

How Green Infrastructure Can Reduce Stormwater Runoff in Northern Gulf Communities

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For more details on the findings presented here, see
**“Determining Implementation Barriers for Green Infrastructure
for Coastal Flood Control”**



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Two sites were chosen to test how small areas of green infrastructure could reduce stormwater runoff in Northern Gulf communities

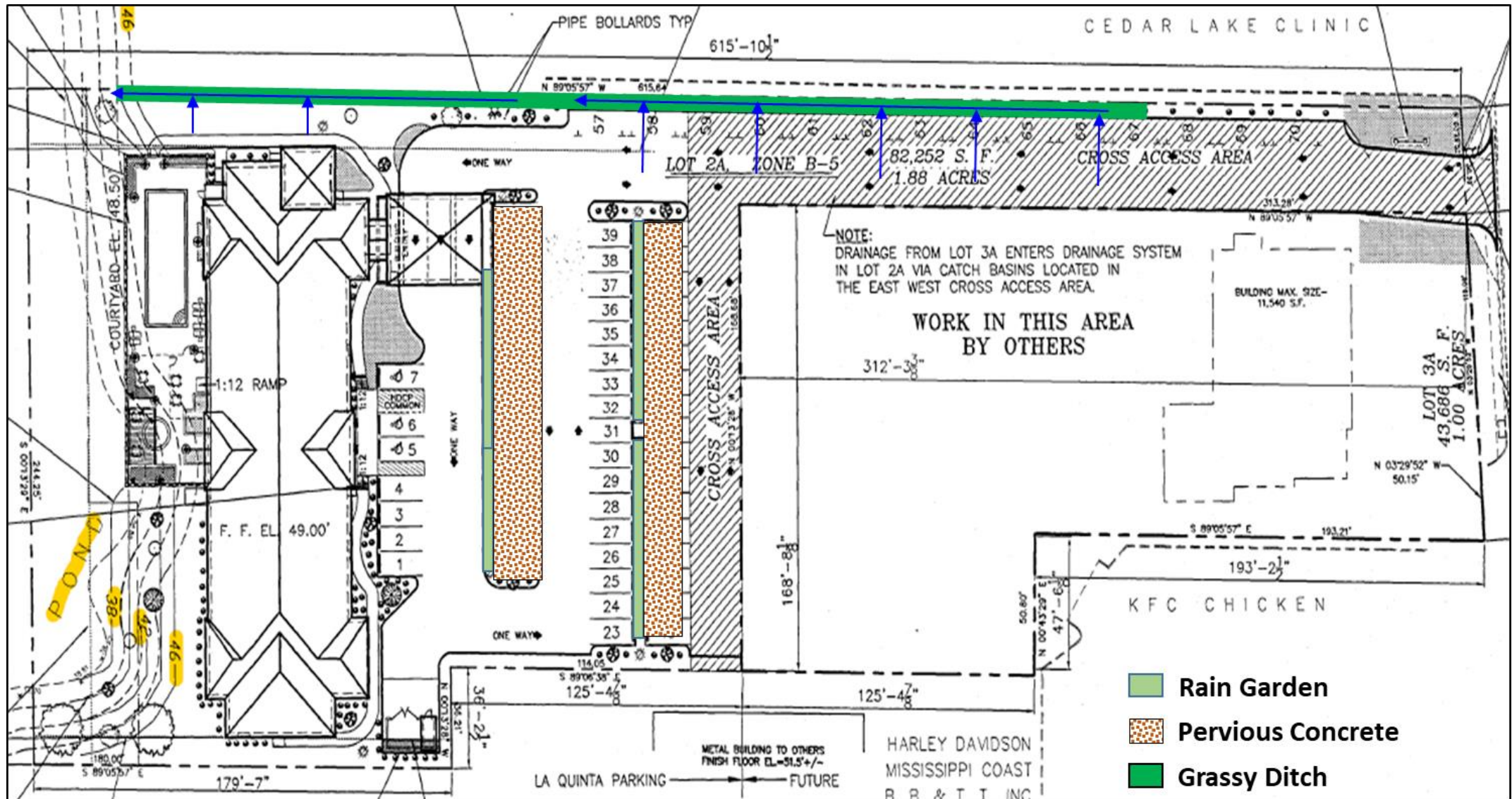
Biloxi, MS and
Orange Beach, AL

Pre-development runoff rates were compared to rates where the site had the following types of green infrastructure:

