

- a. Shop Drawings
 - 1) Distributed to the City
 - 2) Copies
 - a) 8 copies for mechanical submittals
 - b) 7 copies for all other submittals
 - c) If Contractor requires more than 3 copies of Shop Drawings returned, Contractor shall submit more than the number of copies listed above.
- b. Product Data
 - 1) Distributed to the City
 - 2) Copies
 - a) 4 copies
- c. Samples
 - 1) Distributed to the Project Representative
 - 2) Copies
 - a) Submit the number stated in the respective Specification Sections.
3. Distribute reproductions of approved shop drawings and copies of approved product data and samples, where required, to the job site file and elsewhere as directed by the City.
 - a. Provide number of copies as directed by the City but not exceeding the number previously specified.

K. Submittal Review

1. The review of shop drawings, data and samples will be for general conformance with the design concept and Contract Documents. This is not to be construed as:
 - a. Permitting any departure from the Contract requirements
 - b. Relieving the Contractor of responsibility for any errors, including details, dimensions, and materials
 - c. Approving departures from details furnished by the City, except as otherwise provided herein
2. The review and approval of shop drawings, samples or product data by the City does not relieve the Contractor from his/her responsibility with regard to the fulfillment of the terms of the Contract.
 - a. All risks of error and omission are assumed by the Contractor, and the City will have no responsibility therefore.
3. The Contractor remains responsible for details and accuracy, for coordinating the Work with all other associated work and trades, for selecting fabrication processes, for techniques of assembly and for performing Work in a safe manner.
4. If the shop drawings, data or samples as submitted describe variations and show a departure from the Contract requirements which City finds to be in the interest of the City and to be so minor as not to involve a change in Contract Price or time for performance, the City may return the reviewed drawings without noting an exception.
5. Submittals will be returned to the Contractor under 1 of the following codes:
 - a. Code 1
 - 1) "NO EXCEPTIONS TAKEN" is assigned when there are no notations or comments on the submittal.
 - a) When returned under this code the Contractor may release the equipment and/or material for manufacture.
 - b. Code 2

- 1) "EXCEPTIONS NOTED". This code is assigned when a confirmation of the notations and comments IS NOT required by the Contractor.
 - a) The Contractor may release the equipment or material for manufacture; however, all notations and comments must be incorporated into the final product.
 - c. Code 3
 - 1) "EXCEPTIONS NOTED/RESUBMIT". This combination of codes is assigned when notations and comments are extensive enough to require a resubmittal of the package.
 - a) The Contractor may release the equipment or material for manufacture; however, all notations and comments must be incorporated into the final product.
 - b) This resubmittal is to address all comments, omissions and non-conforming items that were noted.
 - c) Resubmittal is to be received by the City within 15 Calendar Days of the date of the City's transmittal requiring the resubmittal.
 - d. Code 4
 - 1) "NOT APPROVED" is assigned when the submittal does not meet the intent of the Contract Documents.
 - a) The Contractor must resubmit the entire package revised to bring the submittal into conformance.
 - b) It may be necessary to resubmit using a different manufacturer/vendor to meet the Contract Documents.
6. Resubmittals
- a. Handled in the same manner as first submittals
 - 1) Corrections other than requested by the City
 - 2) Marked with revision triangle or other similar method
 - a) At Contractor's risk if not marked
 - b. Submittals for each item will be reviewed no more than twice at the City's expense.
 - 1) All subsequent reviews will be performed at times convenient to the City and at the Contractor's expense, based on the City's or City Representative's then prevailing rates.
 - 2) Provide Contractor reimbursement to the City within 30 Calendar Days for all such fees invoiced by the City.
 - c. The need for more than 1 resubmission or any other delay in obtaining City's review of submittals, will not entitle the Contractor to an extension of Contract Time.
7. Partial Submittals
- a. City reserves the right to not review submittals deemed partial, at the City's discretion.
 - b. Submittals deemed by the City to be not complete will be returned to the Contractor, and will be considered "Not Approved" until resubmitted.
 - c. The City may at its option provide a list or mark the submittal directing the Contractor to the areas that are incomplete.
8. If the Contractor considers any correction indicated on the shop drawings to constitute a change to the Contract Documents, then written notice must be provided thereof to the Developer at least 7 Calendar Days prior to release for manufacture.

9. When the shop drawings have been completed to the satisfaction of the City, the Contractor may carry out the construction in accordance therewith and no further changes therein except upon written instructions from the City.

10. Each submittal, appropriately coded, will be returned within 30 Calendar Days following receipt of submittal by the City.

L. Mock ups

1. Mock Up units as specified in individual Sections, include, but are not necessarily limited to, complete units of the standard of acceptance for that type of Work to be used on the Project. Remove at the completion of the Work or when directed.

M. Qualifications

1. If specifically required in other Sections of these Specifications, submit a P.E. Certification for each item required.

N. Request for Information (RFI)

1. Contractor Request for additional information

a. Clarification or interpretation of the contract documents

b. When the Contractor believes there is a conflict between Contract Documents

c. When the Contractor believes there is a conflict between the Drawings and Specifications

1) Identify the conflict and request clarification

2. Sufficient information shall be attached to permit a written response without further information.

1.5 SUBMITTALS [NOT USED]

1.6 ACTION SUBMITTALS/INFORMATIONAL SUBMITTALS [NOT USED]

1.7 CLOSEOUT SUBMITTALS [NOT USED]

1.8 MAINTENANCE MATERIAL SUBMITTALS [NOT USED]

1.9 QUALITY ASSURANCE [NOT USED]

1.10 DELIVERY, STORAGE, AND HANDLING [NOT USED]

1.11 FIELD [SITE] CONDITIONS [NOT USED]

1.12 WARRANTY [NOT USED]

1 **PART 2 - PRODUCTS [NOT USED]**

2 **PART 3 - EXECUTION [NOT USED]**

3 **END OF SECTION**

Revision Log		
DATE	NAME	SUMMARY OF CHANGE
12/20/2012	D. Johnson	1.4.K.8. Working Days modified to Calendar Days

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SECTION 01 35 13
SPECIAL PROJECT PROCEDURES

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. The procedures for special project circumstances that includes, but is not limited to:
 - a. Coordination with the Texas Department of Transportation
 - b. Work near High Voltage Lines
 - c. Confined Space Entry Program
 - d. Air Pollution Watch Days
 - e. Use of Explosives, Drop Weight, Etc.
 - f. Water Department Notification
 - g. Public Notification Prior to Beginning Construction
 - h. Coordination with United States Army Corps of Engineers
 - i. Coordination within Railroad permits areas
 - j. Dust Control
 - k. Employee Parking

B. Deviations from this City of Fort Worth Standard Specification

1. None.

C. Related Specification Sections include, but are not necessarily limited to:

1. Division 0 – Bidding Requirements, Contract Forms and Conditions of the Contract
2. Division 1 – General Requirements
3. Section 33 12 25 – Connection to Existing Water Mains

1.2 REFERENCES

A. Reference Standards

1. Reference standards cited in this Specification refer to the current reference standard published at the time of the latest revision date logged at the end of this Specification, unless a date is specifically cited.
2. Health and Safety Code, Title 9. Safety, Subtitle A. Public Safety, Chapter 752. High Voltage Overhead Lines.
3. North Central Texas Council of Governments (NCTCOG) – Clean Construction Specification

1.3 ADMINISTRATIVE REQUIREMENTS

A. Coordination with the Texas Department of Transportation

1. When work in the right-of-way which is under the jurisdiction of the Texas Department of Transportation (TxDOT):
 - a. Notify the Texas Department of Transportation prior to commencing any work therein in accordance with the provisions of the permit

- b. All work performed in the TxDOT right-of-way shall be performed in compliance with and subject to approval from the Texas Department of Transportation

B. Work near High Voltage Lines

1. Regulatory Requirements

- a. All Work near High Voltage Lines (more than 600 volts measured between conductors or between a conductor and the ground) shall be in accordance with Health and Safety Code, Title 9, Subtitle A, Chapter 752.

2. Warning sign

- a. Provide sign of sufficient size meeting all OSHA requirements.

3. Equipment operating within 10 feet of high voltage lines will require the following safety features

- a. Insulating cage-type of guard about the boom or arm
- b. Insulator links on the lift hook connections for back hoes or dippers
- c. Equipment must meet the safety requirements as set forth by OSHA and the safety requirements of the owner of the high voltage lines

4. Work within 6 feet of high voltage electric lines

- a. Notification shall be given to:

1) The power company (example: ONCOR)

- a) Maintain an accurate log of all such calls to power company and record action taken in each case.

- b. Coordination with power company

1) After notification coordinate with the power company to:

- a) Erect temporary mechanical barriers, de-energize the lines, or raise or lower the lines

- c. No personnel may work within 6 feet of a high voltage line before the above requirements have been met.

C. Confined Space Entry Program

1. Provide and follow approved Confined Space Entry Program in accordance with OSHA requirements.

2. Confined Spaces include:

- a. Manholes

- b. All other confined spaces in accordance with OSHA's Permit Required for Confined Spaces

D. Use of Explosives, Drop Weight, Etc.

1. When Contract Documents permit on the project the following will apply:

a. Public Notification

- 1) Submit notice to City and proof of adequate insurance coverage, 24 hours prior to commencing.

- 2) Minimum 24 hour public notification in accordance with Section 01 31 13

E. Water Department Coordination

1. During the construction of this project, it will be necessary to deactivate, for a period of time, existing lines. The Contractor shall be required to coordinate with the Water Department to determine the best times for deactivating and activating those lines.

2. Coordinate any event that will require connecting to or the operation of an existing City water line system with the City's representative.
 - a. Coordination shall be in accordance with Section 33 12 25.
 - b. If needed, obtain a hydrant water meter from the Water Department for use during the life of named project.
 - c. In the event that a water valve on an existing live system be turned off and on to accommodate the construction of the project is required, coordinate this activity through the appropriate City representative.
 - 1) Do not operate water line valves of existing water system.
 - a) Failure to comply will render the Contractor in violation of Texas Penal Code Title 7, Chapter 28.03 (Criminal Mischief) and the Contractor will be prosecuted to the full extent of the law.
 - b) In addition, the Contractor will assume all liabilities and responsibilities as a result of these actions.

F. Public Notification Prior to Beginning Construction

1. Prior to beginning construction on any block in the project, on a block by block basis, prepare and deliver a notice or flyer of the pending construction to the front door of each residence or business that will be impacted by construction. The notice shall be prepared as follows:
 - a. Post notice or flyer 7 days prior to beginning any construction activity on each block in the project area.
 - 1) Prepare flyer on the Contractor's letterhead and include the following information:
 - a) Name of Project
 - b) City Project No (CPN)
 - c) Scope of Project (i.e. type of construction activity)
 - d) Actual construction duration within the block
 - e) Name of the contractor's foreman and phone number
 - f) Name of the City's inspector and phone number
 - g) City's after-hours phone number
 - 2) A sample of the 'pre-construction notification' flyer is attached as Exhibit A.
 - 3) Submit schedule showing the construction start and finish time for each block of the project to the inspector.
 - 4) Deliver flyer to the City Inspector for review prior to distribution.
 - b. No construction will be allowed to begin on any block until the flyer is delivered to all residents of the block.

G. Public Notification of Temporary Water Service Interruption during Construction

1. In the event it becomes necessary to temporarily shut down water service to residents or businesses during construction, prepare and deliver a notice or flyer of the pending interruption to the front door of each affected resident.
2. Prepared notice as follows:
 - a. The notification or flyer shall be posted 24 hours prior to the temporary interruption.
 - b. Prepare flyer on the contractor's letterhead and include the following information:
 - 1) Name of the project
 - 2) City Project Number

- 3) Date of the interruption of service
- 4) Period the interruption will take place
- 5) Name of the contractor's foreman and phone number
- 6) Name of the City's inspector and phone number
- c. A sample of the temporary water service interruption notification is attached as Exhibit B.
- d. Deliver a copy of the temporary interruption notification to the City inspector for review prior to being distributed.
- e. No interruption of water service can occur until the flyer has been delivered to all affected residents and businesses.
- f. Electronic versions of the sample flyers can be obtained from the Project Construction Inspector.

H. Coordination with United States Army Corps of Engineers (USACE)

1. At locations in the Project where construction activities occur in areas where USACE permits are required, meet all requirements set forth in each designated permit.

I. Coordination within Railroad Permit Areas

1. At locations in the project where construction activities occur in areas where railroad permits are required, meet all requirements set forth in each designated railroad permit. This includes, but is not limited to, provisions for:
 - a. Flagmen
 - b. Inspectors
 - c. Safety training
 - d. Additional insurance
 - e. Insurance certificates
 - f. Other employees required to protect the right-of-way and property of the Railroad Company from damage arising out of and/or from the construction of the project. Proper utility clearance procedures shall be used in accordance with the permit guidelines.
2. Obtain any supplemental information needed to comply with the railroad's requirements.

J. Dust Control

1. Use acceptable measures to control dust at the Site.
 - a. If water is used to control dust, capture and properly dispose of waste water.
 - b. If wet saw cutting is performed, capture and properly dispose of slurry.

K. Employee Parking

1. Provide parking for employees at locations approved by the City.

- 1 **1.4 SUBMITTALS [NOT USED]**
2 **1.5 ACTION SUBMITTALS/INFORMATIONAL SUBMITTALS [NOT USED]**
3 **1.6 CLOSEOUT SUBMITTALS [NOT USED]**
4 **1.7 MAINTENANCE MATERIAL SUBMITTALS [NOT USED]**
5 **1.8 QUALITY ASSURANCE [NOT USED]**
6 **1.9 DELIVERY, STORAGE, AND HANDLING [NOT USED]**
7 **1.10 FIELD [SITE] CONDITIONS [NOT USED]**
8 **1.11 WARRANTY [NOT USED]**

9 **PART 2 - PRODUCTS [NOT USED]**

10 **PART 3 - EXECUTION [NOT USED]**

11 **END OF SECTION**

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Revision Log		
DATE	NAME	SUMMARY OF CHANGE
8/31/2012	D. Johnson	1.3.B – Added requirement of compliance with Health and Safety Code, Title 9. Safety, Subtitle A. Public Safety, Chapter 752. High Voltage Overhead Lines.

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EXHIBIT A

(To be printed on Contractor's Letterhead)

Date: _____

CPN No.: _____

Project Name: _____

Mapsco Location: _____

Limits of Construction: _____

NOTICE OF CONSTRUCTION

THIS IS TO INFORM YOU THAT UNDER A CONTRACT WITH THE CITY OF FORT WORTH, OUR COMPANY WILL WORK ON UTILITY LINES ON OR AROUND YOUR PROPERTY.

CONSTRUCTION WILL BEGIN APPROXIMATELY SEVEN DAYS FROM THE DATE OF THIS NOTICE.

IF YOU HAVE QUESTIONS ABOUT ACCESS, SECURITY, SAFETY OR ANY OTHER ISSUE, PLEASE CALL:

Mr. <CONTRACTOR'S SUPERINTENDENT> AT <TELEPHONE NO.>

OR

Mr. <CITY INSPECTOR> AT < TELEPHONE NO.>

AFTER 4:30 PM OR ON WEEKENDS, PLEASE CALL (817) 392 8306

PLEASE KEEP THIS FLYER HANDY WHEN YOU CALL

EXHIBIT B



Date: _____

DOE NO. XXXX
Project Name:

**NOTICE OF TEMPORARY WATER SERVICE
INTERRUPTION**

DUE TO UTILITY IMPROVEMENTS IN YOUR NEIGHBORHOOD, YOUR
WATER SERVICE WILL BE INTERRUPTED ON _____
BETWEEN THE HOURS OF _____ AND _____.

IF YOU HAVE QUESTIONS ABOUT THIS SHUT-OUT, PLEASE CALL:

MR. _____ AT _____
(CONTRACTORS SUPERINTENDENT) (TELEPHONE NUMBER)

OR

MR. _____ AT _____
(CITY INSPECTOR) (TELEPHONE NUMBER)

THIS INCONVENIENCE WILL BE AS SHORT AS POSSIBLE.

THANK YOU,

_____, CONTRACTOR

SECTION 01 45 23
TESTING AND INSPECTION SERVICES

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Testing and inspection services procedures and coordination

B. Deviations from this City of Fort Worth Standard Specification

1. None.

C. Related Specification Sections include, but are not necessarily limited to:

1. Division 0 – Bidding Requirements, Contract Forms and Conditions of the Contract
2. Division 1 – General Requirements

1.2 PRICE AND PAYMENT PROCEDURES

A. Measurement and Payment

1. Work associated with this Item is considered subsidiary to the various Items bid.
No separate payment will be allowed for this Item.
 - a. Contractor is responsible for performing, coordinating, and payment of all Quality Control testing.
 - b. City is responsible for performing and payment for first set of Quality Assurance testing.
 - 1) If the first Quality Assurance test performed by the City fails, the Contractor is responsible for payment of subsequent Quality Assurance testing until a passing test occurs.
 - a) Final acceptance will not be issued by City until all required payments for testing by Contractor have been paid in full.

1.3 REFERENCES [NOT USED]

1.4 ADMINISTRATIVE REQUIREMENTS

A. Testing

1. Complete testing in accordance with the Contract Documents.
2. Coordination
 - a. When testing is required to be performed by the City, notify City, sufficiently in advance, when testing is needed.
 - b. When testing is required to be completed by the Contractor, notify City, sufficiently in advance, that testing will be performed.
3. Distribution of Testing Reports
 - a. Electronic Distribution
 - 1) Confirm development of Project directory for electronic submittals to be uploaded to the City's document management system, or another form of distribution approved by the City.

- 1 2) Upload test reports to designated project directory and notify appropriate
2 City representatives via email of submittal posting.
3 3) Hard Copies
4 a) 1 copy for all submittals submitted to the Project Representative
5 b. Hard Copy Distribution (if required in lieu of electronic distribution)
6 1) Tests performed by City
7 a) Distribute 1 hard copy to the Contractor
8 2) Tests performed by the Contractor
9 a) Distribute 3 hard copies to City's Project Representative
10 4. Provide City's Project Representative with trip tickets for each delivered load of
11 Concrete or Lime material including the following information:
12 a. Name of pit
13 b. Date of delivery
14 c. Material delivered
15 B. Inspection
16 1. Inspection or lack of inspection does not relieve the Contractor from obligation to
17 perform work in accordance with the Contract Documents.

18 **1.5 SUBMITTALS [NOT USED]**

19 **1.6 ACTION SUBMITTALS/INFORMATIONAL SUBMITTALS [NOT USED]**

20 **1.7 CLOSEOUT SUBMITTALS [NOT USED]**

21 **1.8 MAINTENANCE MATERIAL SUBMITTALS [NOT USED]**

22 **1.9 QUALITY ASSURANCE [NOT USED]**

23 **1.10 DELIVERY, STORAGE, AND HANDLING [NOT USED]**

24 **1.11 FIELD [SITE] CONDITIONS [NOT USED]**

25 **1.12 WARRANTY [NOT USED]**

26 **PART 2 - PRODUCTS [NOT USED]**

27 **PART 3 - EXECUTION [NOT USED]**

28 **END OF SECTION**

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Revision Log		
DATE	NAME	SUMMARY OF CHANGE
03/20/2020	D.V. Magana	Removed reference to Buzzsaw and noted that electronic submittals be uploaded through the City's document management system.

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SECTION 01 50 00
TEMPORARY FACILITIES AND CONTROLS

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Provide temporary facilities and controls needed for the Work including, but not necessarily limited to:
 - a. Temporary utilities
 - b. Sanitary facilities
 - c. Storage Sheds and Buildings
 - d. Dust control
 - e. Temporary fencing of the construction site

B. Deviations from this City of Fort Worth Standard Specification

1. None.

C. Related Specification Sections include, but are not necessarily limited to:

1. Division 0 – Bidding Requirements, Contract Forms and Conditions of the Contract
2. Division 1 – General Requirements

1.2 PRICE AND PAYMENT PROCEDURES

A. Measurement and Payment

1. Work associated with this Item is considered subsidiary to the various Items bid.
No separate payment will be allowed for this Item.

1.3 REFERENCES [NOT USED]

1.4 ADMINISTRATIVE REQUIREMENTS

A. Temporary Utilities

1. Obtaining Temporary Service

- a. Make arrangements with utility service companies for temporary services.
- b. Abide by rules and regulations of utility service companies or authorities having jurisdiction.
- c. Be responsible for utility service costs until Work is approved for Final Acceptance.
 - 1) Included are fuel, power, light, heat and other utility services necessary for execution, completion, testing and initial operation of Work.

2. Water

- a. Contractor to provide water required for and in connection with Work to be performed and for specified tests of piping, equipment, devices or other use as required for the completion of the Work.
- b. Provide and maintain adequate supply of potable water for domestic consumption by Contractor personnel and City's Project Representatives.
- c. Coordination
 - 1) Contact City 1 week before water for construction is desired

- d. Contractor Payment for Construction Water
 - 1) Obtain construction water meter from City for payment as billed by City's established rates.
3. Electricity and Lighting
 - a. Provide and pay for electric powered service as required for Work, including testing of Work.
 - 1) Provide power for lighting, operation of equipment, or other use.
 - b. Electric power service includes temporary power service or generator to maintain operations during scheduled shutdown.
4. Telephone
 - a. Provide emergency telephone service at Site for use by Contractor personnel and others performing work or furnishing services at Site.
5. Temporary Heat and Ventilation
 - a. Provide temporary heat as necessary for protection or completion of Work.
 - b. Provide temporary heat and ventilation to assure safe working conditions.
- B. Sanitary Facilities
 1. Provide and maintain sanitary facilities for persons on Site.
 - a. Comply with regulations of State and local departments of health.
 2. Enforce use of sanitary facilities by construction personnel at job site.
 - a. Enclose and anchor sanitary facilities.
 - b. No discharge will be allowed from these facilities.
 - c. Collect and store sewage and waste so as not to cause nuisance or health problem.
 - d. Haul sewage and waste off-site at no less than weekly intervals and properly dispose in accordance with applicable regulation.
 3. Locate facilities near Work Site and keep clean and maintained throughout Project.
 4. Remove facilities at completion of Project
- C. Storage Sheds and Buildings
 1. Provide adequately ventilated, watertight, weatherproof storage facilities with floor above ground level for materials and equipment susceptible to weather damage.
 2. Storage of materials not susceptible to weather damage may be on blocks off ground.
 3. Store materials in a neat and orderly manner.
 - a. Place materials and equipment to permit easy access for identification, inspection and inventory.
 4. Equip building with lockable doors and lighting, and provide electrical service for equipment space heaters and heating or ventilation as necessary to provide storage environments acceptable to specified manufacturers.
 5. Fill and grade site for temporary structures to provide drainage away from temporary and existing buildings.
 6. Remove building from site prior to Final Acceptance.
- D. Temporary Fencing
 1. Provide and maintain for the duration or construction when required in contract documents
- E. Dust Control

1. Contractor is responsible for maintaining dust control through the duration of the project.
 - a. Contractor remains on-call at all times
 - b. Must respond in a timely manner
- F. Temporary Protection of Construction
 1. Contractor or subcontractors are responsible for protecting Work from damage due to weather.

