



Subject	Meeting Minutes - Citizen Advisory Group (CAG) Meeting #6
Meeting Date	December 6, 2016
Scheduled Time	6:00 pm – 7:00 pm ET
Location	Port Authority Conference Room, 90 Moonachie Avenue, Teterboro, NJ 07608
Attendees	Attendee list available, <i>for internal use only</i>

- The PowerPoint slide presentation utilized at the meeting is attached to the meeting minutes (see **Attachment 1**).
- A CAG meeting packet was provided to all attendees and is also attached to the meeting minutes (see **Attachment 2**).
- Introductions – Linda Fisher, NJDEP Rebuild by Design Meadowlands (RBDM) Project Team Manager, started the meeting and provided a brief overview of the meeting objectives, which included: (1) a Project status update; and (2) an overview of Alternative 1 (Structural Flood Reduction) concept development.
- Chris Benosky, AECOM's Rebuild by Design (RBD) Program Manager, provided a brief project status update. The Draft Concept Screening Criteria Matrix, originally presented at the CAG #3 meeting, has been refined further; it is a living document that will continue to be modified, as appropriate, during the alternative development process. The Meeting Summary for CAG Meeting #5 and the November 2016 Newsletter are available on the Project website at www.rbd-meadowlands.nj.gov. The RBDM Project Team is in the process of developing Alternative 1 alignment options.
- Mr. Benosky presented an overview of the existing flooding conditions within the Project Area. Nearly all of the Project Area is currently within the 100-year floodplain. As sea level rises, this will lead to even more flooding within the Project Area. Sea level is estimated to rise between 0.5 and 1.1 feet by 2050, and between 1.2 and 2.4 feet by 2075, within the Project Area.
- The materials presented at this meeting are based on North American Vertical Datum of 1988 (NAVD 88) elevations; this will be the vertical datum used for the Proposed Project. NAVD 88 replaced the National Geodetic Vertical Datum of 1929 (NGVD 29). However, it was noted that Federal Emergency Management Act (FEMA) data are often in NGVD 29. The difference between NAVD 88 and NGVD 29 is approximately one foot. For example, 7 feet NAVD 88 is approximately 8 feet NGVD 29.
- Based on existing conditions with the Project Area, average water levels along the Hackensack River relative to 5 feet NAVD 1988 (i.e., the approximate average existing ground elevation in the Project Area) include a mean water level of 2.75 feet NAVD 88, a mean lower low water level of -3.55 feet NAVD 88, and a mean higher high water level of 3.08 feet NAVD 88. During a



10-year storm event (i.e., 10 percent chance of this storm occurring each year), water levels are approximately at 5 feet NAVD 1988, or approximately at the existing average ground elevation. During a 50-year storm event (i.e., 2 percent chance of this storm occurring each year), water levels are at 7.4 feet NAVD 1988, which is above the existing ground elevation. Finally, during the 100-year storm event (i.e., 1 percent chance of this storm occurring each year), water levels are at 8.3 feet NAVD 1988, which is above the existing ground elevation by more than 3 feet.

- Within the Project Area, existing ground elevations reach 7 feet NAVD 88 in some areas due to existing berms, existing land slopes, or existing topography. For this reason, the 7-foot elevation is being used as a baseline study elevation. This elevation would maintain the existing level of flood protection within the Project Area while incorporating anticipated sea level rise. In addition, the 7-foot elevation allows the structural components of Alternative 1 to be tied into the existing ground elevation, which would minimize overall construction cost. The 7-foot elevation is not necessarily an alternative that will pass the screening process, and is not the Preferred Alternative; it provides a baseline for the analysis. The RBDM Project Team is considering other elevations above 7 feet. All options are being vetted through the screening process and Feasibility Study.
- In the northeast portion of the Project Area, the ground elevation is higher; therefore, only a 1- to 3-foot flood protection structure would be needed to meet the baseline 7-foot NAVD 88 line of protection. In contrast, the ground is at a lower elevation in the southeast portion of the Project Area, and a flood protection structure as high as 4 feet would be needed to meet the baseline elevation of 7 feet NAVD 88.
- The 7-foot NAVD 88 baseline alignment utilizes the existing ground elevations in the Project Area along the line of protection. Flood protection structures would only be constructed along the alignment within areas having existing ground elevations less than 7 feet NAVD 88. As a result, areas in the Project Area at or above 7 feet NAVD 88 would not require a flood protection structure if the 7-foot NAVD 88 alignment were constructed.
- The RBDM Project Team is considering the use of both berms (soft edges) and walls (hard edges) along the alignment. Berms are being considered in areas where more land is available; berms require a larger footprint to construct than do walls.
- Garrett Avery, RBDM Project Manager, provided an overview of the 7-foot NAVD 88 alignment options that are currently going through the screening process. The alignment options include a mix of walls (depicted in pink) and berms (depicted in green), as well as new tide gates and pump stations. To facilitate the presentation of the alignment options, the Project Area was divided into six zones along the line of protection.
 1. **Zone 1** – This zone occurs at the far northeast portion of the Project Area. Three options are currently under consideration in this zone. They all include the use of existing ground



- elevations to minimize costs. The first option would include a tie-in west of the Bergen Turnpike, and would require road regrading or deployables. Option 2 would not require any road crossings, road regrading, or deployables, but would extend north outside of the current Project Area into Hackensack. Option 3 is similar to Option 2, but extends slightly further north outside of the Project Area and would allow the alignment to tie into the existing Hackensack Riverwalk.
2. **Zone 2** – This zone occurs immediately south of Zone 1. Two interior alignment options are currently under consideration within this zone, as well as a tide gate. Option 1 includes a tie-in at 7-foot NAVD 88 near Indian Lake that would require road regrading and deployables. Option 2 includes a tie-in at 7-foot NAVD 88 east of Bergen Turnpike that would also require road regrading and deployables.
 3. **Zone 3** – In this zone, the alignment would continue along the edge of the Hackensack River. It would tie into high ground and use berms where possible. Several closure gates would be needed to ensure the existing river access is preserved, and a closed line of protection is provided during storm events.
 4. **Zone 4** – This zone includes the use of both berms and walls, with berms proposed in areas with sufficient land available. To the extent feasible, the RBDM Project Team is exploring options to reinforce or replace existing berms in this zone to minimize wetland impacts. This zone would also include a new surge gate to protect existing outfalls at the water treatment plant.
 5. **Zone 5** – This zone occurs in the southeast portion of the Project Area near the wetland mitigation banks. Three options are under consideration in this zone. Option 1 includes a tie-in at 7-foot NAVD 88 near the north side of Commerce Boulevard that would require road regrading and closure gates. Option 2 includes a tie-in on the south side of Commerce Boulevard and would not require regrading or street closures, but could have impacts to wetlands. Finally, Option 3 includes a tie-in to the 7-foot NAVD 88, and includes the reuse or replacement of an existing berm to limit wetland disturbance.
 6. **Zone 6** – Three options are under consideration in this zone. Option 1 includes a surge barrier on Berry's Creek at Paterson Plank Road that would protect approximately 50 percent of the Project Area, along with a new pump station, some closure gates, regrading, and minor flood wall construction. The feasibility of this option is being investigated. The storm surge barrier would only be closed when a storm surge occurs; it would remain open at all other times. Option 2 is an interior alignment along the east bank of Berry's Creek that includes new tide gates, connections to existing tide gates, and new pump stations. Finally, Option 3 includes interior connections that tie into high ground, along with new tide gates and pump stations.