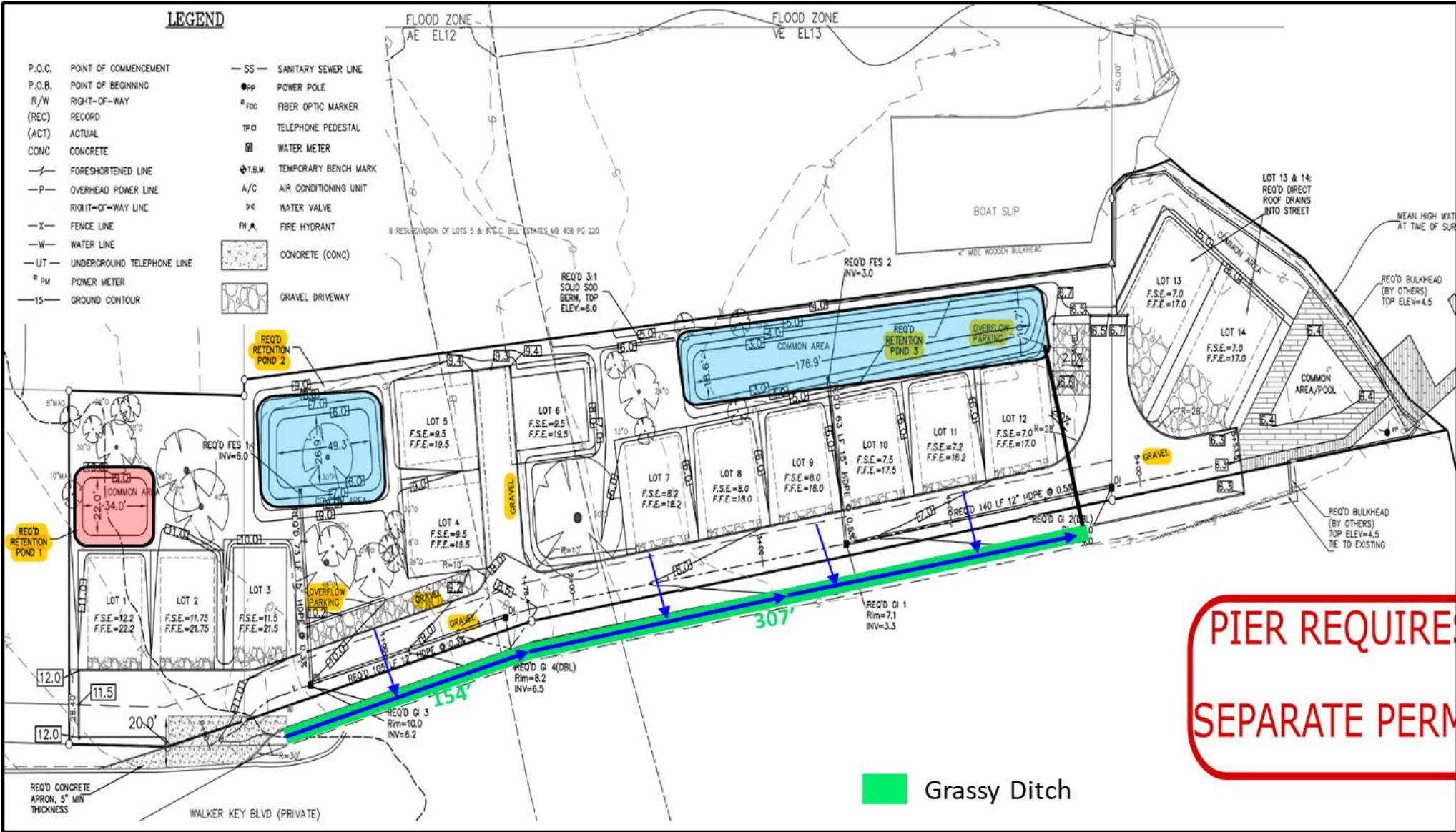
- Grassy ditch
- Rain garden
- Permeable pavement

These types of infrastructure were chosen as being practical to use on sites that have high percentages of impermeable structures/pavement.

