REBUILD BY DESIGN

MEADOWLANDS

CITIZEN ADVISORY GROUP (CAG) MEETING #5

ECOLOGY AND DRAINAGE BASIN OPPORTUNITY AREAS

October 24, 2016

FLOOD PROTECTION PROJECT

Boroughs of Little Ferry, Moonachie, Carlstadt, and Teterboro, and the Township of South Hackensack in Bergen County, New Jersey

PREPARED BY AECOM

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www.renewjerseystronger.org

Table of Contents

1.0 List of Acronyms and Glossary

List of Acronyms

BCR	Benefit/Cost Ratio
CAG	Citizen Advisory Group
CDBG-DR	Community Development Block Grant – Disaster Recovery
EFH	Essential Fish Habitat
EIS	Environmental Impact Statement
HUD	Department of Housing and Urban Development
NEPA	National Environmental Policy Act
NJDEP	New Jersey Department of Environmental Protection
RBD	Rebuild by Design
RBDM	Rebuild by Design Meadowlands

Glossary

Bioretention - is the process in which contaminants and sedimentation are removed from storm water runoff. Storm water is collected in treatment areas which often include landscape vegetation

Bioswale - a vegetated landscape swale that removes silt and pollution from surface runoff water, usually with gently sloped sides

Easement - the right to use and/or enter onto the property of another without possessing it

Encumbrance - an encumbrance is property which may be owned by one entity but other entities may have a right to or legal liability on the property

Filter strip - a flat vegetated area that removes pollutants from storm water as the storm water moves across as sheet flow. Filter strips are between 25 and 100 feet long

Fluvial Park - a public park with various ecosystems, especially related to wetlands and river ecosystems, with varying elevations and habitats. During a flood event the park can handle water inundation

Permeable Paving - a type of paving that allows rainwater to filter through the surface into a water catchment base, often created with interlocking paver tiles or a porous material surface

Public Realm - publicly owned streets, pathways, right of ways, parks, publicly accessible open spaces and any public and civic building and facilities

Rain Garden - a planted depression in a garden that absorbs rainwater runoff from impervious areas such as roofs, driveways, walkways, parking lots, and lawn areas

Runnel - a designed and landscaped channel that directs and assists the flow of rainwater

Widening Ditch – (3) Main ways to improve the ditches; daylighting and increasing habitat and vegetation, extending the ditch to connect to riparian corridor, and filling the ditch with aggregate, but expanding habitat above

2.0 Agenda

6-8 pm
October 24, 2016
Learning Center Room, 4th Floor
One Bergen County Plaza
Hackensack, NJ 07601

Project Website
www.rbd-meadowlands.nj.gov
Project email
rbd-meadowlands@dep.nj.gov

Welcome

Presentation

- Opening Remarks (15 Minutes)
  - Agenda (Linda Fisher, NJDEP)
  - Project Status Update and Project Process (Chris Benosky, AECOM)
- What We Learned from CAG #4 (10 Minutes)
  - General Comments, Alternatives, & Site-Specific Feedback (Susan Bemis, AECOM)
- Project Area Ecology (40 Minutes)
  - Project Area Ecology (John Rollino, AECOM)
- Drainage Basin Opportunity Areas (20 Minutes)
  - Storm Water Improvements within Sub-basins,
    Drainage Zone Areas (Michael Vecchio, HDR)
    What Could These Look Like? (Susan Bemis, AECOM)
- Next Steps & Q&A/Closure (15 Minutes)
  - Next Steps (Chris Benosky, AECOM)
  - Question and Answers

3.0 Power Point Presentation

REBUILD BY DESIGN

MEADOWLANDS

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CITIZEN ADVISORY GROUP (CAG) MEETING #5

ECOLOGY AND DRAINAGE BASIN OPPORTUNITY AREAS

AGENDA

Linda Fisher, NJDEP

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- Welcome and Agenda
- Project Status Update & Schedule
- Project Process & Screening Criteria
- What We Learned from CAG #4 Meeting
- Project Area Ecology
- Drainage Basin Opportunity Areas

PROJECT STATUS UPDATE

Chris Benosky, AECOM

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- Developed working draft Concept Screening Criteria
  - Updated based on CAG #3 meeting
- Completed and published to the project website
  - CAG #4 meeting minutes
  - September 2016 Newsletter
- Received additional input from CAG #4 meeting
- Developing the Preliminary Draft EIS
  - Conducting field work to support EIS and Feasibility Study
- Further developing the alternative conceptual ideas and locations