- Susan Bemis, AECOM Senior Planner, then presented a summary of Design Elements and application of the “Kit of Parts.” The “Kit of Parts” includes several modular casts (i.e., 30-foot units). The use of modular casts minimizes both construction and installation costs. Ms. Bemis presented an example of how to develop a line of protection using a modular system. Each modular unit would be cast at an off-site facility, transported to the Project Area, and installed on-site.
- In addition to cost savings, an additional benefit to the modular system is the flexibility in interchanging each unit. For example, it allows you to develop an optimal layout for where to place key modules (e.g., benches, planting areas, basic walls) and target them appropriately based on existing land uses (i.e., commercial, residential, and industrial zones). In a commercial zone, planters and benches may be optimal in gathering places instead of a wall or berm. In a residential zone, options could include the use of modular benches, planters, and basic walls; walkways and planted berms; or a cantilever walkway. Finally, in an industrial zone, options may include the use of sheet pile walls in areas where smaller footprints are required, or basic berms in areas where larger footprints would be possible.
- The RBDM Project Team is currently developing the modular system, and is exploring several system designs that include linear, geometric, and sculptural concepts with the goal of identifying the most optimal and cost-efficient design.
- Chris Benosky provided an overview of the next steps. The next CAG meeting will be on **January 31, 2017**. CAG members were encouraged to continue to build interest in the Proposed Project and to visit the Proposed Project website at www.rbd.meadowlands.nj.gov or email questions to rbd-meadowlands@dep.nj.gov for more information. Before opening the meeting up for questions, Mr. Benosky informed the CAG that the RBDM Project Team is offering an interactive Google Earth opportunity following the meeting to allow CAG members to zoom into the conceptual alignment presented during the meeting. Following the completion of the presentation, the following questions were posed by the CAG:
 1. Are the berms going to be earthen berms?

Response: The berms are going to be mainly earthen, but would be constructed with an impervious core and suitable geotechnical foundation, so that they would not be washed out or undermined during storm events.
 2. Given sea level will continue to rise, will the Proposed Project design be able to be expanded, so that we can build upon the initial footprint?

Response: This will be taken into consideration, and determined through the Feasibility Study and cost-benefit analysis.



3. The modules seem fairly replaceable. How will the maintenance of the modules and the line of protection be handled?

Response: The Proposed Project is required to have a long-term operations and maintenance (O&M) plan. A responsible entity would be identified in this plan. It is important to note that O&M is part of the screening process and identification of viable alternatives. A goal is to minimize the long-term O&M requirements of the Proposed Project.

4. How would the surge barrier on Berry's Creek at Paterson Plank Road operate under the Zone 6, Option 1?

Response: This option would protect approximately 50 percent of the Project Area. The surge barrier would only be closed during storm events; it would most likely be operated automatically (not manually). This would reduce the chance for human error; however, should it fail, a large portion of the Project Area would be susceptible to flooding during a large storm event.

5. In reference to the Zone 1, Option 3 that connects to the Riverwalk, is this area already protected?

Response: Yes, the Riverwalk is at 7 feet NAVD 88. For example, the homeless shelter and jail to the north are already protected. With Option 1, a road closure would be needed, which is not ideal for evacuation purposes. Although Option 2 is located outside the Project Area, only a small number of modular units would be needed and no road closures would be required. With Option 3, the addition of a few more modular units would allow tie-in to the Riverwalk area.

6. What is the potential for subsidence, and how quickly is it occurring in the Project Area?

Response: The RBDM Project Team is currently collecting geotechnical data within the Project Area. Once the geotechnical analysis is complete, the potential for (and rate of) subsidence in the Project Area will be better understood and incorporated into the design of the proposed line of protection.

7. In reference to Zone 1, are there already berms in the discontinuous areas?

Response: The 7-foot elevation alignment would result in a discontinuous flood control structure in this area because it would be tied to existing high ground (7 feet NAVD 88). However, for example, an 8-foot NAVD 88 alignment would be continuous in this area.

8. What are modular systems made of?

Response: Modular systems are made of 30-foot sections of concrete. Casting is being considered as a way to increase both construction and installation cost efficiencies.



9. How would the modular systems be tied together?

Response: The systems would be held together by water-based sealant and would be stabilized by piles driven below the ground surface (or some other method) to ensure they would not be undermined during storm events.

10. Maintenance is a critical requirement. This needs to be addressed.

Response: Long-term O&M requirements are a large and critical component of this Proposed Project.

11. Where would the modular systems be manufactured?

Response: The modular systems would be manufactured in a local pre-cast facility. A specific facility has not been identified at this point, but it would be local to minimize transportation costs.

12. In reference to a cantilever walkway, how is this considered water access?

Response: While the walkway would not allow you the opportunity to get in the water, it would be approximately 1-4 feet high off of the water, and allow you to be near the water and have access for certain activities (e.g., fishing).

13. Condemnation and property acquisition can be costly and could take up the whole budget. Is the Team considering this?

Response: This issue is very much part of the overall screening process when identifying specific segments and alternatives. The RBDM Project Team is looking at ownership to find ways to minimize these costs to the extent possible.

14. At the last CAG meeting (#5), biological survey data were presented. Will the areas along the alignment presented tonight be assessed for biological resources?

Response: Yes. One of the challenges of not having proposed project footprints is that the biological survey data collection points have had to be more general to date. However, as the alternatives become more fine-tuned geographically in 2017, biological resource data collection will commensurately become more site-specific.

15. Will the New Jersey Sports and Exhibition Authority (NJSEA) take responsibility for long-term O&M?

Response: The NJSEA is involved in the CAG and is regularly updated on the Proposed Project as it becomes more refined. The RBDM Project Team meets with the NJSEA regularly through the Meadowlands Interagency Mitigation Advisory Committee (MIMAC) as well as the mayors, among other meetings. The NJSEA's potential role in the long-term O&M of the Proposed Project is still under development.



