

3.11 Utilities

Impact Assessment

Over the past eighty plus years, cities and franchise utility companies have constructed significant utilities that cross and parallel the existing rail alignment and most of the utility lines remain in service today. Existing utilities shown on the Existing Utility Composite and Modified Utility Composite drawings are compiled from record drawings from, but not limited to, the following sources:

- City of Garland Water Lines
- City of Garland Sanitary Sewer Lines
- City of Garland Storm Drain Lines
- City of Rowlett Water Lines
- City of Rowlett Sanitary Sewer Lines
- City of Rowlett Storm Drain Lines

Generally utilities within the DART ROW are classified into two categories: utilities crossing DART trackways and utilities on the DART ROW clear of tracks. Most underground utilities within the ROW for the proposed DART Rail to Rowlett identified fall into the category of utilities crossing DART trackways. See **Table 3-17** for an inventory of existing underground utilities including storm drains and culverts crossing DART tracks.



Table 3-17: Existing Underground Utilities Crossing DART Trackways

Utility		Guideway	
Description	Owner	NB Station	Crossing Type
STORM DRAIN CROSSINGS			
8' Box Culvert	City of Garland	949+60	At Grade
48" RCP (Partly Cased)	City of Garland	954+94	At Grade
60" RCP (Partly Cased)	City of Garland	955+10	At Grade
48" RCP	City of Garland	958+84	Elevated Crossing
30" RCP	City of Garland	962+31	Aerial Crossing
24" RCP	City of Garland	964+98	Aerial Crossing
48" RCP to 54" RCP	City of Garland	966+36	Aerial Crossing
42" RCP	TxDOT	973+30	Aerial Crossing
4'x3' Box Sewer	TxDOT	974+50	Aerial Crossing
24" RCP	TxDOT	974+94	Aerial Crossing
24" to 30" RCP	City of Garland	979+87	At Grade
Concrete Arch with D/S 60" CMP ext.	DART	1015+00	Elevated Crossing
30" RCP	TxDOT	1019+64	Aerial Crossing
Small Concrete Arch Culvert	DART	1024+30	Elevated Crossing
7'x5' Arch Culvert	DART	1036+92	At Grade
36" RCP	City of Garland	1051+56	At Grade
33" RCP	City of Garland	1051+92	At Grade
24" RCP	City of Garland	1061+64	At Grade
Unknown Drainage Structure	DART	1115+85	At Grade
48" CMP	City of Rowlett	1161+25	Aerial Crossing
4' x 2' Box Culvert	City of Rowlett	1162+42	Aerial Crossing
60" CMP	City of Rowlett	1162+58	Aerial Crossing
60" CMP	City of Rowlett	1162+63	Aerial Crossing
3'x3' RCB (Part of Station Design)	DART	1189+68	At Grade
WATER LINE CROSSINGS			
16" Water Line	City of Garland	966+68	Aerial Crossing
24" Water Line	City of Garland	988+34	At Grade
16" Water Line	City of Garland	1028+20	Elevated Crossing
8" Water Line (Abandoned)	City of Garland	1072+04	At Grade
12" Water (Partly Cased)	City of Garland	1072+21	At Grade
8" Water Line (Partly Cased)	City of Rowlett	1122+71	At Grade
12" Water Line	City of Rowlett	1162+13	Aerial Crossing
8" Water Line	City of Rowlett	1174+18	Aerial Crossing



Table 3-17: Existing Underground Utilities Crossing DART Trackways (continued)

