comparison of the predicted project noise level with the impact criteria, the impact category is listed, along with the predicted total noise level and projected noise increase due to the introduction of LRT service. Table 9 also includes an inventory of the number of impacts and severe impacts at each sensitive receptor location.

Table 9. Noise Impacts for Category 2 Land Use

Location	Civil Station	Side of Track	Dist To Near Track (ft)	Speed (mph)	Exist. Noise Level[1]	Project Noise Level[1]			Impact Category	Total Noise Level[1]	Noise Level Increase[1]	# of Res. Impacts	
						Pred.[2]	Impact Criteria						
							Imp	Sev				Imp	Sev
Parker Circle	997	S	105	65	59[3]	58	57	62	Impact	61	2.5	13	0
Davidson Street	1003	S	125	65	59[3]	57	57	62	None	61	2.0	0	0
Palomino Drive	1126	S	180	50	54	55	55	61	Impact	57	3.3	0	0
Residence on US 67	1164	N	200	65	55	59	55	61	Impact	60	5.5	1	0
Residences North of Main Street (Rowlett)	1183	N	65	35	55	56	55	61	Impact	59	3.6	1	0
Residences South of Main Street (Rowlett)	1179	S	140	45	55	58	55	61	Impact	60	4.9	4	0
Total:												**19**	**0**

1. Noise levels are based on Ldn and are measured in dBA. Noise levels are rounded to the nearest decibel except for the increase in noise level, which is given to the nearest one-tenth decibel to provide a better resolution for assessing noise impact.
2. The reported noise levels represent the highest noise levels for each location.
3. The existing noise level at this location does not include the late night freight train.

The results in Table 9 identify noise impacts for a total of 19 residences. All of the impacts are at the moderate impact level. The following are brief discussions of each impacted Category 2 land use area:

Parker Circle: These thirteen residences are located to the south of the tracks in the Rainbow Estates community. The projected noise impact is due to the proximity of the residences to the proposed LRT alignment. The residences on Davidson Street, to the east of Parker Circle, are located further from the proposed alignment, and are not projected to have noise impact.

Residence on US 67: This single residence is located to the north of the tracks, before downtown Rowlett. The noise impact is due to the speed of the LRT (65 mph) and the presence of the aerial structure at this location.

Residences North of Main Street (Rowlett): There is one existing residence located at the corner of Richards Street where noise impact is projected. The noise impact is due to the proximity of the residence to the proposed LRT alignment.

Residences South of Main Street (Rowlett): These four residences are located to the south of the proposed LRT alignment, just to the east of Rowlett Road. The projected noise impact at this location is due to the speed of the LRT (45 mph) and the presence of the aerial structure over Rowlett Road.

Similar to the Category 2 analysis, an assessment of noise impact for Category 3 receptors was also conducted. This assessment was based on a comparison of the existing ambient noise level with the predicted project noise levels in terms of the peak transit hour Leq. As indicated in Table 10, no impact is predicted at any of these locations.

Table 10. Noise Impacts for Category 3 Land Use

Location	Civil Stn	Dist. to near track (ft)	Speed (mph)	Exist. Noise Level[1]	Project Noise Level[1]			Impact Category	Total Noise Level[1,3]	Noise Level Increase[1,3]
					Pred.[2]	Impact Criteria				
						Imp	Sev			
Victory Baptist Church	972	125	55	68	53	67	73	None	68	0.1
Mt. Hebron Baptist Church	1016	150	65	60	49	63	68	None	61	0.3
Pentecost Church of God parcel	1021	150	65	60	53	63	68	None	61	0.7
Kingdom Hall of Jehovah's Witnesses	1196	230	20	47	40	58	64	None	48	0.7
First Baptist Church of Rowlett	1203	235	20	47	39	58	64	None	48	0.7
Rowlett Methodist Church	1206	240	20	47	39	58	64	None	48	0.7

1. Noise levels are based on Peak Hour Leq and are measured in dBA. Noise levels are rounded to the nearest decibel except for the increase in noise level, which is given to the nearest one-tenth decibel to provide a better resolution for assessing noise impact.

6.2 Vibration Assessment

For the proposed LRT Alternative, the estimated root mean square (RMS) velocity levels (VdB re 1 micro-in./sec.) for sensitive receptors at representative distances are provided in Tables 11 and 12. These tables summarize the results of the analysis in terms of anticipated exceedances of the FTA criteria for "frequent events" (defined as more than 70 events per day). The criteria are discussed in more detail in Chapter 3.

Vibration-sensitive locations along the proposed alignment are listed in Table 11 for Category 2 land use and in Table 12 for Category 3 land use. Each table lists the locations, the civil station, the distance to the near track, and the projected LRT speed at each location. In addition, the predicted project vibration level and the impact criterion level are indicated along with the number of impacts projected for each receptor or receptor group.

Table 11. Vibration Impacts for Category 2 Land Use

Location[1]	Civil Stn	Dist to Near Track (ft)	Speed (mph)	Project Vibration Level[2]	Vibration Impact Criterion[2]	# of Impacts
Parker Circle	997	125	55	75	72	13
Davidson Street	1003	135	65	71	72	0
Palomino Drive	1126	150	65	68	72	0
Residence on US 67	1164	230	20	60	72	0
Residences North of Main Street (Rowlett)	1183	235	20	71	72	0
Residences South of Main Street (Rowlett)	1179	240	20	69	72	0
Total:						**13**

1. Vibration levels are measured in VdB referenced to 1 µin/sec.
2. The reported vibration level represents the maximum vibration level for each location.

The results in Table 11 indicate the potential for vibration impact at thirteen residences in one area as follows:

Parker Circle: These thirteen residences are located to the south of the tracks in the Rainbow Estates community. The projected vibration impact is due to the proximity of the residences to the proposed LRT alignment. The residences on Davidson Street, to the east of Parker Circle, are located further from the proposed alignment, and are not projected to have vibration impact.

Similar to the Category 2 analysis, an assessment of vibration impact for Category 3 receptors was also conducted. As shown in Table 12, no potential impacts were identified for Category 3 receptors.

