



WATER DEPARTMENT

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Tatiana Guillen, Project Manager  
1001 I Street, 16<sup>th</sup> Floor  
Division of Financial Assistance  
Sacramento, CA 95814

**Subject: Request for Waiver of American Iron and Steel Requirements for Ductile Iron Pipe Restrained Joint Push-on Fittings for City of Santa Cruz Newell Creek Pipeline Felton/Graham Hill Replacement Project**

Dear Ms. Guillen:

The City of Santa Cruz has received a State Revolving Fund (SRF) Construction Installment Loan Agreement to fund the Newell Creek Pipeline (NCP) Felton/Graham Hill Replacement (Project). This letter serves as a request for a waiver to American Iron and Steel (AIS) requirements for 24-inch ductile iron pipe (DIP) restrained joint push-on fittings used on the Project. The support for a waiver is summarized below with the project's specifications and drawings, material availability, These will be submitted to the Environmental Protection Agency (EPA) DWSRF Waiver review team with your approval.

The project is scheduled to start mid-2024 and will be owned and operated by the City of Santa Cruz. The project is funded in part by the State of California State Water Resources Control Board (SWRCB) Drinking Water State Revolving Fund (DWSRF) Loan (Project No.4410040-004C) pursuant to the Water Quality, Supply, and Infrastructure Improvement Act of 2014 (Proposition 1).

City of Santa Cruz is requesting a product-specific waiver of American Iron and Steel (AIS) provisions for the Project to be issued for all ductile iron pipe (DIP) restrained joint push-on fittings for the 24-inch pipeline including any 11.25°, 22.5°, 45°, 90° bends and tees. In accordance with the United States Environmental Protection Agency (EPA) memorandum, Implementation of AIS provisions of P.L. 113-76, Consolidated Appropriations Act, 2014, the information required for a waiver to be processed is included below and in the attached documents.

**Project Type:** Raw Water Project (Water Supply Reliability, Water Supply Resiliency, Raw Water Distribution System)

**Project Location**

The Project is located in Santa Cruz County, California. The new raw water pipeline runs along Graham Hill Road from the Town of Felton to the City of Santa Cruz Graham Hill Water Treatment Plant (GHWTP) in Santa Cruz County road right-of-way. The existing raw water pipeline to be abandoned in



place runs along Pipeline Road through Henry Cowell State Park.

### **Project Objectives/Purpose**

The Newell Creek Pipeline is a critical component in the City of Santa Cruz's raw water supply infrastructure that conveys raw water from the Loch Lomond Reservoir to the GHWTP for treatment and distribution into the City of Santa Cruz and parts of Santa Cruz County. The City identified the portion of the pipeline from the Felton Booster Pump Station to GHWTP as having a high risk of potential failure. The pipeline is used most often in the summer months and is a backup source should one of the City's other raw water sources become unavailable. The objective of the project is to maintain the availability and improve the reliability of this backup water supply.

The purpose of this project is to improve overall Newell Creek Pipeline reliability, resilience, sustainability, and improve long-term access for operations and maintenance.

### **Project Background**

Constructed in 1960, the NCP spans approximately 9.25 miles and is reaching the end of its useful service life. The NCP was originally divided into two sections referred to as Schedule I and Schedule II. Schedule II is 4.75 miles in length spanning from Felton Booster Pump Station to GHWTP and consists of pipe sizes ranging from 18-inches to 27-inches in diameter. At the north end of the project, the pipe material is concrete cylinder pipe (CCP), which is composed of a steel cylinder lined with cement mortar on the interior and is helically wrapped with a mild steel bar or wire and coated with dense cement mortar. Within Henry Cowell Redwoods State Park (State Park) and Graham Hill Road, the pipe is cement mortar lined and coated welded steel up to the point the pipeline turns into GHWTP where it becomes 18-inch CCP.

The Project includes replacing the 25,083 feet of existing 18- to 27-inch Schedule II NCP from Felton Booster Pump Station (FBPS) through the State Park to the GHWTP with a new approximately 23,500 foot, 24-inch pipeline located in Graham Hill Road. The new pipeline will start immediately downstream of the FBPS fence and continue south across Zayante Creek and the Santa Cruz, Big Trees and Pacific Railway continue south in Graham Hill Road, and tie-in to the existing pipeline at the GHWTP entrance gate. Where there is sufficient space, the new pipeline will parallel the existing pipeline. Where there is insufficient space due to other existing utilities, the existing pipe will be removed and replaced in the current alignment. The existing pipeline not removed will be abandoned as part of the Project.

