

Year 1 Post-Construction Monitoring Report

for:

**Pochin Place / Indian River Creek Stormwater Basin
Hampton, Virginia**

**Prepared for:
The City of Hampton**

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Pochin Place / Indian River Creek Stormwater Basin Year 1 Post-Construction Monitoring Report

I. Background Summary

The Pochin Place Stormwater Basin project was utilized funding issued by a grant from the National Fish and Wildlife Foundation (NFWF). This grant requires that monitoring be completed pre- and post-construction following protocols detailed in the *National Coastal Resilience Fund (NCRF) Monitoring Document*. Monitoring for the Pochin Place Project followed the protocols and used the standard metrics detailed under the Floodplain Restoration Category. Wetlands were created within the restored floodplain.

The location of the project is depicted on **Exhibit 1**.

WSSI has utilized the NCRF monitoring document to develop site-specific monitoring protocols detailed in the Pre-Construction Monitoring Report.

II. Monitoring Methods & Results

The following table was included in the NCRF Monitoring Document and summarizes the monitoring recommended for Floodplain Restoration Projects. This has been updated to capture that the specifics of the current project. Based on this protocol Elevation and Biomass monitoring were completed for the current year 1 monitoring event.

Table 1: NCRF Floodplain Restoration Monitoring Requirements

Floodplain Restoration					
Metric (include units)	Difference to Recommended Methods and Protocols	Spatial extent of metric monitoring	Baseline year	Frequency/ Timing	Data Limitations/ Considerations
Percent Cover of biomass by species or cover type	Due to the small size of the project area, 7 vegetation monitoring plots were used.	1 square meter at each quadrat	2020	Pre-Construction, Years 1 & 2 post-construction	None
Elevation (cm)	None	At each quadrat	2020	Pre-Construction, Years 1 & 2 post-construction	None
Water level	None	Located in the adjacent tidal channel	2020	Pre-construction only. 5 to 15-minute intervals for 30 days	None

Methods

WSSI revisited the seven (7) monitoring plots previously established during the pre-construction monitoring event. The location of each plot is shown on **Exhibit 2**. The plots are 1m² and the center of each plot was marked by a wooden survey stake.

The following data was collected at each plot location:

- Species of plants present
- Percent aerial coverage of plants
- Percent coverage of live oysters, mussels, and wrack (if present)
- Elevation (Collected by Survey using Virginia South Zone, NAVD 83, 2011)
- Photographs

The project surveyor reoccupied, staked, and collected elevation data at each plots previously established during the pre-construction monitoring event.

Results

Year 1 Post-Construction biomass monitoring was conducted August 23, 2021. WSSI re-visited the seven (7) vegetation monitoring plots utilized in the Pre-Construction Monitoring effort.

Table 2 provides the biomass and elevation data for each of the monitoring plots. Photographs of each plot are included in Appendix A. Bivalves and wrack were absent in all plots. Table 3 provides the biomass and elevation data collected during the 2020 pre-construction monitoring effort last year.

Table 2: Year 1 - Post Construction Monitoring Results

Plot	Elevation (Ft.)	Plant Species	Common Name	Percent Coverage (NCVS Value) *
1	1.74	Phragmites australis	Common reed	70 (8)
		Cyperus strigosus	False nutsedge	10 (5)
		Eupatorium perfoliatum	Common boneset	10 (5)
		Echinochola crusgalli	Barnyard grass	10 (5)
2	0.15	Typha latifolia	Cattail	75 (9)
		Lemna minor	Duckweed	75 (9)
		Ludwigia alternifolia	Seedbox	5 (5)
		Cyperus pseudovegetus	Marsh flatsedge	5 (5)
3	2.01	None	N/A	0
4	2.82	Juncus effusus	Common rush	5 (5)
5	3.02	Baccharis halimifolia	Groundsel	30 (7)
		Spartina patens	Saltmeadow cordgrass	15 (6)
		Ambrosia artemisiifolia	Ragweed	7 (5)
		Symphotrichum subulatum	Saltmarsh aster	5 (5)
6	3.65	Spartina alterniflora	Saltmarsh cordgrass	80 (9)
		Persicaria hydropiper	Smartweed	5 (5)
		Eupatorium perfoliatum	Common boneset	5 (5)
		Spartina patens	Saltmeadow cordgrass	5 (5)
7	4.06	None	N/A	0

