APPENDIX F

Standard Operational Control
Strategy, Sequence of Work, and
Work Restrictions
PART 1 - GENERAL

The proposed control strategy, sequence of work, and work restrictions set forth herein are contract requirements necessary to provide for construction of the McCall Boulevard Pipeline Replacement Project.

All work shall be completed in accordance with these specifications and the contract drawings.

1.1 General Requirements

A. The work sequence and restrictions presented herein do not include all items affecting completion of the work but are intended to describe some of the critical events necessary to minimize disruption of the existing facilities and to ensure compliance with permit requirements. It is the Contractor's responsibility to identify any additional constraints (via Contractor RFI and/or Submittal process) for completion of the work, and to keep the existing systems and facilities fully operational at all times.

B. Contractor shall comply with shutdown constraints to keep the existing facilities operational as required by the District.

C. Prior to beginning construction, Contractor shall excavate, expose, and determine ("pothole") the exact size, elevation, and horizontal location of each and every potential interference, including, but not limited to, all facilities specifically shown (location and/or depth) on the Drawings. In addition, Contractor shall field verify all locations and dimensions at connections with existing piping systems. If necessary, Contractor shall revise the plans or dimensions in order to meet the tie-in time constraints without violating the intent of the design. All Contractor revisions shall be approved by the District prior to any work. Potholes for design purposes are included in Specifications Appendix C, “Pothole Report”.

D. Only District's Operations personnel shall be allowed to operate existing valves for water system(s) shut-down operations and placing water system(s) back in operation.
E. Contractor shall protect existing water pipelines, and those of temporary use including ancillary service to customers, from contamination during connection/tie-in procedures and/or during the use of any other strategies.

F. Whenever possible, Contractor shall complete all connection/tie-in work without shutting down the existing water system.

G. Contractor shall complete all possible portions of new construction and/or modifications to existing facilities, prior to making any connection to existing facilities. All parts, fabrications, and other components necessary to complete the work during the shutdown and startup must be at the job site prior to final scheduling of the shutdown unless otherwise authorized herein or by District.

H. Contractor shall include in his lump sum bid the cost for makeup piping necessary to connect to the exact location of existing pipe joints and temporary connections and fittings. The exact location of each existing joint is not shown on the Drawings. Connection points shall be discussed in advance with District Inspector and Engineer.

I. Contractor shall submit a detailed Work Plan/Sequence for each construction activity and/or shutdown, including dates and timeframes, and receive District's approval prior to scheduling any shutdown. Alternative equivalent construction methods and sequences must be submitted to the District in a timely manner to allow for review, revisions, and approval prior to scheduling of the shutdown. Unless specifically indicated otherwise, no more than 5 hours of shutdown of any existing facility shall be allowed.

J. Contractor shall be responsible for all dewatering, evacuation of all fluids and gases from the existing facilities, proposed work area, nuisance water in excavations for pipelines and abandonments, and all other work associated with making connections to the existing facilities with the specified shutdown limitations. Refer to Shutdown Coordination Table in Plans, Sheet 5, for theoretical dewatering values. Note these values may not include all required dewatering work nor do they include water discharged during filling and flushing activities. Contractor shall refer to Index Map, Shutdown Coordination Table and Exhibits to calculate required dewatering volumes needed to perform work. Contractor shall also consider the distinct possibility that the existing water system line valves will not achieve 100-percent closure and may cause water leakage during tie-in procedures and abandonments; therefore, Contractor may need to continuously dewater existing water pipelines during tie-in work.

Costs associated with all dewatering, including pumping, de-chlorination and disposal shall be included in the bid price for the respective pipeline connection/tie-in work. All activities shall be completed per appropriate permit as required.
Operational Control Strategy and Sequence of Work  
Section 01185

K. Contractor shall include in his bid the costs of making connections to the existing distribution system within the specified shutdown limitations and for providing temporary facilities to all meters when a shutdown of more than 5 hours is required.

L. Any proposed modifications to the Sequence of Work provided herein shall be submitted in writing to District for approval. If approved, said modified Sequence of Work shall be implemented by Contractor at no additional cost to District. Any proposed modifications to the specified Sequence of Work shall reflect the necessary changes to all other project components.

M. Contractor shall work with District to provide adequate public outreach to notify residents of shutdowns.

In accordance with the operational limitations of the existing transmission and distribution systems, the following sections describe work restrictions and sequencing constraints.