1.5 SUBMITTALS [NOT USED]

1.6 ACTION SUBMITTALS/INFORMATIONAL SUBMITTALS [NOT USED]

1.7 CLOSEOUT SUBMITTALS [NOT USED]

1.8 MAINTENANCE MATERIAL SUBMITTALS [NOT USED]

1.9 QUALITY ASSURANCE [NOT USED]

1.10 DELIVERY, STORAGE, AND HANDLING [NOT USED]

1.11 FIELD [SITE] CONDITIONS [NOT USED]

1.12 WARRANTY [NOT USED]

PART 2 - PRODUCTS [NOT USED]

PART 3 - EXECUTION [NOT USED]

3.1 INSTALLERS [NOT USED]

3.2 EXAMINATION [NOT USED]

3.3 PREPARATION [NOT USED]

3.4 INSTALLATION

A. Temporary Facilities

1. Maintain all temporary facilities for duration of construction activities as needed.

3.5 [REPAIR] / [RESTORATION]

3.6 RE-INSTALLATION

3.7 FIELD [or] SITE QUALITY CONTROL [NOT USED]

3.8 SYSTEM STARTUP [NOT USED]

3.9 ADJUSTING [NOT USED]

3.10 CLEANING [NOT USED]

3.11 CLOSEOUT ACTIVITIES

A. Temporary Facilities

- 1 1. Remove all temporary facilities and restore area after completion of the Work, to a
2 condition equal to or better than prior to start of Work.

3 **3.12 PROTECTION [NOT USED]**

4 **3.13 MAINTENANCE [NOT USED]**

5 **3.14 ATTACHMENTS [NOT USED]**

6 **END OF SECTION**

7

Revision Log		
DATE	NAME	SUMMARY OF CHANGE

8

SECTION 01 55 26

STREET USE PERMIT AND MODIFICATIONS TO TRAFFIC CONTROL

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Administrative procedures for:
 - a. Street Use Permit
 - b. Modification of approved traffic control
 - c. Removal of Street Signs

B. Deviations from this City of Fort Worth Standard Specification

1. None.

C. Related Specification Sections include, but are not necessarily limited to:

1. Division 0 – Bidding Requirements, Contract Forms and Conditions of the Contract
2. Division 1 – General Requirements
3. Section 34 71 13 – Traffic Control

1.2 PRICE AND PAYMENT PROCEDURES

A. Measurement and Payment

1. Work associated with this Item is considered subsidiary to the various Items bid.
No separate payment will be allowed for this Item.

1.3 REFERENCES

A. Reference Standards

1. Reference standards cited in this specification refer to the current reference standard published at the time of the latest revision date logged at the end of this specification, unless a date is specifically cited.
2. Texas Manual on Uniform Traffic Control Devices (TMUTCD).

1.4 ADMINISTRATIVE REQUIREMENTS

A. Traffic Control

1. General

- a. When traffic control plans are included in the Drawings, provide Traffic Control in accordance with Drawings and Section 34 71 13.
- b. When traffic control plans are not included in the Drawings, prepare traffic control plans in accordance with Section 34 71 13 and submit to City for review.
 - 1) Allow minimum 10 working days for review of proposed Traffic Control.

B. Street Use Permit

1. Prior to installation of Traffic Control, a City Street Use Permit is required.
 - a. To obtain Street Use Permit, submit Traffic Control Plans to City Transportation and Public Works Department.

- 1) Allow a minimum of 5 working days for permit review.
- 2) Contractor's responsibility to coordinate review of Traffic Control plans for Street Use Permit, such that construction is not delayed.

C. Modification to Approved Traffic Control

1. Prior to installation traffic control:

- a. Submit revised traffic control plans to City Department Transportation and Public Works Department.
 - 1) Revise Traffic Control plans in accordance with Section 34 71 13.
 - 2) Allow minimum 5 working days for review of revised Traffic Control.
 - 3) It is the Contractor's responsibility to coordinate review of Traffic Control plans for Street Use Permit, such that construction is not delayed.

D. Removal of Street Sign

1. If it is determined that a street sign must be removed for construction, then contact City Transportation and Public Works Department, Signs and Markings Division to remove the sign.

E. Temporary Signage

1. In the case of regulatory signs, replace permanent sign with temporary sign meeting requirements of the latest edition of the Texas Manual on Uniform Traffic Control Devices (MUTCD).
2. Install temporary sign before the removal of permanent sign.
3. When construction is complete, to the extent that the permanent sign can be reinstalled, contact the City Transportation and Public Works Department, Signs and Markings Division, to reinstall the permanent sign.

F. Traffic Control Standards

1. Traffic Control Standards can be found on the City's Buzzsaw website.

1.5 SUBMITTALS [NOT USED]

1.6 ACTION SUBMITTALS/INFORMATIONAL SUBMITTALS [NOT USED]

1.7 CLOSEOUT SUBMITTALS [NOT USED]

1.8 MAINTENANCE MATERIAL SUBMITTALS [NOT USED]

1.9 QUALITY ASSURANCE [NOT USED]

1.10 DELIVERY, STORAGE, AND HANDLING [NOT USED]

1.11 FIELD [SITE] CONDITIONS [NOT USED]

1.12 WARRANTY [NOT USED]

PART 2 - PRODUCTS [NOT USED]

PART 3 - EXECUTION [NOT USED]

END OF SECTION

1

Revision Log		
DATE	NAME	SUMMARY OF CHANGE

2

SECTION 01 57 13
STORM WATER POLLUTION PREVENTION

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Procedures for Storm Water Pollution Prevention Plans

B. Deviations from this City of Fort Worth Standard Specification

1. None.

C. Related Specification Sections include, but are not necessarily limited to:

1. Division 0 – Bidding Requirements, Contract Forms and Conditions of the Contract
2. Division 1 – General Requirements
3. Section 31 25 00 – Erosion and Sediment Control

1.2 PRICE AND PAYMENT PROCEDURES

A. Measurement and Payment

1. Construction Activities resulting in less than 1 acre of disturbance
 - a. Work associated with this Item is considered subsidiary to the various Items bid. No separate payment will be allowed for this Item.
2. Construction Activities resulting in greater than 1 acre of disturbance
 - a. Measurement and Payment shall be in accordance with Section 31 25 00.

1.3 REFERENCES

A. Abbreviations and Acronyms

1. Notice of Intent: NOI
2. Notice of Termination: NOT
3. Storm Water Pollution Prevention Plan: SWPPP
4. Texas Commission on Environmental Quality: TCEQ
5. Notice of Change: NOC

A. Reference Standards

1. Reference standards cited in this Specification refer to the current reference standard published at the time of the latest revision date logged at the end of this Specification, unless a date is specifically cited.
2. Integrated Storm Management (iSWM) Technical Manual for Construction Controls

1.4 ADMINISTRATIVE REQUIREMENTS

A. General

1. Contractor is responsible for resolution and payment of any fines issued associated with compliance to Stormwater Pollution Prevention Plan.

B. Construction Activities resulting in:

1. Less than 1 acre of disturbance
 - a. Provide erosion and sediment control in accordance with Section 31 25 00 and Drawings.
2. 1 to less than 5 acres of disturbance
 - a. Texas Pollutant Discharge Elimination System (TPDES) General Construction Permit is required
 - b. Complete SWPPP in accordance with TCEQ requirements
 - 1) TCEQ Small Construction Site Notice Required under general permit TXR150000
 - a) Sign and post at job site
 - b) Prior to Preconstruction Meeting, send 1 copy to City Department of Transportation and Public Works, Environmental Division, (817) 392-6088.
 - 2) Provide erosion and sediment control in accordance with:
 - a) Section 31 25 00
 - b) The Drawings
 - c) TXR150000 General Permit
 - d) SWPPP
 - e) TCEQ requirements
3. 5 acres or more of Disturbance
 - a. Texas Pollutant Discharge Elimination System (TPDES) General Construction Permit is required
 - b. Complete SWPPP in accordance with TCEQ requirements
 - 1) Prepare a TCEQ NOI form and submit to TCEQ along with required fee
 - a) Sign and post at job site
 - b) Send copy to City Department of Transportation and Public Works, Environmental Division, (817) 392-6088.
 - 2) TCEQ Notice of Change required if making changes or updates to NOI
 - 3) Provide erosion and sediment control in accordance with:
 - a) Section 31 25 00
 - b) The Drawings
 - c) TXR150000 General Permit
 - d) SWPPP
 - e) TCEQ requirements
 - 4) Once the project has been completed and all the closeout requirements of TCEQ have been met a TCEQ Notice of Termination can be submitted.
 - a) Send copy to City Department of Transportation and Public Works, Environmental Division, (817) 392-6088.

1.5 SUBMITTALS

A. SWPPP

1. Submit in accordance with Section 01 33 00, except as stated herein.
 - a. Prior to the Preconstruction Meeting, submit a draft copy of SWPPP to the City as follows:
 - 1) 1 copy to the City Project Manager
 - a) City Project Manager will forward to the City Department of Transportation and Public Works, Environmental Division for review

B. Modified SWPPP

1. If the SWPPP is revised during construction, resubmit modified SWPPP to the City in accordance with Section 01 33 00.

1.6 ACTION SUBMITTALS/INFORMATIONAL SUBMITTALS [NOT USED]

1.7 CLOSEOUT SUBMITTALS [NOT USED]

1.8 MAINTENANCE MATERIAL SUBMITTALS [NOT USED]

1.9 QUALITY ASSURANCE [NOT USED]

1.10 DELIVERY, STORAGE, AND HANDLING [NOT USED]

1.11 FIELD [SITE] CONDITIONS [NOT USED]

1.12 WARRANTY [NOT USED]

PART 2 - PRODUCTS [NOT USED]

PART 3 - EXECUTION [NOT USED]

END OF SECTION

Revision Log		
DATE	NAME	SUMMARY OF CHANGE

SECTION 01 60 00
PRODUCT REQUIREMENTS

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. References for Product Requirements and City Standard Products List

B. Deviations from this City of Fort Worth Standard Specification

1. None.

C. Related Specification Sections include, but are not necessarily limited to:

1. Division 0 – Bidding Requirements, Contract Forms and Conditions of the Contract
2. Division 1 – General Requirements

1.2 PRICE AND PAYMENT PROCEDURES [NOT USED]

1.3 REFERENCES [NOT USED]

1.4 ADMINISTRATIVE REQUIREMENTS

A list of City approved products for use is available through the City's website at:
<https://apps.fortworthtexas.gov/ProjectResources/> and following the directory
path: 02 – Construction Documents\Standard Products List

A. Only products specifically included on City's Standard Product List in these Contract Documents shall be allowed for use on the Project.

1. Any subsequently approved products will only be allowed for use upon specific approval by the City.

B. Any specific product requirements in the Contract Documents supersede similar products included on the City's Standard Product List.

1. The City reserves the right to not allow products to be used for certain projects even though the product is listed on the City's Standard Product List.

C. Although a specific product is included on City's Standard Product List, not all products from that manufacturer are approved for use, including but not limited to, that manufacturer's standard product.

D. See Section 01 33 00 for submittal requirements of Product Data included on City's Standard Product List.

1.5 SUBMITTALS [NOT USED]

1.6 ACTION SUBMITTALS/INFORMATIONAL SUBMITTALS [NOT USED]

1.7 CLOSEOUT SUBMITTALS [NOT USED]

1.8 MAINTENANCE MATERIAL SUBMITTALS [NOT USED]

1.9 QUALITY ASSURANCE [NOT USED]

1 **1.10 DELIVERY, STORAGE, AND HANDLING [NOT USED]**

2 **1.11 FIELD [SITE] CONDITIONS [NOT USED]**

3 **1.12 WARRANTY [NOT USED]**

4 **PART 2 - PRODUCTS [NOT USED]**

5 **PART 3 - EXECUTION [NOT USED]**

6 **END OF SECTION**

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Revision Log		
DATE	NAME	SUMMARY OF CHANGE
10/12/12	D. Johnson	Modified Location of City's Standard Product List
4/7/2014	M.Domenech	Revised for DAP application
03/20/2020	D.V. Magana	Removed reference to Buzzsaw and noted that the City approved products list is accessible through the City's website.

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SECTION 01 66 00
PRODUCT STORAGE AND HANDLING REQUIREMENTS

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Scheduling of product delivery
2. Packaging of products for delivery
3. Protection of products against damage from:
 - a. Handling
 - b. Exposure to elements or harsh environments

B. Deviations from this City of Fort Worth Standard Specification

1. None.

C. Related Specification Sections include, but are not necessarily limited to:

1. Division 0 – Bidding Requirements, Contract Forms and Conditions of the Contract
2. Division 1 – General Requirements

1.2 PRICE AND PAYMENT PROCEDURES

A. Measurement and Payment

1. Work associated with this Item is considered subsidiary to the various Items bid.
No separate payment will be allowed for this Item.

1.3 REFERENCES [NOT USED]

1.4 ADMINISTRATIVE REQUIREMENTS [NOT USED]

1.5 SUBMITTALS [NOT USED]

1.6 ACTION SUBMITTALS/INFORMATIONAL SUBMITTALS [NOT USED]

1.7 CLOSEOUT SUBMITTALS [NOT USED]

1.8 MAINTENANCE MATERIAL SUBMITTALS [NOT USED]

1.9 QUALITY ASSURANCE [NOT USED]

1.10 DELIVERY AND HANDLING

A. Delivery Requirements

1. Schedule delivery of products or equipment as required to allow timely installation and to avoid prolonged storage.
2. Provide appropriate personnel and equipment to receive deliveries.
3. Delivery trucks will not be permitted to wait extended periods of time on the Site for personnel or equipment to receive the delivery.

4. Deliver products or equipment in manufacturer's original unbroken cartons or other containers designed and constructed to protect the contents from physical or environmental damage.
5. Clearly and fully mark and identify as to manufacturer, item and installation location.
6. Provide manufacturer's instructions for storage and handling.

B. Handling Requirements

1. Handle products or equipment in accordance with these Contract Documents and manufacturer's recommendations and instructions.

C. Storage Requirements

1. Store materials in accordance with manufacturer's recommendations and requirements of these Specifications.
2. Make necessary provisions for safe storage of materials and equipment.
 - a. Place loose soil materials and materials to be incorporated into Work to prevent damage to any part of Work or existing facilities and to maintain free access at all times to all parts of Work and to utility service company installations in vicinity of Work.
3. Keep materials and equipment neatly and compactly stored in locations that will cause minimum inconvenience to other contractors, public travel, adjoining owners, tenants and occupants.
 - a. Arrange storage to provide easy access for inspection.
4. Restrict storage to areas available on construction site for storage of material and equipment as shown on Drawings, or approved by City's Project Representative.
5. Provide off-site storage and protection when on-site storage is not adequate.
 - a. Provide addresses of and access to off-site storage locations for inspection by City's Project Representative.
6. Do not use lawns, grass plots or other private property for storage purposes without written permission of owner or other person in possession or control of premises.
7. Store in manufacturers' unopened containers.
8. Neatly, safely and compactly stack materials delivered and stored along line of Work to avoid inconvenience and damage to property owners and general public and maintain at least 3 feet from fire hydrant.
9. Keep public and private driveways and street crossings open.
10. Repair or replace damaged lawns, sidewalks, streets or other improvements to satisfaction of City's Project Representative.
 - a. Total length which materials may be distributed along route of construction at one time is 1,000 linear feet, unless otherwise approved in writing by City's Project Representative.

1.11 FIELD [SITE] CONDITIONS [NOT USED]

1.12 WARRANTY [NOT USED]

PART 2 - PRODUCTS [NOT USED]

PART 3 - EXECUTION

3.1 INSTALLERS [NOT USED]

3.2 EXAMINATION [NOT USED]

3.3 PREPARATION [NOT USED]

3.4 ERECTION [NOT USED]

3.5 REPAIR / RESTORATION [NOT USED]

3.6 RE-INSTALLATION [NOT USED]

3.7 FIELD [OR] SITE QUALITY CONTROL

A. Tests and Inspections

1. Inspect all products or equipment delivered to the site prior to unloading.

B. Non-Conforming Work

1. Reject all products or equipment that are damaged, used or in any other way unsatisfactory for use on the project.

3.8 SYSTEM STARTUP [NOT USED]

3.9 ADJUSTING [NOT USED]

3.10 CLEANING [NOT USED]

3.11 CLOSEOUT ACTIVITIES [NOT USED]

3.12 PROTECTION

A. Protect all products or equipment in accordance with manufacturer's written directions.

B. Store products or equipment in location to avoid physical damage to items while in storage.

C. Protect equipment from exposure to elements and keep thoroughly dry if required by the manufacturer.

3.13 MAINTENANCE [NOT USED]

3.14 ATTACHMENTS [NOT USED]

END OF SECTION

Revision Log		
DATE	NAME	SUMMARY OF CHANGE
4/7/2014	M.Domenech	Revised for DAP application

1

SECTION 01 70 00
MOBILIZATION AND REMOBILIZATION

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Mobilization and Demobilization

a. Mobilization

- 1) Transportation of Contractor's personnel, equipment, and operating supplies to the Site
- 2) Establishment of necessary general facilities for the Contractor's operation at the Site
- 3) Premiums paid for performance and payment bonds
- 4) Transportation of Contractor's personnel, equipment, and operating supplies to another location within the designated Site
- 5) Relocation of necessary general facilities for the Contractor's operation from 1 location to another location on the Site.

b. Demobilization

- 1) Transportation of Contractor's personnel, equipment, and operating supplies away from the Site including disassembly
- 2) Site Clean-up
- 3) Removal of all buildings and/or other facilities assembled at the Site for this Contract

c. Mobilization and Demobilization do not include activities for specific items of work that are for which payment is provided elsewhere in the contract.

2. Remobilization

a. Remobilization for Suspension of Work specifically required in the Contract Documents or as required by City includes:

1) Demobilization

- a) Transportation of Contractor's personnel, equipment, and operating supplies from the Site including disassembly or temporarily securing equipment, supplies, and other facilities as designated by the Contract Documents necessary to suspend the Work.
- b) Site Clean-up as designated in the Contract Documents

2) Remobilization

- a) Transportation of Contractor's personnel, equipment, and operating supplies to the Site necessary to resume the Work.
- b) Establishment of necessary general facilities for the Contractor's operation at the Site necessary to resume the Work.

3) No Payments will be made for:

- a) Mobilization and Demobilization from one location to another on the Site in the normal progress of performing the Work.
- b) Stand-by or idle time
- c) Lost profits

3. Mobilizations and Demobilization for Miscellaneous Projects

a. Mobilization and Demobilization

- 1) Mobilization shall consist of the activities and cost on a Work Order basis necessary for:
 - a) Transportation of Contractor's personnel, equipment, and operating supplies to the Site for the issued Work Order.
 - b) Establishment of necessary general facilities for the Contractor's operation at the Site for the issued Work Order
- 2) Demobilization shall consist of the activities and cost necessary for:
 - a) Transportation of Contractor's personnel, equipment, and operating supplies from the Site including disassembly for each issued Work Order
 - b) Site Clean-up for each issued Work Order
 - c) Removal of all buildings or other facilities assembled at the Site for each Work Order
- b. Mobilization and Demobilization do not include activities for specific items of work for which payment is provided elsewhere in the contract.
4. Emergency Mobilizations and Demobilization for Miscellaneous Projects
 - a. A Mobilization for Miscellaneous Projects when directed by the City and the mobilization occurs within 24 hours of the issuance of the Work Order.
- B. Deviations from this City of Fort Worth Standard Specification
 1. None.
- C. Related Specification Sections include, but are not necessarily limited to:
 1. Division 0 – Bidding Requirements, Contract Forms and Conditions of the Contract
 2. Division 1 – General Requirements

1.2 PRICE AND PAYMENT PROCEDURES

A. Measurement and Payment

1. Mobilization and Demobilization
 - a. Measure
 - 1) This Item is considered subsidiary to the various Items bid.
 - b. Payment
 - 1) The work performed and materials furnished in accordance with this Item are subsidiary to the various Items bid and no other compensation will be allowed.
2. Remobilization for suspension of Work as specifically required in the Contract Documents
 - a. Measurement
 - 1) Measurement for this Item shall be per each remobilization performed.
 - b. Payment
 - 1) The work performed and materials furnished in accordance with this Item and measured as provided under "Measurement" will be paid for at the unit price per each "Specified Remobilization" in accordance with Contract Documents.
 - c. The price shall include:
 - 1) Demobilization as described in Section 1.1.A.2.a.1)
 - 2) Remobilization as described in Section 1.1.A.2.a.2)
 - d. No payments will be made for standby, idle time, or lost profits associated this Item.

3. Remobilization for suspension of Work as required by City
 - a. Measurement and Payment
 - 1) This shall be submitted as a Contract Claim in accordance with Article 10 of Section 00 72 00.
 - 2) No payments will be made for standby, idle time, or lost profits associated with this Item.
4. Mobilizations and Demobilizations for Miscellaneous Projects
 - a. Measurement
 - 1) Measurement for this Item shall be for each Mobilization and Demobilization required by the Contract Documents
 - b. Payment
 - 1) The Work performed and materials furnished in accordance with this Item and measured as provided under "Measurement" will be paid for at the unit price per each "Work Order Mobilization" in accordance with Contract Documents. Demobilization shall be considered subsidiary to mobilization and shall not be paid for separately.
 - c. The price shall include:
 - 1) Mobilization as described in Section 1.1.A.3.a.1)
 - 2) Demobilization as described in Section 1.1.A.3.a.2)
 - d. No payments will be made for standby, idle time, or lost profits associated this Item.
5. Emergency Mobilizations and Demobilizations for Miscellaneous Projects
 - a. Measurement
 - 1) Measurement for this Item shall be for each Mobilization and Demobilization required by the Contract Documents
 - b. Payment
 - 1) The Work performed and materials furnished in accordance with this Item and measured as provided under "Measurement" will be paid for at the unit price per each "Work Order Emergency Mobilization" in accordance with Contract Documents. Demobilization shall be considered subsidiary to mobilization and shall not be paid for separately.
 - c. The price shall include
 - 1) Mobilization as described in Section 1.1.A.4.a)
 - 2) Demobilization as described in Section 1.1.A.3.a.2)
 - d. No payments will be made for standby, idle time, or lost profits associated this Item.

1.3 REFERENCES [NOT USED]

1.4 ADMINISTRATIVE REQUIREMENTS [NOT USED]

1.5 SUBMITTALS [NOT USED]

1.6 INFORMATIONAL SUBMITTALS [NOT USED]

1.7 CLOSEOUT SUBMITTALS [NOT USED]

1.8 MAINTENANCE MATERIAL SUBMITTALS [NOT USED]

1.9 QUALITY ASSURANCE [NOT USED]

1.10 DELIVERY, STORAGE, AND HANDLING [NOT USED]

1 **1.11 FIELD [SITE] CONDITIONS [NOT USED]**

2 **1.12 WARRANTY [NOT USED]**

3 **PART 2 - PRODUCTS [NOT USED]**

4 **PART 3 - EXECUTION [NOT USED]**

5 **END OF SECTION**

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Revision Log		
DATE	NAME	SUMMARY OF CHANGE
4/7/2014	M.Domenech	Revised for DAP application

7

SECTION 01 71 23

CONSTRUCTION STAKING AND SURVEY

PART 1 - GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. Requirements for construction staking and construction survey
- B. Deviations from this City of Fort Worth Standard Specification
 - 1. See Changes (Highlighted in Yellow).
- C. Related Specification Sections include, but are not necessarily limited to:
 - 1. Division 0 – Bidding Requirements, Contract Forms and Conditions of the Contract
 - 2. Division 1 – General Requirements

1.2 PRICE AND PAYMENT PROCEDURES

- A. Measurement and Payment
 - 1. Construction Staking
 - a. Measurement
 - 1) This Item is considered subsidiary to the various Items bid.
 - b. Payment
 - 1) The work performed and the materials furnished in accordance with this Item are subsidiary to the various Items bid and no other compensation will be allowed.
 - 2. Construction Survey
 - a. Measurement
 - 1) This Item is considered subsidiary to the various Items bid.
 - b. Payment
 - 1) The work performed and the materials furnished in accordance with this Item are subsidiary to the various Items bid and no other compensation will be allowed.
 - 3. As-Built Survey
 - a. Measurement
 - 1) This Item is considered subsidiary to the various Items bid.
 - b. Payment
 - 1) The work performed and the materials furnished in accordance with this Item are subsidiary to the various Items bid and no other compensation will be allowed.