16. Are you looking into ways to make these features as natural looking as possible? We should consider the preservation of the Meadowlands' aesthetics, and seek to have the Proposed Project blend with the landscape as much as possible.

Response: Yes. Aesthetics are being taken into consideration to the extent possible, and are being analyzed as part of the NEPA process. However, aesthetics considerations need to be balanced with cost.

17. Have you considered corten steel for sheet pile?

Response: Several different options are currently being considered for sheet pile.

The meeting adjourned at 7 pm ET.

Attachment 1.

Power Point Slide Presentation (as delivered)

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CITIZEN ADVISORY GROUP (CAG) MEETING #6

ALTERNATIVE 1: STRUCTURAL FLOOD REDUCTION CONCEPT DEVELOPMENT

AGENDA

Linda Fisher, NJDEP

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- Welcome & Opening Remarks
- Project Status Update and Schedule
- Alternative 1: Structural Flood Reduction Concept Development
 - Flood Conditions
 - Flood Reduction Alignment Options
 - Developing the "Kit of Parts"



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- Developed working draft Concept Screening Criteria
- Completed and published to Project Website:
 - Meeting Minutes from CAG Meeting #5
 - November 2016 Newsletter
- Developing Alignment Options



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ALTERNATIVE 1:

STRUCTURAL FLOOD REDUCTION

CHRIS BENOSKY, AECOM



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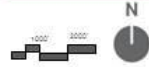
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EXISTING 100-YEAR FLOODPLAIN

5

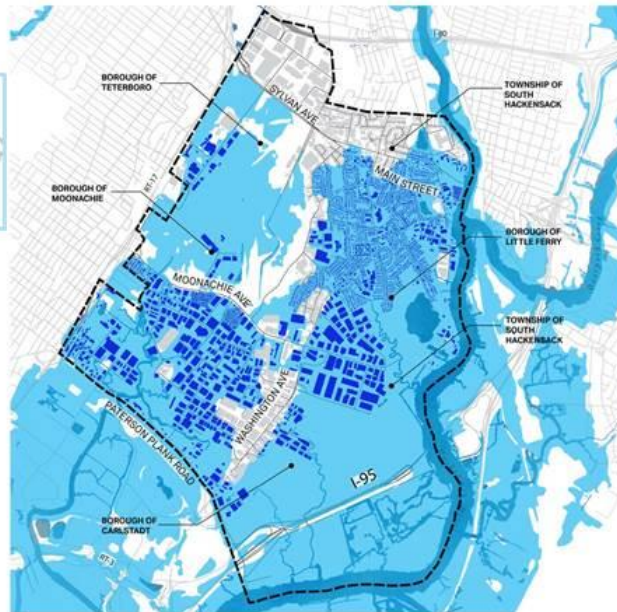
•NEARLY ALL THE PROJECT AREA IS WITHIN THE 100-YEAR FLOODPLAIN.

Location Key



Legend

- Municipality
- 100-Year Floodplain
- Properties Within 100-Year Floodplain
- Properties Not Within 100-Year Floodplain



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ESTIMATED SEA LEVEL CHANGE IN ~35 YEARS SEA LEVEL RISE BY 2050

6

•SEA LEVEL IS ESTIMATED TO RISE BETWEEN 0.5 – 1.1 FEET

Location Key



Legend

- Municipality
- Direction of Water
- Water
- 0' Sea Level Rise
- 1' Sea Level Rise
- 2' Sea Level Rise
- 3' Sea Level Rise
- 4' Sea Level Rise
- 5' Sea Level Rise
- 6' Sea Level Rise



Data Sources: NOAA Int-High, NOAA Int-Low/USACE Intermediate (Modified NRC Curve II, Sea Level Rise (SLR) Inundation Data, NOAA Coastal Services Center (2015)



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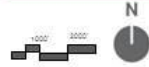
ESTIMATED SEA LEVEL CHANGE IN ~60 YEARS

SEA LEVEL RISE BY 2075

7

• SEA LEVEL IS ESTIMATED TO RISE BETWEEN 1.2 – 2.4 FEET

Location Key



Legend

- Municipality
- Direction of Water
- Water
- 0' Sea Level Rise
- 1' Sea Level Rise
- 2' Sea Level Rise
- 3' Sea Level Rise
- 4' Sea Level Rise
- 5' Sea Level Rise
- 6' Sea Level Rise

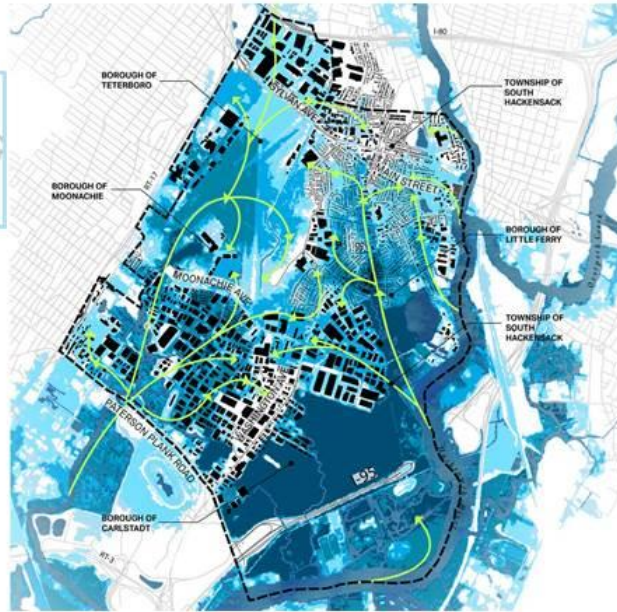
Data Sources: NOAA Int-High, NOAA Int-Low/USACE Intermediate (Modified NRC Curve II, Sea Level Rise (SLR) Inundation Data, NOAA Coastal Services Center (2015)



