

**PROFESSIONAL SERVICES
REQUEST FOR PROPOSALS**

**North System Renewal Water Treatment Plant (NSRWTP)
Design Package #1 (DP#1) – Site and Civil Improvements**

Section 1: Background and History

Denver Water (DW) is in the process of replacing the aging Moffat Water Treatment Plant (WTP) with a new, modern plant located near Ralston Reservoir. The site is owned by DW and has approximately 80 acres available for the NSRWTP. The new facility will have the capacity to initially treat from 10 to 150 million gallons per day (MGD) and be expandable to treat up to 250 MGD, with accommodations for future unit processes such as ozonation, ultraviolet (UV) disinfection, and granular activated carbon (GAC) adsorption. Facility accommodations will also maintain available land for a parallel treatment system should a more impaired water source be treated at this site in the future.

Section 2: Project Description

DW is soliciting proposals for a **DP#1 - Site and Civil Improvements** design consultant (Consultant) to execute and deliver site, civil, transportation and hydraulic preliminary design phase services for the NSRWTP. The NSRWTP is a new 150-MGD facility located on DW property near Ralston Reservoir north of Golden on Colorado State Highway 93 (Highway 93).

The project execution will be a joint effort between DW, DW's Owner's Representative (OR), a Construction Manager-at-Risk (CMAR), and the design team. The design team will be comprised of a multi-disciplinary team based on the design packages (DPs) for the NSRWTP.

- DP#1 – Site and Civil Improvements
- DP#2 – Treatment Process Systems and Structures
- DP#3 – Electrical, Instrumentation & Control Systems
- DP#4 – Ancillary Treatment Process Systems and Structures
- DP#5 – Architectural and Building Systems
- DP#6 – Post-Tensioned Water Storage Tanks

DW/OR responsibilities will include project management, internal and external communications, scheduling of internal resources, design management, review, and budget allocation. The Consultant's responsibilities and pertinent project information are presented herein with instructions for preparing a complete proposal to serve as the Site and Civil Improvements Consultant for the delivery of the NSRWTP.

The Project will be completed using a step-wise phasing strategy to make decisions and obtain approvals before proceeding to subsequent phases. DW is open to input on how to accomplish this phased implementation with the understanding that DW may choose to accelerate or slow down phases in order to satisfy operational or budgetary constraints. DW reserves the right to terminate or amend a DP contract following completion of 20% design, or at any time through construction completion.

Section 3: Project Objectives

The following specific project objectives have been identified:

- Sustainability: The NSRWTP site and facility will be designed to achieve the highest level of sustainability ratings possible in a cost-effective and feasible manner.
- Modularity: The NSRWTP processes will be designed for parallel operation to allow for units to be removed from service (operational and electrical) while the plant remains functional.
- Ease of Access and Maintenance: The NSRWTP site will be designed to allow for safe, efficient flow of traffic; future upgrade, expansion and improvement to processes and structures; and ease of maintenance of all equipment.
- Safety: The NSRWTP will be designed to facilitate personnel safety during construction, startup and commissioning, and long-term plant operations and maintenance (O&M).
- Personnel: The NSRWTP will be designed to accommodate existing and future Source of Supply (SOS) facilities, allowing for streamlined operation and control.
- Schedule: The NSRWTP will be operational no later than 2023.
- Budget: The NSRWTP team will accomplish the project objectives within the projected budget.

Section 4: Consultant Scope of Services

The DP#1 Consultant shall be responsible for the 0-20% design and concept alternatives development of the following:

- Improvements to Highway 93 to allow safe ingress and egress to and from the NSRWTP existing access road, and meeting all requirements of the Colorado Department of Transportation (CDOT), Jefferson County and applicable local regulations. The Consultant shall design site access roads and structures for HS20 loading to accommodate the delivery of chemicals and trucking of dewatered solids for ultimate disposal as determined by the design consultants for DP#2 and DP#4.
- The Consultant shall apply for and obtain all permits required for work associated with DP#1. All local, state, and federal required permits obtained shall be coordinated with the OR for permit tracking.
- Provide a 3D base map of the natural and manmade surface features on-site, property boundary legal monuments, Highway 93, utilities, geotechnical borehole locations and other relevant design information identified by the design consultants and DW. The 3D site model shall be suitable for importing into the 3D design model to accurately represent the existing, proposed, and final ground surface and subsurface features.
- Yard piping inclusive of NSRWTP, including but not limited to, process piping, utilities, stormwater and ancillary unit process yard piping in coordination with DP#2 and DP#4; raw water conduit connection from the Ralston Outlet Works to the NSRWTP Headworks in coordination with DW and DP#2; and potable water connection from the NSRWTP Clearwells to Conduit 16 in coordination with DP#6 and DW.
- Site improvements and finishes including fencing, gates, signage, utilities, erosion control, surface restoration for native vegetation, and landscaping plan. Develop a stormwater plan to maintain use of the site during 100-year storm events, and provide reasonable slopes between all buildings consistent with the access, elevations and landscaping plans.

