Case Study

ODOT / Biggs Junction, OR

View of Biggs Junction project

ODOT crew reviewing completed project

UPStealth Inverter/Controller cabinet installation

Smart Solutions for a Remote Area

Challenge: Biggs Junction earned its reputation as a dangerous multiple highway interchange: heavy traffic, narrow lanes, big rigs, travelers unfamiliar with the narrow lanes, backups and a remote location often buffeted by wind, ice, freezing temperatures or blazing heat in the summer. The interchange ramps were so narrow, heavy trucks had difficulty staying in their lanes. Resulting gaps in traffic create serious safety concerns, especially at the stop sign controlled intersections. Worse, when anything goes wrong at Biggs Junction, the closest ODOT crew is three hours away.

Turning Point: ODOT traffic studies indicated that if no improvements were made to Biggs Junction, the consequence would soon result in vehicle backups down the entire length of the off-ramps and onto the mainline of I-84.

Solution: A 14.5 million dollar road improvement project included the installation of three new traffic signals. Keeping those lights operating was top priority. ODOT learned about the unique form factor and environmentally friendly chemistry behind the UPStealth. The BBS passed the agency's demanding testing lab and on May 19, 2015 three UPStealth units were deployed at Biggs Junction. ODOT is also interested in the UPStealth interface that allows remote monitoring and control of the entire system.

Results: ODOT says the signal switch on at Biggs Junction was "great, flawless". Crews tested the product by shutting off power and the UPStealth immediately engaged, keeping the signals operating without any interruption. Once confident the UPStealth provided the necessary backup power, ODOT turned utility power back on to the cabinet. The UPStealth then monitored the utility power to ensure its quality. This protected the intersection control systems before the UPStealth cut over to utility power.

After putting the UPStealth® Battery Backup System (BBS) through its rigorous testing lab, the Oregon Department of Transportation installed three of the units at a dangerous Central Oregon intersection known as Biggs Junction. The UPStealth becomes the first environmentally friendly, Nickel-Zinc BBS used by ODOT, a smart solution for this remote but heavily trafficked interchange as well as for other Oregon roadways.

Why ODOT Chose the UPStealth

- Long lasting Nickel-Zinc chemistry
- Perfect for remote location
- Unique form fits inside existing cabinet
- Lower labor costs
- Fewer service calls

This combination of intelligence and reliability is helping ODOT meet its goals at Biggs Junction:

- No additional expense to build a piggyback or secondary cabinet. Flat bendable form factor design fits inside existing traffic cabinet.
- Long life cycle.
- Maintenance free.
- Peace of mind the long lasting UPStealth will keep system operating.
- UPStealth withstands demanding weather conditions.
- No hazmat threat from lead-acid.
- No downtime during switch over.
- Should result in reduced service calls; lower labor costs; fewer delays and crashes.

"This looks like a win-win all the way around. The UPStealth is quick and easy. It looks like it is superior, actually fitting inside the existing traffic signal controller cabinet. With less stuff on the street there is less maintenance and less chance it will get hit. There should be less cost and a longer battery life, and that appeals to our retrofit projects."

Scott Cramer

ODOT Traffic Signal Engineer

"The switch on at our Biggs Junction interchange went great, flawless. We shut off power and the UPStealth immediately switched on, just as they said it would. It was easy to test and the screen showed the system status, the wattage the system was using, and estimated time of battery backup."

Laura Wilson

ODOT Lead Technician for the Traffic Systems Service Unit (TSSU)

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