1.3 REFERENCES

- A. Definitions
 - 1. Construction Survey - The survey measurements made prior to or while construction is in progress to control elevation, horizontal position, dimensions and configuration of structures/improvements included in the Project Drawings.

2. As-built Survey –The measurements made after the construction of the improvement features are complete to provide position coordinates for the features of a project.
3. Construction Staking – The placement of stakes and markings to provide offsets and elevations to cut and fill in order to locate on the ground the designed structures/improvements included in the Project Drawings. Construction staking shall include staking easements and/or right of way if indicated on the plans.
4. Survey “Field Checks” – Measurements made after construction staking is completed and before construction work begins to ensure that structures marked on the ground are accurately located per Project Drawings.

B. Technical References

1. City of Fort Worth – Construction Staking Standards (available on City’s Buzzsaw website) – 01 71 23.16.01_ Attachment A_Survey Staking Standards
2. City of Fort Worth - Standard Survey Data Collector Library (fxl) files (available on City’s Buzzsaw website).
3. Texas Department of Transportation (TxDOT) Survey Manual, latest revision
4. Texas Society of Professional Land Surveyors (TSPS), Manual of Practice for Land Surveying in the State of Texas, Category 5

1.4 ADMINISTRATIVE REQUIREMENTS

- A. The Contractor’s selection of a surveyor must comply with Texas Government Code 2254 (qualifications based selection) for this project.**

1.5 SUBMITTALS

- A. Submittals, if required, shall be in accordance with Section 01 33 00.
- B. All submittals shall be received and reviewed by the City prior to delivery of work.

1.6 ACTION SUBMITTALS/INFORMATIONAL SUBMITTALS

A. Field Quality Control Submittals

1. Documentation verifying accuracy of field engineering work, including coordinate conversions if plans do not indicate grid or ground coordinates.
2. Submit “Cut-Sheets” conforming to the standard template provided by the City (refer to 01 71 23.16.01 – Attachment A – Survey Staking Standards).

1.7 CLOSEOUT SUBMITTALS

B. As-built Redline Drawing Submittal

1. Submit As-Built Survey Redline Drawings documenting the locations/elevations of constructed improvements signed and sealed by Registered Professional Land Surveyor (RPLS) responsible for the work (refer to 01 71 23.16.01 – Attachment A – Survey Staking Standards) .
2. Contractor shall submit the proposed as-built and completed redline drawing submittal one (1) week prior to scheduling the project final inspection for City review and comment. Revisions, if necessary, shall be made to the as-built redline drawings and resubmitted to the City prior to scheduling the construction final inspection.

1.8 MAINTENANCE MATERIAL SUBMITTALS [NOT USED]

1.9 QUALITY ASSURANCE

A. Construction Staking

1. Construction staking will be performed by the Contractor.
2. Coordination
 - a. Contact City and Developer's Project Representative at least one week in advance notifying the City of when Construction Staking is scheduled.
 - b. It is the Contractor's responsibility to coordinate staking such that construction activities are not delayed or negatively impacted.
3. General
 - a. Contractor is responsible for preserving and maintaining stakes. If Developer's Project Representative is required to re-stake for any reason, the Contractor will be responsible for costs to perform staking. If in the opinion of the City, a sufficient number of stakes or markings have been lost, destroyed, disturbed or omitted that the contracted Work cannot take place then the Contractor will be required to stake or re-stake the deficient areas.

B. Construction Survey

1. Construction Survey will be performed by the Contractor.
2. Coordination
 - a. Contractor to verify that horizontal and vertical control data established in the design survey and required for construction survey is available and in place.
3. General
 - a. Construction survey will be performed in order to construct the work shown on the Construction Drawings and specified in the Contract Documents.
 - b. For construction methods other than open cut, the Contractor shall perform construction survey and verify control data including, but not limited to, the following:
 - 1) Verification that established benchmarks and control are accurate.
 - 2) Use of Benchmarks to furnish and maintain all reference lines and grades for tunneling.
 - 3) Use of line and grades to establish the location of the pipe.
 - 4) Submit to the City copies of field notes used to establish all lines and grades, if requested, and allow the City to check guidance system setup prior to beginning each tunneling drive.
 - 5) Provide access for the City, if requested, to verify the guidance system and the line and grade of the carrier pipe.
 - 6) The Contractor remains fully responsible for the accuracy of the work and correction of it, as required.
 - 7) Monitor line and grade continuously during construction.
 - 8) Record deviation with respect to design line and grade once at each pipe joint and submit daily records to the City.
 - 9) If the installation does not meet the specified tolerances (as outlined in Sections 33 05 23 and/or 33 05 24), immediately notify the City and correct the installation in accordance with the Contract Documents.

C. As-Built Survey

1. Required As-Built Survey will be performed by the Contractor.

2. Coordination
 - a. Contractor is to coordinate with City to confirm which features require as-built surveying.
 - b. It is the Contractor's responsibility to coordinate the as-built survey and required measurements for items that are to be buried such that construction activities are not delayed or negatively impacted.
 - c. For sewer mains and water mains 12" and under in diameter, it is acceptable to physically measure depth and mark the location during the progress of construction and take as-built survey after the facility has been buried. The Contractor is responsible for the quality control needed to ensure accuracy.
3. General
 - a. The Contractor shall provide as-built survey including the elevation and location (and provide written documentation to the City) of construction features **during the progress of the construction** including the following:
 - 1) Water Lines
 - a) Top of pipe elevations and coordinates for waterlines at the following locations:
 - (1) Minimum every 250 linear feet, including
 - (2) Horizontal and vertical points of inflection, curvature, etc.
 - (3) Fire line tee
 - (4) Plugs, stub-outs, dead-end lines
 - (5) Casing pipe (each end) and all buried fittings
 - 2) Sanitary Sewer
 - a) Top of pipe elevations and coordinates for force mains and siphon sanitary sewer lines (non-gravity facilities) at the following locations:
 - (1) Minimum every 250 linear feet and any buried fittings
 - (2) Horizontal and vertical points of inflection, curvature, etc.
 - 3) Stormwater – Not Applicable
 - b. The Contractor shall provide as-built survey including the elevation and location (and provide written documentation to the City) of construction features **after the construction is completed** including the following:
 - 1) Manholes
 - a) Rim and flowline elevations and coordinates for each manhole
 - 2) Water Lines
 - a) Cathodic protection test stations
 - b) Sampling stations
 - c) Meter boxes/vaults (All sizes)
 - d) Fire hydrants
 - e) Valves (gate, butterfly, etc.)
 - f) Air Release valves (Manhole rim and vent pipe)
 - g) Blow off valves (Manhole rim and valve lid)
 - h) Pressure plane valves
 - i) Underground Vaults
 - (1) Rim and flowline elevations and coordinates for each Underground Vault.
 - 3) Sanitary Sewer
 - a) Cleanouts
 - (1) Rim and flowline elevations and coordinates for each

- b) Manholes and Junction Structures
 - (1) Rim and flowline elevations and coordinates for each manhole and junction structure.
- 4) Stormwater – Not Applicable

1.10 DELIVERY, STORAGE, AND HANDLING [NOT USED]

1.11 FIELD [SITE] CONDITIONS [NOT USED]

1.12 WARRANTY

PART 2 - PRODUCTS

- A. A construction survey will produce, but will not be limited to:
 - 1. Recovery of relevant control points, points of curvature and points of intersection.
 - 2. Establish temporary horizontal and vertical control elevations (benchmarks) sufficiently permanent and located in a manner to be used throughout construction.
 - 3. The location of planned facilities, easements and improvements.
 - a. Establishing final line and grade stakes for piers, floors, grade beams, parking areas, utilities, streets, highways, tunnels, and other construction.
 - b. A record of revisions or corrections noted in an orderly manner for reference.
 - c. A drawing, when required by the client, indicating the horizontal and vertical location of facilities, easements and improvements, as built.
 - 4. Cut sheets shall be provided to the City inspector and Survey Superintendent for all construction staking projects. These cut sheets shall be on the standard city template which can be obtained from the Survey Superintendent (817-392-7925).
 - 5. Digital survey files in the following formats shall be acceptable:
 - a. AutoCAD (.dwg)
 - b. ESRI Shapefile (.shp)
 - c. CSV file (.csv), formatted with X and Y coordinates in separate columns (use standard templates, if available)
 - 6. Survey files shall include vertical and horizontal data tied to original project control and benchmarks, and shall include feature descriptions

PART 3 - EXECUTION

3.1 INSTALLERS

- A. Tolerances:
 - 1. The staked location of any improvement or facility should be as accurate as practical and necessary. The degree of precision required is dependent on many factors all of which must remain judgmental. The tolerances listed hereafter are based on generalities and, under certain circumstances, shall yield to specific requirements. The surveyor shall assess any situation by review of the overall plans and through consultation with responsible parties as to the need for specific tolerances.
 - a. Earthwork: Grades for earthwork or rough cut should not exceed 0.1 ft. vertical tolerance. Horizontal alignment for earthwork and rough cut should not exceed 1.0 ft. tolerance.

- b. Horizontal alignment on a structure shall be within .0.1ft tolerance.
 - c. Paving or concrete for streets, curbs, gutters, parking areas, drives, alleys and walkways shall be located within the confines of the site boundaries and, occasionally, along a boundary or any other restrictive line. Away from any restrictive line, these facilities should be staked with an accuracy producing no more than 0.05ft. tolerance from their specified locations.
 - d. Underground and overhead utilities, such as sewers, gas, water, telephone and electric lines, shall be located horizontally within their prescribed areas or easements. Within assigned areas, these utilities should be staked with an accuracy producing no more than 0.1 ft tolerance from a specified location.
 - e. The accuracy required for the vertical location of utilities varies widely. Many underground utilities require only a minimum cover and a tolerance of 0.1 ft. should be maintained. Underground and overhead utilities on planned profile, but not depending on gravity flow for performance, should not exceed 0.1 ft. tolerance.
- B. Surveying instruments shall be kept in close adjustment according to manufacturer's specifications or in compliance to standards. The City reserves the right to request a calibration report at any time and recommends regular maintenance schedule be performed by a certified technician every 6 months.
- 1. Field measurements of angles and distances shall be done in such fashion as to satisfy the closures and tolerances expressed in Part 3.1.A.
 - 2. Vertical locations shall be established from a pre-established benchmark and checked by closing to a different bench mark on the same datum.
 - 3. Construction survey field work shall correspond to the client's plans. Irregularities or conflicts found shall be reported promptly to the City.
 - 4. Revisions, corrections and other pertinent data shall be logged for future reference.

3.2 EXAMINATION [NOT USED]

3.3 PREPARATION [NOT USED]

3.4 APPLICATION

3.5 REPAIR / RESTORATION

- A. If the Contractor's work damages or destroys one or more of the control monuments/points set by the Developer's Project Representative, the monuments shall be adequately referenced for expedient restoration.
- 1. Notify City or Developer's Project Representative if any control data needs to be restored or replaced due to damage caused during construction operations.
 - a. Contractor shall perform replacements and/or restorations.
 - b. The City or Developer's Project Representative may require at any time a survey "Field Check" of any monument or benchmarks that are set be verified by the Developer's Project Representative before further associated work can move forward.

3.6 RE-INSTALLATION [NOT USED]

3.7 FIELD [or] SITE QUALITY CONTROL

- A. It is the Contractor's responsibility to maintain all stakes and control data placed by the Developer's Project Representative in accordance with this Specification. This includes easements and right of way, if noted on the plans.
- B. Do not change or relocate stakes or control data without approval from the City.

3.8 SYSTEM STARTUP

- A. Survey Checks
 - 1. The City reserves the right to perform a Survey Check at any time deemed necessary.
 - 2. Checks by City personnel or 3rd party contracted surveyor are not intended to relieve the contractor of his/her responsibility for accuracy.

3.9 ADJUSTING [NOT USED]

3.10 CLEANING [NOT USED]

3.11 CLOSEOUT ACTIVITIES [NOT USED]

3.12 PROTECTION [NOT USED]

3.13 MAINTENANCE [NOT USED]

3.14 ATTACHMENTS [NOT USED]

END OF SECTION

Revision Log		
DATE	NAME	SUMMARY OF CHANGE
8/31/2012	D. Johnson	
8/31/2017	M. Owen	Added instruction and modified measurement & payment under 1.2; added definitions and references under 1.3; modified 1.6; added 1.7 closeout submittal requirements; modified 1.9 Quality Assurance; added PART 2 – PRODUCTS ; Added 3.1 Installers; added 3.5 Repair/Restoration; and added 3.8 System Startup.
2/14/2018	M Owen	Removed "blue text"; revised measurement and payment sections for Construction Staking and As-Built Survey; added reference to selection compliance with TGC 2254; revised action and Closeout submittal requirements; added acceptable depth measurement criteria; revised list of items requiring as-built survey "during" and "after" construction; and revised acceptable digital survey file format

SECTION 01 74 23
CLEANING

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Intermediate and final cleaning for Work not including special cleaning of closed systems specified elsewhere

B. Deviations from this City of Fort Worth Standard Specification

1. None.

C. Related Specification Sections include, but are not necessarily limited to:

1. Division 0 – Bidding Requirements, Contract Forms and Conditions of the Contract
2. Division 1 – General Requirements
3. Section 32 92 13 – Hydro-Mulching, Seeding and Sodding

1.2 PRICE AND PAYMENT PROCEDURES

A. Measurement and Payment

1. Work associated with this Item is considered subsidiary to the various Items bid. No separate payment will be allowed for this Item.

1.3 REFERENCES [NOT USED]

1.4 ADMINISTRATIVE REQUIREMENTS

A. Scheduling

1. Schedule cleaning operations so that dust and other contaminants disturbed by cleaning process will not fall on newly painted surfaces.
2. Schedule final cleaning upon completion of Work and immediately prior to final inspection.

1.5 SUBMITTALS [NOT USED]

1.6 ACTION SUBMITTALS/INFORMATIONAL SUBMITTALS [NOT USED]

1.7 CLOSEOUT SUBMITTALS [NOT USED]

1.8 MAINTENANCE MATERIAL SUBMITTALS [NOT USED]

1.9 QUALITY ASSURANCE [NOT USED]

1.10 STORAGE, AND HANDLING

A. Storage and Handling Requirements

1. Store cleaning products and cleaning wastes in containers specifically designed for those materials.

1.11 FIELD [SITE] CONDITIONS [NOT USED]

1.12 WARRANTY [NOT USED]

PART 2 - PRODUCTS

2.1 OWNER-FURNISHED [OR] OWNER-SUPPLIED PRODUCTS [NOT USED]

2.2 MATERIALS

A. Cleaning Agents

1. Compatible with surface being cleaned
2. New and uncontaminated
3. For manufactured surfaces
 - a. Material recommended by manufacturer

2.3 ACCESSORIES [NOT USED]

2.4 SOURCE QUALITY CONTROL [NOT USED]

PART 3 - EXECUTION

3.1 INSTALLERS [NOT USED]

3.2 EXAMINATION [NOT USED]

3.3 PREPARATION [NOT USED]

3.4 APPLICATION [NOT USED]

3.5 REPAIR / RESTORATION [NOT USED]

3.6 RE-INSTALLATION [NOT USED]

3.7 FIELD [OR] SITE QUALITY CONTROL [NOT USED]

3.8 SYSTEM STARTUP [NOT USED]

3.9 ADJUSTING [NOT USED]

3.10 CLEANING

A. General

1. Prevent accumulation of wastes that create hazardous conditions.
2. Conduct cleaning and disposal operations to comply with laws and safety orders of governing authorities.
3. Do not dispose of volatile wastes such as mineral spirits, oil or paint thinner in storm or sanitary drains or sewers.
4. Dispose of degradable debris at an approved solid waste disposal site.
5. Dispose of nondegradable debris at an approved solid waste disposal site or in an alternate manner approved by City and regulatory agencies.

6. Handle materials in a controlled manner with as few handlings as possible.
7. Thoroughly clean, sweep, wash and polish all Work and equipment associated with this project.
8. Remove all signs of temporary construction and activities incidental to construction of required permanent Work.
9. If project is not cleaned to the satisfaction of the City, the City reserves the right to have the cleaning completed at the expense of the Contractor.
10. Do not burn on-site.

B. Intermediate Cleaning during Construction

1. Keep Work areas clean so as not to hinder health, safety or convenience of personnel in existing facility operations.
2. At maximum weekly intervals, dispose of waste materials, debris and rubbish.
3. Confine construction debris daily in strategically located container(s):
 - a. Cover to prevent blowing by wind
 - b. Store debris away from construction or operational activities
 - c. Haul from site at a minimum of once per week
4. Vacuum clean interior areas when ready to receive finish painting.
 - a. Continue vacuum cleaning on an as-needed basis, until Final Acceptance.
5. Prior to storm events, thoroughly clean site of all loose or unsecured items, which may become airborne or transported by flowing water during the storm.

C. Exterior (Site or Right of Way) Final Cleaning

1. Remove trash and debris containers from site.
 - a. Re-seed areas disturbed by location of trash and debris containers in accordance with Section 32 92 13.
2. Sweep roadway to remove all rocks, pieces of asphalt, concrete or any other object that may hinder or disrupt the flow of traffic along the roadway.
3. Clean any interior areas including, but not limited to, vaults, manholes, structures, junction boxes and inlets.
4. If no longer required for maintenance of erosion facilities, and upon approval by City, remove erosion control from site.
5. Clean signs, lights, signals, etc.

3.11 CLOSEOUT ACTIVITIES [NOT USED]

3.12 PROTECTION [NOT USED]

3.13 MAINTENANCE [NOT USED]

3.14 ATTACHMENTS [NOT USED]

END OF SECTION

Revision Log		
DATE	NAME	SUMMARY OF CHANGE
4/7/2014	M.Domenech	Revised for DAP application

SECTION 01 77 19
CLOSEOUT REQUIREMENTS

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. The procedure for closing out a contract

B. Deviations from this City of Fort Worth Standard Specification

1. None.

C. Related Specification Sections include, but are not necessarily limited to:

1. Division 0 – Bidding Requirements, Contract Forms and Conditions of the Contract
2. Division 1 – General Requirements

1.2 PRICE AND PAYMENT PROCEDURES

A. Measurement and Payment

1. Work associated with this Item is considered subsidiary to the various Items bid.
No separate payment will be allowed for this Item.

1.3 REFERENCES [NOT USED]

1.4 ADMINISTRATIVE REQUIREMENTS

A. Guarantees, Bonds and Affidavits

1. No application for final payment will be accepted until all guarantees, bonds, certificates, licenses and affidavits required for Work or equipment as specified are satisfactorily filed with the City.

B. Release of Liens or Claims

1. No application for final payment will be accepted until satisfactory evidence of release of liens has been submitted to the City.

1.5 SUBMITTALS

- A. Submit all required documentation to City's Project Representative.

1.6 INFORMATIONAL SUBMITTALS [NOT USED]

1.7 CLOSEOUT SUBMITTALS [NOT USED]

PART 2 - PRODUCTS [NOT USED]

PART 3 - EXECUTION

3.1 INSTALLERS [NOT USED]

3.2 EXAMINATION [NOT USED]

3.3 PREPARATION [NOT USED]

3.4 CLOSEOUT PROCEDURE

A. Prior to requesting Final Inspection, submit:

1. Project Record Documents in accordance with Section 01 78 39
2. Operation and Maintenance Data, if required, in accordance with Section 01 78 23

B. Prior to requesting Final Inspection, perform final cleaning in accordance with Section 01 74 23.

C. Final Inspection

1. After final cleaning, provide notice to the City Project Representative that the Work is completed.
 - a. The City will make an initial Final Inspection with the Contractor present.
 - b. Upon completion of this inspection, the City will notify the Contractor, in writing within 10 business days, of any particulars in which this inspection reveals that the Work is defective or incomplete.
2. Upon receiving written notice from the City, immediately undertake the Work required to remedy deficiencies and complete the Work to the satisfaction of the City.
3. Upon completion of Work associated with the items listed in the City's written notice, inform the City, that the required Work has been completed. Upon receipt of this notice, the City, in the presence of the Contractor, will make a subsequent Final Inspection of the project.
4. Provide all special accessories required to place each item of equipment in full operation. These special accessory items include, but are not limited to:
 - a. Specified spare parts
 - b. Adequate oil and grease as required for the first lubrication of the equipment
 - c. Initial fill up of all chemical tanks and fuel tanks
 - d. Light bulbs
 - e. Fuses
 - f. Vault keys
 - g. Handwheels
 - h. Other expendable items as required for initial start-up and operation of all equipment

D. Notice of Project Completion

1. Once the City Project Representative finds the Work subsequent to Final Inspection to be satisfactory, the City will issue a Notice of Project Completion (Green Sheet).

E. Supporting Documentation

1. Coordinate with the City Project Representative to complete the following additional forms:
 - a. Final Payment Request
 - b. Statement of Contract Time
 - c. Affidavit of Payment and Release of Liens
 - d. Consent of Surety to Final Payment
 - e. Pipe Report (if required)
 - f. Contractor's Evaluation of City
 - g. Performance Evaluation of Contractor

F. Letter of Final Acceptance

1. Upon review and acceptance of Notice of Project Completion and Supporting Documentation, in accordance with General Conditions, City will issue Letter of Final Acceptance and release the Final Payment Request for payment.

3.5 REPAIR / RESTORATION [NOT USED]

3.6 RE-INSTALLATION [NOT USED]

3.7 FIELD [OR] SITE QUALITY CONTROL [NOT USED]

3.8 SYSTEM STARTUP [NOT USED]

3.9 ADJUSTING [NOT USED]

3.10 CLEANING [NOT USED]

3.11 CLOSEOUT ACTIVITIES [NOT USED]

3.12 PROTECTION [NOT USED]

3.13 MAINTENANCE [NOT USED]

3.14 ATTACHMENTS [NOT USED]

END OF SECTION

Revision Log		
DATE	NAME	SUMMARY OF CHANGE
4/7/2014	M.Domenech	Revised for DAP application

SECTION 01 78 23
OPERATION AND MAINTENANCE DATA

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Product data and related information appropriate for City's maintenance and operation of products furnished under Contract
2. Such products may include, but are not limited to:
 - a. Traffic Controllers
 - b. Irrigation Controllers (to be operated by the City)
 - c. Butterfly Valves

B. Deviations from this City of Fort Worth Standard Specification

1. None.

C. Related Specification Sections include, but are not necessarily limited to:

1. Division 0 – Bidding Requirements, Contract Forms and Conditions of the Contract
2. Division 1 – General Requirements

1.2 PRICE AND PAYMENT PROCEDURES

A. Measurement and Payment

1. Work associated with this Item is considered subsidiary to the various Items bid. No separate payment will be allowed for this Item.