CAG SCHEDULE

Chris Benosky, AECOM

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MOVING FORWARD

CAG #5 TONIGHT	Focus on Alternative 2: Storm Water Drainage Improvements
CAG #6 DECEMBER	Focus on Alternative 1: Structural Flood Reduction
CAG #7 JANUARY	Focus on Alternative 3: Hybrid

PROCESS

Chris Benosky, AECOM

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DEVELOPING CONCEPTS

SITE INVESTIGATION AND RESEARCH

↓

CONCEPT DEVELOPMENT

↓

SCREENING AND FEASIBILITY

SCREENING CRITERIA

Chris Benosky, AECOM

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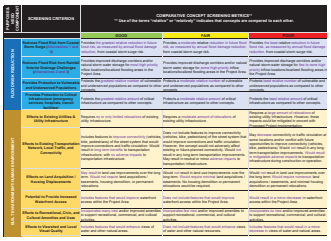


Sample of the screening criteria matrix

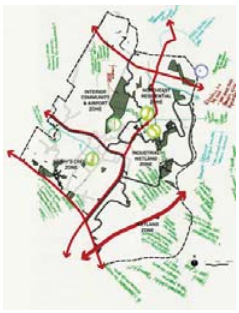
- How do we use the screening criteria to consolidate potential opportunity areas?
  - Identify potential opportunities and develop into concepts
  - Screen concepts using screening criteria
  - Not all opportunities/concepts will pass screening process

WHAT WE LEARNED FROM CAG #4 MEETING

Susan Bemis, AECOM

GENERAL - CAG #4 COMMENTS

Susan Bemis, AECOM 8



INVEST
- Address frequent flooding from rain fall events.
- Utilize the most immediate and cost efficient option(s) for protection from storm surges.

EXAMINE
- Potential water displacement towards neighboring communities.
- Holistic solution.

MAINTAIN
- Long-term maintenance of proposed project infrastructure is a concern: Who maintains and for how long?

DISCUSS AND CONSIDER
- Opportunities for private land acquisition during the concept development process.

ALTERNATIVE 1 - CAG #4 COMMENTS

Susan Bemis, AECOM 9

STRUCTURAL FLOOD REDUCTION

Berry's Creek

WATERFRONT ACCESS
- Access to the Hackensack River needs to remain a priority.

PROTECTION OF WETLANDS
- Emphasize wetland and biological resources protection + enhancement.

MINIMIZE ENVIRONMENTAL IMPACTS
- Consider minimal footprints.

DEPLOYABLES
- Maintenance and operations of deployables are a concern.

PRIORITIZE FLOOD PROTECTION
- General interest in flood protection incorporated with public benefit, but flood protection is the main objective.

ALTERNATIVE 2 - CAG #4 COMMENTS

Susan Bemis, AECOM 10

STORM WATER DRAINAGE IMPROVEMENTS

Green street example

CURRENT SYSTEMS
- Improve current systems, including ditches and pipes.
- Potential to install backflow preventers.

CONSIDER VARIOUS ENGINEERING IMPROVEMENTS
- Green - rain gardens, permeable paving, bioswales, among other green infrastructure elements.
- Grey - pump stations, increase flow capacity of drainage basins, and detention basins.

OPEN SPACES
- Enhance the performance of existing open spaces.

NATURAL CONDITIONS
- Return developed areas to natural conditions and find opportunities for enhancement.

ALTERNATIVE 3 - CAG #4 COMMENTS

Susan Bemis, AECOM 11

HYBRID SOLUTION

Hackensack River

NO ADDITIONAL DEVELOPMENT
- Development has displaced natural habitat and systems.
- Improvements should not be used to generate or promote new development.

POLLUTION + CONTAMINATION
- Understand and consider pollution issues associated with Berry's Creek.
- Consider a tide gate at Paterson Plank Road.

GREEN + GREY INFRASTRUCTURE
- Utilize a combination of both to get the most benefit.

SITE-SPECIFIC - CAG #4 COMMENTS

Susan Bemis, AECOM 12

TETERBORO AIRPORT
Opportunity for green infrastructure at Teterboro Airport (upgrade of disturbed environments).