- Develop and maintain an overall hydraulic gradeline model of the North System Renewal (NSR) program. The model will incorporate design flows from the Ralston Outlet Works, NSRWTP (detailed plant HGL to be provided by DP#2 consultant), Conduit 16 and distribution system at the existing Moffat WTP.
- Develop a NSRWTP project specific Site and Civil Design Guidance Document (DGD) to establish design standards for the final design. DW intends to use a five-day Lean process with the Consultant to help develop and workshop the DGD. Review the existing geotechnical investigation of the site and subsurface condition for use in designing the foundations for structures associated with DP#2, DP#4, NSRWTP Administration Building and Source of Supply Maintenance Building and Warehouse. Provide recommendations for additional geotechnical investigations to be completed in Final Design.
- Consultant will assist in preparation of site information, drawings, and analysis in preparation for a Lean 2P event with DW and the balance of the design team to determine the final site layout of the NSRWTP. Consultant will help in the preparation, participation and follow-up of the Lean 2P event. Consultant will identify Lean Facilitator for involvement in future Phases of Work
- Consultant will identify a Specifications Coordinator to be a part of the NSRWTP Specifications Team (led by DW and the OR) to oversee the development of project specific specifications for DP#1 in conjunction with the development of a NSRWTP project specific Capital Project Construction Standards manual and supplementary technical specifications.
- Consultant will identify an AutoCAD Lead Coordinator to be a part of the NSRWTP Standards Team, and to be responsible for the versioning and control of AutoCAD files and security/permission access to common AutoCAD reference files used by all DPs.
- Consultant will identify a Startup and Commissioning Coordinator to be a part of the NSRWTP Startup Planning Team (led by DP#3) to initiate early planning activities for startup, testing and commissioning the new WTP.

Section 5: Consultant Qualifications

The Consultant shall demonstrate that the firm and proposed team have the necessary experience to design the Site and Civil Improvements for the NSRWTP to meet DW's Project Objectives and all regulatory requirements. At a minimum, the Consultant shall meet the following minimum criteria:

- The Consultant shall have served as prime consultant for the design of a minimum of three (3) stormwater design projects of similar size and complexity. The Consultant shall demonstrate familiarity with site- and stormwater-related regulations and permitting within Jefferson County jurisdiction.
- The Consultant shall have experience designing CDOT highways, managing work to meet CDOT standards and processes, and coordinating highway access plan improvements. The Consultant shall have served as design lead for a minimum of three (3) CDOT highway projects in excess of \$10M construction cost (each).
- The Consultant's Project Manager shall have experience managing the design of two (2) multi-discipline infrastructure projects with a minimum construction cost of \$25 million within the last 10 years.
- The Consultant's Lead Hydraulics Engineer shall be experienced in plant and pipeline hydraulics for gravity and pressure pipelines. The Lead Hydraulics Engineer shall have served as the design lead for a minimum of two (2) steel or concrete conduits greater than 60-inch diameter.
- The Consultant's Landscape Architect shall have developed landscaping plans for a minimum of three (3) treatment or industrial facilities.

- The Consultant's Civil Engineer shall have served as design lead for a minimum of three (3) past projects of similar size and complexity, including site grading and cut/fill balance, access roads, and wet/dry utilities design for treatment or industrial facilities of similar size and complexity.
- The Consultant's Geotechnical Engineer shall have served as Geotechnical Engineer for a minimum of three (3) projects involving design of water-bearing structures and demonstrate experience in the site vicinity and/or with steeply dipping bedrock conditions.
- The Consultant shall have a comprehensive health and safety program to minimize work-related injuries.
- The Consultant shall have a robust quality assurance/quality control program to verify deliverables have been reviewed and checked. Consultant shall be familiar with DW's Capital Projects Construction Standards (CPCS), Capital Projects Procedures Manual (CPPM), and Engineering Standards.
- The Consultant's AutoCAD Lead Coordinator shall have been responsible for CAD coordination for three (3) Civil3D projects within the last 10 years of similar size and complexity, and a history of successfully using Civil3D and ProjectWise (or similar document control system) on past projects, and be familiar with integrating work products from other teams utilizing Revit, AutoCAD Electrical, and Plant3D.
- The Consultant shall demonstrate experience on three (3) projects creating 3D base mapping for multi-facility, multi-discipline design team use, including topographic, surface feature, and existing utilities. The staff proposed for base mapping shall have created at least three (3) AutoCAD Civil3D base maps for complex sites in excess of 20 acres.
- The Consultant's Specifications Coordinator shall have been responsible for developing, compiling, and cross-referencing specification coordination using Construction Specifications Institute (CSI) MasterFormat 2004 edition (or later), having completed specifications for a minimum of three (3) multi-discipline projects within the last 10 years.

Section 6: Owner Responsibility

DW will provide to the Consultant all available relevant information to aid in the design process. This includes but is not limited to:

- Previous studies.
- Project Objectives.
- Provide review comments within agreed upon schedules.
- Provide all surveys including design surveys and as-built elevations.
- Provide historical as-built records.
- Provide relevant and appropriate design, specifications, and drafting for DW-designed project components including but not limited to: Ralston Outlet Works and Conduit 16.