Utility		Guideway	
Description	Owner	NB Station	Crossing Type
WATER LINE CROSSINGS (CONTINUED)			
6" Water Line	City of Rowlett	1174+30	Aerial Crossing
16" Water Line (Cased)	City of Rowlett	1174+40	Aerial Crossing
8" Water Line	City of Rowlett	1183+13	Aerial Crossing
15" SS (Abandoned)	City of Garland	952+24	At Grade
15" SS (Cased--Perpendicular)	City of Garland	952+64	At Grade
15" SS (Partly Cased)	City of Garland	956+46	Elevated Crossing
8" SS	City of Garland	967+08	Aerial Crossing
15" VCT SS	City of Garland	1015+92	Elevated Crossing
36" RCP SS	City of Garland	1036+03	At Grade
8" SS (Abandoned)	City of Garland	1037+12	At Grade
12" SS (Partly Cased)	City of Garland	1071+75	At Grade
36" SS (Cased)	City of Garland	1074+08	Elevated Crossing
48" RCP SS (Bored and Grouted)	City of Garland	1092+70	Aerial Crossing
36" Ductile Iron SS (Cased)	City of Garland	1099+55	Aerial Crossing
8" PVC SS (Cased)	City of Rowlett	1122+05	At Grade
8" Sewer Service (OL "D" 8")	City of Rowlett	1137+50	At Grade
8" Sewer Service (OL "D" 8")	City of Rowlett	1140+40	At Grade
10" VCT SS	City of Rowlett	1161+55	Aerial Crossing
6" SS	City of Rowlett	1174+14	Aerial Crossing
12" VCT SS	City of Rowlett	1174+83	Aerial Crossing
18" SS (Part of Station Design)	City of Rowlett	1189+68	At Grade
6" SS	City of Rowlett	1183+72	At Grade
GAS LINE CROSSINGS			
6" Gas Line		952+66	At Grade
2" Gas Line		966+12	Aerial Crossing
4" Gas Line		966+24	Aerial Crossing
6" Gas Line		1071+70	At Grade
Gas Line		1122+24	At Grade
Gas Line		1162+15	Aerial Crossing
Gas Line		1183+28	At Grade
UG ELECTRIC CROSSINGS			
2-2" PVC (Partly Cased)		1071+90	At Grade
2-4" PVC (Cased)		1072+87	Elevated Crossing
UG TELEPHONE CROSSINGS			
Underground Telephone Line		1028+68	Elevated Crossing
UGT Line		1122+86	At Grade

Source: LOPEZGARCIA GROUP, 2006

Notes: SS=Sanitary Sewer VCT=Vitrified Clay Tile Pipe VC=Vitrified Clay Tile Pipe
 RCP=Reinforced Concrete Pipe PVC=Polyvinyl Chloride Pipe
 QL= (Assumed) Sanitary Sewer Service Line UGT Underground Telephone NB=North Bound



Remaining underground utilities fall under the category of Utilities on the DART ROW clear of tracks (**Table 3-18**).

Table 3-18: Existing Underground Utilities on DART ROW Clear of Tracks

Utility		Guideway	
		Beginning	Ending
Description	Utility Owner	NB Station	NB Station
STORM DRAINS ON ROW			
36" RCP Transitioning to 42" RCP	City of Garland	1071+33	1079+53
Box Culvert	City of Rowlett	1122+00	1122+42
18" CMP	City of Rowlett	1174+26	1174+85
22" CMP	City of Rowlett	1174+26	1174+94
WATER LINES ON ROW			
8" Water Line	City of Rowlett	1174+22	1183+08
SEWER LINES ON ROW			
18" VCT SS	City of Rowlett	1137+50	1152+85
12" D.I.P. Force Main SS	City of Rowlett	1152+85	1161+48
12" VCT SS	City of Rowlett	1162+80	1173+75
18"SS (Part of Station Design)	City of Rowlett	1189+43	1200+90
UG ELECTRIC ON ROW			
3" PVC (Casing)	City of Garland	966+10	967+00

Source: LOPEZGARCIA GROUP, 2006

Notes: RCP=Reinforced Concrete Pipe CMP=Corrugated Metal Pipe
 VCT=Vitrified Clay Tile Pipe SS=Sanitary Sewer DIP=Ductile Iron Pipe
 PVC=Polyvinyl Chloride Pipe NB=North Bound

The existing underground utilities crossing trackways and underground utilities on ROW clear of tracks along the MKT ROW from the DART Downtown Garland LRT Station to the proposed DART Downtown Rowlett LRT Station were reviewed to identify the utilities requiring relocation. Underground utility relocations are identified based on DART requirements of Section 6.8.1 of the *DART Light Rail Project Design Criteria Manual Volume 1 Facilities Design* (BASELINED VERSION). See Technical Memorandum Preliminary Drainage Study/Design R-1 Line Segment for storm water runoff, storm drain capacity, and culvert capacity preliminary design data. See **Table 3-19** for an inventory of underground utilities crossing DART trackways and **Table 3-20** for an inventory of underground utilities on ROW clear of tracks to be relocated.