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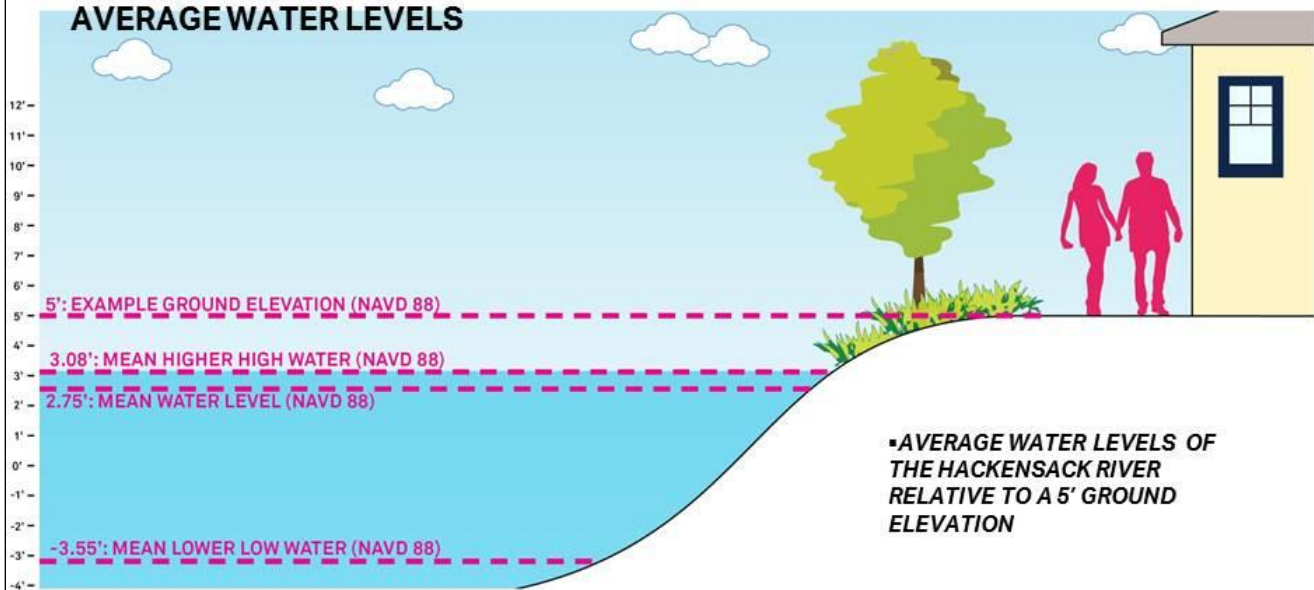
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HACKENSACK RIVER EXISTING CONDITIONS

8

AVERAGE WATER LEVELS



• AVERAGE WATER LEVELS OF THE HACKENSACK RIVER RELATIVE TO A 5' GROUND ELEVATION



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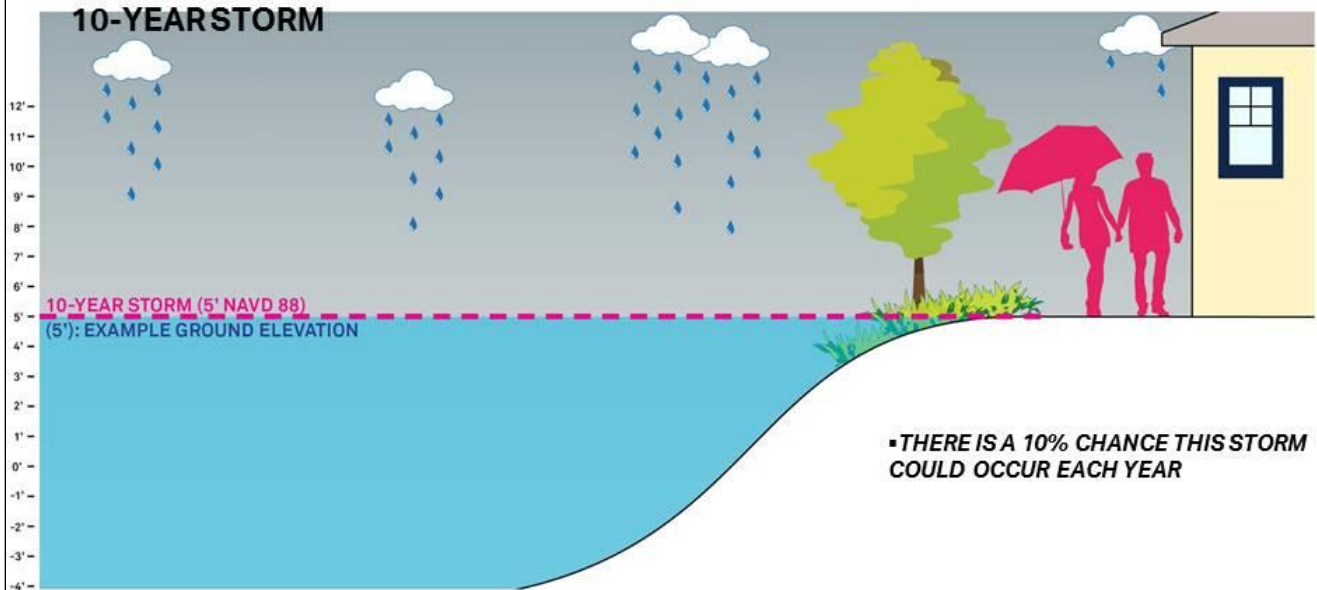
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HACKENSACK RIVER STORM ELEVATIONS

9

10-YEAR STORM



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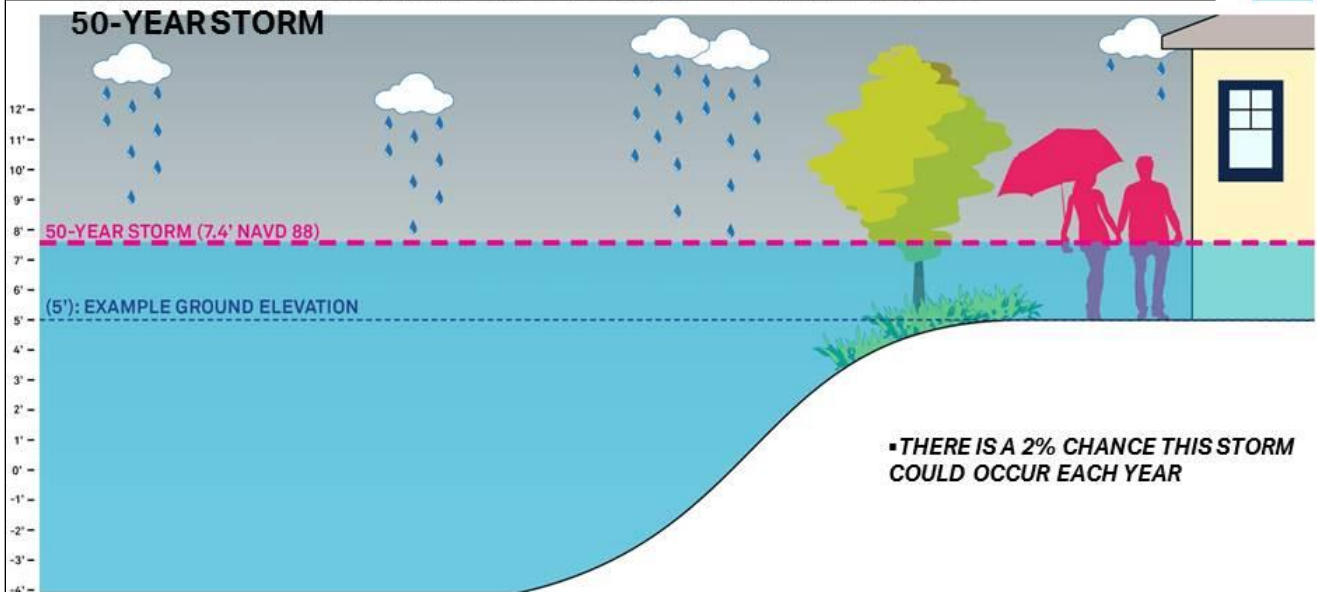
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HACKENSACK RIVER STORM ELEVATIONS