Section 7: Project Assumptions

The following assumptions were made in the development of this Scope of Services:

- The Preliminary Design Phase will proceed to 20%. The 20% level will be a major design gate for the project and will meet the requirements detailed in the Scope of Services. Initially, the Consultant's Scope of Services will only be defined through the 20% Preliminary Design Phase. The Scope of Services from 20% to Final Design and Bidding may be developed near the conclusion of the 20% design.
- The design phase, through 20%, will not exceed a period of 7 months from Notice to Proceed unless so authorized in advance of the delivery deadline by DW.
- DW will provide payment for all agreed upon permit application and review fees.
- Public relations efforts up to 20% design will be completed by DW.
- The project execution shall follow the NSRWTP Project Management Plan, a copy of which will be provided to the selected Consultant, and applicable portions of DW's CPPM: <http://www.denverwater.org/DoingBusinesswithUs/EngineeringOverview/CapitalProjectsProceduresManual/>.
- Drawings shall be provided in electronic media on the shared NSRWTP ProjectWise site and in quality hard copy media. AutoCAD Drawings shall be in accordance with DW's design drafting CAD Standards: <http://www.denverwater.org/DoingBusinesswithUs/EngineeringOverview/CADStandards/> and shall include, but not be limited to, the Standards located online in DW's CPPM.
- Attend a meeting with DW's Drafting and Administration groups to discuss DW's Standards.
- Project specifications shall be submitted in CSI MasterFormat 2016 Edition and adhere to DW's Engineering Specifications, with formatting consistent with the CPCS: <http://www.denverwater.org/DoingBusinesswithUs/EngineeringOverview/CPCS/> and any revisions made by the NSRWTP Specifications Team.
- Construction Contract General Conditions, Contract Agreement, Bid Forms, etc., shall be provided by DW via the CPCS.
- A "gate" is a term used to reference a formal document and the process used to acknowledge project decisions. Gates are designed to acknowledge project decisions. Gates are designed to acknowledge approval of its related topic by project stakeholders. A gate also is a means to document decisions that have been made which are critical to the progress of the design beyond the current milestone/phase. Once a gate is "closed", no changes can be made to the design deliverable or data transferred without approval from DW. If changes are identified, those changes are to be logged on the project change log and addressed in accordance with the change management process identified in the NSRWTP Project Management Plan and the CPPM.
- The Consultant shall assume the site is free of any sensitive cultural resources that require environmental clearance or other required permitting at the local, state, or Federal level.
- The DP#2 consultant will submit the project to Colorado Department of Public Health and Environment (CDPHE) for design approval. The DP#1 Consultant shall coordinate and provide plans and information to the DP#2 consultant as needed to facilitate design submittal and approval.

Section 8: Project Schedule

DW may elect to follow the proposals with a formal questionnaire and/or interview to assist with the proposal evaluation. Final selection of a Consultant will be based upon the selection criteria detailed in Section 12.

The anticipated Project Schedule is summarized below:

- May 17, 2016 Request for Proposals advertised through www.denverwater.org
- May 26, 2016 Mandatory Pre-Proposal Meeting
- June 8, 2016 Final Written Questions Due
- June 16, 2016 Proposals Due
- July 11-13, 2016 Consultant Interviews
- July 14, 2016 Announce Consultant Selection
- August 10, 2016 Selected Consultant Recommendation to the Board
- August 11, 2016 Notice to Proceed Issued to Selected Consultant
- February 28, 2017 Preliminary Design (20%) Completion
- March, 2019 Final Design Completion (estimated)
- 2023 Construction Complete (estimated)

Any requests for clarification or additional information regarding this RFP shall be submitted in writing via e-mail (peter.mccormick@denverwater.org), or during the Pre-Proposal meeting that will be held in the Denver Police Protective Association (PPA) Event Center at 2105 Decatur St, Denver, Colorado 80211 on Thursday, May 26, 2016 at 8:30 am, local time. Limit attendance at the Pre-Proposal Meeting to three employees per firm. Written requests for interpretation, clarification, and/or additional information must be received no later than 5:00 pm, local time, Wednesday, June 8, 2016. DW is in the process of determining selection committee members for all NSRWTP RFPs, and has instituted a blackout period for the solicitation of design services. Any contact with DW or OR team members regarding the NSRWTP during the RFP period, except Peter McCormick, may result in consultant disqualification.

Section 9: Scope of Services

The following Phase breakdown describes Phases 1 through 6 and primary responsibilities of the Consultant for DP#1 of the NSRWTP Project. The scope of work for this proposal is limited to Phase 1 and 2; a future proposal may be requested for Phases 3 through 6.

Phase 1 Project Management and Administration: Project Management and Administration involves tasks to create the elements necessary for the Consultant to execute the Project and effectively collaborate within the Project team, in accordance with the NSRWTP Project Management Plan.

Phase 2 Preliminary Design: Preliminary Design includes conceptual planning and design development for the Project to a 20% level.

Phase 3 Final Design: Final Design includes design development for the Project through 30%/60%/90% design milestones and delivery of the Final for Construction documents. Final design includes bid phase services, preparation of addenda as necessary, and preparation of conformed documents.

Phase 4 Construction: Engineering services during construction include submittal review, Requests for Information (RFI), change management, communication, observation and inspections.

Phase 5 Commissioning: During the course of the Project and through the completion of construction, Consultant will participate in project startup, testing, and commissioning planning and execution for successful transfer of the project to DW O&M.

Phase 6 Project Closeout: The Consultant will transfer project files to DW, complete filing of project documents, prepare Record Drawings, final deliverables, warranty and project close-out.

Phase 1 – Project Management and Administration

Project Management and Administration includes the following activities:

- General Project Management.
- Project Work Plan development for incorporation in the NSRWTP Project Management Plan.
- Project invoicing and reporting.
- Project workshops.
- Project meetings.
- Project gate review meetings (20%).
- Project Management review meetings.