TETERBORO AIRPORT, WEST COMMERCIAL AVENUE
Bioswales and green infrastructure (south/east of the Teterboro Airport, West Commercial Avenue, southern end of the Project Area).

EAST AND WEST RISER
Prioritize the East and West Riser ditches for Berry's Creek area, especially in consideration of the nearby mobile home communities.

PATERSON PLANK ROAD
Consider addition of a tide gate along Paterson Plank Road in the Berry's Creek Zone.

TETERBORO FOREST, LOSEN SLOTE, WILLOW LAKE, VACANT LOTS
Utilize existing open spaces.

HACKENSACK RIVER EDGE
Potential for additional habitat creation, water storage, and water access.

MEHRHOF WETLAND ZONE
Area immediately north of Mehrhof pond wetland zone could be a good location for recreational paths.

LOSEN SLOTE
Large migratory bird area would benefit from enhancements such as widening.

PROJECT AREA ECOLOGY

John Rollino, AECOM

PROJECT AREA ECOLOGY

John Rollino, AECOM 14

PRELIMINARY DATA

Existing habitat near development

- The Project Area contains natural areas surrounded by suburban, industrial, and commercial development. Several of these natural areas have not been intensively studied to date by others.
- The ecological studies being conducted by AECOM will be used to support the NEPA analysis, regulatory agency consultations, and associated permitting.

PROJECT AREA ECOLOGY

John Rollino, AECOM 15

PRELIMINARY DATA

(Foreground) Birds and marshes along the Hackensack
(Background) NJ Turnpike Bridge

- As part of the EIS, the field data collection will be supplemented with previous and ongoing studies (e.g., Fisheries Inventory of the Hackensack River, FAA Wildlife, etc.)
- Members of the project team have past experience conducting studies for the NJSEA (formerly HMDC) (e.g., Secaucus High School Site) and/or other multi-year studies (Empire Tract)

BIOLOGICAL RESOURCES

John Rollino, AECOM 16

PRELIMINARY DATA

East Riser Ditch, looking north from Amor Ave, Carlstadt, NJ

- Biological resource studies (ongoing) include:
  - Habitat mapping and evaluation
  - Wetland delineation
  - Botanical inventories
  - Wildlife studies:
    - Avifauna (birds)
    - Benthic Invertebrates
    - Fish
    - Herptofauna (Reptiles and Amphibians)
    - Mammals

BIOLOGICAL RESOURCES: GOALS

John Rollino, AECOM 17

PRELIMINARY DATA

Scientists evaluate soil conditions in Little Ferry

- Categorize habitats, flora, and fauna, and conduct ecological evaluations in support of a NEPA-level analysis.
- Identify high-value ecological resources and provide input into planning process in order to minimize impacts to greatest extent possible.
- Identify and develop opportunities to increase ecologic value of the Project Area post project construction.

HABITAT MAPPING

John Rollino, AECOM 18

PRELIMINARY DATA

Mowed lawn detention basin, Moonachie, NJ

Hardwood Swamp, Teterboro, NJ

- Project Area ~5,800 acres.
- ~4,000 acres are commercial, industrial, and residential.
- ~1,800 acres are "natural areas" – parcels with vegetated communities.

MAPPED DATA COLLECTION

John Rollino, AECOM

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PRELIMINARY DATA

Screen shot of handheld tablet and mapped habitats

Scientists mapping habitats

- Scientists traversed the Project Area on foot and identified "natural areas."
- Aerial images of the Project Area were used as a background on hand-held tablets.
- Natural areas were sketched in tablets and inputed as a GIS file.
- ~ 400 habitat polygons and shoreline developments (~1,800 ac).
- Each natural area was given an alpha-numeric code, based on its geographic location.

MAPPED DATA COLLECTION

John Rollino, AECOM

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PRELIMINARY DATA

Wetland /Herbaceous/emergent/Drainage (Y)/Disturbed (Y)/ *Phragmites australis, Persicaria perfoliata*/Common Reed Marsh

- Other data collected for each natural area polygon included:
- Dominant Habitat Type - wetland/ upland/waterbody/etc.
  - Covertype – herbaceous, forested, deciduous, etc.
  - Ditch/drainage present/adjacent – Y/N
  - Disturbed – Y/N
  - Dominant species – species identified
  - Habitat Community – floodplain forest, urban woodlot, common reed marsh.