### **AIS Waiver Request Product Descriptions (DIP Restrained Joint Push-on Fittings)**

Due to the existing conditions, restrained joints with high deflection are required to be used in construction of the Project. These fittings were selected as the most feasible solution to satisfy the constraints posed by the existing site conditions. The Vicinity Map and Facilities Location are provided in Attachment A, and engineering specifications and drawings in Attachment B. These delineate the proposed alignment of the main pipeline and associated ancillary facilities where 24-inch DIP fittings are required. To maintain the project's schedule, these products are planned to be

acquired in late summer 2024. The lead time for restrained push on joint fittings is approximately 4 to 7 months, so the City is requesting advanced approval of an AIS waiver to avoid project delays.

**Description of Procurement Issue**

Carollo Engineers performed market research and after reaching out to multiple suppliers, it was determined ductile iron pipe fittings with restrained push-on joints for pipes 24-inches and smaller are not currently manufactured in the United States. The primary reason for this waiver request is based on the unavailability of these products from US manufacturers. The City is seeking approval of this waiver so the Project can avoid any potential critical delays. Based on prior experience, it is understood the EPA DWSRF team may conduct a separate investigation to determine if these products are available from a domestic supplier and will determine if a waiver shall be issued for these parts. Please note, a similar waiver request for restrained joint fittings was drafted and submitted to the State by San Francisco Public Utilities Commission (SFPUC) and later approved by the EPA. The approval letter from the EPA has been provided as Attachment C for reference.

**Construction Materials**

The manufacturers listed below provided budgetary costs of the Project’s restrained DIP fittings and adhere to the project specifications. Please note that while suppliers have US Distribution Centers, all DIP fittings are only able to be imported from international locations according to sales representatives. Refer to Attachment D for all relevant fitting specifications and Attachment E for correspondence from suppliers regarding availability of DIP restrained push-on fittings from US suppliers.

**Product Cost Overview: American Pipe**

<b>11.25° Bend</b>			
<b>45° Bend</b>			
<b>90° Bend</b>			
Notes:			
(1) Quotes February 2024			

**Conclusion**

Based on the information provided, the City of Santa Cruz requests a waiver of the AIS requirement and approval to procure products from any of the listed suppliers shown in this document, which may receive products from manufactured sources outside of the US, approved by the City and the Engineer of Record. Your expeditious review of this request would be greatly appreciated. If approved, we kindly request you forward this letter to the Environmental Protection Agency (EPA) DWSRF Waiver review team (cwsrfwaiver.epa.gov) for final review and approval.

Please do not hesitate to contact me at 831-420-5214 or Isidro Rivera (irivera@santacruz.gov) if there

are any questions regarding this request.

Sincerely,



Heidi Luckenbach, P.E., Director  
City of Santa Cruz Water Department

Attachments:

- Attachment A – Facilities Location and Vicinity Map
- Attachment B – Engineering Specifications & Drawings
- Attachment C – EPA Decision Memo for SFPUC Restrained Joint Fittings AIS Waiver Request
- Attachment D – DIP Restrained Push-on Joint Fittings Product Data
- Attachment E – US Distributors Product Availability Correspondence

This waiver request was submitted to the EPA by the state of California and applies only to the project in the subject line. All supporting correspondence and/or documentation from contractors, suppliers or manufacturers included as a part of this waiver request was done so by the recipient to provide an appropriate level of detail and context for the submission. There may be documents with project diagrams, schedules, and supplier correspondence in formats that do not meet the Federal accessibility requirements for publication on the Agency's website. Hence, these exhibits have been omitted from this waiver publication. They are available upon request by emailing [DWSRFWaiver@epa.gov](mailto:DWSRFWaiver@epa.gov).

