

De-Nitrification Baffle Box Project

Michael Pertler

The purpose of the de-nitrification Baffle Box is to remove debris, sediment, and harmful nutrients from the storm water prior to discharging it into the Halifax River. This handy device will be placed at the corner of Marcelle Ave. and Cardinal Blvd., brought in on large flatbed trucks and installed by crane. However, this task will be no easy one and requires a little creative thinking for it to run smoothly.

The trucks delivering the Baffle Box components and crane will begin their journey on Interstate 95 and proceed east-bound on Dunlawton Ave. approximately 7.2 miles to South Atlantic and then South 1.2 miles to Marcelle Ave. They will then embark southwest approximately 400 feet to the intersection of Marcelle Ave. and Cardinal Blvd., the staging area.

The crane will arrive first on site at roughly 8:00 am and requires approximately 90 minutes to set up. At around 9:30 am, the two tandem flatbed trucks carrying the base, riser, and top slab of the de-nitrification Baffle Box will arrive. The base piece, the heaviest component (roughly 34 tons) will arrive on one truck by itself. The riser and top slab will arrive together on the same truck. The crane will then lift the components into the excavated area.

After unloading the three pieces, the trucks will proceed from Marcelle Ave., southeast on Cardinal Ave. and left onto Teal St. and thence left onto S. Atlantic Ave. and northwest approximately 2.5 miles to Dunlawton Ave. They will then drive southwest, 7.2 miles to Interstate 95. It's not so much the route that is the problem though; it

is what to do when the trucks get there that requires the creative thinking.

When the trucks first arrive, the crane should already be set up, however, a full road closure of about 300 feet at the staging site, southwest of the intersection of Cardinal Blvd. and Marcelle Ave. is necessary and a detour must be provided in order for the trucks and crane to fit in the road. They can't park on the grass because they will sink in because of the weight, and any other way is impossible. A barricade company will provide maintenance of traffic and road closure per my proposed plan and approved by the City of Port Orange. In addition to the maintenance service, I also considered the possibility of the barricade company handing out ice-cold waters with a custom label printed to inform motorists of the beneficial environmental project causing the delay, how it will help them, the environment, and that it is provided by the City of Port Orange. This will help refresh and alleviate frustration of the people who are forced to sit in the traffic that will be created by this project. A suggestion for a detour may be the alternate route of Teal St. to S. Peninsula Dr.

Aside from detours, a drone may be put in place to monitor real-time traffic from above. The information collected by the drone will then be given to a local radio station where live traffic reports can be distributed to the public. These traffic reports will ensure that things run smoothly and the Baffle Box is safely and efficiently installed. Signs may be posted near the detour indicating what station these traffic reports can be found on. An additional precaution that could be made is the advertisement of the Baffle Box via banner pulled by plane. This plane can circle the beach and surrounding areas, flying a banner stating "A Baffling Solution to Saving our Waterways, Brought to you by

the City of Port Orange” and could provide minimal information of the upcoming traffic and installation process. I also considered being able to place all the Baffle Box components onto one truck to save time, but then I realized that the excessive amount of weight would be just too much for both the trucks and the roads.

Overall, this device should be an important improvement and greatly benefit the local ecosystem. With our plans and backup plans in place, everything should go as planned and people can return to their regular schedule in no time at all. The Baffle Box, a brilliant solution to better the world that we live in.

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