Table 3: Pre-Construction Monitoring Results

Plot	Elevation (Ft.)	Plant Species	Common Name	Percent Coverage (NCVS Value) *
1	4.12	Poa annua	Annual bluegrass	30 (7)
		Trifolium repens	White clover	30 (7)
		Glechoma hederacea	Ground ivy	30 (7)
		Chamaecrista fasciculata	Partridge pea	10 (5)
2	5.23	Poa annua	Annual bluegrass	30 (7)
		Glechoma hederacea	Ground ivy	30 (7)
		Lamium amplexicaule	Henbit	30 (7)
3	4.65	Poa annua	Annual bluegrass	30 (7)
		Rumex crispus	Curly dock	15 (6)
		Trifolium repens	White clover	10 (5)
		Glechoma hederacea	Ground ivy	10 (5)
		Taraxacum officinale	Dandelion	10 (5)
		Fragaria vesca	Wild strawberry	7 (5)
4	5.26	Poa annua	Annual bluegrass	90 (9)
		Trifolium repens	White clover	5 (5)
		Taraxacum officinale	Dandelion	3 (4)
5	3.88	Phyllostachys aurea	Bamboo	80 (9)
		Lonicera japonica	Japanese honeysuckle	5 (4)
6	4.70	Phyllostachys aurea	Bamboo	70 (8)
		Liquidambar styraciflua	Sweet gum	45 (7)
		Pinus taeda	Loblolly pine	40 (7)
		Hedera helix	English ivy	40 (7)
7	5.25	Poa annua	Annual bluegrass	80 (9)
		Glechoma hederacea	Ground ivy	15 (6)
		Trifolium repens	White clover	5 (5)

*Percent Coverage is reported using the North Carolina Vegetation Survey (NCVS) categories required in the NCRF monitoring document as defined in Table 4 below.

**Bivalves and wrack were absent in all plots.

Table 4:

Cover Range	NCVS Category
Solitary/Few/Small	1
0.1-1%	2
1-2%	3
2-5%	4
5-10%	5
10-25%	6
25-50%	7
50-75%	8
75-95%	9

Discussion

Construction of stormwater ponds and wetland benches was completed in the winter of 2020 prior to the Year 1 post-construction monitoring effort.

