

10. Relocating Water Pipelines.

a. General.

- 1) Take into account such matters as environmental impact, maintenance of pedestrian and vehicular traffic flow, maintenance of existing and proposed utility services, constructability, permit restrictions, and maintenance, and produce the overall most cost-effective design.

b. Design Requirements.

- 1) When relocating existing water pipelines, follow the design requirements for water pipelines as stated in this manual.

c. Alignment - Horizontal and Vertical.

- 1) Take into consideration for the impact on all existing and proposed facilities before selecting the location of the relocated pipeline.
- 2) Contact the WSSC for limitations on shutdowns of existing pipelines.
- 3) When selecting an alignment, the existing pipeline must be maintained and remain in service until the relocated pipeline is ready for final connection to the existing main. At that time, the existing pipeline will be shut down and all tie-ins between the existing pipeline and the relocated pipeline can be performed, including the transfer of water house connections.
 - a) If all the re-connections and transfer of all the water house connections can not be made during a normal 8 hour shutdown time frame, the design must include having both the existing pipeline and relocated pipeline in service at the same time. This may be accomplished by temporarily plugging and blocking opposite ends of both the existing pipeline and the relocated pipeline, and leaving the other end in service. During this time, all the connections can be transferred and then final connections can be performed.
- 4) Relocating pipeline along the same alignment (same trench). When the existing pipeline must be replaced in the same location/alignment, take into account the limitations for shutdown and the constructability of the alignment. The design will require temporary pipe restraint, removal of the existing pipeline, installation of temporary water service to existing customers, and a long shutdown period.
- 5) Locate all the existing services and appurtenances (water house connections, valves, fire hydrants, blowoffs, air valves, etc.) that are connected to the existing pipeline.
- 6) For information on the design and location of structures and appurtenances, see Part One, Section 16 (Design of Structures) and Part Three, Section 17 (Evaluation of Existing Structures).
- 7) For requirements on reconnecting the relocated pipeline see Part One, Section 9 (Connections to Existing Water Pipelines).
- 8) Ensure acceptable horizontal clearances for relocated alignments where the existing mains are to remain in service until the relocation is complete.
 - a) Spacing between the existing and relocated water pipelines shall be as described in Part One, Section 8 (Horizontal Alignment) and Part Three, Section 3 (Pipeline Crossings and



Clearances).

- b) Horizontal clearances between the existing and relocated pipelines may have to be increased when the relocated pipeline is within the zone of influence of existing concrete blocking. To determine if there is adequate passive soil resistance, see Passive Soil Pressure for Concrete Thrust Blocks in Part Three, Section 27 (Thrust Restraint Design for Buried Piping).
- 9) Vertical clearances for relocated alignments must maintain a minimum of one (1) foot clearance between pipe OD's (including the existing pipeline that will be abandoned by the relocation).

d. Thrust Restraint.

- 1) The design of the relocated alignment must not disturb existing blocking/thrust restraints on existing pipelines that are in service.
- 2) Provide thrust restraints for the relocated pipeline. If the shutdown time is limited, the design will require a thrust block for quick connections for restraining the relocated pipeline, so that WSSC's customers are not out of water service for an extended period, see Part Three, Section 27 (Thrust Restraint Design for Buried Piping).

e. Abandonment.

- 1) Show on the drawings any abandonment of existing pipelines, structures and/or appurtenances. Indicate the limits of abandonment and provide a description and sequence of what will be abandoned. The description shall also include the abandonment that will be performed, see requirements in Specifications and Part Three, Section 5 (Pipeline Abandonment).