10

50-YEAR STORM



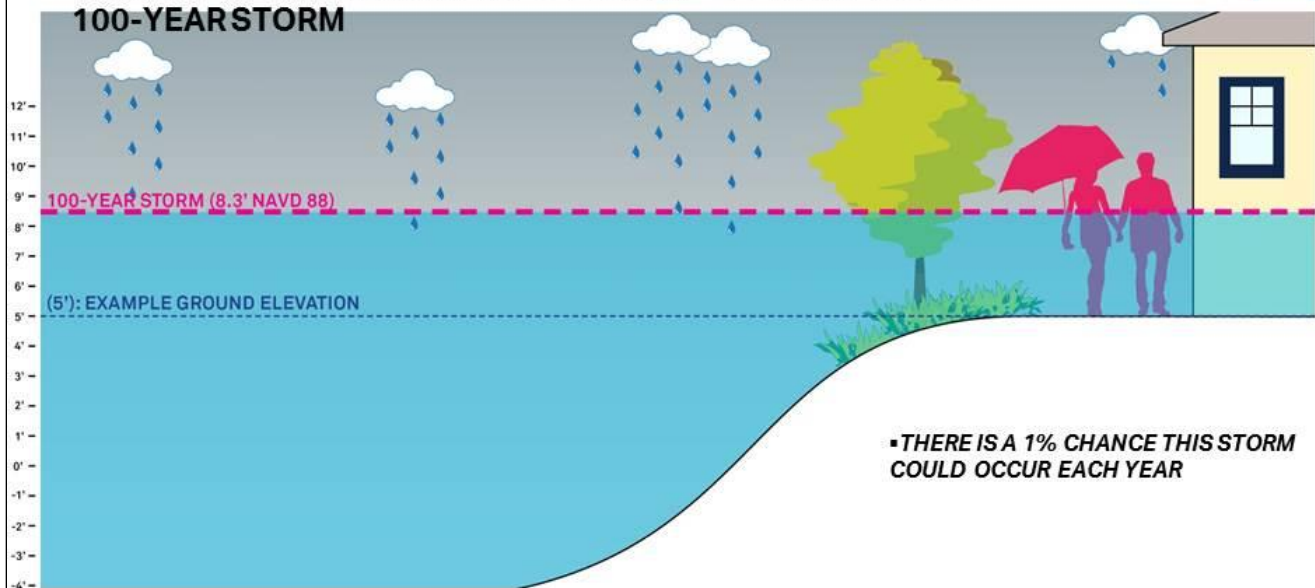
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HACKENSACK RIVER STORM ELEVATIONS

