

**REQUEST FOR PROPOSAL**  
**For**  
**Wildwood Water Transmission Main Extension**  
**PROJECT NO. W00-943**

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**PROJECT DESCRIPTION**

The City of Rapid City (the City) proposes to extend its Highway 16 water zone to serve the Carriage Hills and Red Rock area, as shown on the attached line map. The project will consist of approximately 4,800 feet of 14" water transmission main, 600 feet of 12" water main, 700 feet of 8" water main, a possible boring of Sheridan Lake Road with pipe casing and carrier pipe, demolition of the Wildwood Reservoir, possible piping modifications to the Westview Booster Station, and miscellaneous appurtenances.

The City intends to utilize the Highway 16 pressure zone (3680 - 3900; reservoir overflows 3995 - 4000) to provide service for the following areas: Carriage Hills, upper Wildwood, Westview, Elysian Heights, proposed Red Rock Estates, and North Countryside. In order to accomplish this, a 14" high pressure transmission main is proposed to tie into the existing 14" high pressure line just east of Sheridan Lake Road and extend west along Wildwood Drive. Approximately at the Wildwood Booster, the 14" transmission main will change from a high-pressure line to a standard line. A 12" transmission main is proposed to connect Wildwood and the Carriage Hills area in the vicinity of the Southwest Reservoir and Westview Booster. It is intended that this line will be connected to the discharge side of the Westview Booster which will allow the Booster, in emergencies, to provide water to the Highway 16 area as well as the areas mentioned above.

The existing 14" high-pressure line in Catron Boulevard connects to a 12" PVC Class 200 pipe stubbed out across Sheridan Lake Road. We are hopeful that this 12" Class 200 pipe may continue to be used and the proposed 14" high-pressure line for Wildwood connected to it. This will avoid having to bore under Sheridan Lake Road.

The 14" transmission main will extend south (paralleling the existing 6" main) along Wildwood to the Wildwood Reservoir. At this location, the transmission main will connect to a proposed 14" main being designed by Dream Design. The consultant will need to coordinate this connection location with Dream Design.

Other items to be included in the project are:

- Demolition of the Wildwood Reservoir (23,000 gallons);
- Possible piping modifications at the Westview Booster station;

- Connections between the proposed 14" transmission main and the existing 6" water main in upper Wildwood;
- Improving looping of the Southwest System by extending an 8" water main along North Wildwood from Sheridan Lake Road to Una-Del; and,
- Street intersection improvements at the intersection of North Wildwood and Sheridan Lake Road.

In the near future, the City plans to construct a new well and booster station (proposed Carriage Hills Booster) east of Sheridan Lake Road. The booster station supply will be from the southwest reservoir via a 12" main in Catron Boulevard and the discharge will be to the existing 14" high-pressure line in Catron Boulevard.

Until this booster station is constructed, water for Red Rock Estates, Carriage Hills and the other areas will be provided by the Highway 16 Reservoir. In emergencies, the Westview Booster will be used to provide water to these areas. Once the Carriage Hills Booster is constructed, then the Westview Station will only be used for emergency back-up. Similarly, the Highway 16 Reservoir will then only be used for fire flows and as a back-up for the Carriage Hills Booster.

The City does not anticipate abandoning the 6" water main in upper Wildwood but rather intends to continue to utilize this main for service connections. We anticipate at least two connections to this main with the proposed 14" transmission main, one in the vicinity of the Wildwood Booster and the other near the Wildwood Reservoir.

Design criteria for the project will be as contained in the "City of Rapid City Standard Specifications"; the "Uniform Fire Code as adopted by the City of Rapid City"; "Recommended Standards for Water Works" (Ten State Standards); "Design Criteria Manual for Water Distribution Systems and Sanitary Sewer Collection Systems for the City of Rapid City (Draft)"; "City of Rapid City Street Design Criteria Manual"; "City of Rapid City Drainage Criteria Manual"; and "AASHTO Roadside Design Guide".

Additional background information includes the "Study & Report for Municipal Water System, Rapid City, South Dakota" by FMG, Inc., 1985; "Preliminary Design submittal for Carriage Hills Water Booster Station City of Rapid City" by CETEC Engineering; "Addendum #1 to Preliminary Design Submittal for Carriage Hills Water Booster Station City of Rapid City" by CETEC Engineering; "City of Rapid City Major Street Plan Drawing"; "Geotechnical Exploration Program 2000 City-wide Area Projects" including "Wildwood Water Transmission Main Extension" by FMG, Inc.; "Preliminary Design Submittals" by Dream Design for

the water transmission main from the Wildwood Reservoir to Red Rock Estates; and the "City of Rapid City Engineer's Estimating Guide".

