

Scope Of Work

I. General

A. Federal Funding? If yes, add additional task to meet federal funding requirements.

- 1) Task I:
- 2) Task II:
- 3) Task III:

B. Data Collection/Review

- 1) Review Reports/Studies/Drawings
- 2) Site Visit(s)
- 3) Staff Meeting(s)

C. Survey - See General Requirements in the GIS Checklist for Survey Requirements

- 1) Acquire Temporary Right of Entry
- 2) Establish Project Control ~ set 3 monuments minimum (typically every project)
- 3) ROW Survey ~ How detailed the ROW research needs to be? {Specify One}
 - a) Route Survey per TSPS Manual of Practice Requirements for Category 2 – Route Survey ~ typically used for most project
 - b) Boundary Survey ~ typically for full depth reconstruction with drainage. Signed and sealed boundary survey shall be submitted per TSPS Manual of Practice Requirements for Category 1A – Land Title Survey
- 4) Existing Conditions Survey~ Survey all utilities & surface features within the project limits.
Elevations for all inverts and top of lids. How far inside ROW? XX Feet?
- 5) Topographic Survey {Specify One}
 - a) Use COSM Lidar + Limited Topo Survey
 - b) Full topographic survey with enough detail to prepare 1' contours
- 6) Tree Survey - Specify which level of details is needed. Project limits exhibit agreed on in advance. {Specify One}
 - a) All trees 9" and above should be surveyed and tagged ~ Typical Option
 - b) All trees & shrubs should be tagged within project limits ~ Rarely used
 - c) Condition Assessment by Consultants/City Arborist after trees are tagged and surveyed by surveyor.
Occurs after 6.a. and tree mitigation table and after 60% submittal. May be added by CIS if needed.

D. Field Investigations

- 1) Subsurface Utility Locate
- 2) Geotechnical
- 3) Geological Assessment - Typically Recharge Zone Only
- 4) Field Visit to confirm existing structure dimensions

E. Determine Easement/Land Acquisition Requirements

- 1) Prepare Aerial Exhibits showing Temporary Workspace Limits as well as proposed easement/ROW takings.
- 2) Field Notes
- 3) Appraisal ~ Typically completed with on-calls
- 4) Title Work ~ Typically completed with on-calls
- 5) Negotiations of Easements ~ Typically completed in-house

II. Preliminary Phase (PER)

A. Meetings

- 1) Project Meetings
- 2) Public Meeting(s)
- 3) Prepare Exhibits For Public Meetings
- 4) Utility Coordination Meeting(s)

B. Pipelines – Wastewater (gravity main)

- 1) Determine Alignment(s)
- 2) Preliminary Hydraulics/Modeling ~ Typically not required; refer to Master Plans
- 3) **Other**(_____)

C. Pipelines – Wastewater (force main)

- 1) Determine Alignment(s)
- 2) Preliminary Hydraulics/Modeling ~ Typically not required; refer to Master Plans
- 3) **Other**(_____)

D. Pipelines – Water

- 1) Determine Alignment(s)
- 2) Preliminary Hydraulics/Modeling ~ Typically not required; refer to Master Plans
- 3) **Other**(_____)

E. Plants/Facilities

- 1) Develop Design Parameters
- 2) **Other**(_____)

F. Streets

- 1) Traffic Counts
- 2) Cross-Section Alternatives Concept (Culvert and Bridge)
- 3) Plan view Alternatives Concept (Culvert and Bridge)
- 3) Complete Street Assessment
- 4) Traffic Signals
- 5) Sidewalks
- 6) **Other**(_____)