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DEVELOPING THE ALIGNMENT STARTING AT A 7' ELEVATION

Chris Benosky, AECOM

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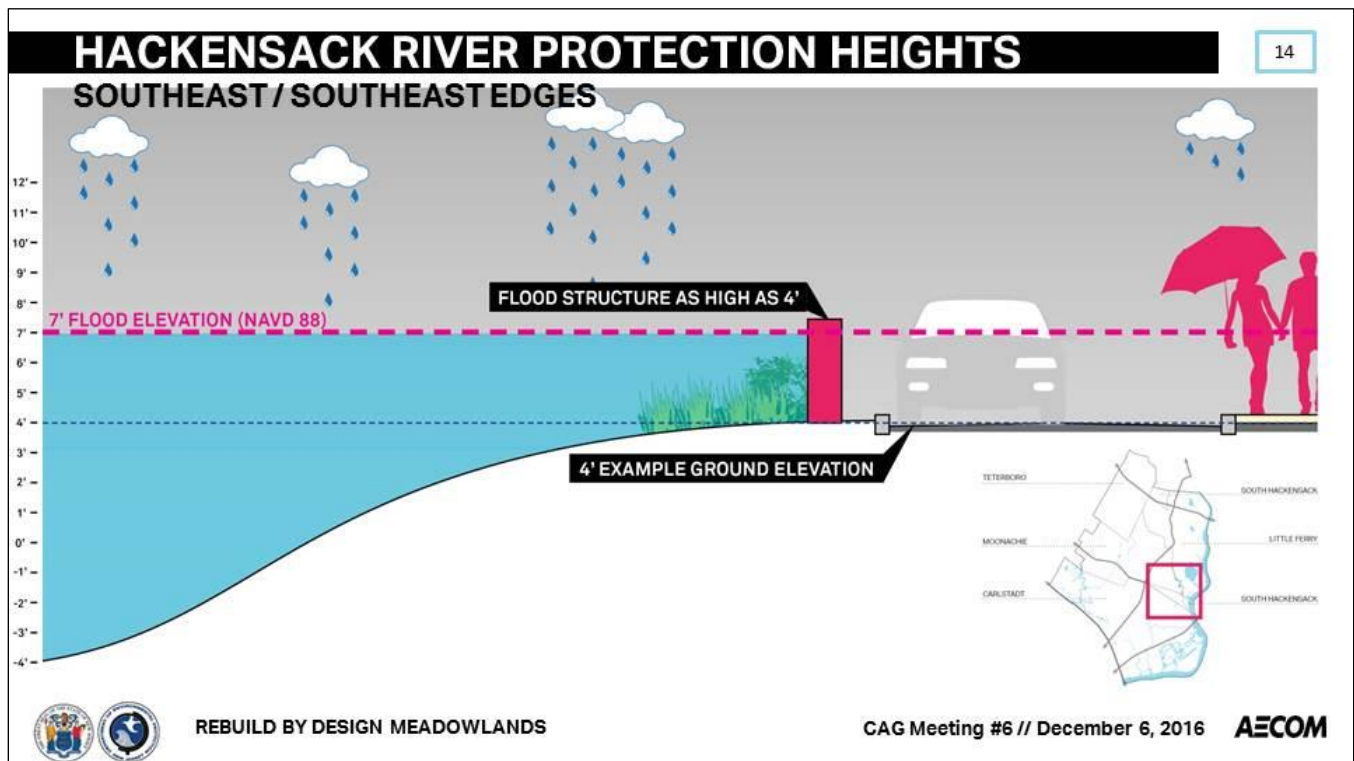
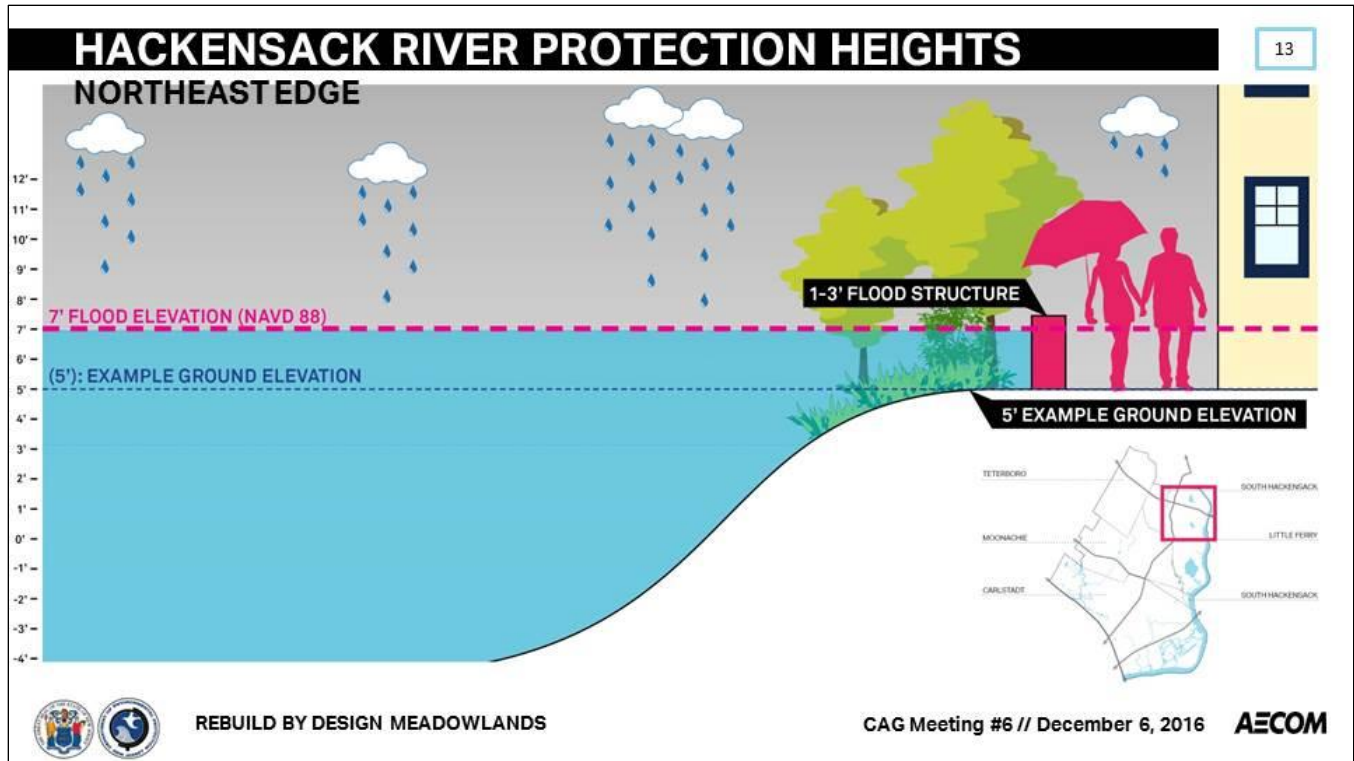
- 7' NAVD88 is approximately 8' NGVD29
- Using the 7' elevation as a study baseline
- 7' elevation maintains existing level of protection with Sea Level Rise through 2050
- Other elevation heights are being considered and will be included as costs and feasibility inputs are identified
- Currently investigating tie-in options and footprint locations



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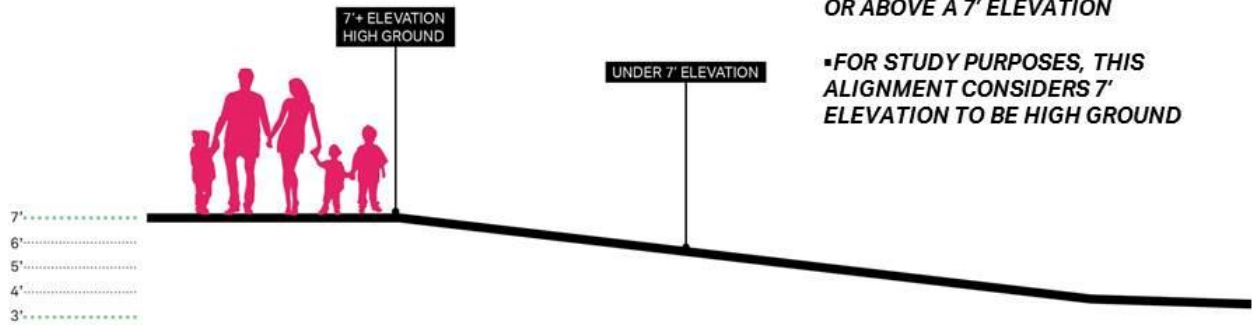
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CONNECTING HIGH GROUND 7' ELEVATION - FILLING IN THE GAPS

15



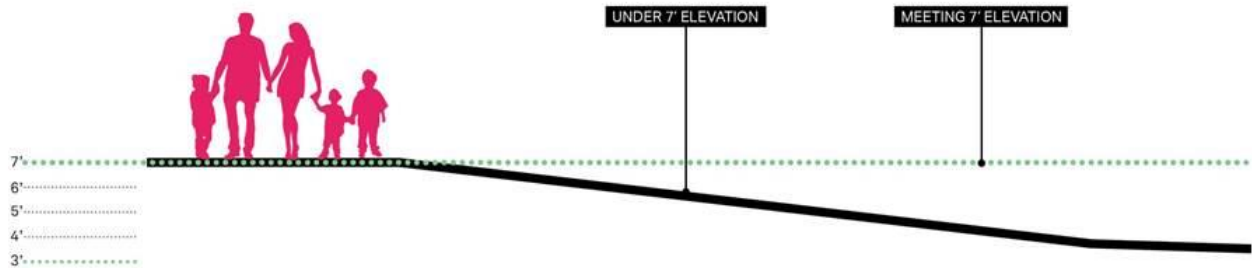
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CONNECTING HIGH GROUND 7' ELEVATION - FILLING IN THE GAPS