Table 12. Vibration Impacts for Category 3 Land Use

Location[1]	Civil Stn	Dist to Near Track (ft)	Speed (mph)	Project Vibration Level[2]	Vibration Impact Criterion[2]	# of Impacts
Victory Baptist Church	972	125	55	70	75	0
Mt. Hebron Baptist Church	1016	250	65	61	75	0
Pentecost Church of God parcel	1021	150	65	69	75	0
Kingdom Hall of Jehovah's Witnesses	1196	230	20	59	75	0
First Baptist Church of Rowlett	1203	235	20	58	75	0
Rowlett Methodist Church	1206	240	20	58	75	0
Total:						**0**

1. Vibration levels are measured in VdB referenced to 1 μin/sec.
2. The reported vibration level represents the maximum vibration level for each location.

6.3 Construction Noise and Vibration Assessment

Based on the criteria in Section 4.3 and the noise projection in Table 10, and assuming that construction noise is reduced by 6 decibels for each doubling of distance from the center of the site, screening distances for potential construction noise impact can be estimated. These estimates suggest that the potential for construction noise impact will be minimal for commercial and industrial land use, with impact screening distances of 70 feet and 40 feet, respectively. Even for residential land use, the potential for temporary construction noise impact would be limited to locations within about 125 feet of the corridor. However, the potential for noise impact from nighttime construction could extend to residences as far as 400 feet. Potential construction noise impacts will be evaluated during final design.

7 MITIGATION OF NOISE AND VIBRATION IMPACTS

7.1 Noise Mitigation Measures

Potential mitigation measures for reducing noise impacts from LRT operations are described below.

- **Noise Barriers** - This is a common approach to reducing noise impacts from surface transportation sources. The primary requirements for an effective noise barrier are that (1) the barrier must be high enough and long enough to break the line-of-sight between the sound source and the receiver, (2) the barrier must be of an impervious material with a minimum surface density of 4 lb/sq. ft. and (3) the barrier must not have any gaps or holes between the panels or at the bottom. Because numerous materials meet these requirements, the selection of materials for noise barriers is usually dictated by aesthetics, durability, cost and maintenance considerations. Depending on the proximity of the barrier to the tracks and on the track elevation, transit system noise barriers typically range in height from between four and eight feet.
- **Relocation of Crossovers or Special Trackwork at Crossovers** - Because the impacts of wheels over rail gaps at track crossover locations, or turn-outs for passing tracks, increases vibration by about 6 dBA, crossovers are a major source of vibration noise impact when they are located in sensitive areas. If crossovers cannot be relocated away from residential areas, another approach is to use spring-rail or moveable point frogs in place of standard rigid frogs at turnouts. These devices allow the flangeway gap to remain closed in the main traffic direction for revenue service trains.
- **Building Sound Insulation** - Sound insulation to improve the outdoor-to-indoor noise reduction has been widely applied around airports and has seen limited application for transit projects. Although this approach has no effect on noise in exterior areas, it may be the best choice for sites where noise barriers are not feasible or desirable, and for buildings where indoor sensitivity is of most concern. Substantial improvements in building sound insulation (on the order of 5 to 10 dBA) can often be achieved by adding an extra layer of glazing to the windows, by sealing any holes in exterior surfaces that act as sound leaks, and by providing forced ventilation and air-conditioning so that windows do not need to be opened.
- **Grade Separation, Quiet Zones or Closure of Grade Crossings** – Because the sounding of horns is the dominant noise source for trains near grade crossings, the reduction or elimination of horn use can be an extremely effective noise mitigation measure. Grade crossing noise can be eliminated by grade separations, by closure of grade crossings or by implementation of FRA approved quiet zones. The FRA has published an Interim Final Rule on the Use of Locomotive Horns at Highway-Rail Grade Crossings that may allow this under certain conditions. The rule, described in 49 CFR Parts 222 and 229 (December 18, 2003), would permit local public authorities to establish “quiet zones” in which train horns may not be routinely sounded, provided that adequate supplementary safety measures (i.e., four quadrant gates and channelization arrangements) are applied at the crossings to compensate for the absence of the train horn. The rule also authorizes the use of automated wayside horns at crossings with flashing lights and gates as a substitute for the train horn. While activated by the approach of trains, these devices are mounted at the grade crossings, thereby limiting the horn noise exposure area to the immediate vicinity. Although the establishment of quiet zones or the use of wayside horns would be very effective noise mitigation measures, considerable design analysis and coordination efforts with the railroad and local communities along the corridor will be required to determine if these measures are feasible. In addition to reducing the noise generated by the LRT operations, a quiet zone would also eliminate current horn noise from freight trains, providing an additional benefit to the surrounding community.

As discussed in Section 4.1, FTA requires that severe impacts be mitigated unless there are no practical means to do so. While mitigation is encouraged at the moderate impact level, the implementation of such mitigation will depend on other project-specific factors. These other factors can include the projected increase over existing noise levels, the types and number of noise-sensitive land uses affected, existing outdoor-to-indoor sound insulation and the cost-effectiveness of mitigating noise to more acceptable levels. Consistent with DART policy on prior FTA-funded rail extensions, noise mitigation is only considered at locations where a noise exposure increase of three decibels or more is projected.

Based on the results of the noise assessment, mitigation measures have been identified for the moderate impacts where there is a projected three decibel increase in the noise level. The primary mitigation measure would be the construction of sound barrier walls to shield areas where impact is projected. Table 13 indicates the approximate noise barrier locations, lengths, and side of tracks as well as the number impacts that would be reduced. Typical barrier height is about eight feet, and can be somewhat less on elevated structures. Exact height and configuration depend on specific conditions, and will be determined during final design.

Table 13. Noise Mitigation Locations

Location	Side of Track	Civil Station	Height (Feet)	Length (Feet)	Impacts[1]	
					Without Mitigation	With Mitigation
Residence on US 67	N	1162-1167	4	500	1	0
Residences North of Main Street (Rowlett)	N	1181-1185	8	400	1	0
Residences South of Main Street (Rowlett)	S	1175-1182	4/8[2]	700	4	0
Total:					**6**	**0**

1. Impacts that are required to be mitigated in accordance with the DART noise mitigation policy.
2. The barrier should be 4 feet high on the elevated structure, with a transition to 8 feet high at grade.