1.3 REFERENCES [NOT USED]

1.4 ADMINISTRATIVE REQUIREMENTS

A. Schedule

1. Submit manuals in final form to the City within 30 calendar days of product shipment to the project site.

1.5 SUBMITTALS

- A. Submittals shall be in accordance with Section 01 33 00. All submittals shall be approved by the City prior to delivery.

1.6 INFORMATIONAL SUBMITTALS

A. Submittal Form

1. Prepare data in form of an instructional manual for use by City personnel.
2. Format
 - a. Size: 8 ½ inches x 11 inches
 - b. Paper
 - 1) 40 pound minimum, white, for typed pages
 - 2) Holes reinforced with plastic, cloth or metal
 - c. Text: Manufacturer's printed data, or neatly typewritten

- d. Drawings
 - 1) Provide reinforced punched binder tab, bind in with text
 - 2) Reduce larger drawings and fold to size of text pages.
 - e. Provide fly-leaf for each separate product, or each piece of operating equipment.
 - 1) Provide typed description of product, and major component parts of equipment.
 - 2) Provide indexed tabs.
 - f. Cover
 - 1) Identify each volume with typed or printed title "OPERATING AND MAINTENANCE INSTRUCTIONS".
 - 2) List:
 - a) Title of Project
 - b) Identity of separate structure as applicable
 - c) Identity of general subject matter covered in the manual
3. Binders
 - a. Commercial quality 3-ring binders with durable and cleanable plastic covers
 - b. When multiple binders are used, correlate the data into related consistent groupings.
 4. If available, provide an electronic form of the O&M Manual.
- B. Manual Content
1. Neatly typewritten table of contents for each volume, arranged in systematic order
 - a. Contractor, name of responsible principal, address and telephone number
 - b. A list of each product required to be included, indexed to content of the volume
 - c. List, with each product:
 - 1) The name, address and telephone number of the subcontractor or installer
 - 2) A list of each product required to be included, indexed to content of the volume
 - 3) Identify area of responsibility of each
 - 4) Local source of supply for parts and replacement
 - d. Identify each product by product name and other identifying symbols as set forth in Contract Documents.
 2. Product Data
 - a. Include only those sheets which are pertinent to the specific product.
 - b. Annotate each sheet to:
 - 1) Clearly identify specific product or part installed
 - 2) Clearly identify data applicable to installation
 - 3) Delete references to inapplicable information
 3. Drawings
 - a. Supplement product data with drawings as necessary to clearly illustrate:
 - 1) Relations of component parts of equipment and systems
 - 2) Control and flow diagrams
 - b. Coordinate drawings with information in Project Record Documents to assure correct illustration of completed installation.
 - c. Do not use Project Record Drawings as maintenance drawings.
 4. Written text, as required to supplement product data for the particular installation:
 - a. Organize in consistent format under separate headings for different procedures.
 - b. Provide logical sequence of instructions of each procedure.

5. Copy of each warranty, bond and service contract issued
 - a. Provide information sheet for City personnel giving:
 - 1) Proper procedures in event of failure
 - 2) Instances which might affect validity of warranties or bonds
- C. Manual for Materials and Finishes
 1. Submit 5 copies of complete manual in final form.
 2. Content, for architectural products, applied materials and finishes:
 - a. Manufacturer's data, giving full information on products
 - 1) Catalog number, size, composition
 - 2) Color and texture designations
 - 3) Information required for reordering special manufactured products
 - b. Instructions for care and maintenance
 - 1) Manufacturer's recommendation for types of cleaning agents and methods
 - 2) Cautions against cleaning agents and methods which are detrimental to product
 - 3) Recommended schedule for cleaning and maintenance
 3. Content, for moisture protection and weather exposure products:
 - a. Manufacturer's data, giving full information on products
 - 1) Applicable standards
 - 2) Chemical composition
 - 3) Details of installation
 - b. Instructions for inspection, maintenance and repair
- D. Manual for Equipment and Systems
 1. Submit 5 copies of complete manual in final form.
 2. Content, for each unit of equipment and system, as appropriate:
 - a. Description of unit and component parts
 - 1) Function, normal operating characteristics and limiting conditions
 - 2) Performance curves, engineering data and tests
 - 3) Complete nomenclature and commercial number of replaceable parts
 - b. Operating procedures
 - 1) Start-up, break-in, routine and normal operating instructions
 - 2) Regulation, control, stopping, shut-down and emergency instructions
 - 3) Summer and winter operating instructions
 - 4) Special operating instructions
 - c. Maintenance procedures
 - 1) Routine operations
 - 2) Guide to "trouble shooting"
 - 3) Disassembly, repair and reassembly
 - 4) Alignment, adjusting and checking
 - d. Servicing and lubrication schedule
 - 1) List of lubricants required
 - e. Manufacturer's printed operating and maintenance instructions
 - f. Description of sequence of operation by control manufacturer
 - 1) Predicted life of parts subject to wear
 - 2) Items recommended to be stocked as spare parts
 - g. As installed control diagrams by controls manufacturer
 - h. Each contractor's coordination drawings
 - 1) As installed color coded piping diagrams

- i. Charts of valve tag numbers, with location and function of each valve
- j. List of original manufacturer's spare parts, manufacturer's current prices, and recommended quantities to be maintained in storage
- k. Other data as required under pertinent Sections of Specifications
3. Content, for each electric and electronic system, as appropriate:
 - a. Description of system and component parts
 - 1) Function, normal operating characteristics, and limiting conditions
 - 2) Performance curves, engineering data and tests
 - 3) Complete nomenclature and commercial number of replaceable parts
 - b. Circuit directories of panelboards
 - 1) Electrical service
 - 2) Controls
 - 3) Communications
 - c. As installed color coded wiring diagrams
 - d. Operating procedures
 - 1) Routine and normal operating instructions
 - 2) Sequences required
 - 3) Special operating instructions
 - e. Maintenance procedures
 - 1) Routine operations
 - 2) Guide to "trouble shooting"
 - 3) Disassembly, repair and reassembly
 - 4) Adjustment and checking
 - f. Manufacturer's printed operating and maintenance instructions
 - g. List of original manufacturer's spare parts, manufacturer's current prices, and recommended quantities to be maintained in storage
 - h. Other data as required under pertinent Sections of Specifications
4. Prepare and include additional data when the need for such data becomes apparent during instruction of City's personnel.

1.7 CLOSEOUT SUBMITTALS [NOT USED]

1.8 MAINTENANCE MATERIAL SUBMITTALS [NOT USED]

1.9 QUALITY ASSURANCE

- A. Provide operation and maintenance data by personnel with the following criteria:
1. Trained and experienced in maintenance and operation of described products
 2. Skilled as technical writer to the extent required to communicate essential data
 3. Skilled as draftsman competent to prepare required drawings

1 **1.10 DELIVERY, STORAGE, AND HANDLING [NOT USED]**

2 **1.11 FIELD [SITE] CONDITIONS [NOT USED]**

3 **1.12 WARRANTY [NOT USED]**

4 **PART 2 - PRODUCTS [NOT USED]**

5 **PART 3 - EXECUTION [NOT USED]**

6 **END OF SECTION**

7

Revision Log		
DATE	NAME	SUMMARY OF CHANGE
8/31/2012	D. Johnson	1.5.A.1 – title of section removed
4/7/2014	M.Domenech	Revised for DAP Application

8

SECTION 01 78 39
PROJECT RECORD DOCUMENTS

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Work associated with the documenting the project and recording changes to project documents, including:
 - a. Record Drawings
 - b. Water Meter Service Reports
 - c. Sanitary Sewer Service Reports
 - d. Large Water Meter Reports

B. Deviations from this City of Fort Worth Standard Specification

1. None.

C. Related Specification Sections include, but are not necessarily limited to:

1. Division 0 – Bidding Requirements, Contract Forms and Conditions of the Contract
2. Division 1 – General Requirements

1.2 PRICE AND PAYMENT PROCEDURES

A. Measurement and Payment

1. Work associated with this Item is considered subsidiary to the various Items bid. No separate payment will be allowed for this Item.

1.3 REFERENCES [NOT USED]

1.4 ADMINISTRATIVE REQUIREMENTS [NOT USED]

1.5 SUBMITTALS

- A. Prior to submitting a request for Final Inspection, deliver Project Record Documents to City's Project Representative.

1.6 ACTION SUBMITTALS/INFORMATIONAL SUBMITTALS [NOT USED]

1.7 CLOSEOUT SUBMITTALS [NOT USED]

1.8 MAINTENANCE MATERIAL SUBMITTALS [NOT USED]

1.9 QUALITY ASSURANCE

A. Accuracy of Records

1. Thoroughly coordinate changes within the Record Documents, making adequate and proper entries on each page of Specifications and each sheet of Drawings and other Documents where such entry is required to show the change properly.
2. Accuracy of records shall be such that future search for items shown in the Contract Documents may rely reasonably on information obtained from the approved Project Record Documents.

3. To facilitate accuracy of records, make entries within 24 hours after receipt of information that the change has occurred.
4. Provide factual information regarding all aspects of the Work, both concealed and visible, to enable future modification of the Work to proceed without lengthy and expensive site measurement, investigation and examination.

1.10 STORAGE AND HANDLING

A. Storage and Handling Requirements

1. Maintain the job set of Record Documents completely protected from deterioration and from loss and damage until completion of the Work and transfer of all recorded data to the final Project Record Documents.
2. In the event of loss of recorded data, use means necessary to again secure the data to the City's approval.
 - a. In such case, provide replacements to the standards originally required by the Contract Documents.

1.11 FIELD [SITE] CONDITIONS [NOT USED]

1.12 WARRANTY [NOT USED]

PART 2 - PRODUCTS

2.1 OWNER-FURNISHED [OR] OWNER-SUPPLIED PRODUCTS [NOT USED]

2.2 RECORD DOCUMENTS

A. Job set

1. Promptly following receipt of the Notice to Proceed, secure from the City, at no charge to the Contractor, 1 complete set of all Documents comprising the Contract.

B. Final Record Documents

1. At a time nearing the completion of the Work and prior to Final Inspection, provide the City 1 complete set of all Final Record Drawings in the Contract.

2.3 ACCESSORIES [NOT USED]

2.4 SOURCE QUALITY CONTROL [NOT USED]

PART 3 - EXECUTION

3.1 INSTALLERS [NOT USED]

3.2 EXAMINATION [NOT USED]

3.3 PREPARATION [NOT USED]

3.4 MAINTENANCE DOCUMENTS

A. Maintenance of Job Set

1. Immediately upon receipt of the job set, identify each of the Documents with the title, "RECORD DOCUMENTS - JOB SET".

2. Preservation
 - a. Considering the Contract completion time, the probable number of occasions upon which the job set must be taken out for new entries and for examination, and the conditions under which these activities will be performed, devise a suitable method for protecting the job set.
 - b. Do not use the job set for any purpose except entry of new data and for review by the City, until start of transfer of data to final Project Record Documents.
 - c. Maintain the job set at the site of work.
3. Coordination with Construction Survey
 - a. At a minimum clearly mark any deviations from Contract Documents associated with installation of the infrastructure.
4. Making entries on Drawings
 - a. Record any deviations from Contract Documents.
 - b. Use an erasable colored pencil (not ink or indelible pencil), clearly describe the change by graphic line and note as required.
 - c. Date all entries.
 - d. Call attention to the entry by a "cloud" drawn around the area or areas affected.
 - e. In the event of overlapping changes, use different colors for the overlapping changes.
5. Conversion of schematic layouts
 - a. In some cases on the Drawings, arrangements of conduits, circuits, piping, ducts, and similar items, are shown schematically and are not intended to portray precise physical layout.
 - 1) Final physical arrangement is determined by the Contractor, subject to the City's approval.
 - 2) However, design of future modifications of the facility may require accurate information as to the final physical layout of items which are shown only schematically on the Drawings.
 - b. Show on the job set of Record Drawings, by dimension accurate to within 1 inch, the centerline of each run of items.
 - 1) Final physical arrangement is determined by the Contractor, subject to the City's approval.
 - 2) Show, by symbol or note, the vertical location of the Item ("under slab", "in ceiling plenum", "exposed", and the like).
 - 3) Make all identification sufficiently descriptive that it may be related reliably to the Specifications.
 - c. The City may waive the requirements for conversion of schematic layouts where, in the City's judgment, conversion serves no useful purpose. However, do not rely upon waivers being issued except as specifically issued in writing by the City.

B. Final Project Record Documents

1. Transfer of data to Drawings
 - a. Carefully transfer change data shown on the job set of Record Drawings to the corresponding final documents, coordinating the changes as required.
 - b. Clearly indicate at each affected detail and other Drawing a full description of changes made during construction, and the actual location of items.
 - c. Call attention to each entry by drawing a "cloud" around the area or areas affected.

- d. Make changes neatly, consistently and with the proper media to assure longevity and clear reproduction.
2. Transfer of data to other Documents
 - a. If the Documents, other than Drawings, have been kept clean during progress of the Work, and if entries thereon have been orderly to the approval of the City, the job set of those Documents, other than Drawings, will be accepted as final Record Documents.
 - b. If any such Document is not so approved by the City, secure a new copy of that Document from the City at the City's usual charge for reproduction and handling, and carefully transfer the change data to the new copy to the approval of the City.

3.5 REPAIR / RESTORATION [NOT USED]

3.6 RE-INSTALLATION [NOT USED]

3.7 FIELD [OR] SITE QUALITY CONTROL [NOT USED]

3.8 SYSTEM STARTUP [NOT USED]

3.9 ADJUSTING [NOT USED]

3.10 CLEANING [NOT USED]

3.11 CLOSEOUT ACTIVITIES [NOT USED]

3.12 PROTECTION [NOT USED]

3.13 MAINTENANCE [NOT USED]

3.14 ATTACHMENTS [NOT USED]

END OF SECTION

Revision Log		
DATE	NAME	SUMMARY OF CHANGE
4/7/2014	M.Domenech	Revised for DAP Application



CITY OF FORT WORTH
WATER DEPARTMENT
STANDARD PRODUCT LIST

Updated: 03/07/2023

Note: All water or sewer pipe larger than 15 inch diameter shall be approved for use by the Water Department on a project specific basis. Special bedding may be required for some pipes.

Approval	Spec No.	Classification	Manufacturer	Model No.	National Spec	Size
Water & Sewer - Manholes & Bases/Components 33-39-10 (Rev 2/3/16)						
07/23/97	33 05 13	Urethane Hydrophilic Waterstop	Asahi Kogyo K.K.	Adeka Ultra-Seal P-201	ASTM D2240/D412/D792	
04/26/00	33 05 13	Offset Joint for 4" Diam. MH	Hanson Concrete Products	Drawing No. 35-0048-001		
04/26/00	33 05 13	Profile Gasket for 4" Diam. MH	Press-Seal Gasket Corp.	250-4G Gasket	ASTM C-443/C-361	SS MH
1/26/99	33 05 13	HDPE Manhole Adjustment Rings	Ladtech, Inc	HDPE Adjustment Ring		Traffic and Non-traffic area
5/13/05	33 05 13	Manhole External Wrap	Canusa - CPS	WrapidSeal Manhole Encapsulation System		
Water & Sewer - Manholes & Bases/Fiberglass 33-39-13 (1/8/13)						
1/26/99	33 39 13	Fiberglass Manhole	Fluid Containment, Inc.	Flowtite	ASTM 3753	Non-traffic area
08/30/06	33 39 13	Fiberglass Manhole	L.F. Manufacturing			Non-traffic area
Water & Sewer - Manholes & Bases/Frames & Covers/Rectangular 33-05-13 (Rev 2/3/16)						
*	33 05 13	Manhole Frames and Covers	Western Iron Works, Bass & Hays Foundry	1001		24"x40" WD
Water & Sewer - Manholes & Bases/Frames & Covers/Standard (Round) 33-05-13 (Rev 2/3/16)						
*	33 05 13	Manhole Frames and Covers	Western Iron Works, Bass & Hays Foundry	30024		24" Dia.
*	33 05 13	Manhole Frames and Covers	McKinley Iron Works Inc.	A 24 AM		24" Dia.
08/24/18	33 05 13	Manhole Frames and Covers	Neenah Foundry	R-1272	ASTM A48 & AASHTO M306	24" Dia.
08/24/18	33 05 13	Manhole Frames and Covers	Neenah Foundry	R- 165-LM (Hinged)	ASTM A48 & AASHTO M306	24" Dia.
08/24/18	33 05 13	Manhole Frames and Covers	Neenah Foundry	NF 1274	ASTM A48 & AASHTO M306	30" Dia.
08/24/18	33 05 13	Manhole Frames and Covers	Neenah Foundry	R-1743-LM (Hinged)	ASTM A48 & AASHTO M306	30" dia.
	33 05 13	Manhole Frames and Covers	Sigma Corporation	MH-144N		
	33 05 13	Manhole Frames and Covers	Sigma Corporation	MH-143N		
	33 05 13	Manhole Frames and Covers	Pont-A-Mousson	GTS-STD		24" dia.
	33 05 13	Manhole Frames and Covers	Neenah Casting			24" dia.
10/31/06	33 05 13	Manhole Frames and Covers (Hinged)	Powersal	Hinged Ductile Iron Manhole	ASTM A536	24" Dia.
7/25/03	33 05 13	Manhole Frames and Covers	Saint-Gobain Pipelines (Pamrex/rexus)	RE32-R8FS		30" Dia.
01/31/06	33 05 13	30" Dia. MH Ring and Cover	East Jordan Iron Works	V1432-2 and V1483 Designs	AASHTO M306-04	30" Dia.
11/02/10	33 05 13	30" Dia. MH Ring and Cover	Sigma Corporation	MH1651FWN & MH16502		30" Dia
07/19/11	33 05 13	30" Dia. MH Ring and Cover	Star Pipe Products	MH32FTWSS-DC		30" Dia
08/10/11	33 05 13	30" Dia. MH Ring and Cover	Accucast	220700 Heavy Duty with Gasket Ring		30" Dia
10/14/13	33 05 13	30" Dia. MH Ring and Cover (Hinged & Lockable)	East Jordan Iron Works	30" ERGO XL Assembly with Cam Lock/MPIC/T-Gasket	ASSHTO M105 & ASTM A536	30" Dia
06/01/17	34 05 13	30" Dia. MH Ring and Cover (Hinged & Lockable) CI	SIP Industries	2280 (32")	ASTM A 48	30" Dia.
09/16/19	33 05 13	30" Dia. MH Ring and Cover	Composite Access Products, L.P.	CAP-ONE-30-FTW, Composite, w/ Lock w/o Hing		30" Dia.
10/07/21	34 05 13	30" Dia. MH Ring and Cover	Trumbull Manufacturing	32"(30") Frame and Cover		30" Dia.
Water & Sewer - Manholes & Bases/Frames & Covers/Water Tight & Pressure Tight 33-05-13 (Rev 2/3/16)						
*	33 05 13	Manhole Frames and Covers	Pont-A-Mousson	Pantight		24" Dia.
*	33 05 13	Manhole Frames and Covers	Neenah Casting			24" Dia.
*	33 05 13	Manhole Frames and Covers	Western Iron Works,Bass & Hays Foundry	300-24P		24" Dia.
*	33 05 13	Manhole Frames and Covers	McKinley Iron Works Inc.	WPA24AM		24" Dia.
03/08/00	33 05 13	Manhole Frames and Covers	Accucast	RC-2100	ASTM A 48	24" Dia.
04/20/01	33 05 13	Manhole Frames and Covers	(SIP)Serampore Industries Private Ltd.	300-24-23.75 Ring and Cover	ASTM A 48	24" Dia.
Water & Sewer - Manholes & Bases/Precast Concrete (Rev 1/8/13)						
*	33 39 10	Manhole, Precast Concrete	Hydro Conduit Corp	SPL Item #49	ASTM C 478	48"
*	33 39 10	Manhole, Precast Concrete	Wall Concrete Pipe Co. Inc.		ASTM C-443	48"
09/23/96	33 39 10	Manhole, Precast Concrete	Concrete Product Inc.	48" I.D. Manhole w/ 32" Cone	ASTM C 478	48" w/32" cone
05/08/18	33 39 10	Manhole, Precast Concrete	The Turner Company	48", 60" I.D. Manhole w/ 32" Cone	ASTM C 478	48", 60"
10/27/06	33 39 10	Manhole, Precast Concrete	Oldcastle Precast Inc.	48" I.D. Manhole w/ 24" Cone	ASTM C 478	48" Diam w 24" Ring
06/09/10	33 39 10	Manhole, Precast (Reinforced Polymer)Concrete	US Composite Pipe	Reinforced Polymer Concrete	ASTM C-76	48" to 72"
09/06/19	33 39 20	Manhole, Precast Concrete	Forterra Pipe and Precast	60" & 72" I.D. Manhole w/32" Cone	ASTM C-76	60" & 72"
10/07/21	32 39 20	Manhole, Precast Concrete	Forterra Pipe and Precast	48" I.D. Manhole w/32" Cone	ASTM C-77	48"
10/07/21	33 39 20	Manhole, Precast (Reinforced Polymer) Concrete	Armorock	48" & 60" I.D. Manhole w/32" Cone		48" & 60"
10/07/21	33 39 20	Manhole, Precast (Hybrid) Polymer & PVC	Predl Systems	48" & 60" I.D. Manhole w/32" Cone		48" & 60" Non Traffic Areas
03/07/23	33 39 20	Manhole, Precast Concrete	AmeriTex Pipe and Products, LLC	48" & 60" I.D. Manhole w/32" Cone	ASTM C-478; ASTM C-923; ASTM C-443	
03/07/23	33 39 20	Manhole, Precast (Reinforced Polymer) Concrete	P3 Polymers, RockHardscp	48" & 60" I.D. Manhole w/32" Cone		
04/28/07		Manhole, Precast (Reinforced Polymer) Concrete	Amitech USA	Meyer Polycrete Pipe		
Water & Sewer - Manholes & Bases/Rehab Systems/Cementitious						
*	E1-14	Manhole Rehab Systems	Quadex			
04/23/01	E1-14	Manhole Rehab Systems	Standard Cement Materials, Inc.	Reliner MSP		
	E1-14	Manhole Rehab Systems	AP/M Permaform			
4/20/01	E1-14	Manhole Rehab System	Strong Company	Strong Seal MS2A Rehab System		
5/12/03	E1-14	Manhole Rehab System (Liner)	Triplex Lining System	MH repair product to stop infiltration	ASTM D5813	
08/30/06		General Concrete Repair	FlexKrete Technologies	Vinyl Polyester Repair Product		Misc. Use



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Updated: 03/07/2023

Note: All water or sewer pipe larger than 15 inch diameter shall be approved for use by the Water Department on a project specific basis. Special bedding may be required for some pipes.