16



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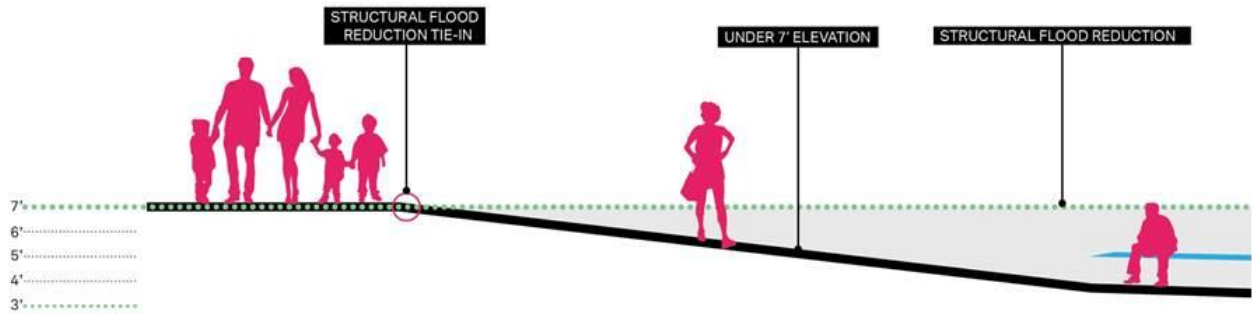
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CONNECTING HIGH GROUND HOW TIE-INS WORK

17

- **STRUCTURAL FLOOD REDUCTION CONNECTS EXISTING HIGH GROUND (7' ELEVATION)**



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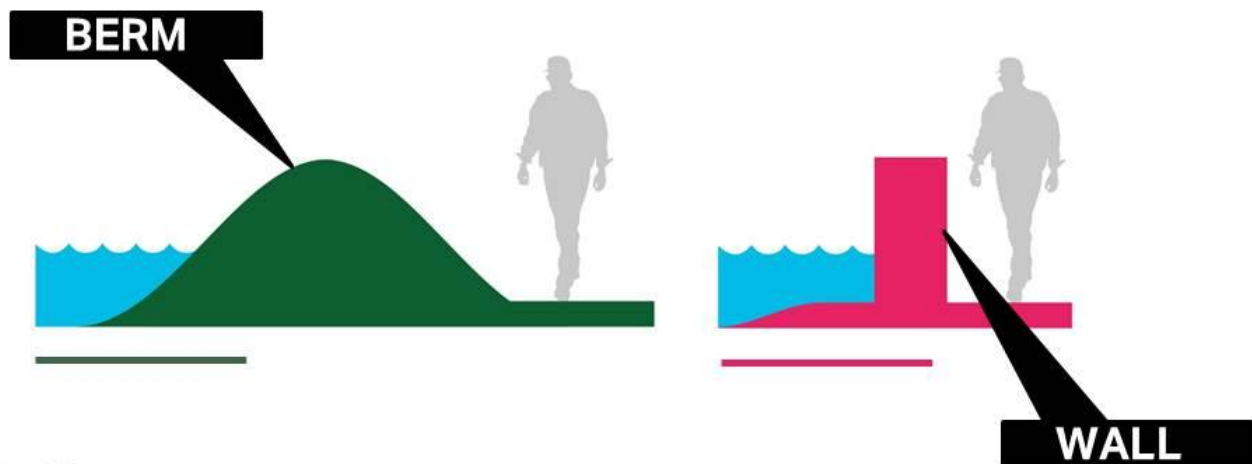
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PRIMARY FLOOD REDUCTION TYPES HARD & SOFT EDGES

18

- **THE COLORS ON THE FOLLOWING ALIGNMENT MAPS REPRESENT POTENTIAL LOCATION OF WALLS AND BERMS**



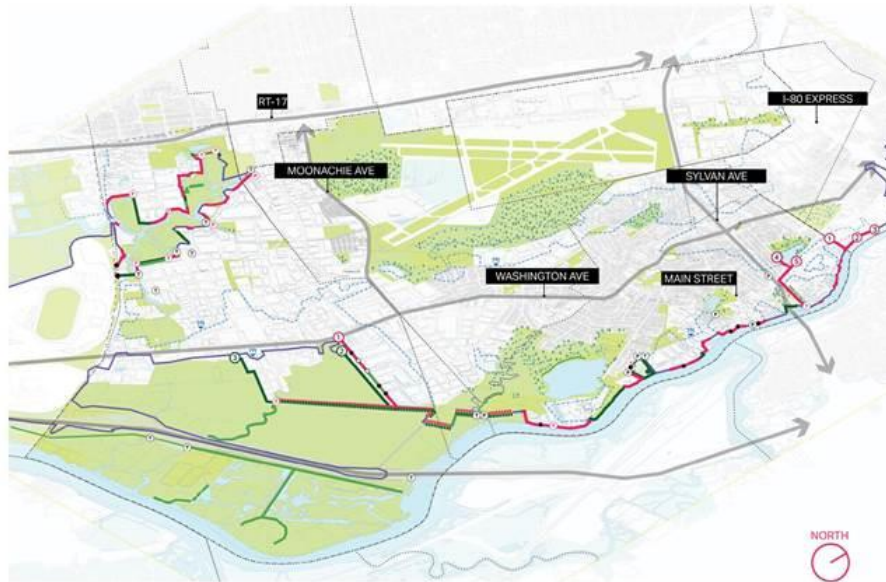
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7' ELEVATION ALIGNMENT OVERVIEW

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- OVERVIEW OF ALL ALIGNMENT OPTIONS AT 7' ELEVATION
- SCREENING OF OPTIONS IS ONGOING
- INTERACTIVE MAPS AVAILABLE POST-MEETING



