



U.S. Department
of Transportation

**Federal Highway
Administration**

Memorandum

Subject: ACTION: Buy America Waiver Request

Date: June 9, 2021

Pumping Equipment for US 41 at IL 176,
Pump Station No. 37

/Signed By:/

From: Mr. William C. Byars P.E.
Metropolitan Transportation Engineer
Chicago, IL

In Reply Refer To:
HA-IL

To: Edwin Okonkwo
Office of Preconstruction, Construction
and Pavements

The FHWA Illinois Division recommends posting for public comment the Illinois Department of Transportation's (IDOT) Buy America Waiver for the procurement of non-domestic pumps for Pump Station No. 37, located at the intersection of IL 176 and US 41 in the State of Illinois. The waiver is requesting procurement of non-domestic pumps with steel components for four (4) main, submersible pumps (3,000 gallons per minute (gpm) each) and two (2) low flow submersible pumps (921 gpm each). This improvement will relocate the existing Pump Station No. 37 out of the IL 176 over US 41 bridge abutment and provide a new pump station to accommodate future interchange reconstruction. The new pump station will be located at the northeast quadrant of the US 41 and IL 176 interchange, north of the existing pump station which will continue to be operational until the new pump station is commissioned.

Based on the waiver request, the Division believes IDOT has conducted sufficient due diligence to locate a domestic supplier who fulfills the Buy America requirements for the pumps required for this project. Previously, the Division had indicated the Chicago Department of Transportation had found a domestic pump manufacturers which met Buy America requirements for the Obama Presidential Center / South Lakefront Framework Plan (OPC/SLFP) project. However, the design criteria for those pumps are significantly different (approximately 500 gpm).

If you have any questions, please contact me at chris.byars@dot.gov, 312-886-1606.

Attachment



Illinois Department of Transportation

Office of Highways Project Implementation / Region 1 / District 1
201 West Center Court / Schaumburg, Illinois 60196-1096

Bureau of Design – Consultant Services
FAP 346 (US 41)
At IL 176 (Rockland Road)
Pump Station 37
Lake County
Contract No.: 62B66
Section No.: (125S-1) I-4
Job No.: D-91-087-16

May 14, 2021

Ms. Arlene K. Kocher
Division Administrator
Federal Highway Administration
3250 Executive Park Drive
Springfield, IL 62703

Subject: Request for Waiver of Buy America Act Requirements on Pumping Equipment - FAP 346 (US 41) at IL 176 (Rockland Road) – Proposed Pump Station No. 37

Dear Ms. Kocher:

The Illinois Department of Transportation (Department) requests the Federal Highway Administration (FHWA) Division Office's written approval of a waiver for the Buy America policy as it applies to this federally funded project.

Background of Pump Station No. 37:

The existing pump station is equipped with two dry pit submersible pumps and has a total capacity of 6,000 gpm. The station was constructed in the 1930s within the US 41 embankment making maintenance difficult and requiring direct access from northbound traffic of US 41. The dry pit is connected to the grade level space making the entire station a hazardous classified location since there is a direct connection to the below grade pumping in the dry pit (see National Fire Protection Association (NFPA) Standard 820). The electrical and controls equipment are located in the grade level, which is a hazardous classified location, and the electrical and controls equipment are not suitable for the hazardous location. Due to these vulnerabilities, the station warrants replacement.

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Project Description:

The proposed improvement will relocate the existing Pump Station No. 37 out of the IL 176 over US 41 bridge abutment and provide a new pump station consistent with the Department standards. This is an advance contract for the proposed future interchange reconstruction at IL 176 at US 41. The proposed pump station will be located in the northeast quadrant of the US 41 and IL 176 interchange, north of the existing pump station which will continue to be operational until the new pump station is commissioned. The new pump station is designed to accommodate future pumping capacity to support the proposed US 41 at IL 176 interchange reconstruction reconfiguration in the future.

The design conditions for this new pump station call for submersible pumps to lift stormwater from the underpass of US 41 at IL 176 and surrounding drainage collection area and discharge stormwater to the Skokie River.

Project Cost:

The project is estimated to cost \$8.26 million in 2021 dollars.

Waiver Item Description:

Buy America Waiver is requested for procurement of non-domestic and steel components of the four (4) main submersible pumps (each pump rated at 3,000 gallons per minute, gpm) with two operating and one standby and one on the shelf spare, and two (2) low flow submersible pumps (each pump rated at 921 gpm) with one operating and one on the shelf spare for Pump Station No. 37 located at the intersection of IL 176 at US 41 in the State of Illinois.