1.2 Constraints on Sequence and Scheduling of Work

A. All components of the work must be completed in a phased sequence to ensure that the operation and control of the District’s existing and proposed system components are maintained with continuous operation and control of the District’s existing water transmission and distribution system. Contractor shall schedule all work such that all existing pipelines and related facilities remain functional during all components of the project work. Except as allowed for short duration shutdowns identified hereafter, water pipelines and service to customers must be maintained in operation at all times during the construction activities.

B. Interruptions of existing District facility operations shall be scheduled and coordinated with District and shall not exceed the duration specified herein. Contractor shall schedule accordingly, to minimize the number of customer interruptions and other impacts to District facilities.

C. Contractor shall conduct work in a manner that will not impair the operational capabilities of essential elements of the District’s existing water transmission and distribution system or reduce the operating capacity of said facilities.

D. Contractor shall include costs in his bid price for compliance with the specific sequencing limitations and all constraints, temporary facilities, and the related general factors pertaining to maintaining the full operational capacity of the District’s existing water transmission and distribution system facilities, and all related systems.
E. Prior to commencing work, Contractor shall submit for District approval, a detailed project schedule with narrative descriptions for his proposed Sequence of Work including required valve closure and opening coordination of work. The project schedule shall be provided in accordance with the General Conditions, Section F – Labor and Construction, and as specified herein. The schedule shall show all construction activities and sub-activities, address all work restrictions and constraints, and include critical events that may impact the operation of existing facilities. The submittal shall clearly identify the work that will require shutdowns or interruptions of the District’s existing transmission and distribution system and the duration of shutdowns/interruptions.

F. Contractor shall discharge dewatering fluids into the facilities as identified in Exhibits A through C. Contractor shall submit a Discharge Plan, identifying locations to be used for dewatering the pipelines, the anticipated flow rates and duration of dewatering activities for District review. Contractor shall coordinate with District staff to identify the most appropriate discharge locations. An operator from EMWD’s source control group shall be present at all times when discharge is taking place. Schedule to be coordinated with EMWD inspector.

1.3 Interruption of Existing District Facilities

A. Contractor shall execute the work while the District’s existing water transmission and distribution systems are in operation.

B. Contractor shall indicate required shutdowns of existing facilities or interruptions of existing operations on his Baseline Schedule as well as Progress Schedule Updates. Shutdowns will be permitted to the extent that existing operation of the existing water transmission and distribution system will not be jeopardized and identified constraints and restrictions are satisfied.

C. Unless specified otherwise, Contractor shall submit three separate written notifications to customers and EMWD, for each required shutdown of existing facilities at least 30 days, 1 week, and 24 hours prior to the planned date of shutdown. The day of installation/shut off, the contractor must knock on the door to notify affected customer(s).

Contractor shall place EMWD provided door-hangers at each residence or business and must have some sort of contact with each customer prior to beginning work on private property.

D. Each request for shutdown will be evaluated based on the facility’s ability to reliably meet capacity demands.

E. Contractor shall not begin alterations until District's written permission has been received.
F. Isolation of individual facilities will require valve closures. All valves shall be operated by District staff except for angle meter stops. Contractor shall not operate existing valves.

G. Contractor shall minimize shutdown times by thorough advanced planning. At the time of shutdown, Contractor shall have on site all equipment, materials, and labor necessary to perform the required work, with a minimum of two crews available, and more as necessary to meet shutdown time requirements. Contractor shall pre-assemble piping as much as possible to meet strict shutdown timeframes.

H. Where required to minimize distribution and transmission system interruptions and while complying with the specified sequencing constraints, Contractor shall provide temporary pumping, piping, power, lighting, controls, instrumentation, safety devices, and any other items required to perform work. Contractor shall provide a detailed temporary facilities plan ahead of commencing work for review describing the proposed scope and general arrangement of the temporary work and facilities. Temporary piping shall be fully restrained at all joints and connections. Temporary piping used for extended periods (over 4-hours in duration) shall be designed by a Registered Civil Engineer unless otherwise approved by District.

I. Shutdowns shall be coordinated year-round and are limited during the summer high peak demand.

1.4 Coordination and Compliance with Permitting Agencies

A. McCall Boulevard Pipeline Replacement

1. City of Menifee: The proposed waterline replacement is under the terms of a permit issued by the City of Menifee. Permit requirements are set forth on the Construction Drawings and are attached to these Contract Documents in Section 00066, H – Permits. Contractor shall submit Traffic Control Plans to the City of Menifee within 30 days of the Notice to Proceed.