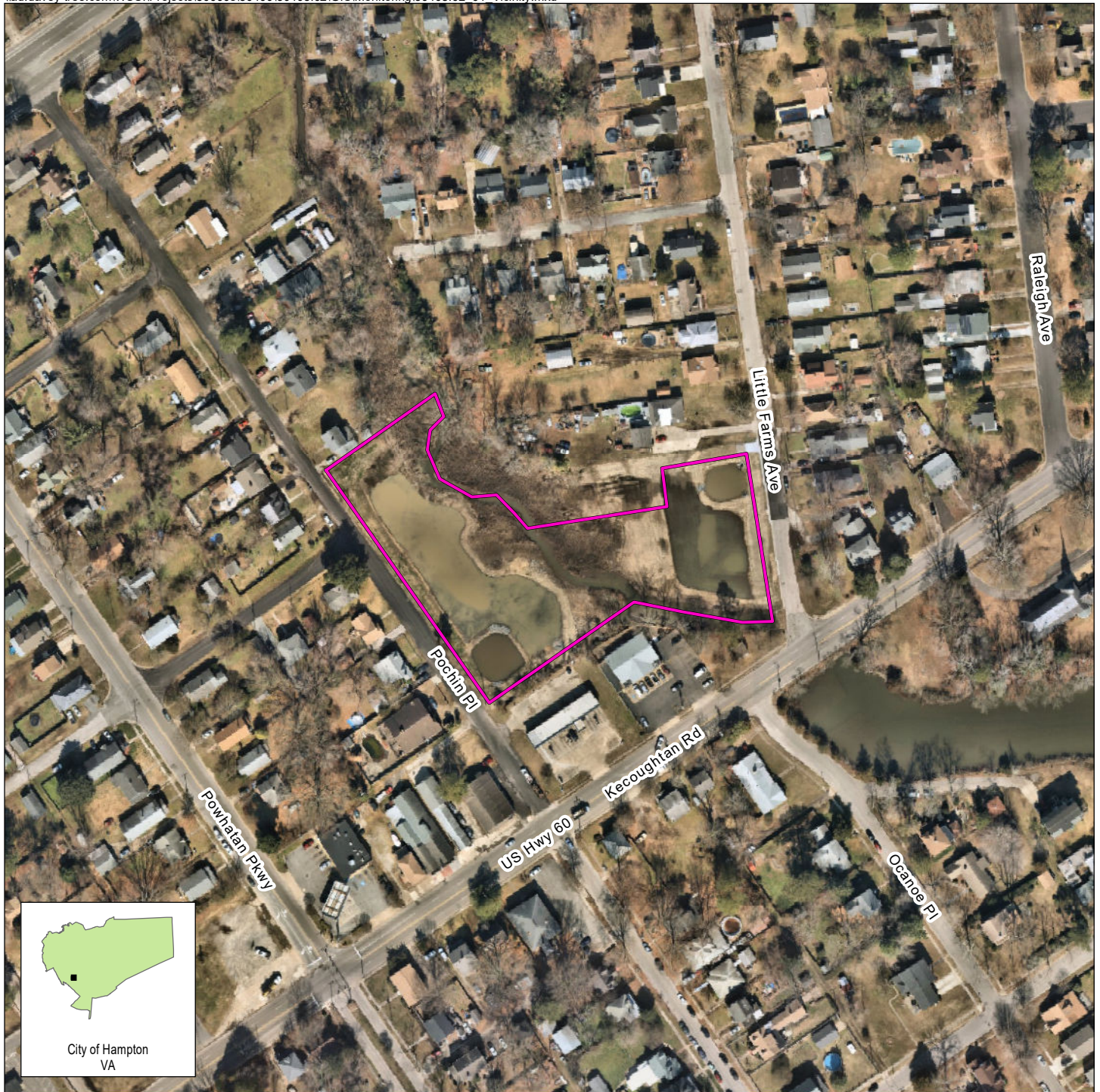
Non-tidal wetland vegetation has become established at plots 1, 2, and 4. Tidal wetland vegetation is dominant in plots 5 and 6. Plots 3 & 7 did not have any vegetation present while station 4 had very little (Table 2). The lack of vegetation at these monitoring plots is due to higher than anticipated water levels. The elevation of all monitoring plot locations decreased as anticipated as a result of the construction (Tables 2 & 3).

During the Pre-Construction monitoring effort, vegetation observed at plots 1, 2, 3, 4, & 7 was consistent with maintained grass fields (Table 3). Plots 5 & 6 were dominated by bamboo and other woody vegetation.

III. Conclusion

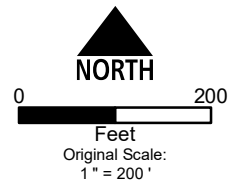
Wetlands have been established in much of the created floodplain as anticipated, and ground elevations are in line with the project design plans. However, some portions of the project have experienced persistently higher water levels than anticipated which has hindered the growth of vegetation at plots 3, 4, & 7. The project has resulted in enhanced floodplain function through the construction of the stormwater basin and water quality improvements through the establishment of wetland vegetation at this lower elevation. The required monitoring data is provided above.

Year 2 Monitoring will take place in 2022 during the peak biomass season (July to August). The Year 1 data above will be used as a baseline for the Year 2 monitoring effort and summarized in the Year 2 Post Construction Monitoring Report.



 Project Area

**Vicinity
Pochin Place
WSSI #30408.02**

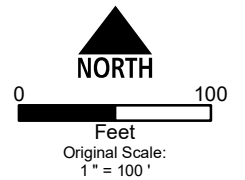


Source: Nearmap® - February 2021



-  Project Area
-  Monitoring Plot

Monitoring Plots
Pochin Place
WSSI #30408.02



Source: Nearmap® - February 2021

Appendix A
Monitoring Plot Photographs

**APPENDIX A
SITE PHOTOGRAPHS
POCHIN PLACE YR1 POST-CONSTRUCTION MONITORING
WSSI #30408.02**



1. Monitoring Plot 1 facing northwest.



2. Monitoring Plot 2 facing north.

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3. Monitoring Plot 3 facing southeast.



4. Monitoring Plot 4 facing west.

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5. Monitoring Plot 5 facing west.



6. Monitoring Plot 6 facing west.

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7. Monitoring Plot 7 facing east.