Waiver Item Cost:

The waiver item is estimated to cost \$0.3 million (installed).

County of Origin:

Sweden, Germany, Japan, or Spain depending on the manufacturer.

Reasons for Waiver Request:

Currently in the market there are manufacturers that can produce a pump that meets design requirements for the project, but these manufacturers cast, machine, assemble and test the pumps overseas. Depending on the manufacturer, pump assembly and flow testing can be performed in the United States; however, because the casting of the volutes does not occur in the United States, it still would not meet Buy America Act criteria. It may be possible (at significant cost) for some manufacturers to ship the pump casing molds so that the pump volute can be cast in the United States, but the manufacturers have not been able to confirm that this is practical nor have they made any commitment to this course of action.

Description of Efforts Made to Locate a Domestic Equivalent:

Prior to submitting a Buy America waiver request, the Department sought but failed to identify domestic manufacturers for the submersible pumps. The Department investigated the ability to meet steel requirements over a multi-year period (between 2017 and 2020) to identify domestic manufacturers to maximize use of domestic content by using greater quantities from the United States steel.

Between 2017 and 2020, over ten (10) pump manufacturers were contacted. Some manufacturers were contacted both in 2017 and 2020. Out of the twelve (12) manufacturers contacted in 2017, four (4) of them did not respond and the remaining manufacturers responded that they either do not manufacture submersible pumps with domestic components or they cannot comply with Buy America requirements. In 2020, an additional three (3) manufacturers for a total of fifteen (15) were contacted. Out of the manufacturers contacted, four of them did not respond. The remaining manufacturers either cannot meet the design intent of the pumps, or they cannot meet Buy America requirements, or both.

Two (2) pump manufacturers responded that they could meet the design intent but not the Buy America requirements: Fairbanks and Flygt. Fairbanks confirmed they can provide the following parts using domestic raw materials, and all casting, machining and production would be completed at domestic facilities:

- Pump volute
- Pump seal gland housing
- Pump motor housing
- Pump impeller
- Pump shaft
- Cable gland
- Power cable
- Fastening hardware
- Mechanical seals

However, Fairbanks outsources all the rotors and stators for their submersible pumps manufactured by NIDEC (US Motors). After reviewing the pumps and motors required to meet the performance requirements for Pump Station No. 37, NIDEC indicated that they do not have the proper machining and tooling for the required motors in place at any of their domestic facilities to allow for these components to be manufactured domestically. As such, Fairbanks fails to meet the Buy America requirements since the motor comprises approximately 50% of the overall pump assembly.

Flygt responded in 2017 that their standard assembly occurs in Sweden with zero domestic components. For added cost, Flygt can provide approximately 75% of the pumps with domestic content. The remaining content of the pump would utilize castings and some metal components from outside the United States. The pumps recommended specifically for the Pump Station No. 37 application (Flygt NT 3171 LT and Flygt NT 3127 LT) are not available with 100% domestic content. As such, Flygt fails to meet the Buy America requirements due to utilizing foreign castings.

Analysis of Re-Design Using a Domestic Equivalent:

No domestically manufactured pump meeting the flow, head, and electrical requirements has been located based on the investigation conducted between 2017 and 2020.

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The table below is a summary of the major pump manufacturers and their ability to comply with Buy America requirements.

Pump Manufacturer	Satisfactory Pump Offering?	Meet Buy America?
Flygt	Y	N
ABS/Sulzer	Y	N
Ebara	N/A*	-
Fairbanks-Morse	Y	N
KSB	Y**	N
Flowserve	N/A*	-
Myers	N/A*	-
Grundfos	Y	N
Yeomans	Y	N
Hydromatic	Y	N
Wilo	Y	N
Goulds	N	-
Zoeller	N/A*	-
Gorman Rupp	N/A*	-
Vaughan	N/A**	N

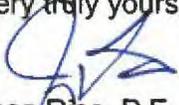
* No response from manufacturer.

** Manufacturer can likely meet the hydraulic selection but was not investigated further since they are not able to meet the Buy America requirements.

Strict adherence to Buy America requirements would, at a minimum, result in a very significant cost increase to the overall project. Currently, it is unclear if Buy America compliance is feasible. Beyond that, there would very likely be project delays and increased engineering costs. Even with these extraordinary measures there is no guarantee that industry can or will produce pumps that fully comply with Buy America regulations.

If you have any questions or need any additional information, please contact Ms. Serin Keller, Consultant Services Engineer, at (847) 705-4269 or Serin.Keller@illinois.gov.

Very truly yours,


Jose Rios, P.E.
Region One Engineer