A Property Management Model for Green Infrastructure Site Maintenance
NEORSD – GREEN INFRASTRUCTURE SYSTEM LOCATIONS

1. University Circle Green Infrastructure Demonstration Project
2. Green Ambassador - Slavic Village Demonstration Projects
3. Fleet Avenue Green Infrastructure
4. Green Ambassador - Urban Agriculture
5. Green Ambassador - Fairhill/MLK
6. East 140th Street Consolidation & Relief Sewer Project
7. Woodland/Central Green Infrastructure Project
8. Union Avenue Green Infrastructure
9. Buckeye Road Green Infrastructure

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SLAVIC VILLAGE G.I. DEMONSTRATION SITE
FLEET AVENUE GREEN INFRASTRUCTURE SITE
EAST 53RD STREET - BIO-RETENTION BASIN
FAIRHILL/MLK G.I. SITE – UPPER BIO-RETENTION BASIN
GREEN INFRASTRUCTURE MAINTENANCE
“GREEN SYSTEM COMPONENTS”

- Storm water basins
- Artificial wetlands
- Rain gardens
- Street bump outs
- Bio-swales
- Green Roofs & Walls
- Tree Wells

**Plants**
- Turf Lawn
- “Low Mow” Grass
- Wetland Plants
- Trees, Bushes/Shrubs
- Perennial Plants
GREEN INFRASTRUCTURE MAINTENANCE
“GRAY” SYSTEM COMPONENTS

- Storm water laterals /catch basins
- Flow diversion structures
- Pretreatment structures
- Storm water curb cuts
- Splash pads/ Flow dissipaters
- Basin underdrain systems
- Overflow structures
- Permeable pavement
- Storm water curb cuts
- Site Amenities
  - Public benches
  - Lighting
  - Bike racks
  - Trash receptacles
SLAVIC VILLAGE G.I. DEMONSTRATION SITE
Green & Gray Components

“Green Elements”
- Turf Lawn
- Low Mow Grass
- Basin Plantings
- Upland Plantings
- Bushes, Trees
- What is/isn’t a weed!?!?

“Gray Elements”
- Sidewalks
- Curb cuts
- Splash pads
- Overflow structures
- Basin underdrain systems
- Site Amenities

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SLAVIC VILLAGE G.I. – KNOW YOUR PLANTS
WHICH PLANT IS STAYS & WHICH NEEDS TO BE PULLED?

IRIS PLANT - STAYS

YUCCA PLANT - GOES
SLAVIC VILLAGE G.I.
NOT KNOWING WHAT TO DO CAN COST YOU AND THE CLIENT $$$
UCI/MARRIOTT HOTEL GREEN INFRASTRUCTURE SITE
Pervious Concrete Paver Block System
UCI/MARRIOTT HOTEL G.I. SITE
GREEN & GRAY COMPONENTS

“Green Elements”
- No Plants
- Leave / Weed Removal

“Gray Elements”
- Permeable Pavement
- Catch Basins
- Lateral Lines
- ADS Basin underdrain systems
- Site Amenities
  - Public Signage
UCI/MARRIOTT HOTEL G.I. SITE
PERVIOUS PAVER MAINTENANCE ISSUES

Snow Pile/Debris

Frost Heave of Pavers
Bentonite Clay mistakenly used in an attempt to remove the oil
UCI/MARRIOTT HOTEL G.I. SITE
PAVER MAINTENANCE
NEORSD GREEN INFRASTRUCTURE
2014 - 2016 MAINTENANCE PROGRAM

➢ Annual Grounds Maintenance Contract
  ▪ Outlying Facilities, Property Acquisition Sites & 5 Green Infrastructure Sites
  ▪ Attempted to have contractor clean some “gray components” of G.I. sites

➢ UCI Marriott: Annual Maintenance Contract
  ▪ Removal/Replacement of clogged aggregate
  ▪ Did not address cleanout of catch basins and ADS Stormtech® chamber

➢ G.I. Gray Infrastructure Maintenance Contract
  ▪ Vacuum cleaning of pretreatment devices, lateral lines & catch basins

➢ Project Specific Contracts
  ▪ Covered G.I. Site Repairs
G.I. Maintenance needs to address “Green & Gray” Components