1.5 Operations and Maintenance Access

Contractor shall provide safe, continuous access to all existing facilities, pipelines, valves and appurtenances for Customers and District staff at all times.

1.6 Utilities

A. Maintain in service all electrical, telephone, water, gas, sanitary facilities, and other utilities within the project area. Provide temporary utilities when necessary.
B. Contractor shall provide advance notice to and utilize the services of Underground Services Alert (USA) for location and marking of underground utilities operated by utility agencies other than the District. Contractor to call 811 for marking of underground utilities.

C. Provide a minimum of 72 hours advance notice to District's Inspector for marking/locating District's underground facilities.

1.7 Work Sequence

A. General Requirements

1. All temporary and permanent piping and crosses/tees with valves and adaptor shall be assembled in advance, prior to commencing shutdown work.

2. Water system shutdown time limitation shall be five (5) hours or as otherwise approved by District. Contractor shall bore all new service connections. See Special Conditions Specification (Section 00100) for further details.

3. Notification to District Construction Administrator, or designee, shall be 48 hours prior to start of construction for connections that are 12-inches or less.

B. Detailed Sequence of Work

The Contractor is hereby made aware that the project includes the removal and replacement of existing facilities in place. As such, the Contractor is responsible for maintaining service to customers throughout construction of the project. An anticipated construction sequence is presented below to be used as a guideline; however, the Contractor may submit to the District Representative an alternate sequence for approval. The District reserves the right to accept, reject, or modify the proposed alternate construction sequence.

The anticipated construction sequence is described as follows:

C. McCall Boulevard Pipeline Replacement

a. Construction of the 12-inch diameter pipeline in McCall Boulevard Drive, 6-inch, 8-inch, 12-inch, and 24-inch lateral connections, fire hydrants, and service connections from the 12-inch waterline on Valley Boulevard to Bradley Road, and replace the 8-inch waterline on Bradley Road with a 12-inch waterline from 200 feet south of the intersection of Bradley road and McCall Boulevard to 200 feet north of the intersection of Bradley Road and McCall Boulevard. See Part 3 below for detailed implementation of the pipeline.

b. Abandon the existing 12-inch diameter pipeline and related facilities per plans and specifications, including filling the line with cellcrete and bulkheading.
c. Testing and associated activities shall be conducted at intermittent stages designated by Contractor to facilitate minimal downtime. Hydrostatic testing and chlorination shall be per Detailed Provision Section 02718.

All work shall be performed in accordance with all applicable laws, District standards, permits, these Specifications, and the Drawings.

1.8 Service Connections

A. Contractor shall bore all new services connection lines. Open cut construction methods for the new service connection lines will not be allowed due to traffic and pavement restoration concerns with the number of connections.

B. Guided boring with a steerable mole shall be the only acceptable method of construction for installing the new service connections. See Special Conditions Specification (Section 00100) for further details.

PART 2 - EXECUTION

2.1 Coordination of Work

A. Contractor shall maintain and be responsible for overall coordination of work execution.

B. Contractor shall obtain schedules from subcontractors and suppliers and assume responsibility for correctness.

C. Contractor shall incorporate schedules from subcontractors and suppliers into Progress Schedule to plan for and comply with work, sequencing, and shutdown constraints.

2.2 Work by Others

A. Where execution of the work depends upon work by others, inspect and promptly report discrepancies and defects.

2.3 General Requirements for Execution of Work

A. Locate temporary facilities in a manner that minimizes interference to District's operation and maintenance personnel.

B. Unless otherwise specified, install temporary pipelines of the same size as its connection to the existing facility at the downstream end of the pipeline.
PART 3 – Anticipated Implementation for Pipeline

3.1 Key Issues Impacting Project Implementation

A. Existing facilities must remain in service until the proposed pipelines are fully operational and accepted by the District.

B. Minimize shutdowns for existing services by pre-assembly of connections where possible.

C. Minimize time between charging of the proposed pipelines with water and functional testing to minimize water quality problems.

Note dewatering quantities are approximate and do not include any possible valve leak by. Contractor shall be responsible to provide additional resources required to remove water generated from valve leakage. Refer to Index Map, Shutdown Table, and Exhibits for additional information. Contractor shall review the provided details and confirm required quantities and equipment to execute the work within the specified timeframes. Additionally, volume estimates do not include quantities for flushing activities.

D. Additional details regarding the discharge of fluids generated from dewatering are located on Exhibits A through B, Shutdown Table and Section 00100 Special Conditions of these Specifications.

