



State of Utah

SPENCER J. COX
Governor

DEIDRE M. HENDERSON
Lieutenant Governor

DEPARTMENT OF TRANSPORTATION

CARLOS M. BRACERAS, P.E.

Executive Director

LISA J. WILSON, P.E.

Deputy Director of Engineering and Operations

BENJAMIN G. HUOT, P.E.

Deputy Director of Planning and Investment

March 27, 2024

Paul Ziman
Area, Pavement & Materials Engineer
FHWA Utah Division

RE: Buy America Waiver Request from the
Utah Department of Transportation for
Wyssen Remote Avalanche Control Systems

Dear Mr. Ziman:

The Utah Department of Transportation (UDOT) is requesting a waiver from Buy America Build America Act requirements to permit the acquisition of a Swiss manufactured Remote Avalanche Control System manufactured by Wyssen Avalanche Control AG. UDOT is submitting this waiver request and supporting information to the Utah Division FHWA Office.

The Wyssen Remote Avalanche Control System provides a unique combination of features that make it suitable for the Mount Superior RAC installation project. The Wyssen avalanche tower is designed to trigger avalanches proactively with remote-controlled blasting. To trigger an avalanche, a coded command is sent from the control center WAC.3® to the control system of the deployment box to initiate blasting. Communication with the systems is redundant in that they can operate on both cellular and radio modems and adjacent towers will function as repeaters to relay a signal in the case that one tower loses connection. The deployment box contains up to 12 explosive charges, which can be individually deployed by remote control. When the explosive charge is dropped two igniters are pulled, and the explosion is set off after a time delay. The charge hangs from a cord about 2-3 meters (7-10 ft) above the snow cover, and the cord is dropped after blasting. To reload explosive charges the deployment box is lifted from the tower by helicopter and brought to a workshop or warehouse.

UDOT initiated this waiver request in Fall 2023 and is now providing this information in Memo format as requested by FHWA. Below are UDOT's responses to the three questions provided by FHWA on March 20, 2024.

1. What actual component of the RACS is being waived? What specific components have foreign iron/steel?

The Wyssen RAC is a system that includes the tower, deployment box, and all other components that are integral to work together as a complete system. The waiver is being requested for the entire Wyssen RAC system. All components on the RAC system are foreign sourced and manufactured by Wyssen (Vendor) with the primary material being steel. The tower is steel and the deployment box "case" is steel with a mix of steel, aluminum, plastic, and electrical components inside the case.

The rock anchors/micro piles, steel and concrete that comprise the reinforced foundation that the RAC system connects to will be domestically sourced and compliant with the Buy America Build America Act.

2. Besides the specific components being waived, could other components in the RACS be domestically manufactured? Or is there a reason why it is necessary to purchase the entire RACS instead of trying to swap certain components out for domestically manufactured ones?

No, the Wyssen Remote Avalanche Control System components are specifically designed to work together as a complete, proprietary system and can not be sourced as independent components. The tower, deployment box, and all other components (including communication, explosive deployment, and power supply) are all engineered to work together to provide the redundancy and reliability required for highway avalanche mitigation. Exchanging parts of the system would void the warranty from the vendor and reduce the reliability and safety of the system.

3. Why did UDOT only contact Wyssen, MND, and Inauen Schatti? Are these the only manufacturers of RACS? The only manufacturers of certain kinds of RACS that fit UDOT's specifications?

Wyssen, MND, and Inauen Schattie (all foreign manufacturers) are ideally suited for this type of extreme terrain and are the most prominent suppliers of RACs and are most commonly used by state DOTs and other domestic avalanche mitigation programs.

The only other known supplier is Alpine Infrastructure, which is a domestic manufacturer that produces a gas based system. This is not a viable alternative for this project, due to the extreme terrain, excessive rockfall, and the extensive distance of the required gas line needed to operate the system. Additionally, this system would require DOT staff to be on-site during operation & maintenance, increasing risk to avalanche workers. Due to this project's terrain, this system is not appropriately suited for this project.

UDOT currently operates RACS from Wyssen and MND (Gazex) and selects RAC systems that are best suited for each locations unique terrain and avalanche mitigation requirements.

Based on this information, we're requesting a waiver from the Buy America Build America Act requirements to permit UDOT to acquire the Wyssen Remote Avalanche Control Systems.

If you have any questions, I can be contacted at 801-887-3470 or via email at rstromness@utah.gov.

Sincerely,



Rebecka Stromness, P.E.
Project Manager
UDOT Region Two

Attachments:

Attachment A – BABAA Waiver Request Memo

Attachment A

Buy America Build America Act (BABAA) Waiver Request Memo

1. Federal-aid project number:

F-0210(39)10

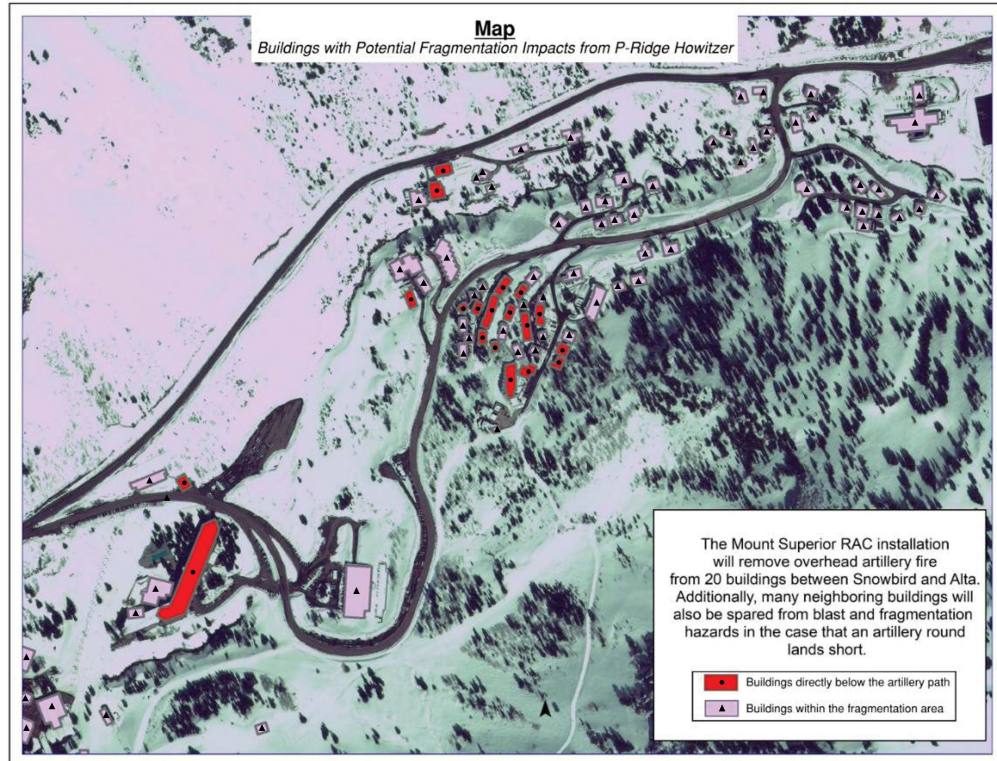
2. Project Description:

Utah State Route (SR) 210 travels up Little Cottonwood Canyon to the ski resorts of Snowbird and Alta and has the highest Avalanche Hazard Index (AHI) of any road in North America. The route follows the north side of the canyon with mountainous terrain along the north side of the roadway with several notorious, large avalanche slide paths. For this project, UDOT is planning to install 16 Remote Avalanche Control Systems (RACS) along Mount Superior (Elevation >11,000 ft) in Little Cottonwood Canyon, above SR-210 (~ Milepost 10.7 to 11.2).

This RAC project will reduce dependency on Military Artillery for avalanche mitigation and help eliminate the need to fire artillery over buildings and people. In 2020, the US Army asked all members of the Avalanche Artillery Users of North America Committee (AAUNAC) to submit an exit plan for their use of military artillery. The plans included locations and timelines for reducing the use of artillery in each respective program. The one exception to this was programs and locations who performed avalanche mitigation in designated wilderness areas. These areas are protected from any type of infrastructure installations and currently do not allow the installation of RACS. For UDOT, this means that most locations where artillery is currently being used to perform avalanche mitigation, will be allowed to continue. The Mount Superior project area is not designated wilderness and UDOT has committed to ending the use of the P-Ridge Howitzer by 2025.

The completion of this Mount Superior RAC installation project is an important step in reducing UDOT's dependency on military artillery. Currently, live artillery ammunition is fired over inhabited buildings for the purposes of avalanche mitigation. This is the only location in North America where this occurs, and the US Army has strongly encouraged UDOT to work toward eliminating this hazard since the early 2000's. So far, previous UDOT RAC installations have contributed to the reduction of overhead fire in Little Cottonwood Canyon. Once the Mount Superior RAC installation project is completed, only two remaining buildings will have overhead fire in Little Cottonwood Canyon, a 97% reduction since 2009 (see map). The reduction of military artillery use will have additional worker safety benefits including limiting exposure to loud noises and breathing in

potentially harmful smoke from the firing of military artillery.



3. Project Cost:

The complete project value is currently estimated at \$6,000,000.

4. Waiver Item Cost:

The waiver item cost is currently estimated at \$2,263,867, which includes 16 Wyssen RAC systems.

5. Country of origin of the product:

Manufactured by Wyssen Avalanche Control AG in Switzerland. US office contact information:

Wyssen USA Inc.
3550 Frontier Ave, Suite A2
Boulder, CO 80301
USA
1-720-826-8526
usa@wyssen.com
www.wyssenavalanche.com/en/

6. Reason for the waiver:

Wyssen, MND, and Inauen Schattie (all foreign manufactures) manufacture RAC systems that are suited for this type of extreme terrain and are the most prominent suppliers of RACs and are most commonly used by state DOTs and other domestic avalanche mitigation programs.

The only other known supplier is Alpine Infrastructure, which is a domestic manufacturer that produces a gas based system. This is not a viable alternative for this project, due to the extreme terrain, excessive rockfall, and the extensive distance of the required gas line needed to operate the system. Additionally, this system would require DOT staff to be on-site during operation & maintenance, increasing risk to avalanche workers. Due to this project's terrain, this system is not appropriately suited for this project.

UDOT currently operates RACS from Wyssen and MND (Gazex) and selects RAC systems that are best suited for each locations unique terrain and avalanche mitigation requirements.

The Wyssen Remote Avalanche Control System components are specifically designed to work together as a complete, proprietary system and can not be sourced as independent components. The tower, deployment box, and all other components (including communication, explosive deployment, and power supply) are all engineered to work together to provide the redundancy and reliability required for highway avalanche mitigation. Exchanging parts of the system would void the warranty from the vendor and reduce the reliability and safety of the system.

7. A description of the efforts made by the State to locate a domestically manufactured product:

Beyond the domestically manufactured Alpine Infrastructure system (which is not a viable alternative for this project), UDOT requested an MEPNN Supplier Scouting Search to seek out any other domestic manufacturers of equal systems and no domestic alternatives were identified.

8. An analysis of re-design of the project using alternate or approved equal domestic product.

There is no ability to re-design this project in a way to use an alternate or approved equal domestic manufacturer.