- a. Flanged (only where indicated on plans).
  - b. Mechanical (only where indicated on typical details).
  - c. Push-on Rubber Gasket.
  - d. Mechanical Wedge Action (only where indicated on typical details).
  - e. Integrally Restrained Push-On.
4. Connections:
- a. Tapping saddle.
5. Fittings.
6. Field cut to fit pipe shall be limited to existing pipe connections

B. Joints:

1. Flanged joints:

a. Screw-on flanges:

- 1) Comply with the diameter, thickness, drilling, and other characteristics in accordance with ASME B16.1.
- 2) Ductile iron.
- 3) Long hub, threaded, and specially designed for ductile iron pipe.
- 4) After attaching to pipe, machine flange face to make pipe end and flange even and perpendicular to the axis of the pipe.

b. Bolt holes on flanges: 2-holed and aligned at both ends of pipe.

c. Cap screw or stud bolt holes: Tapped.

d. Bolts and nuts:

- 1) As specified in Section 33\_05\_00.01 - Common Work Results for General Piping.

e. Gaskets:

- 1) Toruseal gaskets or equal unless specified otherwise in Section 33\_05\_00.01 - Common Work Results for General Piping.

2. Push-on rubber gasket joints:

a. In accordance with AWWA C111.

b. Gaskets:

- 1) As specified in Section 33\_05\_00.01 - Common Work Results for General Piping.

3. Integrally restrained push-on joints:

a. Application:

- 1) Where designations “restrained” and “restrain all joints” are indicated on the Drawings or are specified in the Piping Schedule provided in Section 15523 – Common Work Results for General Piping, supply an integrally restrained push-on joint piping system, which includes self-restrained joints on the pipe and self-restrained joints on the fittings. Mechanical wedge action joint restraints shall not be installed in areas with these designations. Where designations “restrained” and “restrain all joints” are not indicated on the Drawings supply a restrained push-on joint piping system, which includes restrained push-on joints where necessary based upon thrust calculation.
- 2) Standard push-on rubber gasket joints as specified above can be used where thrust calculations demonstrate restraint is not required and designations “restrained” and “restrain all joints” are not indicated on the Drawings.

b. Design:

- 1) Restrained push-on joints of the configuration which utilizes a gripping or friction force for restraint will not be acceptable.

- 2) Unless otherwise shown in the Drawings, suitable for the following working pressures:
    - a) For 4- through 24-inch pipe: 350 pounds per square inch gauge.
    - b) For 30- through 54-inch pipe: 250 pounds per square inch gauge.
  - c. Gaskets:
    - 1) As specified in Section 33\_05\_00.01 - Common Work Results for General Piping.
  - d. Manufacturers: One of the following or equal:
    - 1) [REDACTED]
    - 2) [REDACTED].
    - 3) [REDACTED]
  - e. Limit buried joints to half the manufacturer's published allowable angular joint deflection for purposes of pipeline alignment and elimination of fittings.
- C. Connections:
1. Tapping saddle as specified in Owner standard specification:
    - a. If Owner does not have a standard specification, provide tapping saddles as specified in Section 33\_05\_00.05 - Piping Specialties.
  2. Tapping sleeve as specified in Owner standard specification:
    - a. If Owner does not have a standard specification, provide tapping sleeves as specified in Section 33\_05\_00.05 - Piping Specialties.
- D. Fittings:
1. Ductile iron in accordance with AWWA C110 or AWWA C153.
  2. Joint type:
    - a. Same as that of the associated piping as specified in Section 33\_05\_00.01 - Common Work Results for General Piping.
  3. Plain end-to-flanged joint connectors using setscrews are not acceptable.
  4. Where fittings are located adjacent to other fittings or valves, the adjacent connection may be a flange by flange connection between the fittings.

## 2.05 CEMENT MORTAR

- A. Line pipe with cement mortar in accordance with AWWA C104 and as specified in this Section.
- B. Cement:
1. Cement: In accordance with ASTM C150, Type II.
- C. Water:
1. In accordance with AWWA C104 and as specified in this Section.
- D. Sand and aggregate:
1. In accordance with AWWA C104.
  2. Provide silica sand or other aggregate that is not subject to leaching in accordance with ASTM C33.
- E. Lining:
1. Minimum lining thickness: Standard in accordance with AWWA C104.
  2. Apply cement mortar on clean bare metal surfaces.
  3. Extend to faces of flanges, ends of spigots, and shoulders of hubs.