Table 3-19: Underground Utility Crossing DART Trackway Relocations

Existing Crossing Location				Proposed Relocation
Description	Owner	NB Station	Crossing Type	Description
STORM DRAIN CROSSINGS				
24" to 30" RCP	City of Garland	979+87	At Grade	Replace with 2-42" CL IV RCP
	DART	998+05	At Grade	Add 1-84" CL IV RCP
Concrete Arch with D/S 60" CMP ext.	DART	1015+00	Elevated Crossing	Replace with 2-96" CL IV RCP
Small Concrete Arch Culvert	DART	1024+30	Elevated Crossing	Replace with 3-42" CL IV RCP
7'x5' Arch Culvert	DART	1036+92	At Grade	Replace with 4-60" CL IV RCP
36" RCP	City of Garland	1051+56	At Grade	Replace with 3-48" CL IV RCP
33" RCP	City of Garland	1051+92	At Grade	Modify to flow along track
24" RCP	City of Garland	1061+64	At Grade	Replace with 3-48" CL IV RCP
	DART	1071+90	At Grade	Add 1-24" CL IV RCP
36" RCP	City of Garland	1075+55	At Grade	Replace with 1-36" CL IV RCP
Unknown Drainage Structure	DART	1115+85	At Grade	Replace with 2-72" CL IV RCP
	DART	1134+05	At Grade	Add 2-54" CL IV RCP
	DART	1140+58	At Grade	Add 3-36" CL IV RCP
WATER LINE CROSSINGS				
24" Water Line	City of Garland	988+34	At Grade	Encase Existing 24" Water
16" Water Line	City of Garland	1028+20	Elevated Crossing	Replace Existing 16" Water
12" Water (Partly Cased)	City of Garland	1072+21	At Grade	Extend Casing for 12" Water
8" Water Line (Partly Cased)	City of Rowlett	1122+71	At Grade	Extend Casing for 8" Water



Table 3-19: Underground Utility Crossing DART Trackway Relocations (continued)

Existing Crossing Location				Proposed Relocation
Description	Owner	NB Station	Crossing Type	Description
SEWER LINE CROSSINGS				
15" SS (Partly Cased)	City of Garland	956+46	Elevated Crossing	Extend Casing for 15" SS
15" VCT SS	City of Garland	1015+92	Elevated Crossing	Encase Existing 15" SS
12" SS (Partly Cased)	City of Garland	1071+75	At Grade	Extend Casing for 12" SS
8" Sewer Service (OL "D" 8")	City of Rowlett	1137+50	At Grade	Encase Existing 8" SS
8" Sewer Service (OL "D" 8")	City of Rowlett	1140+40	At Grade	Encase Existing 8" SS
6" SS	City of Rowlett	1183+72	At Grade	Encase Existing 6" SS
GAS LINE CROSSINGS				
6" Gas Line		1071+70	At Grade	Encase Existing Gas Line
Gas Line		1122+24	At Grade	Encase Existing Gas Line
Gas Line		1183+28	At Grade	Encase Existing Gas Line
UG ELECTRIC CROSSINGS				
2-2" PVC (Partly Cased)		1071+90	At Grade	Extend Casing for 2-2" PVC
UG TELEPHONE CROSSINGS				
Underground Telephone Line		1028+68	Elevated Crossing	Encase Existing Telephone Line
UGT Line		1122+86	At Grade	Encase Existing Telephone Line

Source: LOPEZGARCIA GROUP, 2006

Notes: RCP=Reinforced Concrete Pipe CMP=Corrugated Metal Pipe D/S=Down Stream
 CL IV RCP=Class Four Reinforced Concrete Pipe SS=Sanitary Sewer
 QL "D"= (Assumed) Sanitary Sewer Service Line Diameter UGT=Underground Telephone
 NB=North Bound