ECOLOGICAL EVALUATION

John Rollino, AECOM

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PRELIMINARY DATA

High value wetland

Low value wetland

- Using US Army Corps of Engineers "Evaluation of Planned Wetlands (EPW)" methodology.
- EPW mathematically scores wetlands on a number of functions (sediment stabilization, wildlife habitat, water quality, etc).
- Through computation, scientists assess "health" of existing wetlands and calculate the "Functions and values" of mitigated wetlands.
- Using site-specific information gathered from studies, habitats are being coded based on ecological value and function.

WETLANDS

John Rollino, AECOM

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PRELIMINARY DATA

(Foreground) Created/enhanced marsh, Secaucus, NJ
(Background) Project Area

- Section 404 of the Federal Clean Water Act: Wetlands are *"areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas."*
- Freshwater Wetlands: The "three parameter approach." Wetlands under normal conditions have hydric soils; dominance of hydric vegetation; and presence of hydrology.
- Tidal Wetlands: Use elevation data too (e.g., Spring high tide line).

SOILS: UPLAND AND WETLAND

John Rollino, AECOM

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PRELIMINARY DATA

- **Upland soils**
  Note brown color, loose friable texture. Soils are dry.
- **Wetland soils**
  Note dark black color, mucky appearance, obvious saturation. Changes in soil are a result of anoxic conditions.
- **Bog Iron**

Soils cores taken less than 5 feet from each other at a site near Bellman's Creek.

DELINEATED LINE

John Rollino, AECOM

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PRELIMINARY DATA

Wetland site, Durham, Ct

- During a wetland delineation, scientists note soil characteristics, hydrology, and vegetation. These observations allow for the delineation (i.e., delineated line) between uplands and wetlands.

WILDLIFE STUDIES

John Rollino, AECOM

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PRELIMINARY DATA

Indian Lake, Little Ferry, NJ

- Birds, reptiles/amphibeans, fish, benthic invertebrates, and mammal studies occur seasonally (summer completed).
- Additional studies for birds – weekly during summer, fall, and spring. Specialized nesting study in spring.
- Other specialized studies – vernal pools, nocturnal species/activity, game cameras.

BIRDS

John Rollino, AECOM

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PRELIMINARY DATA

Caption: Northern Mockingbird resting on branch along Commerce, Blvd.

- At 10 locations throughout the Project Area, scientists conduct morning and/or evening studies.
- All birds sighted are counted. Activity is noted, as well as direction and distance from scientist.
- Data allows for the creation of a spherical histogram to be overlaid on habitat mapping data to determine site usage.

BIRDS

John Rollino, AECOM

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PRELIMINARY DATA

Double-crested cormorant flying above Hackensack River

- To date, over 70 bird species identified.
- Majority of sightings were very common species: European starlings, mourning dove, ring-billed gull.
- Habitats in which birds sighted:
  - 7.07% Open Water
  - 19.87% Structure
  - 21.80% Upland
  - 51.33% Wetland

BIRDS

John Rollino, AECOM

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PRELIMINARY DATA

American Crow	Carolina Wren	Great Blue Heron	Northern Flicker	Sharp-shinned hawk
American Goldvinch	Cedar Waxwing	Great Egret	Northern Harrier	Snowy Egret
American Kestrel	Chimney Swift	Herring Gull	Northern Mockingbird	Song Sparrow
American Redstart	Common Grackle	House Finch	Osprey	Sparrow sp.
American Robin	Common Yellowthroat	House Sparrow	Ovenbird	Spotted Sandpiper
American Tree Sparrow	Domestic Goose	Killdeer	Palm Warbler	Swallow sp.
Bald Eagle	Double-crested Cormorant	King Bird	Peregrine Falcon	Tree Swallow
Barn Swallow	Downey Woodpecker	Kinglet sp.	Red Tail Hawk	Water Thrush
Belted Kingfisher	Eastern Pheobe	Lesser Yellow Legs	Red Winged Blackbird	White-breasted Nuthatch
Blue Jay	European Starling	Little Blue Heron	Red-bellied Woodpecker	Wood Duck
Brown-headed Cowbird	Field Sparrow	Mallard	Ring-billed Gull	Yellow Rumped Warbler
Bufflehead	Fish Crow	Marsh Wren	Rock Dove	Yellow Warbler
Canada Goose	Gray Catbird	Mourning Dove	Rufous-sided Towhee	Yellow Throated Warbler
Carolina Chickedee	Great Black-backed Gull	Northern Cardinal	Sandpiper sp.	