3.2 Strategy

A. McCall Boulevard Pipeline Replacement – Valley Boulevard to Radford Drive

1. Install 12-inch PVC waterline from Station 35+23 to STA 45+61.95, including service laterals, the 12-inch connection to Valley Boulevard, and 6-inch connection to Sandy Lodge Road and the western most valve on Radford Road, but not including the final connections to the services and 6-inch and 12-inch laterals.

2. Pressure Test, disinfect, and flush the new 12-inch PVC waterline.

3. The District to shut off valves from Valley Boulevard, Sandy Lodge Road, Radford Drive, and service connections.

4. Dewater Existing Line.

5. Connect to waterlines on Valley Boulevard, and Sandy Lodge Road
6. Pressurize the line and bleed air out of the system.

7. Connect new water services.

8. Open valves that were closed for switchover.

9. Cut and bulkhead existing section to be abandoned, fill with cellcrete, remove existing above grade hydrants and appurtenances, and cap service connections. Blind flange existing valve.

B. McCall Boulevard Pipeline Replacement – Radford Drive to Hermitage Way

1. Install 12-inch PVC waterline from Station 41+65.95 to STA 65+59.59, including service laterals, 8-inch connections to Radford Drive and Murrieta Road, and the 12-inch Connection to the 24-inch potable water pipe in Murrieta Road and the western most valve at Hermitage Way, but not including the final connections to the services and 8-inch and 12-inch laterals.

2. Pressure Test, disinfect, and flush the new 12-inch PVC waterline.

3. The District to shut off valves from Radford Drive, Murrieta Road, Hermitage Way and service connections.

4. Dewater the existing water line.

5. Connect to waterlines on Radford Drive, and Murrieta Road.

6. Connect to the installed section of 12-inch PVC along McCall Boulevard between Valley Boulevard and Radford Road as installed in Paragraph A, above.

7. Pressurize the line and bleed air out of the system.

8. Connect new water services.

9. Open valves that were closed for switchover.

10. Cut and bulkhead existing section to be abandoned, fill with cellcrete, remove existing above grade hydrants and appurtenances, and cap service connections. Blind flange existing valve.

C. McCall Boulevard Pipeline Replacement – Hermitage Way to Northwood Drive

1. Install 12-inch PVC waterline from STA 65+59.59 to STA 76+97.49, including service laterals, the 8-inch connections to Hermitage Way, Grosse Point Drive, and the western most valve at Northwood Drive, but not including the final connections to the services and the laterals.
2. Pressure Test, disinfect, and flush the new 12-inch PVC waterline.

3. The District shall turn off Valves at Hermitage Way, Grosse Point Drive, and Northwood Drive.

4. Dewater the existing water line.

5. Make the connections to the Hermitage Way and Grosse Point Drive.

6. Connect to the installed section of 12-inch PVC along McCall Boulevard between Valley Boulevard and Hermitage Way as installed in Paragraphs A through B, above.

7. Pressurize the line and bleed air out of the system.

8. Connect new water services.

9. Open the valves that were closed.

10. Cut and bulkhead existing section to be abandoned, fill with cellcrete, remove existing above grade hydrants and appurtenances, and cap service connections. Blind flange existing valve.

D. McCall Boulevard Pipeline Replacement – Northwood Drive to Windsor Drive

1. Install 12-inch PVC waterline from STA 76+97.49 to STA 84+27.37, including service laterals, the 8-inch connections to Northwood Drive, and Pebble Beach Drive, but not including the final connections to the services and laterals.

2. Pressure Test, disinfect, and flush the new 12-inch PVC waterline.

3. The District shall turn off Valves at Northwood Drive, Pebble Beach Drive and the western most valve on Windsor Drive.

4. Dewater the existing Line

5. Make the connections to Northwood Drive, and Pebble Beach Drive.

6. Connect to the installed section of 12-inch PVC along McCall Boulevard between Valley Boulevard and Northwood as installed in Paragraphs A through C, above.

7. Pressurize the line and bleed air out of the system.

8. Connect new water services.
9. Open the valves that were closed.

10. Cut and bulkhead existing section to be abandoned, fill with cellcrete, remove existing above grade hydrants and appurtenances, and cap service connections. Blind flange existing valve.

E. McCall Boulevard Pipeline Replacement – Windsor Drive to Sun City Boulevard

1. Install 12-inch PVC waterline from STA 84+27.37 to STA 94+53.59, including the service laterals, connections to Windsor Drive, Winged Foot Drive, and Sun City Boulevard, but not including the final connections to the service laterals and laterals.