## **SCOPE OF SERVICES REQUESTED**

### **1. PRELIMINARY DESIGN PHASE**

- 1.1. Review information listed on the prior pages.
- 1.2. Establish design criteria for various components of the project.
- 1.3. Identify and evaluate potential water and sewer utility conflicts associated with the proposed project.
- 1.4. Perform the following planning and design tasks:
  - Perform site surveys sufficient for design plans preparation;
  - Perform preliminary horizontal and vertical alignment analysis.
  - Perform preliminary intersection analysis and layout for the intersection of North Wildwood and Sheridan Lake Road.
  - Evaluate the transmission main connection at Sheridan Lake Road to determine if the connection should be made on the east side or can the existing 12" PVC class 200 crossing pipe be used and the connection made on the west side of Sheridan Lake Road.
  - Investigate piping modifications needed at the Westview Booster Station.
  - Investigate demolition methods and/or techniques for the removal of the Wildwood Reservoir.
- 1.5. Coordinate the transmission main connection location at the Wildwood Reservoir with Dream Design.
- 1.6. Prepare preliminary design report with recommendations for review and comment by City staff and conduct a review meeting with City staff.
- 1.7. Prepare preliminary systems layout in the form of plan and profile sheets showing proposed alignment, valve locations and fire hydrant locations. Show existing utilities locations with probable depth within and adjacent to the construction limits.
- 1.8. Scale of plan and profile sheets shall be 1" = 20' Horizontal and 1" = 5' Vertical.
- 1.9. Prepare preliminary opinion of probable construction cost.

- 1.10. Consider the future Wildwood street reconstruction, which possibly may include an urban street section, widening the street and centering the street within the ROW, when evaluating and selecting the proposed transmission main alignment.
- 1.11. Determine the need for permanent and temporary easement acquisitions and assist the City with property acquisition for temporary or permanent easements and for right-of-way required. Perform legal survey for property and prepare plats and/or easement exhibits as necessary.
- 1.12. Provide additional preliminary design services as negotiated, which may include defining the scope of additional geotechnical investigations as may be necessary for final design; assisting the City in negotiation of an agreement amendment for additional geotechnical engineering services with FMG, Inc.; and, coordinating with the geotechnical engineer.

## 2. FINAL DESIGN

- 2.1. Provide complete plans and specifications for a unit price construction contract.
- 2.2. Provide additional route and topographical survey not provided in Preliminary Design, (establish land ties and bench marks, locate property corners, and field locate all existing utilities).
- 2.3. Construction staking information on the drawings shall include a survey control and project layout sheet that includes a survey control table and a construction survey control table. The survey control table shall include, in tabular format, the control point number, the coordinates, and a description of the monument. The construction survey control table shall be in tabular format and will include all PC's, PI's, PT's and any angle points; the corresponding stationing; point description; and coordinates.

On the plan sheets, include either: 1) Notes with station offsets of all PC's, PI's, PT's, and any angle points, curve data, location of valves, fittings, etc. for work requiring field staking; or 2) In a tabular format the coordinates and description of intervisible control points, curve data, and coordinates of all items of work requiring field staking. Benchmark information shall be provided on each sheet.

- 2.4. Provide project layout plan to include lot lines (front and side) and addresses of all properties adjacent to construction, and the names of the property owners.
- 2.5. Information shown on the drawings shall be drafted to scale, except where specifically noted. Where scaled details are rendered illegible by drafting to scale, such may be drafted in symbol form and so noted.
- 2.6. Provide separate, special detail drawings at appropriate scale showing additional information necessary to construct the project but not shown adequately elsewhere in the drawings.
- 2.7. Coordinate directly with utility companies' engineering divisions to ensure that all existing utilities are completely and accurately located in the field; that pertinent information regarding depth, material, size, etc. are noted on the plans; and that conflicts requiring relocation of utilities or special construction techniques are fully specified in the contract documents.
- 2.8. Provide project cross sectional drawings for the intersection reconstruction of North Wildwood and Sheridan Lake Road. Information shown shall include all underground utilities drafted to scale (except where specifically noted), centerline elevation, utility elevation, top of curb elevation, and any special grade information.
- 2.9. Provide general sequence of construction requirements in order to assist bidders to prepare their bids and to coordinate utilities construction to minimize interruption of service, etc.
- 2.10. Provide suggested methods of cleaning and disinfecting the constructed large diameter transmission main and water main.
- 2.11. Provide conceptual Traffic Control Plans identifying detour routes and signage for various stages of construction as necessary.
- 2.12. Provide Detailed Specifications supplementing *City of Rapid City Standard Specifications* as necessary.
- 2.13. Prepare opinion of probable construction cost (engineer's estimate) for the project based upon the City of Rapid City Engineer's Estimating Guide format and average bid price and engineering judgement.
- 2.14. Provide general dewatering and sediment control requirements.