FISH AND BENTHIC INVERTEBRATES

John Rollino, AECOM

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PRELIMINARY DATA

Minnow traps in Losen Slote headwater

Mummichog

- Sampled from 9 different locations in the Project Area using fish traps.
- Fish identified to date include: bluegill, pumpkinseed, catfish, carp, goldfish, mummichogs, and mosquitofish.
- Species common to disturbed environments.

MAMMALS

John Rollino, AECOM

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PRELIMINARY DATA

Skunk captured on infrared game camera near River Barge Park in the southern portion of the study area.

- Mammals surveyed through game cameras, presence identification (tracks and scat), nocturnal surveys, and (soon) snow tracking.
- Mammal survey locations occur throughout Project Area in a variety of representative habitats.
- Bats studied with night vision scopes, meters, and ultrasonic microphones that capture bat echolocations.
- Game cameras stationed throughout the Project Area in a variety of habitats.

MAMMALS

John Rollino, AECOM

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PRELIMINARY DATA

- Big Brown Bat (*Eptesicus fuscus*)
- Cat (*Felis silvestris catus*)
- Chipmunk, unknown species
- Grey Squirrel (*Sciurus carolinensis*)
- Groundhog (*Marmota monax*)
- Little Brown Bat (*Myotis lucifugus*)
- Muskrat (*Ondatra zibethicus*)
- Opossum (*Didelphis virginiana*)
- Rabbit (*Sylvilagus floridanus*)
- Raccoon (*Procyon lotor*)
- Rat (unknown species)
- Red Fox (*Vulpes vulpes*)
- Skunk (*Mephitis mephitis*)
- White-tailed Deer (*Odocoileus virginianus*)

MAMMALS

John Rollino, AECOM

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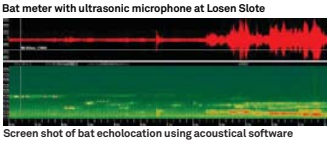
PRELIMINARY DATA

Bat meter with ultrasonic microphone at Losen Slote



Screen shot of bat echolocation using acoustical software

- Using a meter with ultrasonic microphone, scientists record bat echolocations.
- Analyzing timing, kHz, and other factors, scientists can identify what species are present in an area.

ECOLOGICAL ENHANCEMENT

John Rollino, AECOM

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PRELIMINARY DATA

Forested Mitigation Area, Duke Farms, Hillsborough, NJ

- Using existing data collected to identify potential areas to avoid and enhance.
- Using ecological value calculation methods (e.g., EPW, IVA, etc.) and other metrics, it is possible to quantify impacts and ensure that enhancement would provide a net ecological benefit.

PRELIMINARY CONCLUSIONS

John Rollino, AECOM

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View of Hackensack River, looking south from Rt 46 Bridge

- Many Project Area habitats are home to invasive species and other stressors.
- Studies to date have shown aquatic fauna affected by contamination south of Moonachie Ave.
- Many small waterways are polluted and stressed, often due to previous engineering projects and efforts.
- To date, data has shown that developed industrial / commercial areas have limited ecological value to fauna.

PRELIMINARY CONCLUSIONS

John Rollino, AECOM

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Tidal Gate along Berry's Creek

- The Proposed Project presents a unique opportunity to reduce flooding and simultaneously improve habitat values and functions.
- Improvements could include, but are not limited to:
  - New marshes along the Hackensack
  - Upgrades of streams – daylighting, select plantings, fish habitat improvements.
  - Invasive species removal.