2. Pressure Test, disinfect, and flush the new 12-inch PVC waterline.

3. The District shall turn off Valves at Windsor Drive, Winged Foot Drive, and Sun City Boulevard.

4. Dewater the existing line.

5. Make the connections to the Windsor Drive, Winged Foot Drive, and Sun City Boulevard.

6. Connect to the installed section of 12-inch PVC along McCall Boulevard between Valley Boulevard and Windsor Drive as installed in Paragraphs A through D, above.

7. Pressurize the line and bleed air out of the system.

8. Connect new water services.

9. Open the valves that were closed.

10. Cut and bulkhead existing section to be abandoned, fill with cellcrete, remove existing above grade hydrants and appurtenances, and cap service connections. Blind flange existing valve.

F. McCall Boulevard Pipeline Replacement – Sun City Boulevard to Bradley Road

1. Install 12-inch PVC waterline from STA 94+53.59 to End of Relocation, including the service laterals, connections to Sun City Boulevard, and north and south Bradley Road from STA 98+36.17 to 102+21, but not including the final connections to the services and laterals.

2. Pressure Test, disinfect, and flush the new 12-inch PVC waterline.
3. The District shall turn off Valves at Sun City Boulevard and Bradley Road

4. Dewater the existing line.

5. Make the connections to Sun City Boulevard, and north and south Bradley Road.

6. Connect to the installed section of 12-inch PVC along McCall Boulevard between Murrieta Road and Pebble Beach Drive as installed in Paragraphs A through E, above. Pressurize the line and bleed air out of the system.

7. Connect new water services.

8. Open the valves that were closed.

9. Cut and bulkhead existing section to be abandoned, fill with cellcrete, remove existing above grade hydrants and appurtenances, and cap service connections. Blind flange existing valve.

NOTE: Various items can be combined or completed as needed with EMWD approval. Contractor must have appropriate manpower and equipment and have the required testing and disinfection plan in place to accomplish all work within the specified timeframe.

3.3 Additional Information

The phased Sequence of Work and Strategy set forth herein and on Exhibits A through C, attached at the end of this section, are intended to minimize shutdown times and to ensure a continuous water supply during all construction activities.

Contractor is responsible to review and understand all Sequence of Work activities and the Strategy detailed herein and to provide all additional sequence steps not mentioned necessary to provide the continued operation during all construction activities. Contractor shall also be responsible to provide all temporary interconnections, piping, pumps, trucks and appurtenances as necessary to ensure that the water system remains in service during all construction activities other than for those specified.

Procedures listed herein are intended to provide guidelines identifying anticipated work activities to Contractor that are deemed necessary for the project. Contractor shall identify any issues with the proposed Sequence of Work and Strategy prior to submitting bid. This strategy is only a suggested strategy and Contractor can submit another strategy for EMWD approval.

Contractor shall coordinate required valve operations including necessary openings and closures with District staff in accordance with Contractor’s final submitted and approved Sequence of Work as required. Included as part of this section are anticipated strategies for existing and new system valves and pipeline operations which will be necessary for successful project completion.
This data is set forth in Exhibits A through C which are attached at the end of this section, as follows:

Exhibit A – McCall Boulevard Pipeline Shutdown Exhibit

Exhibit B – McCall Boulevard Pipeline Existing Facilities

Exhibit C – McCall Boulevard Pipeline Shutdown Schematic

END OF SECTION
Segments shown are as suggested in the Shutdown Table. Contractor may adjust segments as required to minimize shutdown time and service interruptions to customers. Contractor shall highline services as required to minimize service interruptions. Contractor shall coordinate with District for Shutdown Coordination, pressure testing and disinfection of new McCall Boulevard and Bradley Road Pipelines, and relocating existing services from existing lines to new lines.
Max Dewatering Flow Rate (From Valley Blvd to Western MH at Murrieta): 230 GPM

No Dewatering to Sewer Manholes From Eastern MH at Murrieta to MH just upstream of MH at Grosse Pt

Max Dewatering Flow Rate to Sewer (From MH at Grosse Pt. to Bradley Rd): 450 GPM

Manholes along McCall Boulevard can be used for dewatering pipeline.

Legend
- McCall Pipeline
- Potable Water Line
- Sewer Main
- Brine Line
- Raw Water Line

This exhibit is diagrammatic and is intended to identify existing District water and sewer main facilities. Scale is approximate. Contractor shall visit the site to identify any discrepancies and is responsible for verifying all dimensions and quantities. See Specifications for shutdown and dewatering restrictions.