Task 1.1: General Project Management

Time for this task is allocated to the Consultant Project Manager to oversee and administer the project. For the purposes of estimating, the Consultant shall assume the OR will provide Project-level oversight and management, with the Consultant providing DP-specific oversight.

Deliverables:

The following deliverables will be provided as part of Task 1.1.

- *Cost Loaded Schedule/Work Breakdown Structure time allocation provided to OR for incorporation in master NSRWTP Cost-Loaded Schedule.*

Task 1.2: Project Work Plan

The Project Work Plan will document the key project information required by all Consultant Team members to assist them in executing the project to meet the required objectives on-time and on-budget, and meeting DW's critical success factors and quality requirements. The key elements of the project work plan are described below, and will be incorporated into the NSRWTP Project Management Plan for all Project Team members:

- Consultant Project Team members, their roles, and responsibilities. This will also include the staffing plan (management, engineering, quality control, etc.)
- Scope of Services with Work Breakdown Structure.
- Baseline Planned Value (PV) schedule to be used for Earned Value (EV) reporting.
- Consultant Project safety plan.
- Consultant Quality Assurance/Quality Control plan. DW and the OR will be responsible for cross-package coordination, quality assurance, and quality control. The Consultant is expected to provide its plan for internal DP quality assurance and control.

In addition to producing the Project Work Plan, the Consultant will provide input to the following components of the master NSRWTP Project Management Plan components:

- Project budgets.
- Communications Plan.
- Risk management plan, including risk register.
- Project cost-loaded schedule in GANTT chart format. Schedule updates will be provided in monthly progress reports, if changes have been made and agreed upon by DW. Project Schedule input shall be provided in Primavera P6 for ease of incorporation into the master NSRWTP Project Schedule.

Deliverables:

The following deliverables will be provided as part of Task 1.2.

- *Consultant Project Work Plan and input to master Project Management Plan.*

Task 1.3: Project Invoicing and Reporting

Monthly invoices will be prepared and submitted to DW and the OR in an approved format. Invoices shall include the following broken down by task, Prime Consultant, and Subconsultants:

- Total contract amount.
- Detailed charges for the current invoice period.
- Total charges to date.
- Previous billings.
- Outstanding balance.
- Current amount remaining.
- Total amount due.

Consultant shall be responsible for management of the Consultant and Subconsultant Project Team's overall cost, schedule, and quality, actively coordinating with DW and the OR to manage:

- Project Costs.
- Project Schedule.
- Document Control.

Monthly project status reports shall be prepared and submitted to DW and the OR, along with the monthly invoices. These reports will include:

- Summary of services completed since the previous report.
- Any cost or schedule variance from the approved Project Schedule and budget, including separate earned value graphs for the Consultant and each Subconsultant.
- Any updates to the master Project Issues and Potential Change logs.
- Milestones and/or deliverables scheduled in the coming month.

This task also includes periodic project review by Consultant management to assure that the project is meeting DW's critical success factors, is on schedule, and within budget.

Deliverables:

The following deliverables will be provided as part of Task 1.3.

- *Monthly invoices.*
- *Monthly Project Status Reports.*
- *Monthly input/updates the Project Cost-Loaded Schedule.*
- *Earned value analysis and graph.*

Task 1.4: Project Workshops

Workshops are to inform and obtain input from Project Team stakeholders. DW and the OR will prepare agendas and minutes for all workshops, which include:

- Kickoff workshop for DPs #1, 2 and 3 – assume four Consultant team members for two hours.
- Kickoff workshop for DPs #4 through 6 – assume four Consultant team members for two hours.
- Stakeholder workshops for key decisions – assume four one-hour workshops with two Consultant team members.
- Lean Workshop for DGD development – assume attendance of four Consultant team members for a single five-day workshop, facilitated by others.
- Lean workshop for Site Layout finalization – assume attendance of four Consultant team members at a single five-day workshop, facilitated by others.

Deliverables:

The following deliverables will be provided as part of Task 1.4.

- *Input to master NSRWTP Decision Log & Action Item Log.*
- *Notes and action items from each workshop for inclusion in Minutes, prepared by DW/OR.*

Task 1.5: Project Meetings

Project meetings include the key Project Team members from each DP and, as needed for the current topic, project stakeholders. Assume up to three attendees at each meeting, as applicable to the meeting topic.

- Discuss ongoing issues and conflict resolution.
- Three CAD Standards meetings.
- Three Specifications Standards meetings.
- Three co-location planning meetings.
- Bi-weekly DW, OR, and DP Consultant Management review meetings.
- Bi-weekly DW, OR, and DP Consultant Team meetings.
- Four half-day partnering sessions to discuss NSRWTP progress to date and provide coordination between DPs.

Deliverables:

The following deliverables shall be provided as part of Task 1.5.

- *Input to agendas, minutes, and decision logs prepared by DW/OR.*

Task 1.6: Project Management Review Meetings

Quarterly management review meetings shall be held with Consultant and DW's/OR's Project Management Team (upper echelon of Project Management for the project) in attendance. The meeting will be attended by up to two members of the Consultant Team. A total of three hours per attendee is assumed for the workshop, with an additional one hour of project management time for input to agenda and minutes development.