DRAINAGE BASIN OPPORTUNITY AREAS

Michael Vecchio, HDR

PROCESS + SCREENING CRITERIA

Michael Vecchio, HDR | 37

DEVELOPING CONCEPTS

SITE INVESTIGATION AND RESEARCH

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CONCEPT DEVELOPMENT

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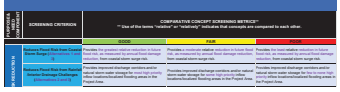
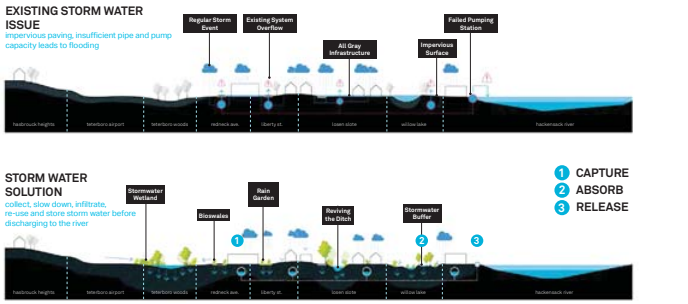
SCREENING AND FEASIBILITY



- How do we use the screening criteria to consolidate potential opportunity areas?
  - Identify potential opportunities and develop into concepts
  - Screen concepts using screening criteria
  - Not all opportunities/concepts will pass screening process

STORM WATER IMPROVEMENTS

Michael Vecchio, HDR | 38



STORM WATER DRAINAGE

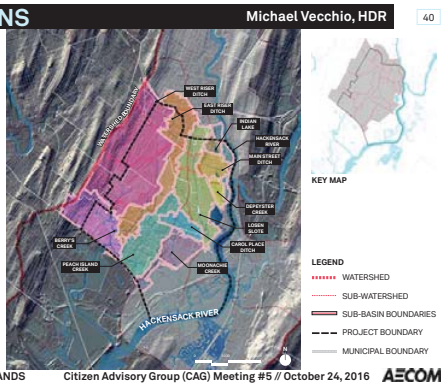
Michael Vecchio, HDR | 39

KIT OF PARTS:
MOVING FROM **STRATEGY** TO **OPPORTUNITY**

DRAINAGE SUB-BASINS

Michael Vecchio, HDR | 40

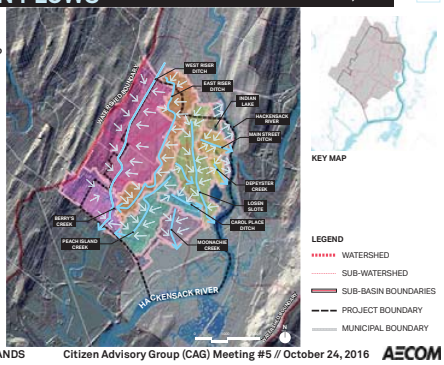
- Zones represent distinct sub-basins within the Project Area.
- Identify storm water management strategies within watershed and zones:
  - Grey Infrastructure
  - Green Infrastructure



DRAINAGE SUB-BASIN FLOWS

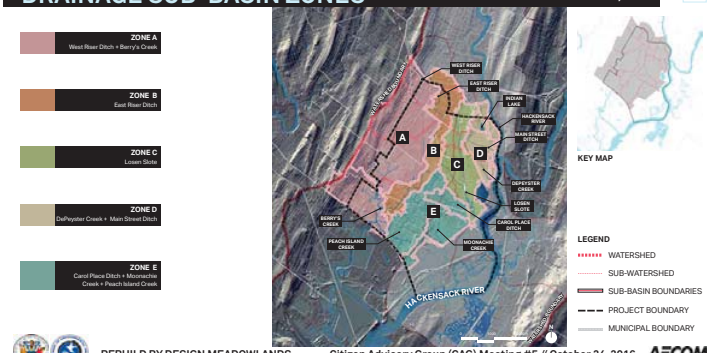
Michael Vecchio, HDR | 41

- How is water moving and being captured within each sub-basin?



DRAINAGE SUB-BASIN ZONES

Michael Vecchio, HDR | 42

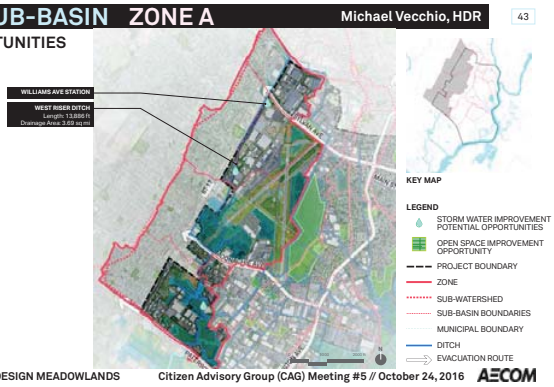


DRAINAGE SUB-BASIN ZONE A

Michael Vecchio, HDR | 43

POTENTIAL OPPORTUNITIES

- West Riser dredging
- West Riser Tide Gate and Pump Station
- Access for O&M
- Green streets