Table 3-20: Underground Utilities on DART ROW Clear of Track Relocations

Existing Parallel Utility				Proposed Relocation
Description	Utility Owner	NB Station	NB Station	Description
		Beginning	Ending	
STORM DRAINS ON ROW				
36" RCP Transitioning to 42" RCP	City of Garland	1071+33	1079+53	Relocate with 36"RCP Trans to 66"RCP
Box Culvert	DART	1122+00	1122+42	Replace with 1-66"CL IV RCP
	DART	1121+82	1123+45	Add 2-66" CL IV RCP
WATER LINES ON ROW				
8" Water Line	City of Rowlett	1174+22	1183+08	Relocate with 8"Water Line
SEWER LINES ON ROW				
18"SS (Part of Station Design)	City of Rowlett	1189+43	1200+90	Part of Station Design
UG ELECTRIC ON ROW				
3" PVC (Casing)	City of Garland	966+10	967+00	Relocate with Traffic Signals

Source: LOPEZGARCIA GROUP, 2006

Notes: RCP=Reinforced Concrete Pipe CL IV RCP=Class Four Reinforced Concrete Pipe
 SS=Sanitary Sewer "D"= (Assumed) Sanitary Sewer Service Line Diameter
 UGT=Underground Telephone PVC=Polyvinyl Chloride Pipe NB=North Bound

Culvert replacements are the most significant relocations for the proposed DART Rail to Rowlett. Culvert crossing near line station 1015+46 replaces the existing concrete arch culvert with 60" corrugated metal pipe extension with 2-96" class four reinforced concrete pipe along with adding a new 1-84" class four reinforced concrete pipe crossing near line station 998+05 with the 84" reinforced concrete pipe curving to parallel to the track for a total length of approximately 1,765 feet with the pipe size increased to 96" reinforced concrete pipe for the last 44 feet to reduce the discharge outlet velocity. Most of the 36 crossing relocations consist of undertrack encasement extensions.

There are aerial cable crossings and paralleling cables overhanging the DART ROW that need to be evaluated for conflicts, and possible relocations including placement underground to eliminate conflicts with the proposed DART Rail to Rowlett Alignment. See **Table 3-21** for an inventory of existing aerial transmission lines crossing DART tracks. Some overhead wire crossings may require adjustment, however most recent railroad utility permits require clearance for overhead catenary equal or exceeding the DART minimum construction standards.



Table 3-21: Existing Aerial Transmission Lines Crossing DART Trackway

Utility		Guideway	
Description	Owner	NB Station	Crossing Type
345 kV Electric Transmission Line	TMPA	961+50	Elevated Track
138 kV Electric Transmission Line	GP&L	967+20	Elevated Track
138 kV Electric Transmission Line	GP&L	988+63	At Grade Track
138 kV Electric Transmission Line	GP&L	989+88	At Grade Track
138 kV Electric Transmission Line	TXU	1020+20	Elevated Track
138 kV Electric Transmission Line	GP&L	1027+55	Elevated Track

Source: LOPEZGARCIA GROUP, 2006

Notes: TXU=Texas Utilities TMPA=Texas Municipal Power Agency

Where utilities must be rebuilt or where new construction is warranted, work would be designed in conformance with requirements of the owning/operating utility company and government agency having jurisdiction. Utility line locations shown on the Existing Utility Composite and Modified Utility Composite drawings are taken from record drawings and are not field verified. Vertical invert elevations are taken from record drawings where available. The final designer is forewarned to field verify locations and of elevations of all existing utilities for design purposes.

The proposed DART Rail to Rowlett planned improvements require coordination with all utility companies to avoid conflicts.

Mitigation Treatments

An allowance is included in the project cost at the preliminary engineering level to cover relocation, protection, and/or consolidation of all utilities along the proposed DART Rail to Rowlett Alignment. The facilities to be relocated would be relocated prior to or protected during construction. In addition, utility relocation and protection would be closely coordinated with affected utility companies and designed to avoid any disruption in service.

3.12 Hazardous/Regulated Materials

Impact Assessment

This section presents the impact assessment for hazardous and regulated materials. The database search noted 166 citations of locations containing hazardous or regulated substances within the DART Rail to Rowlett Study Area (Banks 2006). These sites have the potential to impact construction of the proposed DART Rail to Rowlett, based on the type of facility listed, distance from the proposed construction in the corridor, soil types, and surface elevation gradients. Because the soils in the proposed DART Rail to Rowlett Study Area are

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