Approval	Spec No.	Classification	Manufacturer	Model No.	National Spec	Size
Water & Sewer - Manholes & Bases/Rehab Systems/NonCementitious						
05/20/96	E1-14	Manhole Rehab Systems	Spraycoq.	Spray Wall Polyurethane Coating	ASTM D639/D790	
12/14/01		Coating for Corrosion protection(Exterior)	ERTECH	Series 20320 and 2100 (Asphatic Emulsion)		Structures Only
01/31/06		Coatings for Corrosion Protection	Chesterton	Arc 791, S1HB, S1, S2	Acid Resistance Test	Sewer Applications
8/28/2006		Coatings for Corrosion Protection	Warren Environmental	S-301 and M-301		Sewer Applications
03/19/18	33 05 18, 33 39 10, 33 39 20	Coating for Corrosion protection(Exterior)	Sherwin Williams	KCC-CC Dampproofing Non-Fructed Spray Grade (Asphatic Emulsion)		For Exterior Coating of Concrete Structures Only
Water & Sewer - Manhole Inserts - Field Operations Use Only (Rev 2/3/16)						
*	33 05 13	Manhole Insert	Knutson Enterprises	Made to Order - Plastic	ASTM D 1248	For 24" dia.
*	33 05 13	Manhole Insert	South Western Packaging	Made to Order - Plastic	ASTM D 1248	For 24" dia.
*	33 05 13	Manhole Insert	Noflow-Inflow	Made to Order - Plastic	ASTM D 1248	For 24" dia.
09/23/96	33 05 13	Manhole Insert	Southwestern Packing & Seals, Inc.	LifeSaver - Stainless Steel		For 24" dia.
09/23/96	33 05 13	Manhole Insert	Southwestern Packing & Seals, Inc.	TetherLok - Stainless Steel		For 24" dia.
Water & Sewer - Pipe/Casing Spacers 33-05-24 (07/01/13)						
11/04/02		Steel Band Casing Spacers	Advanced Products and Systems, Inc.	Carbon Steel Spacers, Model SI		
02/02/93		Stainless Steel Casing Spacer	Advanced Products and Systems, Inc.	Stainless Steel Spacer, Model SSI		
04/22/87		Casing Spacers	Cascade Waterworks Manufacturing	Casing Spacers		
09/14/10		Stainless Steel Casing Spacer	Pipeline Seal and Insulator	Stainless Steel Casing Spacer		Up to 48"
09/14/10		Coated Steel Casin Spacers	Pipeline Seal and Insulator	Coated Steel Casin Spacers		Up to 48"
05/10/11		Stainless Steel Casing Spacer	Powerseal	4810 Powerchoc		Up to 48"
03/19/18		Casing Spacers	BWM	SS-12 Casing Spacer(Stainless Steel)		
03/19/18		Casing Spacers	BWM	FB-12 Casing Spacer (Coated Carbon Steel) for Non_pressure Pipe and Grouted Casing		
03/29/22	33 05 13	Casing Spacers	CCI Pipeline Systems	CSC12, CSS12		
Water & Sewer - Pipes/Ductile Iron 33-11-10(1/8/13)						
*	33 11 10	Ductile Iron Pipe	Griffin Pipe Products, Co.	Super Bell-Tite Ductile Iron Pressure Pipe,	AWWA C150, C151	3" thru 24"
08/24/18	33 11 10	Ductile Iron Pipe	American Ductile Iron Pipe Co.	American Fastite Pipe (Bell Spigot)	AWWA C150, C151	4" thru 30"
08/24/18	33 11 10	Ductile Iron Pipe	American Ductile Iron Pipe Co.	American Flex Ring (Restrained Joint)	AWWA C150, C151	4" thru 30"
*	33 11 10	Ductile Iron Pipe	U.S. Pipe and Foundry Co.		AWWA C150, C151	
*	33 11 10	Ductile Iron Pipe	McWane Cast Iron Pipe Co.		AWWA C150, C151	
Water & Sewer - Utility Line Marker (08/24/2018)						
Sewer - Coatings/Epoxy 33-39-60 (01/08/13)						
02/25/02		Epoxy Lining System	Sauereisen, Inc	SewerGard 210RS	LA County #210-L33	
12/14/01		Epoxy Lining System	Ertech Technical Coatings	Ertech 2030 and 2100 Series		
04/14/05		Interior Ductile Iron Pipe Coating	Induron	Protecto 401	ASTM B-117	Ductile Iron Pipe Only
01/31/06		Coatings for Corrosion Protection	Chesterton	Arc 791, S1HB, S1, S2	Acid Resistance Test	Sewer Applications
8/28/2006		Coatings for Corrosion Protection	Warren Environmental	S-301 and M-301		Sewer Applications
Sewer - Coatings/Polyurethane						
Sewer - Combination Air Valves						
05/25/18	33-31-70	Air Release Valve	A.R.I. USA, Inc.	D025LTP02(Composite Body)		2"
Sewer - Pipes/Concrete						
*	E1-04	Conc. Pipe, Reinforced	Wall Concrete Pipe Co. Inc.		ASTM C 76	
*	E1-04	Conc. Pipe, Reinforced	Hydro Conduit Corporation	Class III T&G, SPL Item #77	ASTM C 76	
*	E1-04	Conc. Pipe, Reinforced	Hanson Concrete Products	SPL Item #95 Manhole, #98 Pipe	ASTM C 76	
*	E1-04	Conc. Pipe, Reinforced	Concrete Pipe & Products Co. Inc.		ASTM C 76	
Sewer - Pipe Enlargment System (Method)33-31-23 (01/18/13)						
		PIM System	PIM Corporation	Polyethylene	PIM Corp., Piscata Way, N.J.	Approved Previously
		McConnell Systems	McLat Construction	Polyethylene	Houston, Texas	Approved Previously
		TRS Systems	Trenchless Replacement System	Polyethylene	Calgary, Canada	Approved Previously
Sewer - Pipe/Fiberglass Reinforced/33-31-13(1/8/13)						
7/21/97	33 31 13	Cent. Cast Fiberglass (FRP)	Hobas Pipe USA, Inc.	Hobas Pipe (Non-Pressure)	ASTM D3262/D3754	
03/22/10	33 31 13	Fiberglass Pipe (FRP)	Ameron	Bondstrand RPMP Pipe	ASTM D3262/D3754	
04/09/21	33 31 13	Glass-Fiber Reinforced Polymer Pipe (FRP)	Thompson Pipe Group	Thompson Pipe (Flowtite)	ASTM D3262/D3754	
03/07/23	33 31 13	Fiberglass Pipe (FRP)	Future Pipe Industries	Fiberstrong FRP	ASTM D3262, ASTM D3681, ASTM D4161, AWWA M45	
Sewer - Pipe/Polymer Pipe						
4/14/05		Polymer Modified Concrete Pipe	Amitech USA	Meyer Polycrrete Pipe	ASTM C33, A276, F477	8" to 102", Class V
06/09/10	E1-9	Reinforced Polymer Concrete Pipe	US Composite Pipe	Reinforced Polymer Concrete Pipe	ASTM C-76	
Sewer - Pipes/HDPE 33-31-23(1/8/13)						



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Note: All water or sewer pipe larger than 15 inch diameter shall be approved for use by the Water Department on a project specific basis. Special bedding may be required for some pipes.

Approval	Spec No.	Classification	Manufacturer	Model No.	National Spec	Size
*		High-density polyethylene pipe	Phillips Driscopipe, Inc.	Opticore Ductile Polyethylene Pipe	ASTM D 1248	8"
*		High-density polyethylene pipe	Plexco Inc.		ASTM D 1248	8"
*		High-density polyethylene pipe	Polly Pipe, Inc.		ASTM D 1248	8"
		High-density polyethylene pipe	CSR Hydro Conduit/Pipeline Systems	McConnell Pipe Enlargement	ASTM D 1248	
Sewer - Pipes/PVC (Pressure Sewer) 33-11-12 (4/1/13)						
12/02/11	33-11-12	DR-14 PVC Pressure Pipe	Pipeline Jetstream	PVC Pressure Pipe	AWWA C900	4" thru 12"
10/22/14	33-11-12	DR-14 PVC Pressure Pipe	Royal Building Products	Royal Seal PVC Pressure Pipe	AWWA C900	4" thru 12"
Sewer - Pipes/PVC* 33-31-20 (7/1/13)						
*	33-31-20	PVC Sewer Pipe	J-M Manufacturing Co., Inc. (JM Eagle)	SDR-26	ASTM D 3034	4" - 15"
12/23/97*	33-31-20	PVC Sewer Pipe	Diamond Plastics Corporation	SDR-26	ASTM D 3034	4" thru 15"
*	33-31-20	PVC Sewer Pipe	Lamson Vylon Pipe		ASTM F 789	4" thru 15"
01/18/18	33-31-20	PVC Sewer Pipe	Vinyltech PVC Pipe	Gravity Sewer	ASTM D3034	4" thru 15"
11/11/98	33-31-20	PVC Sewer Pipe	Diamond Plastics Corporation	"S" Gravity Sewer Pipe	ASTM F 679	18" to 27"
*	33-31-20	PVC Sewer Pipe	J-M Manufacturing Co, Inc. (JM Eagle)	SDR 26/35 PS 115/46	ASTM F 679	18" - 28"
09/11/12	33-31-20	PVC Sewer Pipe	Pipelife Jet Stream	SDR-26 and SDR-35	ASTM F-679	18"
05/06/05	33-31-20	PVC Solid Wall Pipe	Diamond Plastics Corporation	SDR 26/35 PS 115/46	ASTM F-679	18" to 48"
04/27/06	33-31-20	PVC Sewer Fittings	Harco	SDR-26 and SDR-35 Gasket Fittings	ASTM D-3034, D-1784, etc	4" - 15"
*	33-31-20	PVC Sewer Fittings	Plastic Trends, Inc. (Westlake)	Gasketed PVC Sewer Main Fittings	ASTM D 3034	
3/19/2018	33 31 20	PVC Sewer Pipe	Pipelife Jet Stream	SDR 35	ASTM F679	18"- 24"
3/19/2018	33 31 20	PVC Sewer Pipe	Pipelife Jet Stream	SDR 26	ASTM D3034	4"- 15"
3/29/2019	33 31 20	Gasketed Fittings (PVC)	GPX Products, Inc.	SDR 26	ASTM D3034/F-679	4"- 15"
10/21/2020	33 31 20	PVC Sewer Pipe	NAPCO(Westlake)	SDR 26	ASTM D3034	4" - 15"
10/22/2020	33 31 20	PVC Sewer Pipe	Sanderson Pipe Corp.	SDR 26	ASTM D3034	4"- 15"
10/21/2020	33 31 20	PVC Sewer Pipe	NAPCO(Westlake)	SDR 26/35 PS 115/46	ASTM F-679	18"- 36"
Sewer - Pipes/Rehab/CIPP 33-31-12 (01/18/13)						
*		Cured in Place Pipe	Insituform Texark, Inc		ASTM F 1216	
05/03/99		Cured in Place Pipe	National Envirotech Group	National Liner, (SPL) Item #27	ASTM F-1216/D-5813	
05/29/96		Cured in Place Pipe	Reynolds Inc/Inliner Technology (Inliner USA)	Inliner Technology	ASTM F 1216	
Sewer - Pipes/Rehab/Fold & Form						
*		Fold and Form Pipe	Cullum Pipe Systems, Inc.			
11/03/98		Fold and Form Pipe	Insituform Technologies, Inc.	Insituform "NuPipe"	ASTM F-1504	
		Fold and Form Pipe	American Pipe & Plastics, Inc.			Demo. Purpose Only
12/04/00		Fold and Form Pipe	Ultraliner	Ultraliner PVC Alloy Pipeliner	ASTM F-1504, 1871, 1867	
06/09/03		Fold and Form Pipe	Miller Pipeline Corp.	EX Method	ASTM F-1504, F-1947	Up to 18" diameter
Sewer - Pipes/Open Profile Large Diameter						
09/26/91	E100-2	PVC Sewer Pipe, Ribbed	Lamson Vylon Pipe	Carlton Vylon H.C. Closed Profile Pipe,	ASTM F 679	18" to 48"
09/26/91	E100-2	PVC Sewer Pipe, Ribbed	Extrusion Technologies, Inc.	Ultra-Rib Open Profile Sewer Pipe	ASTM F 679	18" to 48"
	E100-2	PVC Sewer Pipe, Ribbed	Uponor ETI Company			
11/10/10	(E100-2)	Polypropylene (PP) Sewer Pipe, Double Wall	Advanced Drainage Systems (ADS)	SaniTite HP Double Wall (Corrugated)	ASTM F 2736	24"-30"
11/10/10	(E100-2)	Polypropylene (PP) Sewer Pipe, Triple Wall	Advanced Drainage Systems (ADS)	SaniTite HP Triple Wall Pipe	ASTM F 2764	30" to 60"
05/16/11		Steel Reinforced Polyethylene Pipe	ConTech Construction Products	Durmaxx	ASTM F 2562	24" to 72"



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Approval	Spec No.	Classification	Manufacturer	Model No.	National Spec	Size
Water - Appurtenances 33-12-10 (07/01/13)						
01/18/18	33-12-10	Double Strap Saddle	Romac	202NS Nylon Coated	AWWA C800	1"-2" SVC, up to 24" Pipe
08/28/02		Double Strap Saddle	Smith Blair	#317 Nylon Coated Double Strap Saddle		
07/23/12	33-12-10	Double Strap Service Saddle	Mueller Company	DR2S Double (SS) Strap DI Saddle	AWWA C800	1"-2" SVC, up to 24" Pipe
03/07/23	33-12-10	Double Strap Service Saddle	Powerseal	3450AS, Incl. Corp. Stop, Dbl Strap, Stainless	NSF ANSI 372	1"-2" SVC, up to 24" Pipe
10/27/87		Curb Stops-Ball Meter Valves	McDonald	6100M, 6100MT & 610MT		3/4" and 1"
10/27/87		Curb Stops-Ball Meter Valves	McDonald	4603B, 4604B, 6100M, 6100TM and 6101M		1 1/2" and 2"
5/25/2018	33-12-10	Curb Stops-Ball Meter Valves	Ford Meter Box Co., Inc.	FB600-7NL, FB1600-7-NL, FV23-777-W-NL, L22-77NL	AWWA C800	2"
5/25/2018	33-12-10	Curb Stops-Ball Meter Valves	Ford Meter Box Co., Inc.	FB600-6-NL, FB1600-6-NL, FV23-666-W-NL, L22-66NL	AWWA C800	1-1/2"
5/25/2018	33-12-10	Curb Stops-Ball Meter Valves	Ford Meter Box Co., Inc.	FB600-4-NL, FB1600-4-NL, B11-444-WR-NL, B22444-WR-NL, L28-44NL	AWWA C800	1"
5/25/2018	33-12-10	Curb Stops-Ball Meter Valves	Mueller Co., Ltd.	B-25000N, B-24277N-3, B-20200N-3, H-15000N, H-1552N, H142276N	AWWA C800, ANSF 61, ANSI/NSF 372	2"
5/25/2018	33-12-10	Curb Stops-Ball Meter Valves	Mueller Co., Ltd.	B-25000N, B-20200N-3, B-24277N-3, H-15000N, H-14276N, H-15525N	AWWA C800, ANSF 61, ANSI/NSF 372	1-1/2"
5/25/2018	33-12-10	Curb Stops-Ball Meter Valves	Mueller Co., Ltd.	15530N	ANSI/NSF 372	1"
01/26/00		Coated Tapping Saddle with Double SS Straps	JCM Industries, Inc.	#406 Double Band SS Saddle		1"-2" Taps on up to 12"
0/5/21/12	33-12-25	Tapping Sleeve (Coated Steel)	JCM Industries, Inc.	412 Tapping Sleeve ESS	AWWA C-223	Up to 30" w/12" Out
03/29/22	33-12-25	Tapping Sleeve (Coated or Stainless Steel)	JCM Industries, Inc.	415 Tapping Sleeve	AWWA C-223	Concrete Pipe Only
05/10/11		Tapping Sleeve (Stainless Steel)	Powerseal	3490AS (Flange) & 3490MJ		4"-8" and 16"
02/29/12	33-12-25	Tapping Sleeve (Coated Steel)	Romac	FTS 420	AWWA C-223	Up to 42" w/24" Out
02/29/12	33-12-25	Tapping Sleeve (Stainless Steel)	Romac	SST Stainless Steel	AWWA C-223	Up to 24" w/12" Out
02/29/12	33-12-25	Tapping Sleeve (Stainless Steel)	Romac	SST III Stainless Steel	AWWA C-223	Up to 30" w/12" Out
05/10/11		Joint Repair Clamp	Powerseal	3232 Bell Joint Repair Clamp		4" to 30"
		Plastic Meter Box w/Composite Lid	DFW Plastics Inc.	DFW37C-12-IEPAF FTW		
		Plastic Meter Box w/Composite Lid	DFW Plastics Inc.	DFW39C-12-IEPAF FTW		
08/30/06		Plastic Meter Box w/Composite Lid	DFW Plastics Inc.	DFW65C-14-IEPAF FTW		Class "A"
		Concrete Meter Box	Bass & Hays	CMB37-B12 1118 LID-9		
		Concrete Meter Box	Bass & Hays	CMB-18-Dual 1416 LID-9		
		Concrete Meter Box	Bass & Hays	CMB65-B65 1527 LID-9		
Water - Bolts, Nuts, and Gaskets 33-11-05 (01/08/13)						
Water - Combination Air Release 33-31-70 (01/08/13)						
*	E1-11	Combination Air Release Valve	GA Industries, Inc.	Empire Air and Vacuum Valve, Model 935	ASTM A 126 Class B, ASTM A	1" & 2"
*	E1-11	Combination Air Release Valve	Multiplex Manufacturing Co.	Crispin Air and Vacuum Valves, Model No.		1/2", 1" & 2"
*	E1-11	Combination Air Release Valve	Valve and Primer Corp.	APCO #143C, #145C and #147C		1", 2" & 3"
Water - Dry Barrel Fire Hydrants 33-12-40 (01/15/14)						
10/01/87	E-1-12	Dry Barrel Fire Hydrant	American-Darling Valve	Drawing Nos. 90-18608, 94-18560	AWWA C-502	
03/31/88	E-1-12	Dry Barrel Fire Hydrant	American Darling Valve	Shop Drawing No. 94-18791	AWWA C-502	
09/30/87	E-1-12	Dry Barrel Fire Hydrant	Clow Corporation	Shop Drawing No. D-19895	AWWA C-502	
01/12/93	E-1-12	Dry Barrel Fire Hydrant	American AVK Company	Model 2700	AWWA C-502	
08/24/88	E-1-12	Dry Barrel Fire Hydrant	Clow Corporation	Drawings D20435, D20436, B20506	AWWA C-502	
	E-1-12	Dry Barrel Fire Hydrant	ITT Kennedy Valve	Shop Drawing No. D-80783FW	AWWA C-502	
09/24/87	E-1-12	Dry Barrel Fire Hydrant	M&H Valve Company	Shop Drawing No. 13476	AWWA C-502	
10/14/87	E-1-12	Dry Barrel Fire Hydrant	Mueller Company	Shop Drawings No. 6461 A-423 Centurion	AWWA C-502	
01/15/88	E1-12	Dry Barrel Fire Hydrant	Mueller Company	A-423 Super Centurion 200	AWWA C-502	
10/09/87	E-1-12	Dry Barrel Fire Hydrant	U.S. Pipe & Foundry	Shop Drawing No. 960250	AWWA C-502	
09/16/87	E-1-12	Dry Barrel Fire Hydrant	American Flow Control (AFC)	Waterous Pacer WB67	AWWA C-502	
08/12/16	33-12-40	Dry Barrel Fire Hydrant	EJ (East Jordan Iron Works)	WaterMaster 5CD250		
Water - Meters						
02/05/93	E101-5	Detector Check Meter	Ames Company	Model 1000 Detector Check Valve	AWWA C550	4" - 10"
08/05/04		Magnetic Drive Vertical Turbine	Hersey	Magnetic Drive Vertical	AWWA C701, Class 1	3/4" - 6"



CITY OF FORT WORTH
WATER DEPARTMENT
STANDARD PRODUCT LIST

Updated: 03/07/2023

Note: All water or sewer pipe larger than 15 inch diameter shall be approved for use by the Water Department on a project specific basis. Special bedding may be required for some pipes.