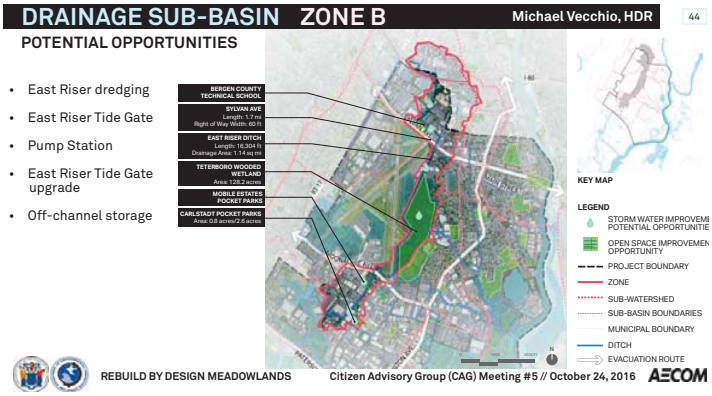


DRAINAGE SUB-BASIN ZONE B

Michael Vecchio, HDR | 44

POTENTIAL OPPORTUNITIES

- East Riser dredging
- East Riser Tide Gate
- Pump Station
- East Riser Tide Gate upgrade
- Off-channel storage

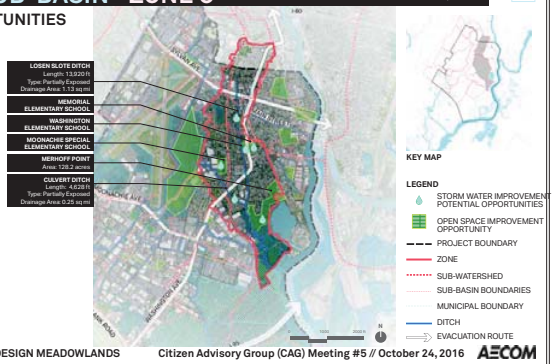


DRAINAGE SUB-BASIN ZONE C

Michael Vecchio, HDR | 45

POTENTIAL OPPORTUNITIES

- Losen Slote outfall backflow prevention
- Losen Slote dredging
- Storm sewer capacity upgrades

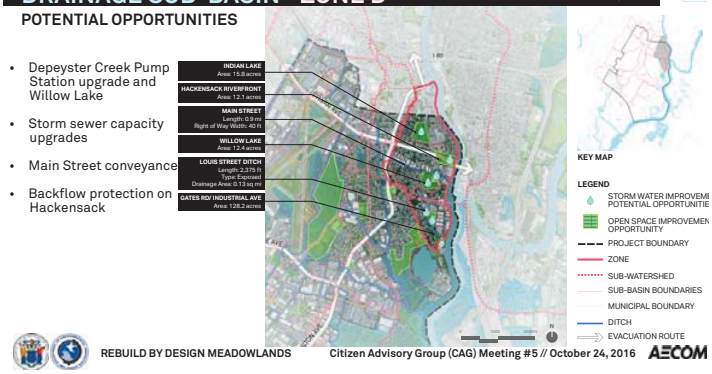


DRAINAGE SUB-BASIN ZONE D

Michael Vecchio, HDR | 46

POTENTIAL OPPORTUNITIES

- Depeyster Creek Pump Station upgrade and Willow Lake
- Storm sewer capacity upgrades
- Main Street conveyance
- Backflow protection on Hackensack

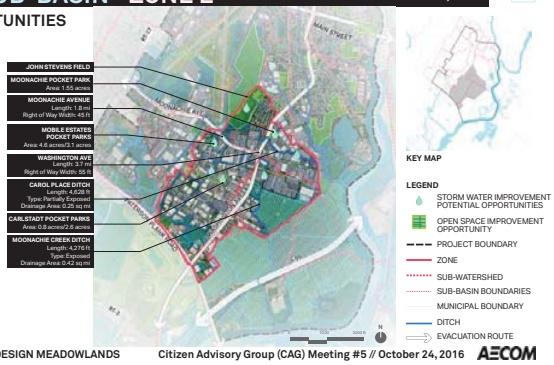


DRAINAGE SUB-BASIN ZONE E

Michael Vecchio, HDR | 47

POTENTIAL OPPORTUNITIES

- Storm sewer capacity upgrades
- Interior pump stations
- Pump station upstream of Peach Island Creek Tide Gate
- Upgrade of Peach Island Creek Tide Gate



WHAT COULD THESE LOOK LIKE?