7.2 Vibration Mitigation Measures

The assessment assumes that the vehicle wheels and track are maintained in good condition with regular wheel truing and rail grinding. Beyond this, there are several approaches to reduce ground-borne vibration from LRT operations, as described below.

- **Ballast Mats** - A ballast mat consists of a pad made of rubber or rubber-like material placed on an asphalt or concrete base with the normal ballast, ties and rail on top. The reduction in ground-borne vibration provided by a ballast mat is strongly dependent on the frequency content of the vibration and design and support of the mat.
- **Tire Derived Aggregate (TDA)** – Tire derived aggregate or shredded tires consists of installing a layer of tire shreds, typically about one foot thick and encased in geo-textile material, in a trench and covering it with a one-foot thick layer of sub-ballast and a one-foot thick layer of ballast to support the track. Preliminary tests suggest that the vibration attenuation properties of the tire shreds are midway between that of ballast mats and that of floating slab track beds. Thus far, this treatment has only recently been installed on two U.S. light rail transit systems, in San Jose and in Denver. Although this is a low-cost option, the effectiveness of these shredded tire installations has not yet been tested under train operating conditions and the long-term endurance and vibration isolation performance of this treatment is unknown.
- **Resilient Rail Fasteners** – Resilient fasteners can be used to provide vibration isolation between rails and concrete slabs for direct fixation track on aerial structures or in tunnels. These fasteners include a soft, resilient element to provide greater vibration isolation than standard rail fasteners in the vertical direction.

- **Relocation of Crossovers or Special Trackwork** - Because the impacts of wheels over rail gaps at track crossover locations, or turn-outs for passing tracks, increases vibration by about 10 dBA, crossovers are a major source of vibration impact when they are located in sensitive areas. If crossovers cannot be relocated away from residential areas, another approach is to use spring-rail or moveable point frogs in place of standard rigid frogs at turnouts. These devices allow the flangeway gap to remain closed in the main traffic direction for revenue service trains.
- **Floating Slabs** - Floating slabs consist of thick concrete slabs supported by resilient pads on a concrete foundation; the tracks are mounted on top of the floating slab. Most successful floating slab installations are in subways, and their use for at-grade track is rare. Although floating slabs are designed to provide vibration reduction at lower frequencies than ballast mats, they are extremely expensive.
- **Property Acquisitions or Easements** – Additional options for avoiding vibration impacts (and noise impacts also) are for the transit agency to purchase residences likely to be impacted by train operations or to acquire easements for such residences by paying the homeowners to accept the future train vibration conditions. These approaches are usually taken only in isolated cases where other mitigation options are infeasible, impractical, or too costly.

Vibration impacts that exceed FTA criteria are considered to be significant and to warrant mitigation, if reasonable and feasible. Table 14 indicates the locations along the corridor where mitigation has been recommended to reduce the vibration levels. At a minimum, mitigation would require the installation of ballast mats or TDA. However, more extensive mitigation may be required to adequately reduce the vibration levels to below the FTA vibration impact criterion. Vibration mitigation will be addressed in more detail during final design. The vibration mitigation locations in Table 14 are preliminary only, and will be refined based on a more complete vibration analysis with more detailed engineering information.

Table 14. Vibration Mitigation Locations

Location	Impacts	Civil Station	Length (Feet)
Parker Circle	13	994-1004	1000
Total:			**1000**

7.3 Construction Noise and Vibration Mitigation Measures

Construction noise varies greatly depending on the construction process, type and condition of equipment used, and layout of the construction site. Many of these factors are traditionally left to the contractor's discretion, which makes it difficult to accurately estimate levels of construction noise. Overall, construction noise levels are governed primarily by the noisiest pieces of equipment. For most construction equipment, the engine, which is usually diesel, is the dominant noise source. This is particularly true of engines without sufficient muffling. For special activities such as impact pile driving and pavement breaking, noise generated by the actual process dominates.

Temporary noise during construction of the new tracks and the stations has the potential of being intrusive to residents near the construction sites. Most of the construction would consist of site preparation and laying new track, and would only occur during daytime hours.

Construction activities will be carried out in compliance with all applicable local noise regulations. In addition, specific residential property line noise limits will be developed during final design and included in the construction specifications for the project, and noise monitoring will be performed during construction to verify compliance with the limits. This approach allows the contractor flexibility to meet

the noise limits in the most efficient and cost-effective manner. Noise control measures that will be applied as needed to meet the noise limits include the following:

- Avoiding nighttime construction in residential neighborhoods.
- Using specially quieted equipment with enclosed engines and/or high-performance mufflers.
- Locating stationary construction equipment as far as possible from noise-sensitive sites.
- Constructing noise barriers, such as temporary walls or piles of excavated material, between noisy activities and noise-sensitive receivers.
- Re-routing construction-related truck traffic along roadways that will cause the least disturbance to residents.
- Avoiding impact pile driving near noise-sensitive areas, where possible. Drilled piles or the use of a sonic or vibratory pile driver are quieter alternatives where the geological conditions permit their use. If impact pile drivers must be used, their use will be limited to the periods between 8:00 a.m. and 5:00 p.m. on weekdays.

With the incorporation of the appropriate noise mitigation measures, impacts from construction-generated noise should not be significant. To provide added assurance, a complaint resolution procedure should also be put in place to rapidly address any noise problems that may develop during construction.

Construction activities that could cause intrusive vibration include vibratory compaction, jackhammers, and use of tracked vehicles such as bulldozers. The most serious sources of construction vibration are blasting and pile driving. There will be no blasting for this project and only limited, if any, pile driving. Avoiding vibration impacts during construction can be achieved through numeric limits in the construction specifications.