Deliverables:

The following deliverables shall be provided as part of Task 1.6.

- *Input to agendas, minutes, and decision logs prepared by DW/OR.*

Phase 2 – Preliminary Design Phase Services

Preliminary Design Phase Services include the following activities:

- Advance the elements to the preliminary design 20% milestone.
- Develop planning documents, conceptual site layouts, and preliminary design drawings including drawing index identifying the Consultant's anticipated list of drawings. Drawing index shall identify and distinguish those drawings developed and prepared during preliminary design and those to be completed during final design.
- Prepare a list of proposed technical specifications in CSI MasterFormat 2016 Edition.
- Complete the specific Tasks associated with Preliminary Design and coordinate and interface with the design team concurrently advancing their respective elements of the project.
- Provide preliminary permit planning to facilitate initiation of permitting efforts during future Phases.

Task 2.1: Highway 93

Highway 93 north bound and south bound widening, lane modifications and traffic control.

- Coordinate with CDOT to evaluate and prepare preliminary layouts, planning level construction costs, advantages, disadvantages and recommendations for site access from Highway 93, including use of acceleration and deceleration lanes, and as further described below.
- Provide estimate of total (Denver Water and third party) truck and passenger vehicles entering and exiting the NSRWTP site per CDOT standard analysis methods.
- Evaluate a new access at Highway 93 south of 64th Ave, using and improving an existing private access, and improving or creating new site roads to NSRWTP for temporary construction access. Some improvements will remain for the benefit of the existing business (Asphalt Paving Company). Some portions of the temporary site access may be removed and restored to pre-construction conditions following construction.
- Evaluate existing site access and recommend improvements for permanent secondary access to the NSRWTP site.
- Evaluate a new access west of Highway 93 at 64th Ave (existing signalized intersection) and identify improvements for permanent primary site access to Denver Water NSRWTP. Associated land acquisition and/or easements will be negotiated by DW.
- Evaluate stormwater runoff implications of each access alternative described above.
- Selection of preferred access alternative(s) by DW will occur following 20% design completion.

Deliverables:

The following deliverables shall be provided as part of Task 2.1.

- *Conceptual alternatives analysis of Highway 93 improvements, including any secondary access.*
- *20% transportation improvement alternative plans with opinions of probable cost.*
- *Traffic impact study and recommendations for Highway 93 improvement alternatives.*
- *Draft stormwater evaluation.*

Task 2.2: Site Access Roads

Lay out on-site access roads to support construction activities and permanent access to facilities, including haul routes.

- Temporary construction access road, parking, haul routes, and staging areas shall be developed in conjunction with the CMAR. The Consultant shall lay out these facilities and design appropriate surfaces, pedestrian paths, signage, and stormwater control to support personnel and construction activities.
- Develop a master plan for permanent access roads for employees, visitors and deliveries to all NSRWTP buildings, including sufficient parking at all buildings.
- Delineate basins and analyze stormwater generated for appropriate design storms as identified by Jefferson County Storm Drainage Design and Technical Criteria Manual and design appropriate detention and conveyance facilities.
- Lay out curb and gutter, inlets and pipes necessary for stormwater control from access roads, parking lots and buildings.
- Develop a preliminary Drainage Report per Jefferson County Storm Drainage Design and Technical Criteria Manual.
- Develop a preliminary Stormwater Management Plan including temporary Best Management Practices in accordance with Jefferson County new development requirements.

Deliverables:

The following deliverables shall be provided as part of Task 2.2.

- *20% site access road, parking, guard stations, gates and traffic control layout and drawings.*
- *Standard site access road details.*
- *Preliminary stormwater modeling and data, stormwater control plans, and a preliminary Drainage Report.*
- *20% preliminary Stormwater Management Plan.*

Task 2.3: Site Survey & Model

Prepare and maintain an AutoCAD Civil 3D site model to be used by all design consultants and DW during the Preliminary Design and subsequent phases of the Project.

- Review and use existing topographic base files and Ralston Reservoir Property As-Built documents and DW's CAD Standards to prepare templates for information to be included into each info block, and other information provided by DW.

- Create 2D and 3D base drawings of existing and new yard piping, buried utilities, overhead utilities, topographic features, structures, and other features including electrical conduits and duct banks, using DW's CAD Standards and base map requirements. Compile and analyze the data provided to create Civil 3D structures of all 3D data. Consultant shall prepare Ralston Reservoir Property 3D base map drawings using AutoCAD Civil 3D (2016). DW will transmit existing relevant data to Consultant using the NSRWTP ProjectWise site.
- Existing buildings and structures to be demolished will be shown as simple blocks.
- Existing buried utilities to be protected, abandoned/removed, and/or relocated will be shown on appropriate layers with confidence index.
- Provide recommendation for subsurface utility locates (if any) to be performed by DW and recommended schedule for performance during Final Design.
- The OR will delineate areas or features to be protected and establish buffer zones. Consultant shall recommend best management practices (BMPs).
- Site Model shall be the basis for subsequent design phase work, used by other design consultants and DW.

Deliverables:

The following deliverables shall be provided as part of Task 2.3.

