Stevenson Toyota

LID and Auto Dealerships

WHY LID at Toyota?

LID was part of a larger picture of a LEED facility:

- LID provided options for stormwater that makes the facility more inviting and aesthetically pleasing.
- Design, construction costs, and maintenance costs play into the decision as to which LID elements to include.
- LID provides a more efficient and environmentally friendly way of handling stormwater runoff which was important to the Stevenson family.
- This project proves you can be blend environmentally friendly facilities with first class facilities.

Incorporated LID Elements

- Cisterns for catching rain water.
- Constructed wetlands in place of a conventional methods.
- Larger green space areas for infiltration.
- Indigenous plantings to avoid the need for irrigation.

CISTERNS

- Treatment system to use the rainwater for toilet/grey water usage.
- Roof capture of 7,290 sq. feet for two (2) 10,000 gallon cisterns.
- Estimated collection of 263,000 gallon per year based on average rainfall.
- This conveys to an estimated usage of 117,000 gallons of rainwater flushed through the toilets versus City water.
- Potential cost savings of greater than $10,000.00 year.
- ROI is recouped within 4 years assuming the above the savings/year.
- Still have to pay sewer costs for water that comes from Cistern.

- All onsite water is collected and treated in constructed wetlands.
- Wetlands provide treatment for the first 1.5” of onsite stormwater runoff as well as attenuate post development flows to pre-development levels per the City of Jacksonville Requirements.

Created Wetlands

Constructed Wetland Details

Wetland #1

- Drainage Area – 7.768 acres
- Impervious Area – 6.132 acres
- Storage Volume – 32,165 cubic feet
- City of Jacksonville Required Surface Area – 31,806 cubic feet
- NCDENR Required Surface Area – 32,151 cubic feet

Wetland #2

- Drainage Area – 6.757 acres
- Impervious Area – 4.648 acres
- Storage Volume – 24,793 cubic feet
- City of Jacksonville Required Surface Area – 24,341cubic feet
- NCDENR Required Surface Area – 24,793cubic feet

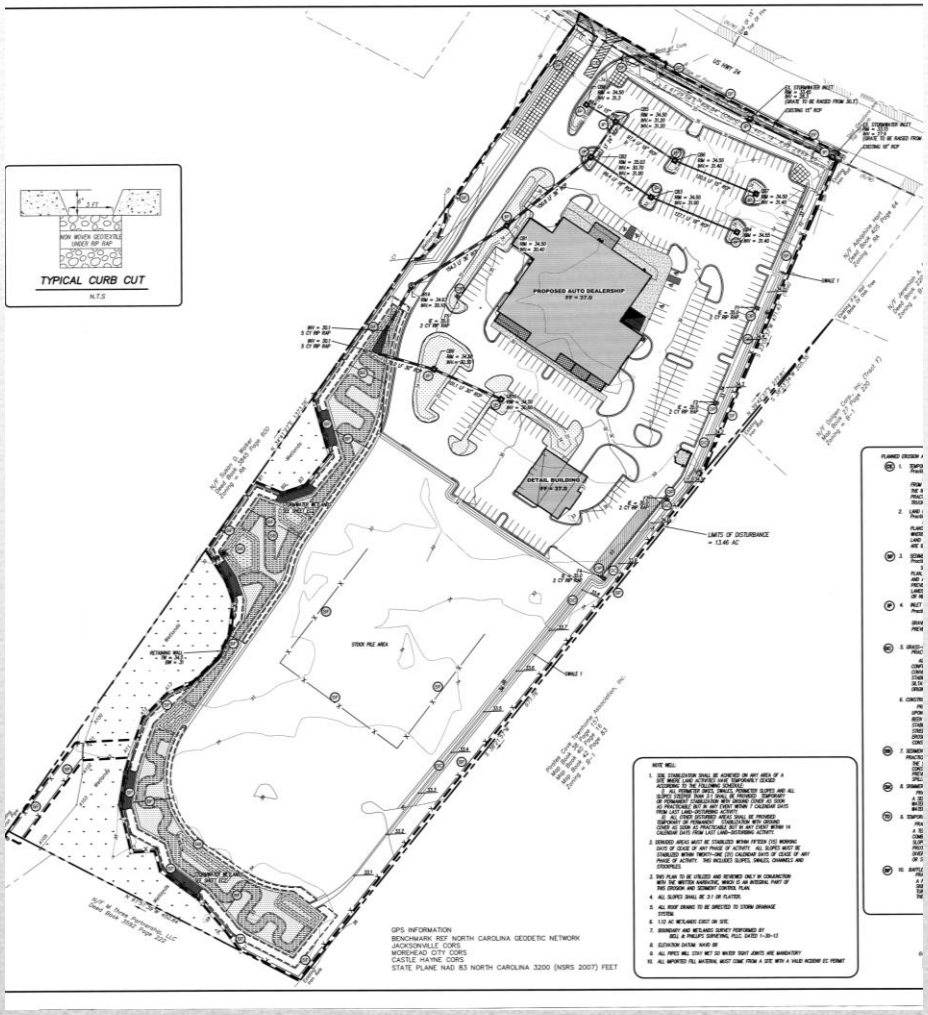
PROS of LID use at Stevenson Toyota

- Cisterns are visible to the general public allowing an opportunity to increase awareness.
- Water consumption is decreased reducing operating costs.
- Constructed wetlands have less maintenance requirements once established.
- The long term cost effectiveness means lower overhead.
- A more aesthetically pleasing facility.
- Positive public perception of implementing practices that protect local waters.
- Increased customer base.
- “Free” marketing.

CONS of LID use at Stevenson Toyota

- Local and/or State regulations that make LID impossible or more costly.
- Lack of knowledge of permitting staff – not thinking outside the box.
- Lack of knowledgeable companies for maintenance.
- Construction costs can be higher for LID vs. Conventional methods.
- Ensuring employees can correctly convey benefits to customers.
- Different requirements between state and local permitting agencies that require additional permitting and engineering costs.

- Utilizing constructed wetlands versus a stormwater pond.
- Wetlands utilize a series of shallow and deep water pools combined with wetland vegetation.
- Draining impervious areas to pocket rain gardens prior to draining to the constructed wetlands.



Proposed Chevrolet LID

Pros of LID at Chevy

- Constructed wetlands will require less maintenance once established.
- More green space and open space make a more aesthetically pleasing facility.
- Positive public perception of implementing practices that protect local waters.

CONS of LID at Chevy

- Local and/or State regulations that make LID impossible or more costly.
- Construction costs can be higher for LID vs. Conventional methods.