APPENDIX A MEASUREMENT SITE PHOTOGRAPHS

Figure A-1. Site LT-1, Single-family residence at 318 Davidson Street, Garland

Figure A-2. Site LT-2, Single-family residence at 1918 Palamino Drive, Rowlett

Figure A-3. Site LT-3, Kingdom Hall of Jehovah's Witnesses, Rowlett

Figure A-4. Site ST-1, Victory Baptist Church, Garland

Figure A-5. Site ST-2, Mt. Hebron Baptist Church, Garland

Figure A-6. Site V-1, Mt. Hebron Baptist Church, Garland

Figure A-7. Site V-2, DART Park & Ride, Rowlett

APPENDIX B NOISE MEASUREMENT DATA

Site LT-1: Single-family residence at 318 Davidson Street, Garland

Ldn: 68 dBA

Table B-1. Noise Survey Results, Site LT-1

Start Hour	Leq	Lmax	Lmin	L1	L10	L33	L50	L90	L99
13:00:00	54.8	75.1	41.7	67.3	56.4	47.7	46	43.5	42.1
14:00:00	47.5	60	40.2	55.6	50	47.2	46	42.6	41
15:00:00	50.4	69.6	40.7	60.7	52.3	49.2	47.5	43.6	42.1
16:00:00	47.9	64.5	40.5	59.4	49.3	45.2	44.2	42.2	41.1
17:00:00	51.6	71.8	41.5	60.2	53.9	51	49.5	44.7	42.9
18:00:00	53.8	70.5	48.7	60.8	55	53.4	52.7	51	49.5
19:00:00	52.5	65.2	45.5	57.7	54.5	52.6	51.9	50	48.3
20:00:00	52.4	65.4	45.4	57.8	54.3	52.6	51.7	49.4	47.3
21:00:00	52	69.5	44.1	59	53.9	51.7	50.6	47.8	46.1
22:00:00	48.5	61.8	41.4	55.2	51.4	48.4	47.1	44.1	42.3
23:00:00	70	101.2	38.6	80	61.9	49.9	46.4	42.2	40.1
0:00:00	63.8	85.7	36.3	74.7	68.6	57.7	50.2	40.4	37.6
1:00:00	49.4	74.4	36.2	61.4	47.9	42.4	41.1	38.3	37
2:00:00	47.9	69.3	34.8	61.2	46.9	43.1	41.6	38.4	35.8
3:00:00	46.7	70.7	35.7	58.3	46.8	44.4	43.1	39.1	37
4:00:00	56.5	78.8	42.1	70.5	51.9	48.5	47	44.1	42.6
5:00:00	52.3	71	45.1	58.3	53.9	52.4	51.4	48.6	46.5
6:00:00	57.7	74	51.6	66.9	60	56.5	55.6	53.4	52.1
7:00:00	54.5	64.6	50.7	58	55.9	54.8	54.3	52.7	51.3
8:00:00	53.3	72.1	45.1	63.6	54	51.9	50.8	47.1	45.5
9:00:00	48.5	64.3	41.6	57.7	50.8	46.9	45.8	43.4	42.1
10:00:00	45.8	63.8	39.6	54.9	47.5	44.6	43.7	41.8	40.5
11:00:00	48.5	65.4	41.1	57.7	50.7	47.5	46.3	44	42.4
12:00:00	49.2	65.2	43	57.4	51.2	48.6	47.6	45.4	44