- *Final conformed Ralston site 3D model of existing topography, surface features and underground utilities within the DW property from the Ralston Outlet Works to Highway 93.*
- *Colored set of existing as-built drawings used in the development of the Ralston site 3D model.*
- *Large scale site plan showing entire DW property and surrounding area. Partial plan(s) of proposed improvement areas and recommendations for additional site survey and/or field locates and pothole locations for unknown utilities that may be of concern for NSRWTP design.*

Task 2.4: Yard Piping

Develop yard piping plans for all piping, connecting to other consultant DPs approximately 5 feet from each building or structure. Develop profiles for all gravity yard piping 24-inch diameter and greater. Yard pipe shall terminate within five feet of structures and connect to process piping (by other DPs) with two restrained couplings. Valve vaults (precast or cast-in-place) shall not be considered structures for this purpose and shall be considered part of the yard piping scope of work to be provided by the Consultant. Design calculations and specifications for yard piping related to process shall be provided by the DP#2 consultant, and the Consultant shall provide design drawings detailing the routing of process piping.

Deliverables:

The following deliverables shall be provided as part of Task 2.4.

- *20% yard piping drawings (plan and profile, where appropriate).*
- *Recommendation for standard yard piping details.*
- *Preliminary design calculations (excluding process piping, for which design calculations will be provided by DP#2 consultant).*

Task 2.5: Site Utilities

Develop site utility plans, including corrosion protection where appropriate, as described below.

- Prepare sediment and erosion control BMP plans, Spill Prevention and Control plans (SPCC) and details. Consultant shall prepare specification requirements for SPCC Plans to be implemented by CMAR.
- Develop site piping construction plan for potable water and fire protection loop to serve on-site facilities.
- Develop plan and profiles for on-site stormwater infrastructure including any detention basin(s), piping, and/or swales as required.
- Develop plan and profiles for sanitary sewer on-site to serve proposed facilities and convey flows to existing sanitary manhole east of Highway 93.
- Develop layout plan for natural gas supply and distribution piping to all NSRWTP buildings.
- Coordinate with other DPs to facilitate and complete layout of all site utilities.

Deliverables:

The following deliverables shall be provided as part of Task 2.5.

- *20% site utility yard piping drawings (plan and profile for gravity systems).*
- *List of technical specifications.*
- *Preliminary utility yard pipe sizing and design calculations.*
- *20% stormwater infrastructure component drawings and site layout.*
- *Preliminary stormwater infrastructure design calculations and/or modeling.*
- *20% process yard piping and electrical utility site drawings, developed in coordination with other DPs.*

Task 2.6: Site Finishes

Design and layout site improvements and finishes including fencing, gates, signage, utilities, erosion control, surface restoration for native vegetation, and landscaping plans.

- Consultant shall prepare site grading plans to support proposed facilities including any over-excavation or preloading as may be recommended by geotechnical engineer based on previous site investigations.
- Consultant shall develop site access roads, site signage, parking areas, ADA accessibility, curb gutter and sidewalk for proposed facilities as required.
- Consultant shall develop preliminary recommendations for site landscaping to minimize water usage, consistent with NSRWTP sustainability goals. Consultant will prepare cost-benefit evaluation of sustainability goals including but not limited to: using less irrigation water than the existing Moffat Water Treatment Plant, implementing no irrigation and all native plant xeriscaping, and demonstration plant for typical commercial development.
- Consultant shall develop site fencing plan including automated controlled-access gates and/or guard sheds. Consultant shall evaluate the use of "early fencing and/or landscaping for shielding nearby residents from site impacts during construction..
- Develop a stormwater plan to allow use of the site during 100-year storm events, and provide reasonable slopes between all the buildings consistent with the access, elevations and landscaping plans.

Deliverables:

The following deliverables shall be provided as part of Task 2.6.

- *20% Site and Civil features incorporated into site model.*
- *List of technical specifications.*
- *Recommendations on standard site finish and civil details; including landscaping, signage, and security/fencing.*

Task 2.7: Hydraulic Model

Develop and maintain an overall hydraulic gradeline model.

- Consultant shall develop and maintain an overall system Hydraulic Gradeline (HGL) model from Ralston Reservoir through the connection of Conduit 16 to Conduit 25. HGL shall represent nodes for Conduits 17, 21, and 94. HGL shall be prepared at 10-, 75-, 150-, and 250-MGD flow rates.
- Detailed HGL for the NSRWTP will be developed by the DP#2 consultant, for DP#1 Consultant incorporation into the overall HGL. The Consultant shall analyze all yard piping from the end of the Ralston Outlet Works to the connection to the NSRWTP Headworks and discharge from the NSRWTP Clearwells to the connection to Conduit 16. In addition, Consultant shall incorporate modifications to the Moffat WTP HGL and distribution system connection to Conduit 25 at the existing Moffat WTP.
- Consultant may be required to incorporate hydropower generation at one or more locations within the system into the HGL model.

Deliverables:

The following deliverables shall be provided as part of Task 2.7.

- *Hydraulic Profile drawings at 10, 75, 150 and 250 MGD.*
- *Validated hydraulic analysis computer files, in a format acceptable to DW.*
- *Preliminary hydraulics memorandum.*

Task 2.8: Geotechnical

Consultant shall compile and review available existing site geotechnical data and make recommendations for additional investigations (if any) to be performed during final design. Recommendations shall include a schedule for completing any additional investigations prior to 30% design.

Deliverables:

The following deliverables shall be provided as part of Task 2.8.