- In Perpetuity Maintenance
- Aesthetics
- Functionality
- Community Involvement & Workforce Development

Maintenance Options

1. Develop an in-house G.I. District Workforce
   - Union Staff & Good Neighbor Ambassadors
   - Staff limitations
   - Skill and equipment
   - Little to No Community involvement and workforce development

2. Property Management of G.I. Sites
   - One stop shop for Maintenance Services
   - Pre-skilled Staff with Landscaping/G.I. Certification
   - Property Manager to provide all equipment
   - Contract flexibility
   - NEORSD can direct community involvement and workforce development
Pilot Contract Requirements:

➢ 2-Year Maintenance of 5 G.I. Sites
➢ Vegetative Maintenance
➢ Non-Vegetative Maintenance
➢ Site Monitoring
➢ Green Infrastructure Site Assessment
➢ Monthly Status Reporting
➢ Community Involvement & Workforce Development
   ❖ 50% MBE/FBE Requirement
   ❖ Option for Community Education Activities
NEORSD GREEN INFRASTRUCTURE MAINTENANCE PROGRAM PILOT CONTRACT STATUS

➢ Consultant Down-select: April 2017
➢ Contract Award: June 2017
➢ Maintenance Start: July 2017
➢ G.I. Site Assessment: September 2017
➢ Urban/Ag Site Improvements: Fall 2017 & Spring 2018
➢ Three additional G.I. sites: Summer 2018
GREEN INFRASTRUCTURE PROPERTY MANAGEMENT
“GREEN” SYSTEM COMPONENTS

- Bioretention, planting beds, residual lawn areas and tree lawn areas
- Annual pruning of trees, shrubs
- Weekly care of perennials (including weeding during growing season)
- Mowing (including review and repair of runneling)
- Care of no mow areas including weed control
- Replacement of mulch and bioretention soil as needed
- Invasive species management
- Fall & Spring cleanup (e.g. leaf pickup)
GREEN INFRASTRUCTURE PROPERTY MANAGEMENT
“GRAY” SYSTEM COMPONENTS

- Amenity cleaning: snow plowing, trash receptacles, benches, anti-graffiti
- Stormwater inflow/outflow structures & underdrains
- Sediment/trash/blockage from inlets, trench drains, overflow structures, underdrains, curb cut (flume), splash pad
- Storm sewer lines & catch basin inspection & cleaning (within project area)
- Suntree Nutrient Separating Baffle Box maintenance
- ADS Stormtech Chamber maintenance (2-inches of sediment)
- Pervious Pavement maintenance
GREEN INFRASTRUCTURE PROPERTY MANAGEMENT
SITE EVALUATIONS

- Individual site checklists
- Drone, photos, and sketches of existing conditions
- Vegetation establishment and condition
- Sediment accumulation
- Trash/debris or bare soil
- Runnels, divots and sinkholes
- Runoff bypass or short-circuiting
- Weather conditions
- Identification of maintenance needs
GREEN INFRASTRUCTURE PROPERTY MANAGEMENT
PERFORMANCE MONITORING

- Supplemental to Monitoring Program

- Infiltration Basins
  - Rainfall visual inspection - draw down 40 hours after rain event
  - Infiltration testing - known volume and visual observation

- Inlet and Flow Structures
  - Visual inspection
GREEN INFRASTRUCTURE PROPERTY MANAGEMENT OUTREACH AND TRAINING

- Workforce development such as Oriana House & Express Employment Professionals
  - Parolees & ex-offenders

- Good Neighbor Ambassador Program
  - Program to train workers
  - Awareness for ownership and education

- Community Outreach
  - Coordination with District Community Relations Office
  - Perennial Plant Splitting
  - Local School Program
G.I. Property Manager provides the following project updates:

- **Overall Contract Metrics**
  - Monthly Budgetary Numbers
  - MBE/FBE/SBE Costs

- **Existing G.I. Site Conditions**
  - Completed Maintenance Tasks
  - Site inspection results
  - Upcoming Maintenance Tasks
  - Recommended Site Enhancements/Repairs
NEORSD GREEN INFRASTRUCTURE
URBAN/AG G.I. WEST ENTRY FEATURE SITE ENHANCEMENTS
Questions?

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