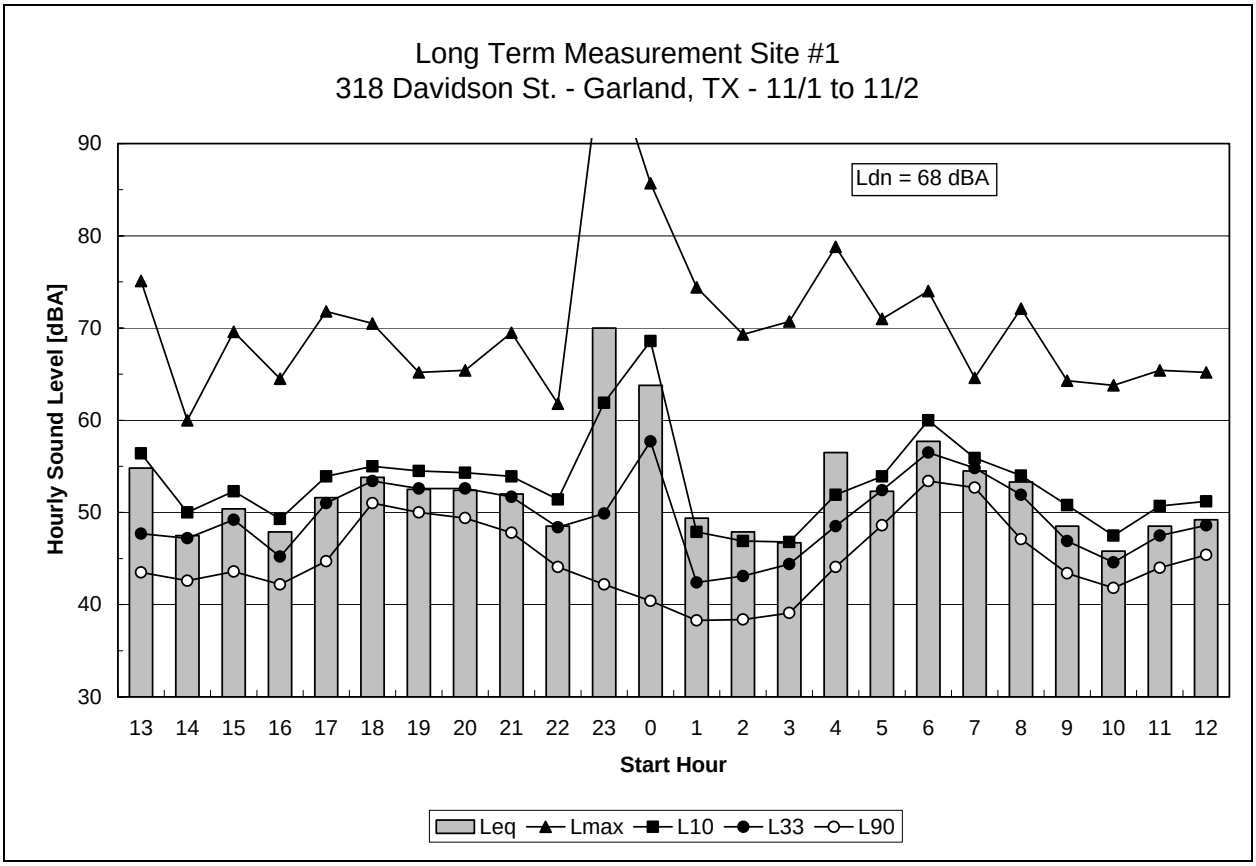

Figure B-1. Noise Survey Results, Site LT-1 – 318 Davidson Street, Garland

Site LT-2: Single-family residence at 1918 Palamino Drive, Rowlett

Ldn: 54 dBA

Table B-2. Noise Survey Results, Site LT-2

Start Hour	Leq	Lmax	Lmin	L1	L10	L33	L50	L90	L99
15:00:00	50.8	69.8	40.2	63.4	51.5	46.7	45	42	41
16:00:00	51.6	69.8	39.4	64.3	52.1	46.9	45.3	42	40.3
17:00:00	49.2	61	42.3	56	51.6	49	47.9	45.4	43.3
18:00:00	50.2	62	46	56.4	51.8	50.3	49.6	48.1	47.1
19:00:00	49.2	61.3	45.3	54.4	50.9	49.3	48.5	46.8	46
20:00:00	48.5	61.2	44.3	55	50.4	48.4	47.6	45.7	45
21:00:00	48.1	59.6	44.9	52	49.7	48.3	47.7	46.3	45.4
22:00:00	46.5	54.5	42.5	53.1	48.3	46.6	45.9	43.6	42.5
23:00:00	45.2	55.6	41.6	50.5	46.8	45.1	44.6	43.2	42.1
0:00:00	44.5	51.9	42.1	48.7	45.7	44.5	44.1	43.1	42.3
1:00:00	47.3	68.2	41.5	50.9	49.7	45.9	45	43.2	42.1
2:00:00	47.6	65.1	41.7	53.8	49.9	46.9	46.1	43.5	42.2
3:00:00	43.8	50.3	40.4	46.9	45.7	44.3	43.4	41.8	41
4:00:00	43.6	53.2	40.3	48.5	45.3	43.6	42.9	41.6	40.5
5:00:00	46.8	59.3	42.8	51	48.5	47	46.3	44.2	43.2
6:00:00	51.9	63.9	46.3	56	53.9	52.5	51.6	48.2	46.7
7:00:00	53.8	65.1	49.4	58.5	55.1	53.9	53.4	51.7	50.3
8:00:00	51	56.7	46	55	52.9	51.4	50.6	48.4	46.8
9:00:00	49	65.4	41.9	57.9	51.3	48.1	46.6	43.5	42.4
10:00:00	44.9	60.8	40.2	52.6	47.6	44.1	43.1	41.5	40.4
11:00:00	46.7	72.9	40.1	54	49	45.8	44.6	42.2	41
12:00:00	47.4	68.2	40.6	56.3	49.7	45.9	44.6	42.2	41.1
13:00:00	50.2	73.1	41.4	60.2	52.1	48.1	46.8	43.7	42.2
14:00:00	49	70.4	41.4	56.4	51.1	47.7	46.5	43.2	41.6

