

Rocky Branch Watershed Urban Study

Final Report Summary

June 5, 2012



- *Comparison with past studies?*
- *Would proposed site fill cause a rise?*
- *What does improving downstream crossings do?*
- *Can water quality be addressed?*
- *What impact does Congaree River have on Rocky Branch?*
- *Can the watershed can be served by site improvements?*

- PACE and PB studies were reasonable for their purposes
 - PB was more modern with higher flows
- PB model changes were required for the goals of this project:
 - Extend the cross-section widths
 - Use the lower flows d/s of Bluff Rd RR (in-stream storage)

- Would Site Fill Cause A Rise Due To Lost Conveyance?
 - **NO** - site lies in the backwater area from Bluff Rd. RR culvert.
 - No Rise should be verified (or rise mitigated) after final design
- Would Site Fill Reduce Floodplain Storage Volume & Cause Impacts?
 - **NO** – not significant enough to make an impact
 - Includes higher volume QC estimates using new topography.

- Can Improving Downstream Crossings Move Flooding Downstream?
 - **YES** –Bluff Rd. RR crossing serves as a dam, reducing outflow.
 - Increased opening increases flows & stages to Olympia Ave:
 - *Impacts could be mitigated

Storm Event	2-yr	5-yr	10-yr	25-yr	50-yr	100-yr
Inflow	1,700	2,417	2,972	3,692	4,305	4,927
Outflow	1,697	2,396	2,846	3,357	3,732	4,096
% Change	-0.2%	-1%	-4%	-9%	-13%	-17%

- *Can Improving Downstream Crossings Improve Flooding Conditions?*
 - **YES** - Supports trend identified by PACE
 - u/s benefits (stage drop) diminish with each flood event:
 - 100-yr: stops 600 ft u/s of Assembly St.
 - 50-yr: stops at Assembly St.
 - 2- to 10-yr: stops 500 ft d/s of Assembly St.
 - Modifying d/s crossings could mitigate those rises:

- Can Water Quality Be Addressed?
 - **NO** – not from preserving floodplain storage u/s of Bluff Rd. RR
 - **YES** – from reducing Bluff Rd RR culvert exit velocities

Storm Event	2-yr	5-yr	10-yr	25-yr	50-yr	100-yr
Bluff Rd. RR	11	14	17	21	24	27
Olympia Ave.	14	12	11	10	9	8

- *What Impact Does Congaree River Flooding Have On The Area?*
 - 100-yr: extends up to Olympia Ave.
 - 50-yr: extends to quarry access road
 - \leq 25-yr: below stages in Rocky Branch

- *How Much Of The Watershed Is Served By Site Improvements?*
 - Nothing u/s of the Assembly St. area
 - d/s can be improved with improved culverts (stage & velocity)

Recommendations



- Improve Downstream Crossings
- Integrate Stream Restoration and Greenway Features
- Consider Alternative Upper Watershed Improvements
- Adopt Green Infrastructure (GI) Techniques
- Leverage Local Watershed Support

Questions?