- 2.15. Prepare and include within the detailed specifications any permits required by the contractor for construction dewatering, etc.
- 2.16. Prepare any other permits required by the City.
- 2.17. Deliver the following: 1) Reproducible construction plans on 22"x34" mylar for printing by the City; 2) Complete construction plans on disk in AutoCAD 14.0 format; 3) Complete specifications on disk in Word 97 format for printing by the City; 4) A unit price Engineer's cost estimate on disk in City of Rapid City Project Workbook format (based upon the City of Rapid City Bid Items listed in the Engineer's Estimating Guide) in Excel 97 format; and 5) Copies of consultant's Quantity Take Off Sheets.
- 2.18. Review design, plans and specifications, and permanent or temporary easement exhibits with City staff at preliminary design, at 65% and at 95% stages.
- 2.19. Include appropriate City of Rapid City Standard Details in the plan drawings. (The City can furnish the consultant with AutoCAD drawings of the details.)
- 2.20. Provide additional Final Design services as negotiated, which may include signalization and street lighting modifications associated with the North Wildwood and Sheridan Lake Road intersection improvements.

### 3. BIDDING PHASE

Provide standard bidding phase services, e.g. attend Prebid Conference, issue addenda and interpretations to the bid documents if required, review prequalification submittals if required, assist owner in evaluating bids, etc. Bid tabs will be prepared by the City of Rapid City in the Project Workbook.

### 4. CONSTRUCTION PHASE

Provide construction management services as negotiated, which may include:

- Attend preconstruction conference and periodic progress meetings;
- Review and take action on shop drawings, test results, and other submittals;
- Provide construction surveys under this contract or under the appropriate construction Contract bid item;

- Provide construction observation, make periodic site visits at intervals appropriate to the various stages of construction;
- Review and recommend for payment the Contractors applications for payment;
- Prepare as-constructed drawings and submit compilation of construction observation reports, photos, etc.;
- Issue statement of substantial completion;
- Issue warranty letter to contractor; and
- Attend and participate in a post construction project review and critique.

## 5. MEETINGS AND SUBMITTALS

- 5.1. Project team members will include the *consultant*; *City staff from Engineering Division* project management, design and construction coordination; *Operations Divisions*, e.g. Water Division (service area and O&M related issues), and *other departments* as appropriate, e.g. Planning Department (master planning, traffic planning), Fire Department (fire flows and hydrant locations).
- 5.2. Meetings requiring the Consultant's participation will include:
  - Kick-off meeting;
  - Preliminary design presentation and discussion;
  - Utility companies coordination meeting;
  - 65% Plans and Specifications Review;
  - 95% Plans and Specifications Review; and
  - Prebid Conference.
- 5.3. Meetings the Consultant may need to attend as negotiated, which may include:
  - Preconstruction Conference;
  - Construction Progress Meetings; and
  - Post Construction Meeting.
- 5.4. Submittals required during the design phase include:
  - Preliminary Design;
  - 65% Plans and Specifications and Easement Exhibits;



- 95% Plans and Specifications and Easement Exhibits; and
- 100% Plans and Specifications and Easement Exhibits.

Easement Exhibits for property acquisition should be completed prior to Plans and Specifications in order to facilitate securing the easements prior to construction.

#### **PROJECT SCHEDULE**

Contract Negotiations Complete	September 6, 2000
Notice to Proceed with Design	September 19, 2000
Preliminary Design Submittal	October 30, 2000
65% Design Submittal	November 27, 2000
95% Design Submittal	December 22, 2000
100% P & S Submittal	January 19, 2001

#### **ESTIMATED CONSTRUCTION SCHEDULE**

Open bids	February 15, 2001
Award construction contract	February 19, 2001
Begin construction	March 19, 2001
Complete construction	June 29, 2001

#### **PROPOSAL SUBMISSION**

Please submit three (3) copies of your proposal no later than 4:00 p.m., August 17, 2000. Interviews are tentatively scheduled for the afternoon of August 23, 2000.