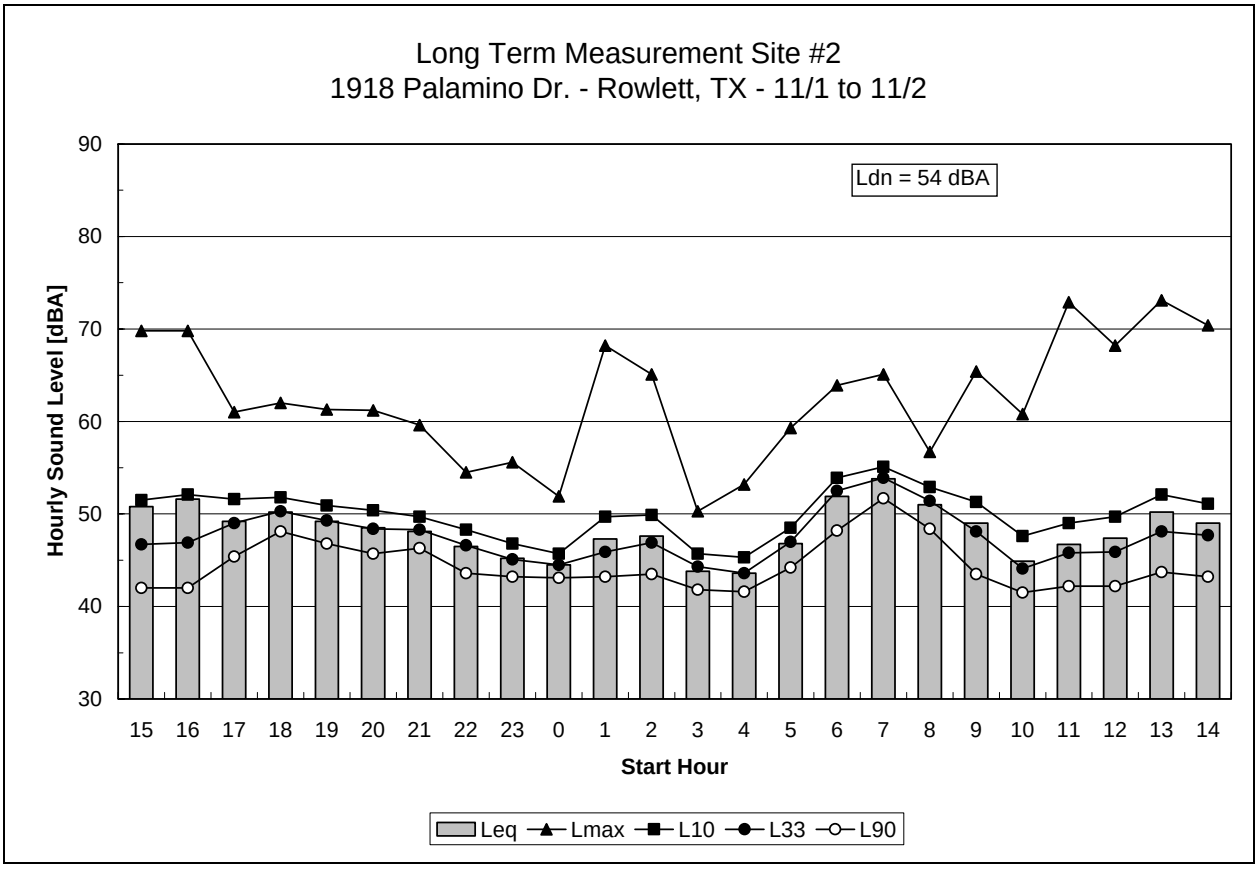

Figure B-2. Noise Survey Results, Site LT-2 – 1918 Palamino Drive, Rowlett

Site LT-3: Kingdom Hall of Jehovah's Witnesses, Rowlett

Ldn: 55 dBA

Table B-3. Noise Survey Results, Site LT-3

Start Hour	Leq	Lmax	Lmin	L1	L10	L33	L50	L90	L99
13:00:00	52	74.5	42.5	62.4	53.1	48.8	47.5	44.9	43.5
14:00:00	52.8	72.2	42.6	61.5	55.7	51.6	49.4	45.1	43.8
15:00:00	49.9	61.7	42.7	58.1	52.9	49.4	47.8	45	43.4
16:00:00	47.1	59.3	42.5	53	48.7	47	46.4	44.7	43.3
17:00:00	50.3	65.1	45.1	57.4	52.8	50	48.7	46.7	45.4
18:00:00	57.4	66.4	51.4	59.3	58.7	58	57.6	54.1	52.2
19:00:00	54.9	68.4	49.3	59	57.9	55.9	52.6	50.8	50.1
20:00:00	51.9	58.9	50	53.9	52.8	52	51.7	51.1	50.2
21:00:00	51	62.3	47.2	54.4	52.2	51.4	50.9	49.2	48.1
22:00:00	48.4	56.5	46.2	50.8	49.5	48.6	48.1	47.2	46.6
23:00:00	46.5	60.7	43.2	50	47.9	46.8	46.1	44.2	43.3
0:00:00	43.8	54.2	40.9	47.4	44.9	44.1	43.6	42.2	41.2
1:00:00	42.8	58.9	39.8	47.3	44.9	42.7	42.1	40.8	40.1
2:00:00	45.2	62.9	41.1	51.1	46	45.2	44.7	42.7	41.5
3:00:00	41.7	55.9	37.3	46.9	43.6	42	40.8	39.2	38.1
4:00:00	41.8	53.2	38.2	46.2	43.2	41.9	41.5	40	39
5:00:00	45.7	54.2	40.7	50.3	47.7	45.8	45.2	43.1	41.7
6:00:00	52.2	62.8	45.9	57	54	52.5	51.8	49.3	46.9
7:00:00	53	64.7	48.8	58.9	54.1	52.8	52.4	51	49.8
8:00:00	52.8	69.9	46.6	59.9	54.5	52.1	51.4	48.9	47.3
9:00:00	52.3	66.3	46.3	59.7	54.9	52.1	50.9	47.9	46.6
10:00:00	52.9	65.2	46.6	59.1	55.7	53	51.8	49	47.4
11:00:00	55.3	78.5	44.9	62.2	55.9	53.2	51.7	48	45.8
12:00:00	54.5	67.9	46	59.9	56.9	54.4	53.5	50.5	46.8

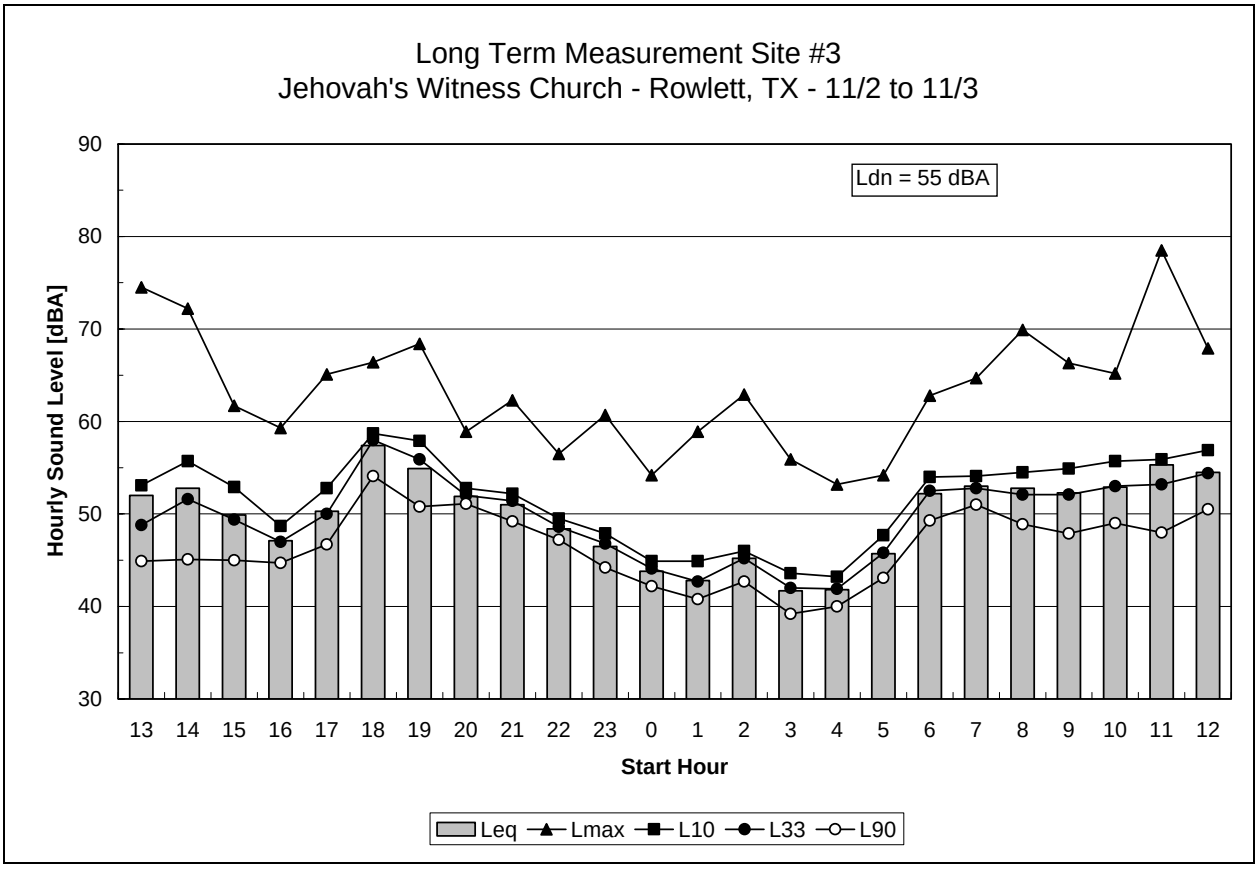

Figure B-3. Noise Survey Results, Site LT-3 – Kingdom Hall of Jehovah's Witnesses