- *Summary memorandum of geotechnical design criteria.*
- *Detailed memorandum of building foundation design alternatives.*
- *Geotechnical cross sections of main process structures.*
- *Recommended geotechnical field investigation, boring locations, and schedule for implementation in final design.*

Task 2.9: Design Guidance Document (DGD)

Consultant shall prepare a Project specific DGD.

- Consultant shall review DW's CPCS for applicable standards to incorporate or reference into the DGD. Consultant shall assist in preparation for and participate in a Lean event hosted by DW to develop and finalize the Site and Civil DGD, and prepare documents identified during the Lean event. Any gaps identified will be evaluated by Consultant with recommendations for possible inclusion in the NSRWTP CPCS.
- Consultant shall provide analysis and alternatives evaluation of site sustainability design components and Energy Star products in support of potential Leadership in Energy and Environmental Design (LEED) and/or Envision™ certifications. Identify cost/schedule impacts, potential alternatives for use of recycled or locally-sourced materials, BMPs, and green infrastructure.
- Consultant shall prepare a safety guidance document for prevention through design.

Deliverables:

The following deliverables shall be provided as part of Task 2.9.

- *Site and Civil DGD.*
- *List of proposed site and civil design considerations in support of project sustainability certification, including cost-benefit analysis and schedule impacts.*
- *List of proposed supplemental technical specifications.*
- *List of proposed supplemental standard details.*

Phases 3-6

Scope of work, deliverables and schedule for Phase 3 and subsequent phases may be negotiated with Consultant based on performance on Phase 1 and 2 Tasks, and an increased project design definition developed during Phase 2.

Section 10: Proposal Requirements

The proposal shall outline the Consultant's approach to the Scope of Services, which at a minimum must include the criteria set forth within this Request for Proposals. A detailed project approach will assist DW in understanding the Consultant's comprehension of the project and the opportunities and constraints that a project of this complexity may contain.

Proposals shall be limited to 20 pages (double-sided counted as 2 pages) excluding resumes. At a minimum, the Proposal shall include the following elements:

- Cover Letter (two pages maximum).
- Qualification documents as outlined in Section 5 (four pages maximum).
- Written statement regarding the consultant's eligibility to perform the work without a conflict of interest (one page maximum).
- Project approach including any unique solutions and clearly identifying all assumptions including any additional scope proposed as add-on tasks.
 - Provide detailed lessons learned from past programs. Include lessons learned on workflow with multi-firm programs.
 - Provide lessons learned regarding use of DW's intended CAD/3D modeling platforms. Should the Consultant recommend a different CAD approach, provide detailed explanation of cost savings and/or other benefits to DW.
- Detailed schedule clearly identifying any deviations from the schedule included herein, and tied to the project approach (an 11-inch by 17-inch format for the schedule is acceptable).
- Provide an organization chart showing the team structure and their duties throughout all phases of the Scope of Services (an 11-inch by 17-inch format for the organization chart is acceptable).
- Tailored 2-page resumes (not included in page limit) for key project personnel, including projects similar in nature and complexity to the NSRWTP Project. In addition to the Consultant's key project personnel, NSRWTP project specific roles are detailed below.
 - **Startup and Commissioning Coordinator** – Responsible for coordination of startup and commissioning planning, working in collaboration with other DP consultants and DW O&M. Startup and Commissioning planning efforts will be led by DP#3.
 - **Specifications Coordinator** – Responsible for the development and coordination of project specifications, the Specifications Coordinator will be a member of the NSRWTP Project Specifications Team, which will be comprised of staff from each DP and led by DW/OR.
 - **AutoCAD Lead Coordinator** – Responsible for the versioning and control of AutoCAD files and security/permission access to common AutoCAD reference files used by all DPs. The NSRWTP Project DP Consultants will employ AutoCAD Civil3D, Plant3D, Electrical, and Revit, along with ProjectWise for document management.

The Consultant understands that DW's selection process incorporates an evaluation of key personnel, and that DW's decision to select the DP#1 Consultant is based upon the representation of the Consultant's intent to use the key personnel for the duration of the Project. Therefore, the Consultant will agree to retain the listed **Project Manager** through Project design completion. Any replacement for key individuals must be approved in advance and agreed to in writing by DW. A change in **Project Manager** without pre-approval in writing may result in DW terminating the Consultant's contract for convenience, require the Consultant to pay DW a one-time amount of \$50,000.00 (to be withheld from progress payment), and/or allow DW to select the Project Manager's replacement. This provision shall not apply if a medical or personal emergency requires a Project Manager's individual release from the Project, or if the Project Manager leaves the employment of the Consultant or its affiliates.