G. San Marcos Electric (SMEU)
1) Underground Conduit
2) Photometric for Street Lighting (check with SMEU, they have in-house as well)
3) If effected by project, coordination required
H. Drainage
1) Watershed Analysis
2) Determine Alignments
3) Preliminary Hydraulics/Modeling
4) LID/Water Quality
5) Other ()
I. Project Sustainability
1) Alternative Methods For Construction- Alternatives City should consider to improve the project, include associated tradeoffs
2) Alternative Green Solutions
3) Review Engineering Sustainability Checklist
J. Texas Historic Commission
1) Letter Only to THC - typically projects that occurs within limits of an existing road
2) Archeological - Desktop Review and Archeological Background Study
3) Archeological - Permit Application (if required)
4) Archeological - Archeological Survey with shovel testing (if required)
5) Archeological - Archeological Survey Report to THC
K. Determine Project Permitting/Design Requirements
Review Project to determine if any additional permits are needed (Typical Permits listed below)
1) TxDOT ROW 2) County ROW 3) Floodplain Zone 4) TCEQ a. Edwards Contributing b. Recharge Zone c. WPAP d. SCS 5) TPWD - Parks 6) UPRR - Railroad 7) FAA Jurisdiction 8) US Army Corps of Engineers 9) US Fish and Wildlife Service 11) Texas Historical Commission 10) Other ()
L. Utility Coordination
1) Review Project to determine which utilities are within the project limits
2) Identify Utility Conflicts - Prepare an overall exhibit and utility conflict matrix
3) Coordinate with Utility Companies to resolve conflicts ~ Typically handled by City Staff
811 Pedernales Electric Bluebonnet Electric Century Link CenterPoint Gas Enterprise Gas American Tower LCRA Maxwell Time Warner Zayo AT&T Grande Texas State University Crystal Clear GBRA
M. Cost Estimate
1) Develop Construction Cost Estimates
N. Deliverables
1) Monthly Status Report (PDF)
2) Preliminary Engineering Report Draft (1 PDF)
3) Preliminary Engineering Report Final (1 PDF, 1 DWG)
4) GIS Submittal Checklist & Additional Required Submittals.
5) Plan Sheets - Specify Size a) Roll Plot - size & scale as determined by Consultant b) 11" x 17" per Engineering/CIP Plan Review Checklist
6) Notes: Review meetings and Exhibits as necessary

III. Design Phase (30/60/90/100%) ~ See Engineering/CIP Plan Review Checklist For Additional Details

A. Meetings

- 1) Project Meetings

Enter Weekly, Monthly, or Specify: Monthly

- 2) Public Meeting(s)

- 3) Prepare Exhibits For Public Meetings

- 4) Utility Coordination Meeting(s)

B. Design Sheet Categories

- 1) Cover Page

- 2) Index

- 3) General Notes

- 4) Quantity Table – By Sheet (Required by 90% submittal)

- 5) Project Layout & Survey

- 6) Typical Sections

- 7) Tree Mitigation - Table Of All Trees & Plan of Replacement Trees. If number of trees are small, show on Erosion Control Sheets

- 8) Erosion Control - {Specify}

a. SWPPP - TXDOT Template (Required on all projects)

b. EPIC - TXDOT Template (Required on all projects)

c. Permanent & Temporary - combined as one plan set

d. Permanent & Temporary - prepared as 2 separate plan sets

- 9) Sequence of Construction/Phase (can be combined with Traffic Control Narrative if needed)

- 10) Traffic Control Plan {Specify One}

a. Minimum Requirements - simple write up and standard details

b. Detailed Phasing - Typical Section & Plan Sheet for every phase

- 11) Removal

- 12) Roadway - Plan & Profile

- 13) Grading Plan For Intersections - show limits of accessible path

- 14) Driveways {Specify One}

a. Plan & Profile for Each Driveway

b. Driveway Table

- 15) Drainage

a. Hydrologic Calculations

b. Drainage Area Map

c. Detention Basin, if Required

d. Plan and Profile

e. Laterals Profiles

f. Water Quality

- 16) Structural

a. Bridge Layout

b. Bridge Section

c. Bridge Details

d. Standard Details

- 17) Retaining Walls {Specify One}

a. Plan only - Typically 24" and smaller

b. Plan & Profile - Typically 24" and larger

- 18) Water Line {Specify One}

a. Plan only - Typically 8" Utility Project Only

b. Plan & Profile - Required for 12" and Larger. May want it for Full Depth Reconstruction or Drainage Projects

- 19) Wastewater Plan & Profile

- 20) Force Main Plan & Profile

- 21) Reclaimed Water {Specify One}

a. Plan only - Typically 8" Utility Project Only

b. Plan & Profile - Required for 12" and Larger. May want it for Full Depth Reconstruction or Drainage Projects

- 22) Lift Station

a. Site Plan

b. Mechanical Plan

c. Structural Plan

e. Electrical Plan

f. Control Panel Schematic Diagram

g. RTU Schematic Diagram

- 23) Electrical – Underground {Specify One} (Conduit only)