APPENDIX C VIBRATION MEASUREMENT DATA AND PROJECTIONS

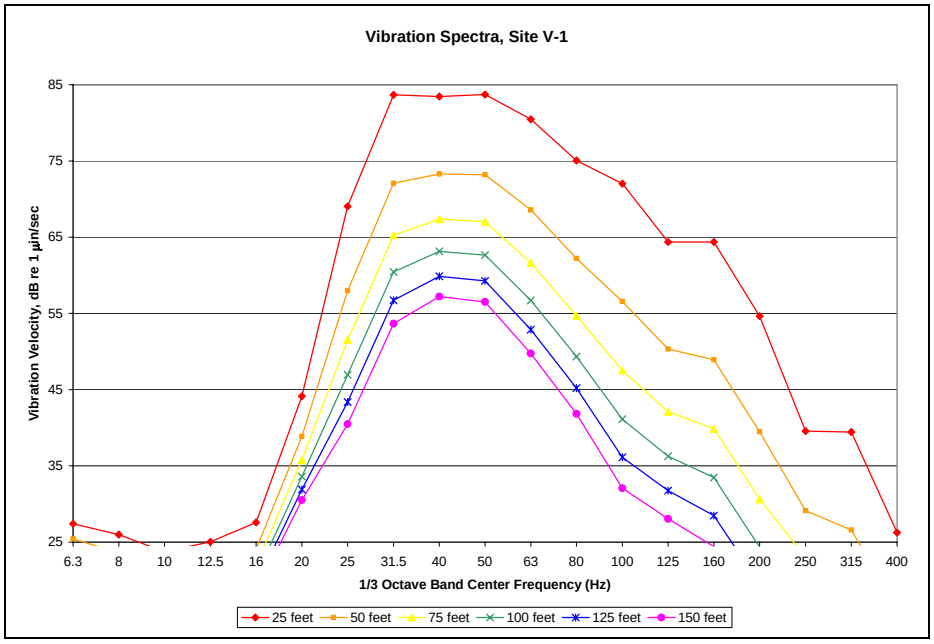

Figure C-1. Projected LRT Vibration Spectra, Site V-1, 40 mph

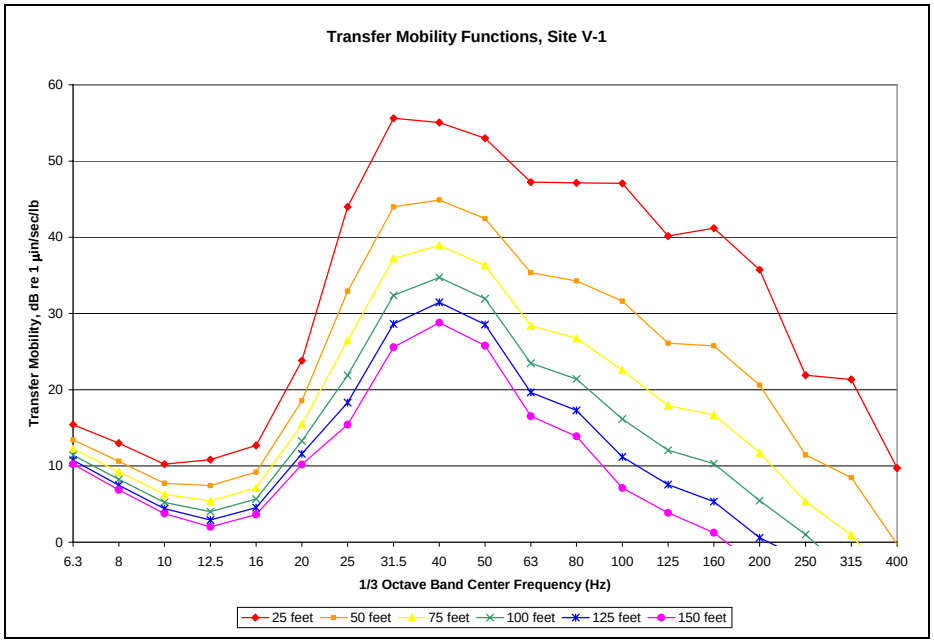

Figure C-2. Representative Transfer Mobility Functions, Site V-1

Table C-1. Line Source Transfer Mobility Coefficients, Site V-1

Frequency (Hz)	A	B	C
6.3	24.7	-6.7	0.0
8	24.0	-7.9	0.0
10	21.9	-8.3	0.0
12.5	26.7	-11.4	0.0
16	29.0	-11.7	0.0
20	48.3	-17.5	0.0
25	95.3	-36.7	0.0
31.5	109.5	-38.6	0.0
40	102.2	-33.7	0.0
50	101.8	-35.0	0.0
63	102.4	-39.5	0.0
80	106.8	-42.7	0.0
100	118.8	-51.3	0.0
125	105.4	-46.6	0.0
160	112.9	-51.3	0.0
200	106.1	-50.3	0.0
250	70.4	-34.7	0.0
315	81.1	-42.7	0.0
400	56.1	-33.2	0.0

$$TM = A + B*\log(d) + C*(\log(d))^2$$

Where:

TM = Transfer Mobility in dB re 1µin/sec/lb/(ft)^1/2

d = Distance in feet

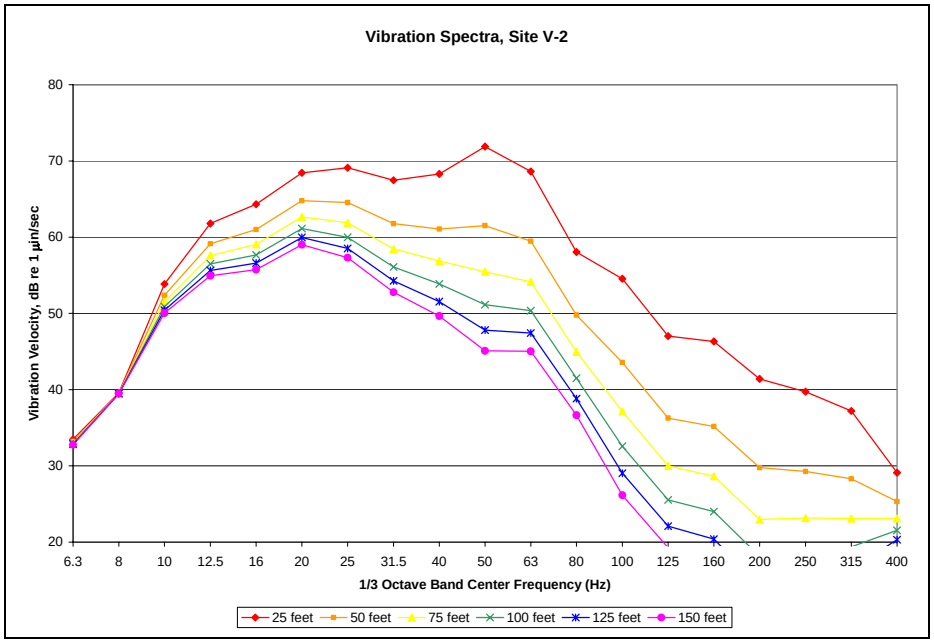

Figure C-3. Projected LRT Vibration Spectra, Site V-2, 40 mph

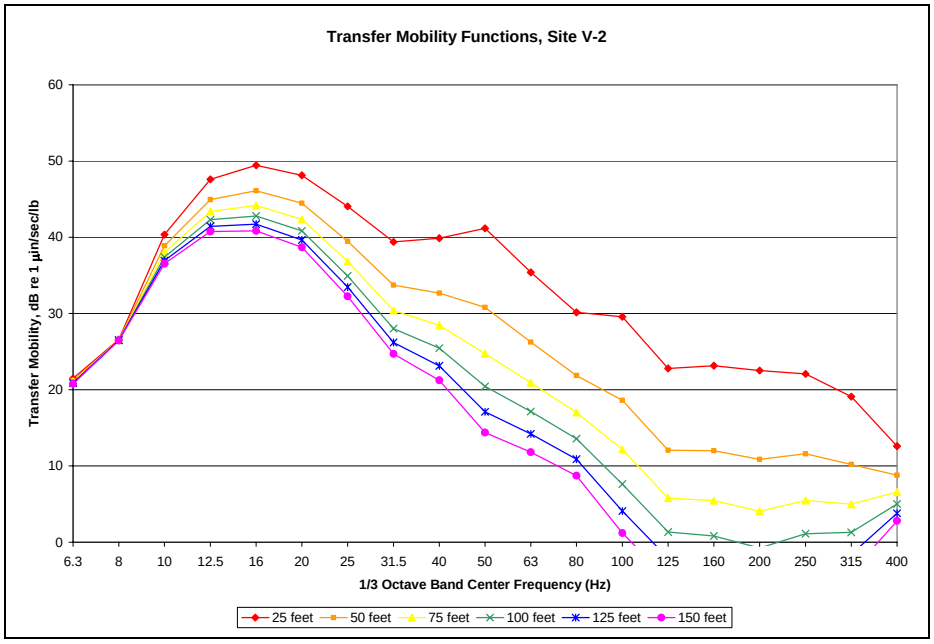

Figure C-4. Representative Transfer Mobility Functions, Site V-2

Table C-2. Line Source Transfer Mobility Coefficients, Site V-2

Frequency (Hz)	A	B	C
6.3	22.8	-0.9	0.0
8	26.8	-0.1	0.0
10	47.2	-4.9	0.0
12.5	59.9	-8.8	0.0
16	64.9	-11.0	0.0
20	65.0	-12.1	0.0
25	65.2	-15.2	0.0
31.5	65.8	-18.9	0.0
40	73.4	-23.9	0.0
50	89.3	-34.4	0.0
63	77.8	-30.3	0.0
80	68.6	-27.5	0.0
100	80.6	-36.5	0.0
125	72.6	-35.6	0.0
160	75.0	-37.1	0.0
200	76.6	-38.7	0.0
250	70.7	-34.8	0.0
315	60.4	-29.6	0.0
400	30.2	-12.6	0.0

$$TM = A + B*\log(d) + C*(\log(d))^2$$

Where:

TM = Transfer Mobility in dB re 1µin/sec/lb/(ft)^1/2

d = Distance in feet

Appendix D
List of References

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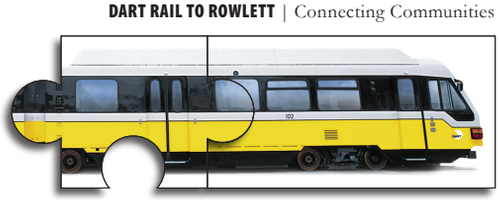

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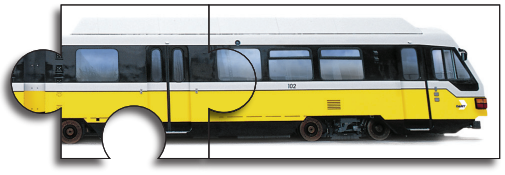

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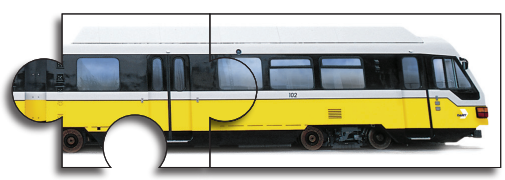

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