Biloxi Site: Commercial



And a residential site in Orange Beach, AL



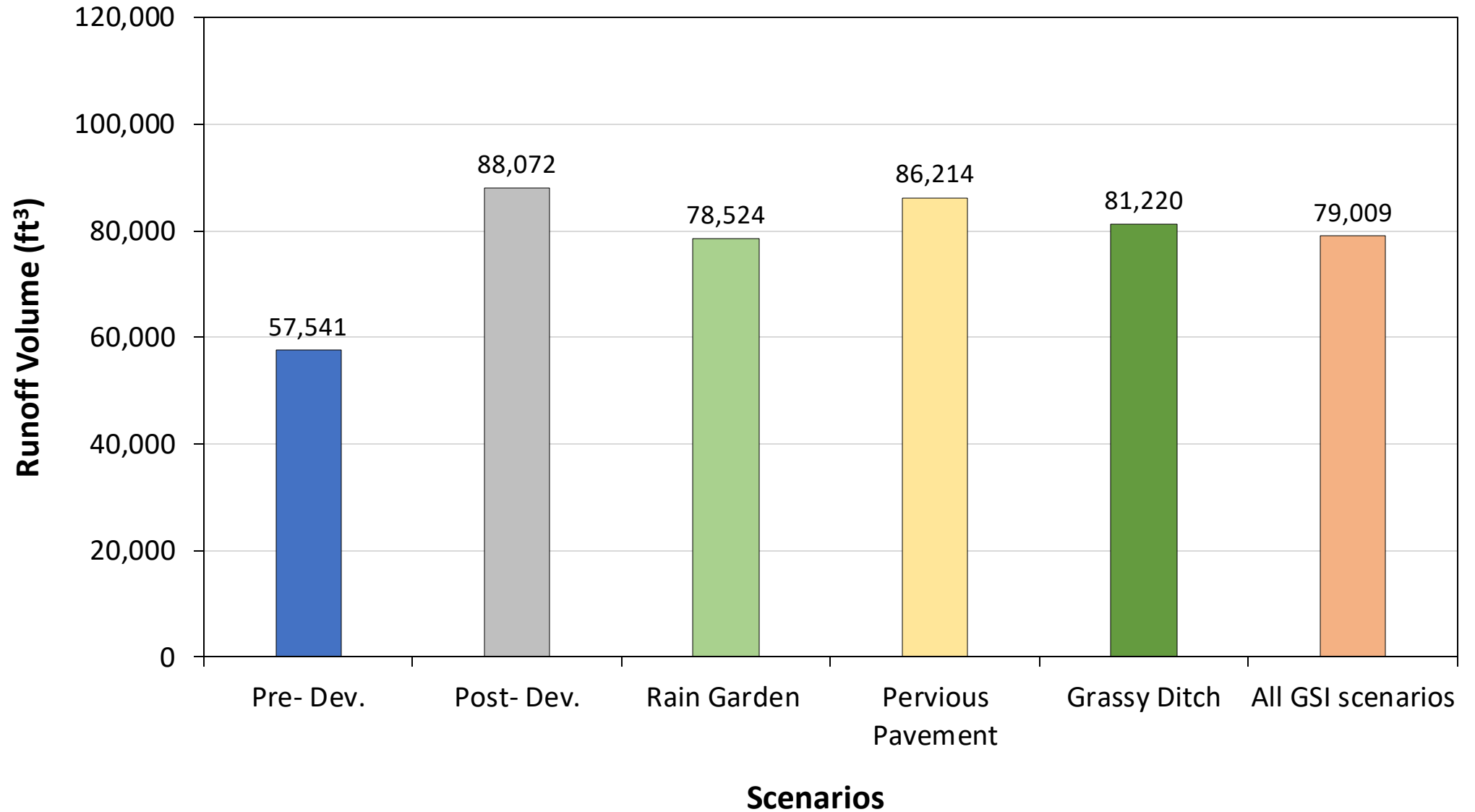
Each city requires assessing a different storm when assessing runoff rates and volumes:

Biloxi – 100-yr design storm

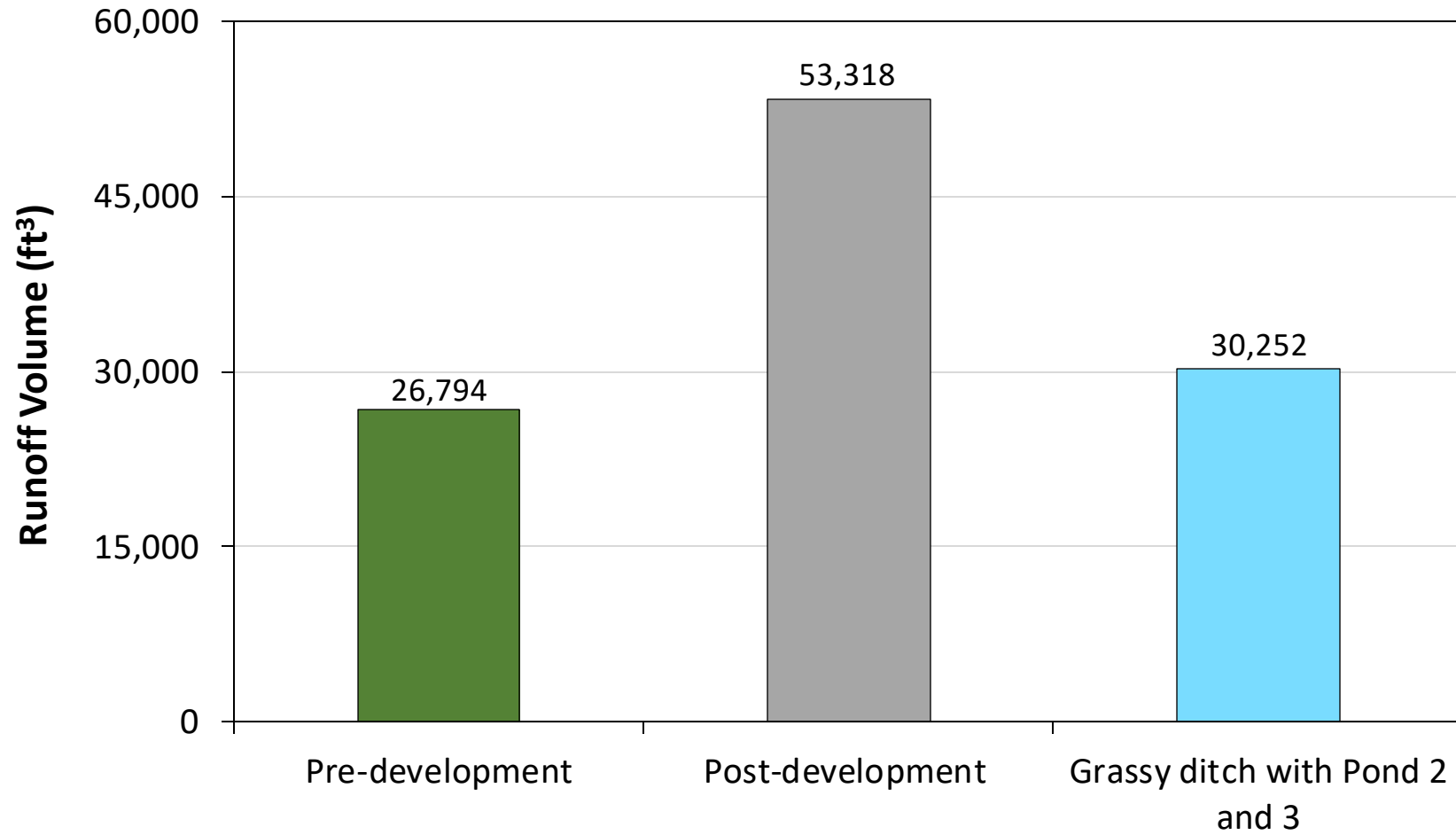
Orange Beach – 25-yr design storm

The most effective/practical green infrastructure varies by site. For the commercial site in Biloxi it is a rain garden. For the residential site in Orange Beach it is a grassy ditch.

Biloxi: 100-yr Design Storm



Orange Beach: 25-yr Design Storm



These graphs show that green infrastructure alone does not reduce runoff volume to pre-development conditions.

So traditional gray infrastructure is still necessary.



On smaller city sites, a combination of green and traditional infrastructure will be required to reduce runoff to pre-development rates.

Using effective green infrastructure offers ecological benefits that traditional infrastructure does not.

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