Approval	Spec No.	Classification	Manufacturer	Model No.	National Spec	Size
Water - Pipes/PVC (Pressure Water) 33-31-70 (01/08/13)						
01/18/18	33-11-12	PVC Pressure Pipe	Vinyltech PVC Pipe	DR14	ASTM D1784	4"-12"
3/19/2018	33 11 12	PVC Pressure Pipe	Pipelife Jet Stream	DR14	AWWA C900	4"-12"
3/19/2018	33 11 12	PVC Pressure Pipe	Pipelife Jet Stream	DR18	AWWA C900	16"-24"
5/25/2018	33 11 12	PVC Pressure Pipe	Diamond Plastics Corporation	DR 14	AWWA C900	4"-12"
5/25/2018	33 11 12	PVC Pressure Pipe	Diamond Plastics Corporation	DR 18	AWWA C900	16"-24"
12/6/2018	33 11 12	PVC Pressure Pipe	J-M Manufacturing Co., Inc d/b/a JM Eagle	DR 14	AWWA C900-16 UL 1285 ANSI/NSF 61 FM 1612	4"-28"
12/6/2018	33 11 12	PVC Pressure Pipe	J-M Manufacturing Co., Inc d/b/a JM Eagle	DR 18	AWWA C900-16 UL 1285	16"-24"
9/6/2019	33 11 12	PVC Pressure Pipe	Underground Solutions Inc.	DR14 Fusible PVC	AWWA C900	4" - 8"
9/6/2019	33 11 12	PVC Pressure Pipe	NAPCO(Westlake)	DR18	AWWA C900	16" - 24"
9/6/2019	33 11 12	PVC Pressure Pipe	NAPCO(Westlake)	DR14	AWWA C900	4" - 12"
9/6/2019	33 11 12	PVC Pressure Pipe	Sanderson Pipe Corp.	DR14	AWWA C900	4" - 12"
Water - Pipes/Valves & Fittings/Ductile Iron Fittings 33-11-11 (01/08/13)						
07/23/92	E1-07	Ductile Iron Fittings	Star Pipe Products, Inc.	Mechanical Joint Fittings	AWWA C153 & C110	
*	E1-07	Ductile Iron Fittings	Griffin Pipe Products, Co.	Mechanical Joint Fittings	AWWA C 110	
*	E1-07	Ductile Iron Fittings	McWane/Tyler Pipe/Union Utilities Division	Mechanical Joint Fittings, SSB Class 350	AWWA C 153, C 110, C 111	
08/11/98	E1-07	Ductile Iron Fittings	Sigma, Co.	Mechanical Joint Fittings, SSB Class 351	AWWA C 153, C 110, C 112	
02/26/14	E1-07	MJ Fittings	Accucast	Class 350 C-153 MJ Fittings	AWWA C153	4"-12"
05/14/98	E1-07	Ductile Iron Joint Restraints	Ford Meter Box Co./Uni-Flange	Uni-Flange Series 1400	AWWA C111/C153	4" to 36"
05/14/98	E1-24	PVC Joint Restraints	Ford Meter Box Co./Uni-Flange	Uni-Flange Series 1500 Circle-Lock	AWWA C111/C153	4" to 24"
11/09/04	E1-07	Ductile Iron Joint Restraints	One Bolt, Inc.	One Bolt Restrained Joint Fitting	AWWA C111/C116/C153	4" to 12"
02/29/12	33-11-11	Ductile Iron Pipe Mechanical Joint Restraint	EBAA Iron, Inc.	Megalug Series 1100 (for DI Pipe)	AWWA C111/C116/C153	4" to 42"
02/29/12	33-11-11	PVC Pipe Mechanical Joint Restraint	EBAA Iron, Inc.	Megalug Series 2000 (for PVC Pipe)	AWWA C111/C116/C153	4" to 24"
08/05/04	E1-07	Mechanical Joint Retainer Glands(PVC)	Sigma, Co.	Sigma One-Lok SLC4 - SLC10	AWWA C111/C153	4" to 10"
03/06/19	33-11-11	Mechanical Joint Retainer Glands(PVC)	Sigma, Co.	Sigma One-Lok SLC54 - SLC512	AWWA C111/C153	4" to 12"
08/05/04	E1-07	Mechanical Joint Retainer Glands(PVC)	Sigma, Co.	Sigma One-Lok SLCE	AWWA C111/C153	12" to 24"
08/10/98	E1-07	MJ Fittings(DIP)	Sigma, Co.	Sigma One-Lok SLDE	AWWA C153	4" - 24"
10/12/10	E1-24	Interior Restrained Joint System	S & B Technical Products	Bulldog System (Diamond Lok 21 & JM)	ASTM F-1624	4" to 12"
08/16/06	E1-07	Mechanical Joint Fittings	SIP Industries(Serampore)	Mechanical Joint Fittings	AWWA C153	4" to 24"
11/07/16	33-11-11	Mechanical Joint Retainer Glands	Star Pipe Products, Inc.	PVC Stargrip Series 4000	ASTM A536 AWWA C111	
11/07/16	33-11-11	Mechanical Joint Retainer Glands	Star Pipe Products, Inc.	DIP Stargrip Series 3000	ASTM A536 AWWA C111	
03/19/18	33-11-11	Mechanical Joint Retainer Glands	SIP Industries(Serampore)	EZ Grip Joint Restraint (EZD) Black For DIP	ASTM A536 AWWA C111	3"-48"
03/19/18	33-11-11	Mechanical Joint Retainer Glands	SIP Industries(Serampore)	EZ Grip Joint Restraint (EZD) Red for C900 DR14 PVC Pipe	ASTM A536 AWWA C111	4"-12"
03/19/18	33-11-11	Mechanical Joint Retainer Glands	SIP Industries(Serampore)	EZ Grip Joint Restraint (EZD) Red for C900 DR18 PVC Pipe	ASTM A536 AWWA C111	16"-24"
Water - Pipes/Valves & Fittings/Resilient Seated Gate Valve* 33-12-20 (05/13/15)						
		Resilient Wedge Gate Valve w/no Gears	American Flow Control	Series 2500 Drawing # 94-20247		16"
12/13/02		Resilient Wedge Gate Valve	American Flow Control	Series 2530 and Series 2536	AWWA C515	30" and 36"
08/31/99		Resilient Wedge Gate Valve	American Flow Control	Series 2520 & 2524 (SD 94-20255)	AWWA C515	20" and 24"
05/18/99		Resilient Wedge Gate Valve	American Flow Control	Series 2516 (SD 94-20247)	AWWA C515	16"
10/24/00	E1-26	Resilient Wedge Gate Valve	American Flow Control	Series 2500 (Ductile Iron)	AWWA C515	4" to 12"
08/05/04		Resilient Wedge Gate Valve	American Flow Control	42" and 48" AFC 2500	AWWA C515	42" and 48"
05/23/91	E1-26	Resilient Wedge Gate Valve	American AVK Company	American AVK Resilient Seated GV	AWWA C509	4" to 12"
01/24/02	E1-26	Resilient Wedge Gate Valve	American AVK Company			20" and smaller
*	E1-26	Resilient Seated Gate Valve	Kennedy			4" - 12"
*	E1-26	Resilient Seated Gate Valve	M&H			4" - 12"
*	E1-26	Resilient Seated Gate Valve	Mueller Co.			4" - 12"
11/08/99		Resilient Wedge Gate Valve	Mueller Co.	Series A2361 (SD 6647)	AWWA C515	16"
01/23/03		Resilient Wedge Gate Valve	Mueller Co.	Series A2360 for 18"-24" (SD 6709)	AWWA C515	24" and smaller
05/13/05		Resilient Wedge Gate Valve	Mueller Co.	Mueller 30" & 36", C-515	AWWA C515	30" and 36"
01/31/06		Resilient Wedge Gate Valve	Mueller Co.	Mueller 42" & 48", C-515	AWWA C515	42" and 48"
01/28/88	E1-26	Resilient Wedge Gate Valve	Clow Valve Co.		AWWA C509	4" - 12"
10/04/94		Resilient Wedge Gate Valve	Clow Valve Co.	16" RS GV (SD D-20995)	AWWA C515	16"
11/08/99	E1-26	Resilient Wedge Gate Valve	Clow Valve Co.	Clow RW Valve (SD D-21652)	AWWA C515	24" and smaller
11/29/04		Resilient Wedge Gate Valve	Clow Valve Co.	Clow 30" & 36" C-515	AWWA C515	30" and 36" (Note 3)
11/30/12		Resilient Wedge Gate Valve	Clow Valve Co.	Clow Valve Model 2638	AWWA C515	24" to 48" (Note 3)
05/08/91	E1-26	Resilient Seated Gate Valve	Stockham Valves & Fittings		AWWA C 509, ANSI 420 - stern,	4" - 12"
*	E1-26	Resilient Seated Gate Valve	U.S. Pipe and Foundry Co.	Metrosal 250, requirements SPL #74		3" to 16"
10/26/16	33-12-20	Resilient Seated Gate Valve	EJ (East Jordan Iron Works)	EJ FlowMaster Gate Valve & Boxes		
08/24/18		Matco Gate Valve	Matco-Norca	225 MR	AWWA/ANSI C115/An21.15	4" to 16"



**CITY OF FORT WORTH
WATER DEPARTMENT
STANDARD PRODUCT LIST**

Updated: 03/07/2023

Note: All water or sewer pipe larger than 15 inch diameter shall be approved for use by the Water Department on a project specific basis. Special bedding may be required for some pipes.

Approval	Spec No.	Classification	Manufacturer	Model No.	National Spec	Size
Water - Pipes/Valves & Fittings/Rubber Seated Butterfly Valve 33-12-21 (07/10/14)						
*	E1-30	Rubber Seated Butterfly Valve	Henry Pratt Co.		AWWA C-504	24"
*	E1-30	Rubber Seated Butterfly Valve	Mueller Co.		AWWA C-504	24" and smaller
1/11/99	E1-30	Rubber Seated Butterfly Valve	Dezurik Valves Co.		AWWA C-504	24" and larger
06/12/03	E1-30	Valmatic American Butterfly Valve	Valmatic Valve and Manufacturing Corp.	Valmatic American Butterfly Valve.	AWWA C-504	Up to 84" diameter
04/06/07	E1-30	Rubber Seated Butterfly Valve	M&H Valve	M&H Style 4500 & 1450	AWWA C-504	24" to 48"
03/19/18	33 12 21	Rubber Seated Butterfly Valve	G. A. Industries (Golden Anderson)	AWWA C504 Butterfly Valve	AWWA C-504	30"-54"
Water - Polyethylene Encasement 33-11-10 (01/08/13)						
05/12/05	E1-13	Polyethylene Encasement	Flexsol Packaging	Fulton Enterprises	AWWA C105	8 mil LLD
05/12/05	E1-13	Polyethylene Encasement	Mountain States Plastics (MSP) and AEP Ind.	Standard Hardware	AWWA C105	8 mil LLD
05/12/05	E1-13	Polyethylene Encasement	AEP Industries	Bullstrong by Cowtown Bolt & Gasket	AWWA C105	8 mil LLD
09/06/19	33-11-11	Polyethylene Encasement	Northtown Products Inc.	PE Encasement for DIP	AWWA C105	8 mil LLD
Water - Sampling Station						
03/07/23	33 12 50	Water Sampling Station	Eclipse	Number 88 , 12-inch Depth of Bury		As shown in spec, 33 12 50
Water - Automatic Flusher						
10/21/20		Automated Flushing System	Mueller Hydroguard	HG2-A-IN--2-PVC-018-LPLG(Permanent)		
04/09/21		Automated Flushing System	Kupferle Foundry Company	Eclipse #9800wc		
04/09/21		Automated Flushing System	Kupferle Foundry Company	Eclipse #9700 (Portable)		

CITY OF FORT WORTH, TEXAS

FY2023

ADOPTED
ANNUAL BUDGET
& PROGRAM
OBJECTIVES



Debt Service Fund

Water Prior Lien Debt Service

FUND SUMMARY

	FY2021	FY2022	FY2022	FY2023	Change from Adopted	
	Final	Adopted	Adjusted	Adopted	Amount	%
Use of Money & Property	3,784,013	-	-	-	-	0.00%
Transfer In	167,356,053	97,221,066	187,471,066	100,472,612	3,251,546	3.34%
Use of Fund Balance	-	-	9,271,059	-	-	0.00%
Revenue	\$ 171,140,066	\$ 97,221,066	\$ 196,742,125	\$ 100,472,612	\$ 3,251,546	3.34%
Debt Service Accts	162,562,021	96,536,154	196,742,125	97,718,311	1,182,157	1.22%
Transfer Out & Other	-	684,912	-	2,754,301	2,069,389	302.14%
Expenses	\$ 162,562,021	\$ 97,221,066	\$ 196,742,125	\$ 100,472,612	\$ 3,251,546	3.34%

FUND PURPOSE AND GOALS

Water & Sewer Prior Lien Debt Service Fund uses revenue debt to fund projects which update, upgrade, or improve the city's current water and sewer system. It also includes long-range development and planning of the systems.

The city's Water & Sewer Enterprise System has outstanding debt service obligations for previously issued water-related debt. Issues include water & sewer revenue bonds and loans from the Texas Water Development Board's State Revolving Loan Fund. The Water & Sewer Operating Fund collects fees for its services to support ongoing operations and its outstanding debt service obligations.

The following chart shows principal and interest by series for each bond issuance with a payment due in FY2023. An additional minimal amount is included in debt service accounts that do not show below. This is due to bond covenant requirements in addition to budgetary needs.

FY 2023	Principal	Interest	Total Debt Service
	61,510,000.00	36,990,551.00	98,500,551.00
2009 W&SS Revenue Bonds	815,000.00	-	815,000.00
2014 W&SS Ref and Imp	5,945,000.00	4,510,925.00	10,455,925.00
2015 W&SS Rev	1,865,000.00	422,714.00	2,287,714.00
2015A W&S Ref and Imp	11,440,000.00	3,735,544.00	15,175,544.00
2015B W&SS Rev	865,000.00	122,506.00	987,506.00
2016 W&SS Ref and Imp	4,655,000.00	2,100,025.00	6,755,025.00
2017 W&SS Rev	475,000.00	185,546.00	660,546.00
2017A W&SS Rev Ref Imp	1,855,000.00	3,544,900.00	5,399,900.00
2017B W&SS Rev	4,095,000.00	634,905.00	4,729,905.00
2018 W&SS Rev	940,000.00	1,799,244.00	2,739,244.00
2019 W&SS Rev	1,750,000.00	3,370,994.00	5,120,994.00
2020 W&SS Rev	3,115,000.00	111,562.00	3,226,562.00
2020A W&SS Rev Ref Imp	10,755,000.00	5,235,400.00	15,990,400.00
2021 W&SS Rev Ref Imp	11,535,000.00	4,078,056.00	15,613,056.00
2021 W&SS Rev Ref Imp	1,405,000.00	7,138,230.00	8,543,230.00

Debt Service Fund

Water Sub Lien Debt Service

FUND SUMMARY

	FY2021	FY2022		FY2023	Change from Adopted	
	Final	Adopted	Adjusted	Adopted	Amount	%
Use of Money & Property	12,560	-	-	-	-	0.00%
Transfer In	-	-	-	-	-	0.00%
Revenue	\$ 12,560	\$ -	\$ -	\$ -	\$ -	0.00%
Debt Service Accts	-	-	-	-	-	0.00%
Transfer Out & Other	-	-	-	-	-	0.00%
Expenses	\$ -	\$ -	\$ -	\$ -	\$ -	0.00%

FUND PURPOSE AND GOALS

In addition to the outstanding general obligation debt, the Water & Sewer Prior Lien Debt Service Fund includes state revolving loan debt used to fund projects which update, upgrade, or improve the city's current water & sewer system. It also includes long-range development and planning of the systems. This debt works in conjunction with the city's other water & sewer debt in that issues are subordinate liens to the primary water & sewer system debt.

All debt obligations were relieved in FY2020 and no outstanding obligations remain for FY2021 and beyond.

Enterprise Funds

Water and Sewer FUND SUMMARY

	FY2021	FY2022		FY2023	Change from Adopted	
	Final	Adopted	Adjusted	Adopted	Amount	%
Property Tax	-	-	-	-	-	0.00%
Sales Tax	-	-	-	-	-	0.00%
Other Tax	-	-	-	-	-	0.00%
License & Permits	1,216,198	1,345,700	1,345,700	1,420,659	74,959	5.57%
Intergovernmental	-	-	-	-	-	0.00%
Charge for Service	472,132,157	459,626,060	504,226,060	474,620,055	14,993,995	3.26%
Fines & Forfeitures	-	-	-	-	-	0.00%
Use of Money & Property	1,829,320	1,166,503	1,166,503	1,646,386	479,883	41.14%
Special Assesments	-	-	-	-	-	0.00%
Other	13,338,421	9,885,000	9,885,000	11,515,000	1,630,000	16.49%
Transfer In	21,695,857	19,558,778	22,343,830	26,249,360	6,690,582	34.21%
Use of Fund Balance	-	-	-	-	-	0.00%
Revenue	\$510,211,953	\$491,582,041	\$538,967,093	\$515,451,460	\$23,869,419	4.86%
Salaries & Benefits	84,027,322	84,677,788	84,677,788	90,313,535	5,635,747	6.66%
Gen Operating & Maintenance	190,670,222	195,551,456	233,101,456	214,715,525	19,164,069	9.80%
Capital Accts	-	-	-	-	-	0.00%
Debt Service Accts	1,955,115	1,773,714	2,723,714	903,806	(869,908)	-49.04%
Transfer Out & Other	207,527,661	209,579,083	218,464,135	209,518,594	(60,489)	-0.03%
Contra Accounts	-	-	-	-	-	0.00%
Project Budget Account	-	-	-	-	-	0.00%
Expenses	\$484,180,321	\$491,582,041	\$538,967,093	\$515,451,460	\$23,869,419	4.86%

Fund	2022		2023		Change	
	AP	FTE	AP	FTE	AP	FTE
Water and Sewer Fund	999.00	974.05	1,002.00	977.05	3.00	3.00
W&S Capital Projects	-	24.95	-	24.95	-	-
Total	999.00	999.00	1,002.00	1,002.00	3.00	3.00

FUND PURPOSE AND GOALS

The Water and Sewer Fund is an Enterprise Fund responsible for providing water, wastewater and reclaimed water services to residential, commercial, industrial, irrigation, and wholesale customers. Fort Worth Water (the Utility) serves approximately 1.3 million people in Fort Worth and 33 surrounding communities. Operations are financed through a rate structure based on the amount of services used, as well as base service fees, which are billed to customers on a monthly basis. Debt is issued for large capital projects.

The Water and Sewer Fund provides resources for three separate departments: water, sewer and reclaimed water. These services are billed separately to more accurately capture the cost of each service. However, the

Enterprise Funds

Water and Sewer Departments share administrative staff, and many of the employees are partially expensed to more than one department.

The Water Department is responsible for providing safe, clean drinking water to Fort Worth residents and customer cities. The Sewer Department collects, monitors, treats and processes domestic and industrial waterborne waste from Fort Worth and other contracting communities. The Reclaimed Water Department provides highly treated effluent from Fort Worth's water reclamation facility. Reclaimed water is distributed through a separate system to wholesale and retail reclaimed water customers for non-potable uses such as irrigation and industrial cooling towers.

The Customer Care Division performs metering services as well as billing and collection functions for water, sewer, reclaimed water, stormwater, environmental, and solid waste services for wholesale and retail customers; processes orders for new services; collects delinquent payments and investigates complaints. The division also manages programs to encourage efficient water use, provides educational programming to the public, and is responsible for internal and external communications. In addition, the division provides backflow prevention services, as well as industrial pretreatment by permitting and monitoring businesses and industries that produce a high level of concentrated waste to reduce the impact to the sewer system. The division also coordinates development activities for the Utility with the Development Services Department.

The Management Services Division develops and monitors operating budgets and capital improvement programs, determines rates, and coordinates all fiscal and administrative functions for the Utility, including procurement activities and capital improvement project accounting. The division also provides capital project support, organizational development, information technology services, environmental health and safety program administration, security and emergency planning, records management and workforce development.

The Strategic Operations Division is responsible for developing a master plan for all water and sewer capital projects. This division provides infrastructure and facility planning, asset management, technical support, and SCADA systems management for the Utility. The regulatory affairs section serves as the departmental liaison on all intergovernmental and regulatory issues related to water and sewer services. The laboratory section provides water and sewer sampling and laboratory analysis.

The Capital Delivery Division is responsible for engineering and construction of facilities and pipeline projects including water and sewer mains, new development infrastructure, treatment facilities, storage tanks, pump stations and lift stations. The division provides in-house design, construction inspection services and coordination of projects with the City's street bond program.

The Plant Operations Division treats and distributes a safe water supply to meet customer needs and operates five water treatment plants and various water storage and pumping facilities located throughout the city. It is responsible for the metering of all the wholesale customer cities' water and sewer services. The division also provides wastewater treatment services for Fort Worth and its customer cities through a regional water reclamation facility. Furthermore, this facility dewateres and treats Class AB biosolids for beneficial re-use. The facility sells biogas produced in its onsite digesters for RIN credit to MAS Energy (Renovar). The water reclamation facility generates about 45% of its energy using natural gas turbines.

The Field Operations Division is responsible for the maintenance and repair of more than 7,000 miles of water distribution and sewer collection system pipelines. The division handles main break and leak repairs, line location services, sewer overflows, inspection and cleaning of sewer lines, water and sewer taps, and fire hydrant and valve maintenance.

Enterprise Funds

FY2023 DISCUSSION AND SIGNIFICANT CHANGES

The FY2023 Adopted Budget of \$515.5 million is an increase of \$23 million. This increase is achieved with no retail water or sewer rate increase.

The Adopted Budget increases for the addition of 12 positions to provide data analysis, customer service, financial management, system implementation, and regulation reporting support.

Additionally, 9 positions move from the Water and Sewer Fund to the Development Services Department in the General Fund. The Water & Sewer Fund continues to fund these 9 positions as a transfer out to the General Fund. This results in a net increase of 3 positions.

The Adopted Budget:

- Decreases by \$1.16 million and nine authorized positions (APs) transferred to the Development Services Department due to the movement of the water and stormwater development functions.
- Increases by \$239,668 and three APs to manage the IE Apprenticeship Program.
- Increases by \$199,368 and two APs to assist with customer services and wholesale operations.
- Increases by \$151,672 and one AP to assist with Horizontal Assets.
- Increases by \$148,093 and one AP to assist with SCADA projects.
- Increases by \$144,592 and one AP assist with PMIS.
- Increases by \$116,560 and one AP to assist with Customer Care Conservation.
- Increases by \$95,437 and one AP to assist with purchasing.
- Increases by \$88,747 and one AP to assist with Industrial Pretreatment.
- Increases by \$40,476 and one AP to assist with Management Services.
- Increases by \$8,972,235 in Chemicals due to commodity increases.
- Increases by \$3.98 million in salary and benefits for previously approved costs associated with pay for performance, rising health care costs and pension contributions.
- Increases by \$3.53 million in Raw Water Purchases due to a 3% Tarrant Regional Water District rate increase.
- Decreases by \$3.58 million in transfer to Water/Sewer Fund to partially offset the cost of the expenses listed.
- Increases by \$3.25 million in required debt payments due to the sale of \$150M in debt in the summer of 2022.
- Increases by \$2.97 million in Commercial and Residential Meter/Valve Supply, Minor Equipment, Operating Supplies, paving materials and Uniforms due to commodity increases and supply chain cost increases.
- Decreases by \$2.12 million in equipment and vehicle purchases due to pre-funding of capital purchases in the summer of 2022.
- Increases by \$1.65 million in Salaries & Benefits associated with pay for performance, step increases, rising health care costs and pension contributions.
- Increases by \$1.6 million in General Operating & Maintenance for previously approved costs associated with risk management and IT solutions allocation costs.
- Increases by \$1.37 million in Gas Utility Service due to commodity increases.
- Decreases by \$869,908 in Energy Savings principal and interest payments due to retirement of the debt in FY23.
- Increases by \$749,149 due to increase in Administrative cost and ITS Services allocations.

Enterprise Funds

- Increases by \$687,520 in Bank Charges due to growth of the customer base and customer payment type preferences.
- Increases by \$244,394 in Interfund transfer out to fund two APs in the Purchasing Division. These positions help Water department with procurement needs on a daily basis.



CITY OF FORT WORTH, TEXAS

FY2022

**ANNUAL COMPREHENSIVE FINANCIAL REPORT
For the Fiscal Year Ended September 30, 2022**



ANNUAL COMPREHENSIVE FINANCIAL REPORT

For the Fiscal Year Ended September 30, 2022

CITY OF FORT WORTH, TEXAS



ELECTED OFFICIALS

2022 CITY COUNCIL

Mattie Parker, Mayor

Carlos E. Flores, District 2

Jared Williams, District 6

Michael D. Crain, District 3

Leonard Firestone, District 7

Alan Blaylock, District 4

Chris Nettles, District 8

Gyna Bivens, District 5

Elizabeth M. Beck, District 9

CITY MANAGER

David Cooke

CHIEF FINANCIAL OFFICER

Reginald Zeno

Prepared by the Department of Financial Management Services

Financial Reporting and Accounting

Anthony M. Rousseau, CPA, CTP

Financial Reporting

Ashley Clement

Brian Hemann

May Ma

Abraham Gandarilla, CPA

Christian McCoy

Chenese Strange, CGFO

Accounting

Stephen C. Nesbitt, CPA

Catherine Perry

Kristy Allen

Edward Amoah, CGFO

Ramona Nails

Shalonda Oliver

Accounting Staff

Treasury

John R. Samford, CPA, CTP

Jay Rutledge, CTP

Kiphani Allen

Monica Arranaga

Vonda Coleman

Sharon Gunter

Alex Laufer

Treasury Staff

Purchasing

Cynthia Garcia

John Padinj, CPPO, NIGP-CPP

Cristina Camarillo

Michelle Greene

Purchasing Staff

Administration

Charissa Williams

Financial Systems

Alexis Rivas

Financial Systems Staff



CITY OF FORT WORTH, TEXAS

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CITY OF FORT WORTH, TEXAS

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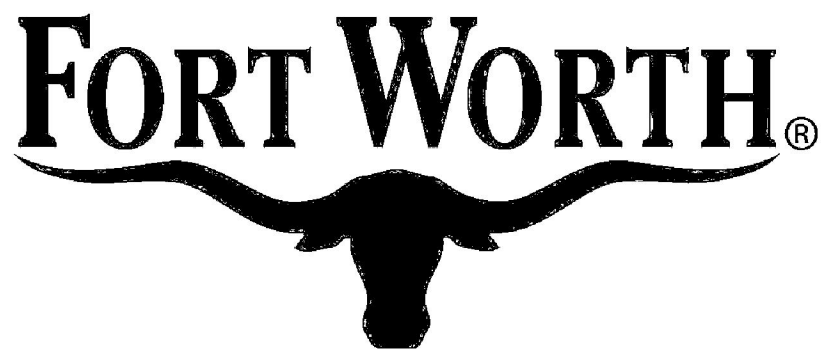
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INTRODUCTORY SECTION



March 3, 2023

To the Honorable Mayor, Members of the City Council, Residents and Stakeholders of the City of Fort Worth, Texas:

We are pleased to submit the Annual Comprehensive Financial Report (ACFR) of the City of Fort Worth, Texas (the “City” or “Fort Worth”), for the fiscal year ended September 30, 2022. The Department of Financial Management Services prepared this report to present the financial position of the City. The ACFR describes the financial results of our operations and the cash flow of our proprietary fund types. Additionally, it conveys changes in plan net positions of our pension and other postemployment benefit trusts. The financial statements and supporting schedules have been prepared in accordance with generally accepted accounting principles and meet the requirements of the State of Texas and the City Charter.