Price Proposals shall be submitted in a separate, sealed envelope marked “Confidential”. At a minimum, the Price Proposal shall include:

- Manpower labor estimate (work breakdown structure (WBS)) by labor type/hours for the following major project phases and tasks, provided under *Scope of Services*. Include the corresponding hourly rates (an 11-inch by 17-inch format for the WBS is acceptable).
 - Phase 1: Project Management and Administration
 - Task 1.1: General Project Management
 - Task 1.2: Project Work Plan
 - Task 1.3: Project Invoicing and Reporting
 - Task 1.4: Project Workshops
 - Task 1.5: Project Meetings
 - Task 1.6: Project Management Review Meetings
 - Phase 2: Preliminary Design Phase Services
 - Task 2.1: Highway 93
 - Task 2.2: Site Access Roads
 - Task 2.3: Site Survey & Model
 - Task 2.4: Yard Piping
 - Task 2.5: Site Utilities
 - Task 2.6: Site Finishes
 - Task 2.7: Hydraulic Model
 - Task 2.8: Geotechnical
 - Task 2.9: Design Guidance Document
- Clear identification of proposed Minority and Women Business Enterprise (MWBE) participation and proposed MWBE firms and scope of work. A MWBE goal of 15% has been set for this DP. Clearly identify any proposed Small Business Enterprise (SBE) participation and proposed SBE firms and scope of work. DW encourages engagement of SBEs, although no specific SBE goal has been set for the Project. More information on DW’s MWBE Program can be found online at: <http://www.denverwater.org/DoingBusinesswithUs/SmallDisadvantagedBusinessEnterprisesSDBE>
- Proposed additional scope items as add-on tasks with detailed description of tasks, benefits and WBS for the add-on(s).
- Proposed labor rate escalation for calendar years 2017 through 2019.

Section 11: Addenda to the Request for Proposals

If it becomes necessary to revise any part of the RFP, an addendum will be placed online at: <http://www.denverwater.org/DoingBusinesswithUs/RequestsforProposals/BidProposalsEngineering/> prior to **June 10, 2016**. Respondents are responsible to check online prior to submission of their proposal and acknowledge receipt of addendum(s) within their proposal.

Section 12: Selection Criteria

DW will review the Proposals and make a selection based on best value while considering the following criteria.

Criteria	Standard	Weighting Factor
Project Personnel and Firm Experience	<ul style="list-style-type: none"> • Do the assigned personnel have the demonstrated skills and experience to provide a detailed and complete design? • Do personnel have firsthand experience performing this type of work in a collaborative, multi-disciplined, multi-firm team? • Is the firm's capacity and commitment to providing the staff identified in the Project Organization Chart clearly demonstrated? • Are key project staff identified and is their experience working on W/WWTP, site/civil, and transportation projects of similar size and complexity to the NSRWTP highlighted? • Are proposed team members clearly tied to project references? • Do key team members have Project Management Professional certification? • Do the firm and the firm's proposed team members meet or exceed the minimum qualifications listed in Section 5? • Does the firm's proposal demonstrate adequate resources and support services within the Denver metro region for key staff roles throughout all phases of the Project? • Does the team composition reflect commitment to meeting or exceeding the MWBE participation goals for the NSRWTP Project? 	4
Proposed Approach, Project Plan and Schedule	<ul style="list-style-type: none"> • Does the proposal show an understanding of DW's project objectives and the results that are desired from the project? • Does the approach reflect the team's desire to serve as an active and engaged member of a multi-firm design team? • Does the firm's proposed approach add value, innovation and efficiencies to the Project? • Is the firm capable of completing the work in the required time frame and avoiding schedule impacts to other DP consultants? • Does the proposed schedule demonstrate a complete understanding of DW's objectives and scope of work, as well as key hand-off points between DP consultants? 	4
Cost and Work Hours	<ul style="list-style-type: none"> • Do the work hours presented accurately reflect the required level of effort, at the proper level of experience, to complete the project tasks? • How do unit labor rates and escalation compare to other firms? • What percentage of the proposed team is local and how do travel costs for out-of-town staff compare to other consultants'? • Are key staff dedicated to the project at the level of commitment noted in the proposal? • Is the WBS completed properly, detailed, and meet the project needs? • Are subconsultant fees and expenses clearly identified? 	2

The scale of the criteria is from 1 to 10, with 1 being a poor rating, 5 being an average rating, and 10 being an outstanding rating. All criteria will be multiplied by the associated weight to give a weighted criteria score. The weighted criteria scores will be summed for a cumulative score. The maximum possible cumulative score is 100.

Section 13: Proposal Submittal

Selection of a Consultant will be based on the selection criteria described above. The Proposal shall address all the selection criteria.

Costs associated with Proposal preparation, pre-proposal meeting attendance, interview attendance and so forth shall be borne entirely by the proposing Consultant. Proposal information becomes property of DW.

Firms are recommended to access and become familiar with a copy of the most recent version of DW's CPCS and CPPM CAD standards and specifications formatting at no cost to DW. Consultants will be responsible for meeting the requirements of DW's standards.

Eight hard copies and one electronic copy (pdf on a CD or flash drive) of the Consultant's Proposal and Price Proposal shall be submitted to Peter McCormick, Design Project Manager, by 11:00 a.m., local time, on Thursday, June 16, 2016 at Denver Water, 1600 West 12th Avenue, Denver, Colorado 80204. Proposers acknowledge that DW may be required to disclose some or all of the documents submitted with a Response, pursuant to the Colorado Open Records Act, C.R.S. 24 72-200.1, et seq. Under C.R.S. 24-72-204(3) (a) (IV), DW may deny inspection of any confidential commercial or financial information furnished to DW by an outside party. Therefore, a Proposer shall clearly designate any documents submitted with its Response that it deems proprietary or confidential, to aid DW in determining what must be disclosed in the event of a request for documents under the Colorado Open Records Act.

Section 14: Attachments

The following documents have been posted to DW's website for reference:

- Draft Professional Services Agreement
- Sample Work Breakdown Structure