a. Plan only

b. Plan & Profile

- 24) Electrical – Lighting

- 25) Traffic Signals

a. Existing Layout

b. Temporary Signal Design

c. Proposed Signal Design

d. Phasing & Timing Plan

e. Signal Wiring

f. Elevations
g. Quantities & Notes
26) Signing & Pavement Markings
27) Utility Layout – (Color Coded)
28) Landscaping - Creek Bank restoration and habitat planting
29) Irrigation
30) Cross-Sections (Every 50')
C. Permits
1) TDLR Review
2) COSM Floodplain Permit
3) TXDOT Permit ~ Typically submitted by COSM Staff
4) Hays County Permit
5) Others: TCEQ
6) Others:
D. Utility Coordination
1) Update Utility Conflicts - Prepare an overall exhibit and utility conflict matrix
2) Coordinate with Utility Companies to resolve conflicts ~ Typically handled by City Staff
E. Deliverables – (Must follow COSM CADD standards)
1) Monthly Status Report
2) 30% Submittal (1 PDF, DWG) (1"=40'H & 1"=10'V)
a. Plan Set
i. Plan Sheets (see items under III. b. Design Phase)
i. Submittals may be delayed as indicated on the Engineering/CIP Plan Review Checklist
b. Opinion of Probable Construction Cost
c. Construction Schedule - Duration by Tasks
e. GIS Submittal Checklist
f. Engineering/CIP Plan Review Checklist
3) 60% Submittal (1 PDF) (1"=40'H & 1"=10'V)
a. Plan Set
i. Plan Sheets (see items under III. b. Design Phase)
ii. Submittals may be delayed as indicated on the Engineering/CIP Plan Review Checklist
iii. Profile of all utilities specified except Water & Force Main
iv. List of Standard Details – COSM and COA
v. List of Standard Specifications – COSM Div 1 and CO
vi. Project Specific/Special Details
b. Opinion of Probable Construction Cost
c. Construction Schedule - Duration by Tasks
e. Response Comments to 30% Design
f. Engineering/CIP Plan Review Checklist
4) 90% Submittal (1 PDF)
a. Plan Set
i. Plan Sheets (Include items from 60% submittal)
ii. Quantities – Broken down by page
iii. Profile of All Utilities Specified Above
iv. Project Specific/Special Details
b. Opinion of Probable Construction Cost
c. Construction Schedule
d. Specifications - Submitted as a single PDF
i. Index of Specs
ii. Modifications to Austin Specs
iii. COSM Adopted Specs - Project Specific
iv. Special Provisions
v. Special Specifications
e. Bid Form (Excel File)
f. Response Comments to 60% Design
h. Engineering/CIP Plan Review Checklist
5) 100% Submittal (1 PDF, 1 DWG)
a. Sealed Plan Set (include all items from 30% 60%, & 90% submittal)
b. Opinion of Probable Construction Cost
c. Construction Schedule
d. Specifications - Submitted as a single PDF
i. Index of Specs
ii. Modifications to Austin Specs
iii. COSM Adopted Specs - Project Specific
iv. Special Provisions
v. Special Specifications
e. Bid Form (Excel File)
f. Response Comments to 90% Design
g. Engineering/CIP Plan Review Checklist
h. GIS Submittal Checklist
i. Construction Checklist

IV. Bid Phase
A. Meetings
1) Attend Pre Bid Meeting ~ Agenda prepared by COSM Staff
2) Answer Questions
3) Issues Addenda to Purchasing
B. Bid Review
1) Bid Tabulation of Submitted Bids
2) Reference check for bid qualification & Recommendation of Award
a. Check for Debarment and perform a background check (only required for Federal Funded Jobs)
b. Verify References of top 3 bidders
C. Deliverables
1) Letter of recommendation (add statement that debarment has been checked)
2) After Bid Opening - Conformed Plans (1 PDF, 1 DWG, 2-22"x34" Sets, 4-11"x17" Sets)
V. Construction Phase
A. Assist with Construction Tasks
1) Project Meetings
2) Attend Pre-Construction Meeting ~ Agenda prepared by COSM Staff
3) Submittal Review
4) Respond to Requests for Information/Modifications
5) Construction Observation (Site Visits Per Month ____) ~ Typically Not Required
6) Construction Inspection ~ Typically Not Required
Notes:

7) Construction Monitoring As Required By THC or Others ~ Typically Not Required
Notes:

8) Pay Estimate Review
9) Review Change Orders
10) TDLR Inspection & Approval
11) Project Startup - Typically Lift Station Projects Only
Notes:

12) Attend Final Walk Through
B. Survey
1) Reset Monuments ~ Typically not required unless the design duration is long
2) Construction Layout For SMEU - Typically only enough detail for SMEU to move overhead in advance of CIP project. {Specify One}
a) Stake proposed poles and proposed features within 5' of poles
b) Stake proposed & existing ROW within project limits
C. Deliverables
1) Site Visit Reports
2) Submittal Response & Log
3) RFI Response & Log
VI. Record Drawing Phase
A. Survey ~ See GIS Submittal Checklist For Items To Be Surveyed
1) Record Drawing Survey - After construction is completed, survey installed appurtenances and invert elevations
B. Plan Revisions
1) Update alignment on plans to reflects GPS data.
2) Update text on Profiles Inverts to reflect Record Drawing Survey.
C. Deliverables
1) Draft Drawings (1-22"x34" Set, 1-11"x17" Set)
2) Final Drawings Per GIS Checklist
3) GIS Submittal Checklist & Additional Required Submittals