The City Charter Chapter X, Section 11 requires that an annual audit of all accounts of the City be made by an independent certified public accountant and an annual financial report be published by the City. The annual financial report must be furnished to the Mayor and each member of the City Council, the City Manager and to each resident who requests a copy. This report is published to fulfill the aforementioned requirements for the most recent fiscal year. In addition, this report is used to communicate background information on the City and the environment which it operates, schedules that demonstrate compliance with finance-related legal and contractual provisions and statistical information that offers multi-year trend information. The report also contains relevant economic and demographic information.

Management assumes full responsibility for the completeness, fairness and reliability of the information contained in this report, based upon a comprehensive framework of internal controls established for this purpose. Because the cost of internal control should not exceed anticipated benefits, the objective is to provide reasonable, rather than absolute, assurance that the financial statements are free of any material misstatements.

FORVIS, LLP issued an unmodified opinion on the City’s financial statements for the year ended September 30, 2022. The Independent Auditor’s Report is located on page 1 of this report.

Management’s Discussion and Analysis (MD&A) immediately follows the Independent Auditor’s Report and provides a narrative introduction, overview, and analysis of the basic financial statements and should be read in conjunction with the basic financial statements.

DEPARTMENT OF FINANCIAL MANAGEMENT SERVICES

CITY OF FORT WORTH * 200 TEXAS ST * FORT WORTH, TEXAS 76102
817-392-8500 * FAX 817-392-8966

City of Fort Worth Profile

Fort Worth, incorporated in 1873, is a political subdivision and municipal corporation of the State of Texas, located in Tarrant, Denton, Parker, Wise, and Johnson Counties. The City covers approximately 359 square miles and serves a population of nearly 940,000 according to the 2022 Census estimate.

Fort Worth operates under a Council/Manager form of government with a City Council comprised of the Mayor and eight Council members. The Mayor is elected at large and the eight Council members are elected from single-member districts. Both the Mayor and Council members serve two-year terms. The Mayor and City Council appoint the City Manager, City Attorney, City Secretary, City Auditor, and municipal judges. On May 7, 2016, a special election was held to vote on amendments to the City's Charter. Proposition 2 was approved by voters, which increases the number of council members from nine to eleven, one of which is the mayor, beginning with the first election following the 2020 census. This is planned to be held in May of 2023.

Services provided by the City under general governmental functions include public safety (municipal courts, and police/fire protection), streets and highways, culture and recreation, urban redevelopment and housing, health and welfare, and general government services.

Water and sewer services, stormwater utility services, airports, city owned parking garages and lots, and solid waste collection are provided under an enterprise fund concept, with user charges set by the City Council to ensure adequate coverage of operating expenses and payments of outstanding debt. In addition, the City provides water and wastewater treatment for several neighboring jurisdictions. Fleet services, capital project services, group health and life insurance, and risk financing are provided through internal service funds.

As required by generally accepted accounting principles in the United States of America (GAAP), the financial reporting entity includes all funds of the primary government (the City), as well as the City's component units. Component units are legally separate entities for which the primary government is financially accountable. Organizations that do not meet the financial accountability criteria for inclusion as a component unit could be included based upon management's determination that it would be misleading to exclude them. During Fiscal Year 2022, there was one discretely presented component unit and seven blended component units. One of the blended component units (Fort Worth Housing Finance Corporation) also has nine Limited Liability Corporations (LLCs), which are reported as blended component units, and one Limited Liability Partnership that is discretely presented. Additionally, the City's defined benefit pension plan and two other postemployment benefit plans are reported as fiduciary component units.

The fiscal year of the City begins on the first day of October and ends on the last day of September. On or before the fifteenth day of August of each year, the City Manager submits to the City Council a recommended budget for the ensuing fiscal year. The City Manager's recommended budget provides a complete financial plan of all City funds and activities for the upcoming fiscal year. The budget is prepared by fund, organization unit or department, program, purpose or activity, and object. As required by the City Charter, the auditors completed a separate review of the City's budget adoption process. The City Manager may transfer resources within a department. Transfers between departments, however, require approval from the City Council.

Local Economy

Despite impacts of COVID-19, Fort Worth has fared well and continues to sustain a multi-year trend of broad-based growth across sectors. Much of this business growth has been fueled by Fort Worth's reputation of being one of the fastest growing cities in the U.S. and one of the top places in the nation to live, work, and play. With a growing workforce, the expansion of top educational facilities, low cost of doing business, high quality of life, and prime location and climate, the City is an attractive choice for companies looking to expand in or move their operations.

Major employers in Fort Worth include AMR/American Airlines, Lockheed Martin (photo below), Fort Worth Independent School District, JPS Health Network/John Peter Smith Hospital, City of Fort Worth, NAS Fort Worth Joint Reserve Base, Alcon Laboratories, Tarrant County College, Bell Helicopter-Textron, Inc., and Burlington Northern Santa Fe LLC.



Manufacturing and distribution remain an important part of the Fort Worth economy. The list of companies in distribution and manufacturing operations include Acme Brick, Alcon Labs, Allied Electronics, ATC Logistics & Electronics, Haggard Clothing, Federal Express, J.C. Penney's, Mother Parker's Tea and Coffee, Coca-Cola Enterprises, Ben E. Keith Co., Miller Coors LLC, Williamson-Dickie, Pratt Industries USA, Inc., NGC Renewables, LLC, Carolina Beverage Group, LLC, GE Manufacturing Solutions, and Danone North America.

The City's industry clusters remain diverse with trade, transportation, and utilities making up the largest percentage of the Fort Worth-Arlington Metropolitan Division (MD) industry composition at 38%. Since 2016, trade, transportation, and utilities companies have grown considerably adding over 25,800 jobs to the area. Healthcare, Manufacturing, Hospitality and Tourism, Transportation and Warehousing, and Oil and Gas make up the five established sectors that play a key role in the Fort Worth economy. As a group, these five established sectors account for more than a third of employment in Tarrant County with over 387,000 people employed.

Local Economy (Continued)

The City's Economic Development Department recently updated their strategic plan. The 2022 updated plan identified key emerging economic sectors including aerospace manufacturing and design, life sciences delivery and innovation, geotechnical engineering, international business, corporate and regional headquarters, professional services, financial services, and transportation innovation.

There are over 31,488 registered business firms in the City of Fort Worth. About 99.5% of these businesses are small to mid-size firms that employ anywhere from one to 249 individuals. The remaining 0.5% of businesses are firms that employ greater than 250 employees (Database USA, via EMSI).

The Fort Worth-Arlington MD boasts a strong labor force of 1.35 million that continues to grow. The Fort Worth-Arlington MD has experienced positive annual employment growth since summer 2010, up until the Covid-19 pandemic in early 2020. In the wake of the crisis, the city's unemployment rate of 7.9% was slightly higher than the 6.8% state unemployment rate, but below the 8.4% national unemployment rate through August 2020. In 2022, the City's unemployment rate decreased dramatically to 3.4%, which is lower than the state unemployment rate of 3.6%, but slightly higher than the national employment rate of 3.3% (not-adjusted).

After reaching a total value of deals in Fort Worth of \$569 million in 2021, Fort Worth continues to grow in all aspects of development, spurred by population and employment growth as part of the Dallas-Fort Worth Metropolitan Area. Notably, large clusters of commercial development focused on manufacturing, distribution, and warehousing are being developed near state and interstate highways. In 2022, the corporate offices of RSI North America and manufacturing operations of MP Materials were announced in the first quarter. RSI North America is a company that manufactures modular truck bed canopies. In addition to advanced manufacturing, functions within the proposed City of Fort Worth facility will include housing the North American headquarters operations, as well as product design and prototyping. Following a multi-state site selection process, an existing facility located at 1501 Joel East Road was identified for the 391,000 square foot manufacturing location. The company will be required to expend a minimum of \$2.5 million in total construction costs and will locate taxable business personal property having a minimum taxable appraised value of \$52.5 million. RSI North America will provide a minimum of 250 full-time jobs with an average annual salary of \$65,800.



MP Materials (photo above) is a Las Vegas based company that manufactures rare earth materials. Founded in 2017, MP Materials will develop a greenfield metal, alloy and neodymium-iron-boron (NdFeB) magnet manufacturing facility, which will also serve as the business and engineering headquarters for its growing magnetics division, MP Magnetics. Following a multi-state site selection process, an existing facility located at 13840 Independence Parkway was identified for the 200,000 square foot manufacturing location. The company will be required to expend a minimum of \$40 million in total construction

Local Economy (Continued)

costs and will locate taxable business personal property, having a minimum taxable appraised value of \$60 million. MP Materials will provide up to 90 jobs over the first three years, with an average annual salary of \$80,390.

Medical innovation is also on the rise as the Medical Innovation District, south of Downtown, grows with the expansion of Cook Children's Medical Center. Further growth in this district is anticipated with the announcement of the TEX Rail expansion to the proposed Medical District station, which will spur further investment. Plans are currently underway and expect to be completed by 2026.

Downtown Fort Worth continues to see its share of development, including the approved expansion of the Omni Hotel. The newly expanded Omni Hotel (photo below), located in south Downtown, will add at least 400 rooms (creating a strategically important 1,000 rooms under one property), and will engage Lancaster Avenue by incorporating an active restaurant use. The project adds to the building momentum along the southern portion of downtown along Lancaster Avenue and near the Fort Worth Convention Center. Construction is expected to be completed by fall 2026.



The Central City Flood Control Project and Panther Island continue to develop. Three bridges under construction were completed in 2021 to greatly increase connectivity between Panther Island and the rest of the city. Most recently, an extension of TIF 9 (Trinity River Vision) was approved to facilitate long-term financing for the Central City Flood Control project.

South of downtown, the Near Southside continues to attract a wide variety of development projects and new businesses of all types and sizes. Among the district's recent multifamily developments, Broadway Chapter on Hemphill stands out as the first to locate along the Hemphill corridor, benefitting from the new Hemphill connector to Downtown and other public and private investments nearby. Broadway Chapter also features the Near Southside's largest public art mural, painted on the parking garage façade and representative of the district's recent recognition by Texas Commission on the Arts as a state-designated cultural district. The Near Southside's other major identity, as home to the city's world class Medical Innovation District, continues to attract major investments. Calendar year 2022, saw the completion of the Justin Tower at THR Harris Methodist, major expansions at Cook Children's Medical Center, and the commencement of construction of TCU's Burnett School of Medicine, centrally located at Rosedale and Henderson in close proximity to the med school's educational partners.

Additionally, the Economic Development Department has been focused on community revitalization this past year. Projects like the Berry/Stalcup redevelopment and Evans and Rosedale have been shaping up. For Berry/Stalcup, the City continues to work with Legacy Construction Solutions and Innovan Neighborhoods on a revised site plan for the property. Staff anticipates bringing an updated site plan and financials for consideration to the Local Development Corporation in Q1 of 2023. In October of 2021, the City Council approved an allocation of up to \$4.2 million from the American Rescue Plan Act (ARPA) funds, a 15-year Chapter 380 Economic Development Program Agreement for up to \$9 million, and an additional \$7 million

Local Economy (Continued)

committed by TIF 4 (Near Southside) for the Evans and Rosedale Redevelopment and Affordable Housing Project. Hoque Global Properties is proposing a two-phased redevelopment (photo below) that will result in a total of at least \$70 million worth of investment: approximately 292 multifamily units, 20 townhomes, and 28 live-work units, with at least 20% of the total number of units being affordable, a cultural square, parks, and other public spaces. In April 2022, the City entered into multiple definitive agreements with Hoque Global Development for the project. Currently, the developers are in the pre-development stage with Development Services and closed on the properties by December 14, 2022. The developer expects to break ground on Phase I by April of 2023.



The City's Fort Worth Local Development Corporation (FWLDC) launched the Fort Worth Main Street Pilot Program to build the capacity for place-based community organizations to revitalize historic, commercial corridors as economic and community vitality hubs. The program is targeted at historic business corridors in the City's Neighborhood Empowerment Zones, Urban Villages, and Revitalization Target Areas. In August 2022, the City announced the two awardees of the pilot program (photo below): Fort Worth Hispanic Chamber of Commerce for a Northside District and the Southeast Fort Worth, Inc. for a Polytechnic District. Each entity and associated community will receive \$50,000 worth of revitalization training and develop a transformation strategy and work plan with Main Street America's UrbanMain and receive \$270,000 worth of grants for both operational support and new program and project implementation. With success, the City hopes to roll out this framework across the City to other historic commercial districts and potentially become the first city in Texas and only one in five in the nation with a Main Street City-Coordinating Program.



Local Economy (Continued)

In October 2021, the City Council approved an allocation of up to \$3 million from the American Rescue Plan Act (ARPA) funds to enter into a contract with CDFI Friendly America, LLC to bring financing from one or more community development financial institutions (“CDFIs”) to the City. The contract includes engaging the consultant to provide consulting services in assessing the potential roles of CDFI financing in the community, organizing potential CDFI Friendly strategies, developing an actionable CDFI Friendly business plan, and providing the City with consultative capacity-building support for the implementation of that business plan in collaboration with the Economic Development Department and the Department of Diversity and Inclusion. Since its kickoff on January 26, 2022, CDFI Friendly Fort Worth has closed on 149 loans for \$10.32 million.

In addition to the growth in development and revitalization projects, the City launched a messaging campaign and economic development framework to prioritize equity, vitality, and quality of place along Fort Worth’s neighborhood business corridors, as many of them serve as the heart of the community. This framework and messaging campaign continue to be built out to provide a website and materials to inform the community, businesses, developers, and partners of the City’s investment priorities—to grow and attract more investment and opportunity to reach the full potential of each area. As a part of this effort, the City’s Revitalization Target Areas were adopted to portray its priority areas for investment, partnership, and staff focus.

Entrepreneurship and innovation have become focal points for the department in recent years as well. On September 15, 2022, TechStars (photo below) officially launched the first cohort of the Accelerator. The program’s partners chose ten high-growth, early-stage startups to support and fund over the next three years. The companies were chosen from a pool of hundreds of applicants worldwide. For the next several months, owners, innovators, and representatives of these startups will call Fort Worth home, as team members from HSC, TechStars, and Goff Capital shepherd their ideas from concept to game-changing tech. The accelerator is focused on supporting companies building new technologies, treatments, and therapies in the physical health space in areas such as rehabilitation, physical therapy, performance, and exercise. The selected startups will participate in an intensive, 13-week program, and receive hands-on mentorship, curated entrepreneurial content and programming, up to \$120,000 in funding, and access to a vast network of mentors, investors, alumni, and influential corporate executives. These efforts culminated on December 8, 2022 during Demo Day, where leaders of the startups presented their work.



Local Economy (Continued)

A commitment to improvement continues in education projects to serve the City's growing population. Just recently, a \$1.2 billion school bond package was approved to help fund several updates to area schools in the Fort Worth Independent School District (FWISD). Additionally, in late September 2022, the FWISD School Board finalized a contract for the district's new superintendent, Angelica Ramsey, emphasizing its commitment for visionary change and improvements.

In addition to public schools, two new charter schools recently opened in Fort Worth. IDEA Southeast opened on Seminary Drive and IDEA Rise opened on Cherry Lane. These charter schools will focus on college preparation, while giving Fort Worth families alternative school options for educating their children.

Area institutions of higher education have likewise shown their commitment to growth by recently announcing plans for expansion, including TCU's expansion of its medical school and A&M's expansion of its nationally-ranked law school (photo below). These two historical expansions will help propel the quality of life and higher education in Fort Worth, and will likewise become attractive to outside companies and corporations looking for a highly educated workforce.



Please visit the City's website at <https://www.fortworthtexas.gov/departments/ecodev/edplan> for a copy of the 2022 Updated Economic Development Strategic Plan.

While all eligible applications will be considered for the programs, the City is especially interested in supporting projects that produce a meaningful impact on the City and its economy and result in one of more of the following:

- Growth of business activity, employment, or investment in one of Fort Worth's target industries. These target industries include:
 - Established target industries, like transportation and warehousing, manufacturing, healthcare, oil and gas, or tourism
 - Emerging sectors, such as transportation innovation, life sciences, geotechnical engineering, or aerospace manufacturing and design
 - International businesses, corporate and regional headquarters, and other professional and financial services
- Significant investment, including the creation of high-wage jobs and a willingness to be part of strategic revitalization efforts in key areas of Fort Worth
- Retaining/expanding one of Fort Worth's existing major employers, or anchoring a business expansion project in a way that provides potential for more supply chain activity and additional growth

Local Economy (Continued)

The City's Economic Development Department completes 5-year financial projections to determine the potential impact of the program and an annual review of all awards. In 2022, nine (9) tax abatement and thirty-four (34) economic development program (Chapter 380 Grant) agreements were reviewed for performance. These include five newly completed projects or project phases.

After payment of the grants and abatements, projects with active economic development agreements in 2021 provided \$22.3 million in new net tax revenue to the City in Tax Year 2021. This represents approximately 2.97% of the City's total property, sales, and hotel occupancy tax revenues. The private investment leveraged by the economic development program totaled \$5.5 billion, making the City's total incentive participation 0.67%, resulting in a private to public investment ratio of 148:1. The net new tax revenues to the City generated by these projects represented a 59.56% return on the annual cost of incentives used to secure them.

See Note A.15 Tax Abatements for additional information.

Moody's Investors Services (Moody's), S&P Global Rating Services (S&P), Fitch Rating Services (Fitch), and Kroll Bond Rating Agency (Kroll) have all assigned ratings to the City of Fort Worth's outstanding debt. The city's general obligation debt is rated 'Aa3' by Moody's, 'AA' by both S&P and Fitch, and 'AA+' by Kroll. The city's water and sewer system revenue bonds are rated 'Aa1' by Moody's, 'AA+' by S&P, and 'AA' by Fitch. The city's drainage utility system revenue bonds are rated 'AA+' by both S&P and Fitch. The city's special tax revenue bonds are rated 'A1' by Moody's and 'AA' by Fitch. The city's credit ratings are complimentary of strong financial performance, maintaining reserves and strong financial governance. The city's credit strengths are somewhat offset by the city's unfunded pension liability and fixed cost burden.

COVID-19 and Future Challenges

In December 2019, the coronavirus now designated as COVID-19 was detected in China and by March 2020 was declared a worldwide pandemic by the World Health Organization (WHO).

On January 21, 2021, the City received approximately \$27.5 million under the Consolidated Appropriations Act, 2021 for the provision of financial assistance and housing stability services to eligible households. This program provides relief for rent, utility, and other housing expenses related to housing and negatively affected by COVID-19. In April 2022, \$10 million in additional funding was reallocated from Tarrant County to the City, resulting in a total of approximately \$37.5 million available for community assistance. As of September 30, 2022, approximately \$32.5 million has been expended through several social service Non-Governmental Organizations in the community.

On May 19, 2021, the City received approximately \$86.8 million under the American Rescue Plan Act of 2021 (ARPA), representing one half of the total amount of \$173.7 million in State and Local Fiscal Recovery Funds (SLFRF) allocated to the City of Fort Worth. On June 22, 2021, City Council approved an initial framework of priority needs identified within the City and community including continued pandemic response, tourism industry recovery, affordable and permanent supportive housing initiatives, cybersecurity and broadband projects, majority minority area infrastructure projects, minority business enterprise capacity building, City projects delayed because of the pandemic, and matching funds for use in joint projects with other entities. The remaining half of the ARPA SLFRF funding, in the approximate amount of \$86.9 million, was received from the US Treasury on June 6, 2022. A variety of individual projects have been approved by the City Manager's Office and City Council to address both community and City needs within the approved framework and ARPA guidelines. As of September 30, 2022, \$14 million in ARPA SLSRF funding has been expended.

Additionally, on May 24, 2021 the City received approximately \$11.6 million under ARPA, representing an advance equaling 40% of the total amount of \$29.1 million allocated for the provision of financial assistance and housing stability services to

COVID-19 and Future Challenges (Continued)

eligible households in the same manner as the funding under the Consolidate Appropriations Act of 2021. As of September 30, 2022, \$17.2 million has been expended, and an additional \$11.9 million has been reimbursed for expenditures under the program. More information on the City's use of ARPA funding can be found at <https://www.fortworthtexas.gov/arpa>.

Finally, approximately \$10.4 million in additional funds related to COVID-19 pandemic relief were expended during fiscal year 2022, including Emergency Solution and Justice Assistance Grants, Airport Assistance Grants, Community Development and Community Services Block Grants, Comprehensive Energy Assistance Grants, Home Partnership and Housing Opportunities for Persons with AIDS Grants, and Library Grants.

The City maintains a positive outlook on long-range financial planning. Strong economic growth is expected to continue long term, but we recognize the pandemic rebound may result in fluctuating revenue streams in the near-term. Financial planning will focus on existing land use, capital infrastructure development and maintenance, and operating within the bounds of anticipated revenues.

Long-term Financial Planning and Major Initiatives

The City's strategic goals enable the City Council to:

- Better understand Fort Worth's cultural heritage
- Have a consensus on what to accomplish over the next five years
- Translate the vision into an action plan
- Prioritize the use of limited city resources
- Support staff and community groups in focusing efforts on the vision and priorities

City Council will refine and adjust the strategic goals, as circumstances change. Overall, the City of Fort Worth concentrated on seven top-priority strategic challenges and opportunities for Fiscal Year 2022. These areas were identified to provide a clear and concise statement about where the Mayor and City Council want Fort Worth to focus over the next five years and to stimulate broader discussion of the important issues facing Fort Worth now and in the future. A number of ongoing administrative and community processes will make the goals reality.

The City Council's strategic challenges and opportunities:

- Maintain or lower the property tax rate in the General Fund
- Increase funding for capital investment and maintenance
- Meet infrastructure and service growth needs as related in the 2018 & 2022 Bond Programs
- No use of fund balance/reserves for operations
- Improve equity of city services
- Enhance public safety
- Prepare for slower growth of resources, both near-term and into the future

These strategic challenges and opportunities enable the City Council to have a consensus on mission, vision, and values for the future as follows:

Mission: Working together to build a strong community.