Susan Bemis, AECOM

OPEN SPACE + HABITAT IMPROVEMENTS

Susan Bemis, AECOM

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CAESAR PLACE ILLUSTRATIVE EXAMPLE

KEY MAP

WETLAND CREATION
Through grading and wetland planting, existing upland is transformed into wetland

WETLAND ENHANCEMENT
With minimal re-grading and native plantings, existing west River Ditch and low-quality wetlands are improved to filter and store more storm water

BOARDWALK
Accessible walkway allows for contiguous wetland and storm water system beneath

OPEN SPACE IMPROVEMENTS

Susan Bemis, AECOM

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FLUVIAL PARK ILLUSTRATIVE EXAMPLE

KEY MAP

PERMEABLE PAVING
Gravel paving absorbs storm water

BIOSWALES
Filters 60-90% of suspended solids and prevents water from overflowing sewer systems

BIORETENTION
Filters 80-90% of suspended solids and slows flow of storm water into sewer systems

WETLAND CREATION
Forms ecological habitat and storm water infiltration

DITCH IMPROVEMENTS

Susan Bemis, AECOM

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EAST RISER ILLUSTRATIVE EXAMPLE

KEY MAP

FILTER STRIP
Native plantings uptake pollutants before entry into water systems

BIORETENTION
Filters 80-90% of suspended solids and slows flow of storm water into combined sewer systems

DITCH WIDENING
Maximizes ecological opportunity and storm water conveyance to larger watershed

GRAVEL TRENCH
Provides initial infiltration of road runoff before overflow into ecologically improved ditch

STREET IMPROVEMENTS

Susan Bemis, AECOM

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MAIN STREET ILLUSTRATIVE EXAMPLE

KEY MAP

OPEN SPACE
Absorbs more storm water

NATIVE PLANTS
Low-maintenance options that contribute to native ecological systems

RAIN GARDENS
Filters 60-90% of suspended solids and prevents water from overflowing sewer systems

PERFORATED PIPE
Drains storm water overflow during larger rain events

PERMEABLE PAVING
Absorbs storm water and serves as place-making for Main Street

STREET IMPROVEMENTS

Susan Bemis, AECOM

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EMPIRE BLVD ILLUSTRATIVE EXAMPLE

KEY MAP

BIOSWALES
Filters 60-90% of suspended solids and prevents water from overflowing sewer systems

CURB CUT
Allows infiltration of road runoff into adjacent bioswales while maintaining the safety of raised curbs

OPEN SPACE
Absorbs more storm water

NEXT STEPS

Chris Benosky, AECOM

NEXT STEPS

Chris Benosky, AECOM

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NJDEP / AECOM UPCOMING ACTIVITIES

- Prepare Meeting Summary for CAG #5 meeting
- Continue developing:
  - Initial Alternatives and Concepts
  - Preliminary Draft EIS

NEXT STEPS

Chris Benosky, AECOM

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CAG CALL TO ACTION

- Review and comment on Meeting Summary for CAG #5 meeting.
- Share information from this meeting with friends and neighbors.
- Educate your friends and colleagues on the Project and NEPA process.
- Continue to build interest in the Project.
- Continue obtaining information, ideas, and potential concerns from constituents.
- Ensure the public knows about upcoming information (to be posted on Project website).

NEXT STEPS

Chris Benosky, AECOM

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CRITICAL INFORMATION

TUESDAY DECEMBER 6TH
CAG MEETING #6

PROJECT WEBSITE
WWW.RBD-MEADOWLANDS.NJ.GOV

PROJECT EMAIL
RBD-MEADOWLANDS@DEP.NJ.GOV

Q&A

THANK YOU!

6.0 Personal Notes