Building a strong community means building strong neighborhoods, developing a sound economy, providing a safe community, and fostering a healthy environment.

Vision: Fort Worth will be the most livable and best managed city in the country.

Long-term Financial Planning and Major Initiatives (Continued)

The City's vision statement sets forth our aspiration to become even better than we are today as a community and as an organization.

Values: There are six values that guide our employees as they go about this work:

- Exceptional Customer Experience
- Accountability
- Ethical Behavior
- Diversity
- Mutual Respect
- Continuous Improvement

The City continues to focus major efforts on these strategic challenges and opportunities which drive decision-making and help the City Council further the City's mission and vision by translating that vision into an action plan. The City's limited resources are then prioritized to achieve that plan. The City's actions to implement the established strategic challenges and address community issues are numerous and varied.

Awards

The Government Finance Officers Association of the United States and Canada (GFOA) awarded a Certificate of Achievement for Excellence in Financial Reporting to the City for its ACFR for the fiscal year ended September 30, 2021. This was the 12th consecutive year that the City has achieved this prestigious award. In order to be awarded a Certificate of Achievement, the City must publish an easily readable and efficiently organized ACFR. This report must satisfy both generally accepted accounting principles and applicable legal requirements.

A Certificate of Achievement is valid for a period of one year only. We believe that our current ACFR continues to meet the Certificate of Achievement Program's requirements and we are submitting it to the GFOA to determine its eligibility for another certificate.

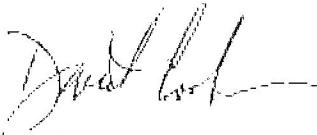
The City also received the GFOA's Distinguished Budget Presentation Award for its annual budget document for the fiscal year beginning October 1, 2021. To qualify for the Distinguished Budget Presentation Award, the City's budget document had to be judged proficient as a policy document, a financial plan, an operations guide, and a communications device.

The City's General Portfolio Investment Policy received the Investment Policy Certification Award issued by the Government Treasurers' Organization of Texas (GTOT). This certification is awarded to governmental entities that develop a comprehensive investment policy that meets the requirements of the Public Funds Investment Act and the standards for prudent public investing established by the GTOT. The certification is good for two years and expires on March 31, 2023.

Acknowledgements

The preparation of this report could not have been accomplished without the full support and involvement of the City Manager's Office and all City departments who provided information and analyses contained within this document. A very special thanks is due to the Financial Management Services Department staff for their dedicated service to the City and to the residents of Fort Worth. In addition, we acknowledge the thorough, professional, and timely manner in which our independent auditors, FORVIS, LLP, conducted the audit. Finally, we express great appreciation to the Mayor and City Council for their unfailing support for maintaining the highest standards and professionalism in the management of the City's finances.

Sincerely,

A handwritten signature in black ink, appearing to read "David Cooke", with a long horizontal flourish extending to the right.

David Cooke
City Manager

A handwritten signature in black ink, appearing to read "Reginald Zeno", with a long horizontal flourish extending to the right.

Reginald Zeno
Chief Financial Officer



Government Finance Officers Association

**Certificate of
Achievement
for Excellence
in Financial
Reporting**

Presented to

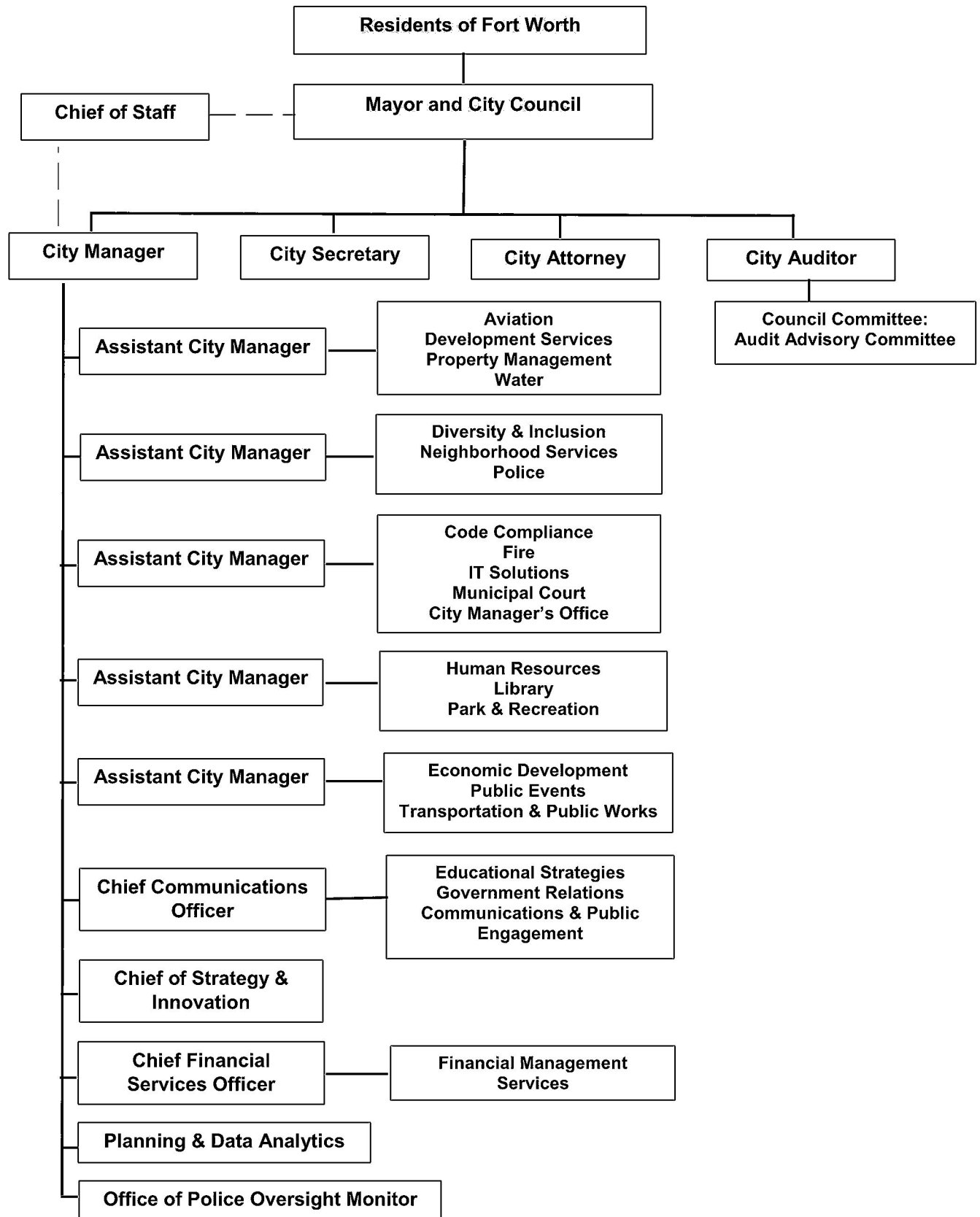
**City of Fort Worth
Texas**

For its Annual Comprehensive
Financial Report
For the Fiscal Year Ended

September 30, 2021

Christopher P. Morill

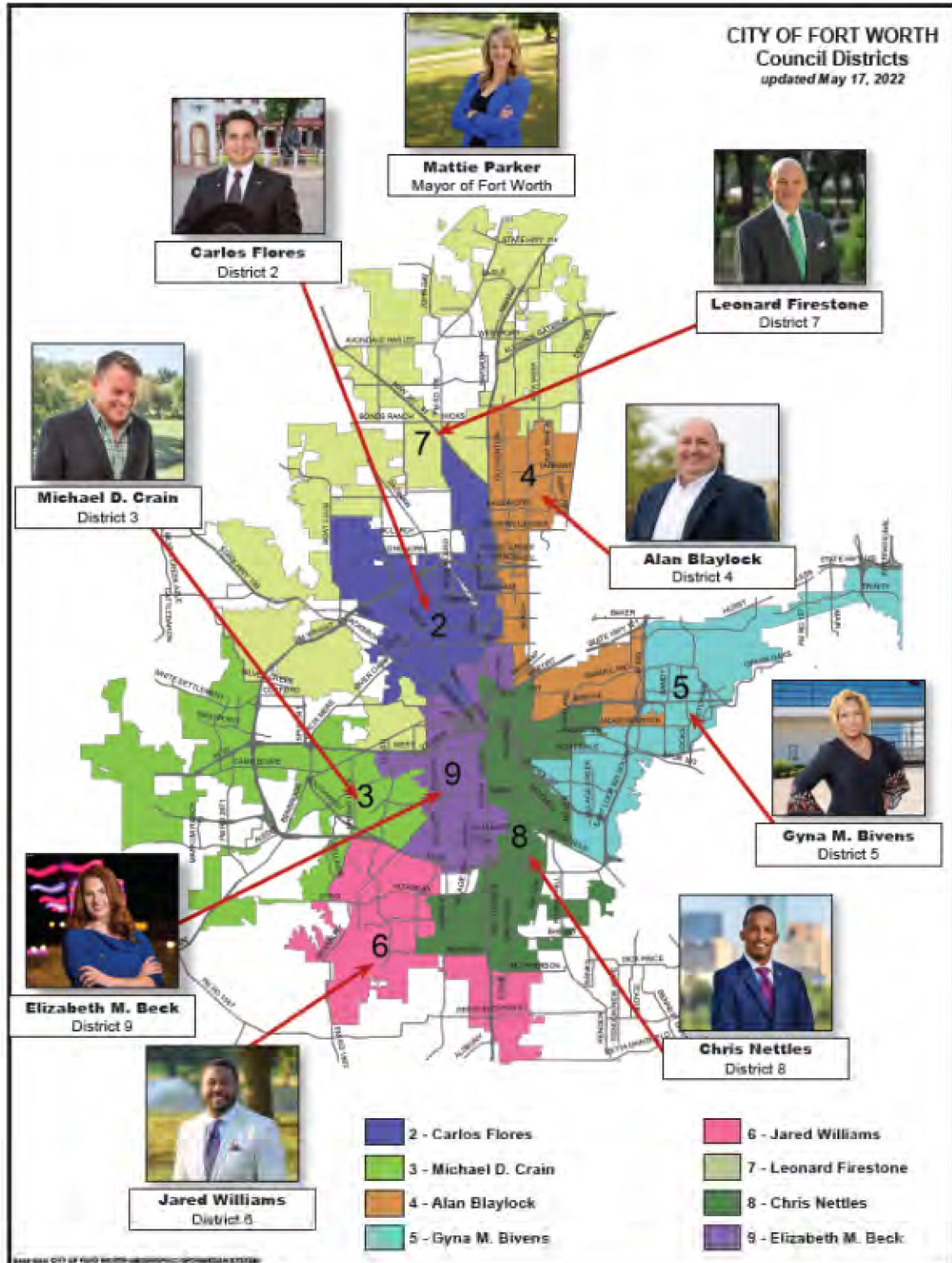
Executive Director/CEO



CITY OF FORT WORTH, TEXAS

ELECTED OFFICIALS

MAYOR AND CITY COUNCIL MEMBERS





FINANCIAL SECTION



14241 Dallas Parkway, Suite 1100 / Dallas, TX 75254

P 972.702.8262 / F 972.702.0673

forvis.com

Independent Auditor's Report

Honorable Mayor and Members of the City Council
City of Fort Worth, Texas
Fort Worth, Texas

Opinions

We have audited the financial statements of the governmental activities, the business-type activities, the discretely presented component unit, each major fund and the aggregate remaining fund information of the City of Fort Worth, Texas (City), as of and for the year ended September 30, 2022, and the related notes to the financial statements, which collectively comprise the City's basic financial statements as listed in the table of contents.

In our opinion, based on our audit and the reports of other auditors, the accompanying financial statements referred to above present fairly, in all material respects, the respective financial position of the governmental activities, the business-type activities, the discretely presented component unit, each major fund and the aggregate remaining fund information of the City as of September 30, 2022, and the respective changes in financial position and, where applicable, cash flows thereof for the year then ended in accordance with accounting principles generally accepted in the United States of America.

We did not audit the financial statements of the Employees' Retirement Fund of the City of Fort Worth, Texas, a fiduciary component unit of the City and the Fort Worth Housing Finance Corporation, a blended component unit of the City, which represent approximately 76 percent of the total assets, 76 percent of fund balance/net position and -11 percent of the total revenues/additions of the aggregate remaining fund information of the City. We also did not audit the financial statements of Terrell Homes, Ltd., the discretely presented component unit of the City, which represent 100 percent of the total assets, 100 percent of net position and 100 percent of the total revenues of the discretely presented component unit of the City. Those statements were audited by other auditors whose reports have been furnished to us, and our opinions on the discretely presented component unit and the aggregate remaining fund information, insofar as they relate to the amounts included for Terrell Homes, Ltd., the Fort Worth Housing Finance Corporation and the Employees' Retirement Fund of the City of Fort Worth, Texas are based solely on the reports of the other auditors.

Basis for Opinions

We conducted our audit in accordance with auditing standards generally accepted in the United States of America (GAAS). Our responsibilities under those standards are further described in the "Auditor's Responsibilities for the Audit of the Financial Statements" section of our report. We are required to be independent of the City, and to meet our other ethical responsibilities, in accordance with the relevant ethical requirements relating to our audit. We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our audit opinions.

Emphasis of Matter

Change in Accounting Principle

As discussed in *Note A.16* to the financial statements, in fiscal year 2022 the City adopted Governmental Accounting Standards Board (GASB) Statement No. 87, *Leases*. Our opinions are not modified with respect to this matter.

Responsibilities of Management for the Financial Statements

Management is responsible for the preparation and fair presentation of the financial statements in accordance with accounting principles generally accepted in the United States of America, and for the design, implementation and maintenance of internal control relevant to the preparation and fair presentation of financial statements that are free from material misstatement, whether due to fraud or error.

In preparing the financial statements, management is required to evaluate whether there are conditions or events, considered in the aggregate, that raise substantial doubt about the City's ability to continue as a going concern for 12 months beyond the financial statement date, including any currently known information that may raise substantial doubt shortly thereafter.

Auditor's Responsibilities for the Audit of the Financial Statements

Our objectives are to obtain reasonable assurance about whether the financial statements as a whole are free from material misstatement, whether due to fraud or error, and to issue an auditor's report that includes our opinions. Reasonable assurance is a high level of assurance but is not absolute assurance and therefore is not a guarantee that an audit conducted in accordance with GAAS will always detect a material misstatement when it exists. The risk of not detecting a material misstatement resulting from fraud is higher than for one resulting from error, as fraud may involve collusion, forgery, intentional omissions, misrepresentations or the override of internal control. Misstatements are considered material if there is a substantial likelihood that, individually or in the aggregate, they would influence the judgment made by a reasonable user based on the financial statements.

In performing an audit in accordance with GAAS, we:

- Exercise professional judgment and maintain professional skepticism throughout the audit.
- Identify and assess the risks of material misstatement of the financial statements, whether due to fraud or error, and design and perform audit procedures responsive to those risks. Such procedures include examining, on a test basis, evidence regarding the amounts and disclosures in the financial statements.
- Obtain an understanding of internal control relevant to the audit in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the City's internal control. Accordingly, no such opinion is expressed.
- Evaluate the appropriateness of accounting policies used and the reasonableness of significant accounting estimates made by management, as well as evaluate the overall presentation of the financial statements.
- Conclude whether, in our judgment, there are conditions or events, considered in the aggregate, that raise substantial doubt about the City's ability to continue as a going concern for a reasonable period of time.

We are required to communicate with those charged with governance regarding, among other matters, the planned scope and timing of the audit, significant audit findings and certain internal control-related matters that we identified during the audit.

Required Supplementary Information

Accounting principles generally accepted in the United States of America require that the management's discussion and analysis, budgetary comparison schedule-general fund and pension and other postemployment benefit information as listed on the table of contents be presented to supplement the basic financial statements. Such information is the responsibility of management and, although not a part of the basic financial statements, is required by the Governmental Accounting Standards Board who considers it to be an essential part of financial reporting for placing the basic financial statements in an appropriate operational, economic or historical context. We and other auditors have applied certain limited procedures to the required supplementary information in accordance with auditing standards generally accepted in the United States of America, which consisted of inquiries of management about the methods of preparing the information and comparing the information for consistency with management's responses to our inquiries, the basic financial statements and other knowledge we obtained during our audit of the basic financial statements. We do not express an opinion or provide any assurance on the information because the limited procedures do not provide us with sufficient evidence to express an opinion or provide any assurance.

Supplementary Information

Our audit was conducted for the purpose of forming opinions on the financial statements that collectively comprise the City's basic financial statements. The supplementary information including the combining and individual fund financial statements and schedules is presented for purposes of additional analysis and is not a required part of the basic financial statements. Such information is the responsibility of management and was derived from and relates directly to the underlying accounting and other records used to prepare the basic financial statements. The information has been subjected to the auditing procedures applied in the audit of the basic financial statements and certain additional procedures, including comparing and reconciling such information directly to the underlying accounting and other records used to prepare the basic financial statements or to the basic financial statements themselves, and other additional procedures in accordance with auditing standards generally accepted in the United States of America. In our opinion, the combining and individual fund financial statements and schedules are fairly stated, in all material respects, in relation to the basic financial statements as a whole.

Other Information

Management is responsible for the other information included in the annual comprehensive financial report. The other information comprises the introductory section and the statistical section but does not include the financial statements and our auditor's report thereon. Our opinions on the basic financial statements do not cover the other information, and we do not express an opinion or any form of assurance thereon.

In connection with our audit of the financial statements, our responsibility is to read the other information and consider whether a material inconsistency exists between the other information and the financial statements, or the other information otherwise appears to be materially misstated. If, based on the work performed, we conclude that an uncorrected material misstatement of the other information exists, we are required to describe it in our report.

FORVIS, LLP

Dallas, Texas
March 3, 2023



CITY OF FORT WORTH, TEXAS
MANAGEMENT'S DISCUSSION AND ANALYSIS
SEPTEMBER 30, 2022
(000's omitted in tables)
(Unaudited)

Management's discussion and analysis (MD&A) provides a narrative overview of the financial activities and changes in the financial position of the City of Fort Worth, Texas (City), for the fiscal year ended September 30, 2022 (FY2022). The MD&A is offered here by the management of the City to the readers of its financial statements. Readers should use the information presented here in conjunction with additional information furnished in our letter of transmittal, which can be found in the Introductory Section of this Annual Comprehensive Financial Report (ACFR) on pages v-xvi of this report.

Financial Highlights

- The assets and deferred outflows of the City exceeded its liabilities and deferred inflows as of September 30, 2022, by \$4,160,314,000 (net position). For FY2022, the City reported an unrestricted net deficit of \$1,487,001,000 which was an increase in unrestricted net deficit of \$73,745,000 compared to the previous fiscal year. This increase was primarily driven by a \$75,579,000 increase in unrealized loss on investments whereas the previous year experienced a net gain on investments.
- The City's total net position increased by \$273,160,000 from FY2021. This increase can be attributed to a good year where Program and General revenues exceeded expenses. This can be seen in the change in Charges for Services, Property Tax, Sales Tax, Other local Taxes, Gas Lease Royalties, and Other Revenues. These increases were offset by a decrease in Operating Grants.
- As of September 30, 2022, the City's governmental funds reported combined ending fund balances of \$1,300,608,000, an increase of \$142,732,000 compared to the FY2021 ending balance. Approximately 58.2 percent of the fund balance of \$756,671,000 is available for spending at the government's discretion, as follows: \$394,815,000 of committed fund balance; \$202,548,000 of assigned fund balance; and \$159,308,000 of unassigned fund balance.
- The City's total long-term liabilities decreased by \$222,605,000 in comparison with FY2021. A key factor in this decrease was the decrease in Net Pension Liability of \$297,430,000 and a decrease in OPEB Liability in the amount of \$39,887,000. During the year, long-term liabilities were reduced by principal payments of \$189,251,000 in governmental activities and \$83,275,000 in business-type activities. This decrease was offset by the debt issuance of \$235,808,000 for governmental activity and \$145,740,000 for business-type activity.

Overview of the Financial Statements

This discussion and analysis are intended to serve as an introduction to the City's basic financial statements. The reporting focus of this document is on the City as a whole and on individual major funds. It is intended to present a more comprehensive view of the City's financial activities.

The basic financial statements are comprised of three components: 1) government-wide financial statements; 2) fund financial statements; and 3) notes to the financial statements. This report also contains required supplementary information, and combining and individual fund financial statements and schedules.

CITY OF FORT WORTH, TEXAS
MANAGEMENT'S DISCUSSION AND ANALYSIS
SEPTEMBER 30, 2022
(000's omitted in tables)
(continued)

Government-wide Financial Statements

The government-wide financial statements include the Statement of Net Position and the Statement of Activities. These statements are designed to provide readers with a broad overview of the City's finances in a manner similar to a private-sector business. Both are prepared using the economic resources focus and the accrual basis of accounting; meaning that all the current year's revenues and expenses are included regardless of when cash is received or paid.

The Statement of Net Position presents information on all of the City's assets and deferred outflows of resources and liabilities and deferred inflows of resources, including capital and lease assets and long-term obligations. The difference between the two is reported as net position. Over time, the increases or decreases in net position may serve as a useful indicator of whether the financial position of the City is improving or deteriorating. Other indicators of the City's financial position should be taken into consideration, such as the change in the City's property tax base and condition of the City's infrastructure (i.e., roads, drainage systems, water and sewer lines, etc.), in order to more accurately assess the overall financial condition of the City.

The Statement of Activities presents information showing how the City's net position changed during the most recent fiscal year. It focuses on both the gross and net costs of the government's various activities and thus summarizes the cost of providing specific governmental services. This statement includes all current year revenues and expenses.

The Statement of Net Position and the Statement of Activities divide the primary government's (the City) activities into two types:

Governmental activities – Most of the City's basic services are reported here, including general government, public safety, highways and streets, culture and recreation, health and welfare, and urban development and housing. General property taxes, sales taxes, and franchise fees provide the majority of the financing for these activities.

Business-Type activities – Activities for which the City charges a fee to customers to pay most or all of the costs of a service it provides are reported here. The City's business-type activities include water distribution and wastewater collection, stormwater utility, municipal airports, municipal parking, and solid waste collection and disposal.

Discretely Presented Component Unit – These statements also report information on the activities of a discretely presented component unit. This entity is not considered a part of the primary government.

The government-wide financial statements can be found on page 19-21 of this report.

Fund Financial Statements

The City of Fort Worth, like other state and local governments, uses fund accounting to ensure and demonstrate compliance with finance-related legal requirements. A fund is a grouping of related accounts that is used to maintain control over resources that have been segregated for specific activities or objectives. These statements focus on the most significant funds and are used to report more detailed information about the City's most significant activities. All of the funds of the City can be divided into three categories: governmental funds, proprietary funds, and fiduciary funds.

Governmental Funds – These funds are used to account for the majority of the City's activities, which are essentially the same functions reported as governmental activities in the government-wide statements. However, unlike the government-wide financial statements, governmental fund financial statements focus on near-term inflows and outflows of spendable resources, as well as spendable resources available at the end of the fiscal year for future spending. Such information may be useful in evaluating a government's near-term financing requirements.