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PRELIMINARY

FLOOD REDUCTION ALIGNMENT OPTIONS

GARRETT AVERY, AECOM



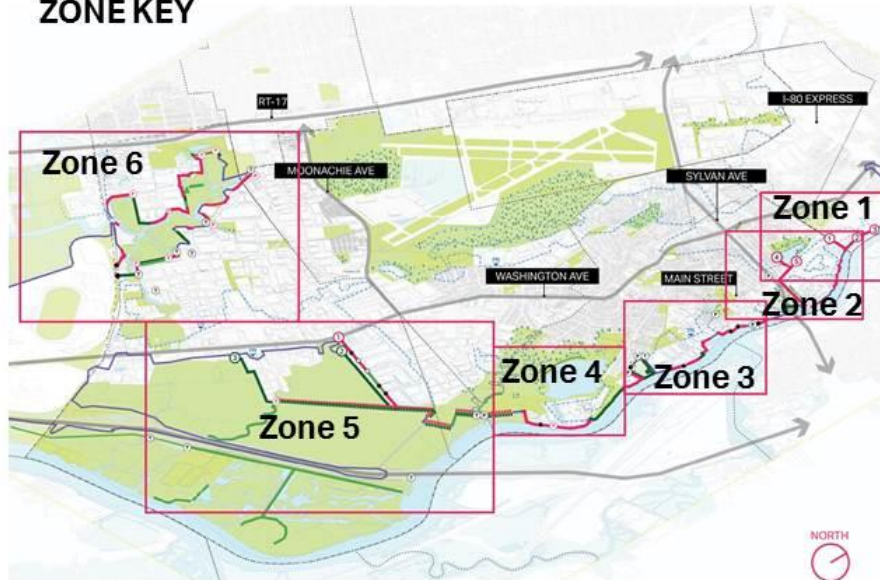
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ALIGNMENT OVERVIEW ZONE KEY

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- SIX AREAS WITH SEVERAL OPTIONS
- MIX OF WALLS AND BERMS PROVIDE FLOOD PROTECTION
- NEW TIDAL GATES AND PUMP STATIONS



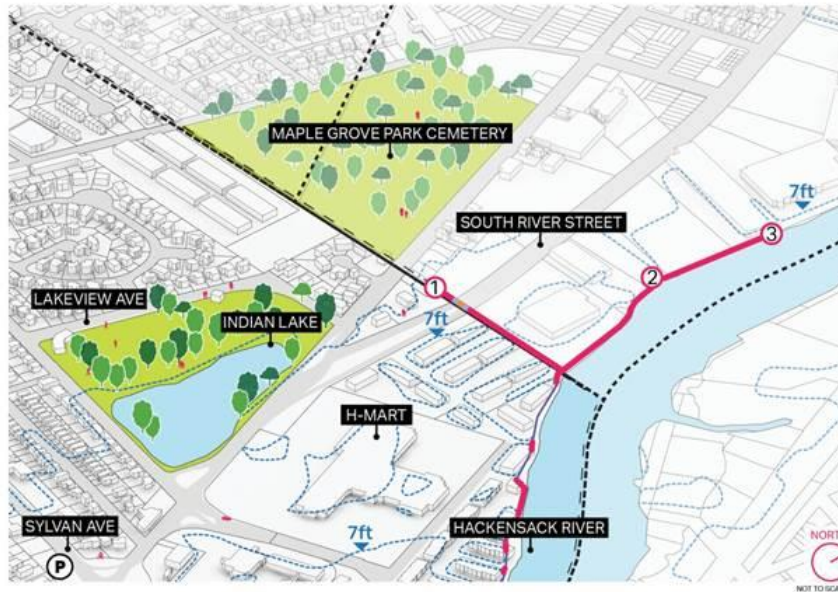
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ALIGNMENT OPTION – ZONE 1

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- OPTION 1: TIE-IN WEST OF BERGEN TNP. ROAD REGRADING OR A DEPLOYABLE WOULD BE REQUIRED.
- OPTION 2: TIE-IN NORTH OF PROJECT AREA. NO ROAD CROSSINGS OR REGRADING NEEDED.
- OPTION 3: TIE INTO HACKENSACK RIVERWALK NORTH OF PROJECT AREA. NO ROAD-CROSSING REQUIRED.



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ALIGNMENT OPTION – ZONE 2

23



- **OPTION 4: INTERIOR ALIGNMENT, TIE-IN AT 7' CONTOUR AT INDIAN LAKE. WOULD REQUIRE ROAD REGRADING AND DEPLOYABLES.**
- **OPTION 5: INTERIOR ALIGNMENT, TIE-IN AT 7' CONTOUR ON THE EAST SIDE OF BERGEN TNP. WOULD REQUIRE ROAD REGRADING AND DEPLOYABLES.**



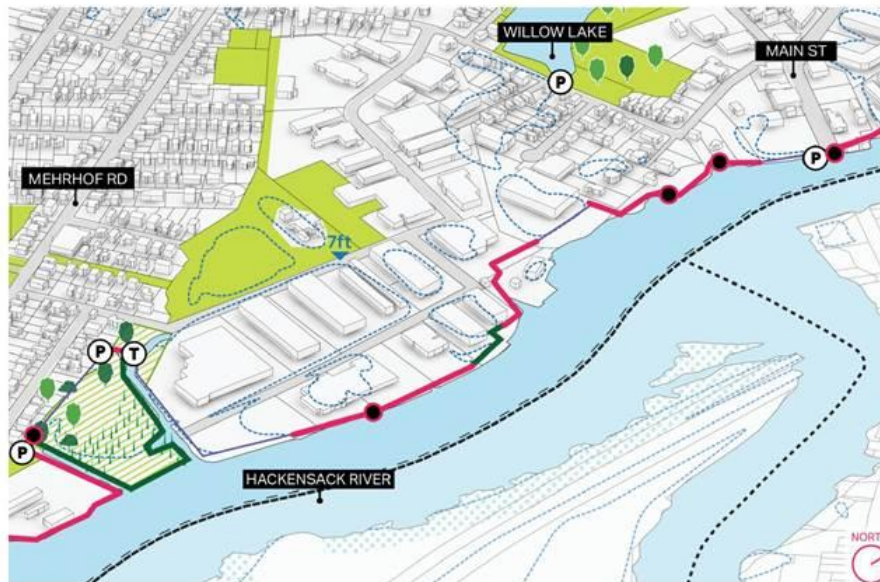
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ALIGNMENT OPTION – ZONE 3

24



- **ELEVATION 7' ALIGNMENT CONTINUES ALONG THE EDGE.**
- **TYING INTO TO HIGHGROUND AND USING BERMS WHERE POSSIBLE.**
- **EXISTING RIVER ACCESS PRESERVED BY CLOSURE GATES.**



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ALIGNMENT OPTION – ZONE 4

25



- ELEVATION 7' ALIGNMENT COMPOSED OF FLOODWALL OR BERM AS SPACE ALLOWS
- SURGE GATE TO PROTECT EXISTING TREATMENT PLANT OUTFALLS.
- REINFORCEMENT OR REPLACEMENT OF EXISTING BERMS BEING STUDIED. FLOODWALL AND BERM BEING CONSIDERED TO LIMIT POTENTIAL WETLAND DISTURBANCE.



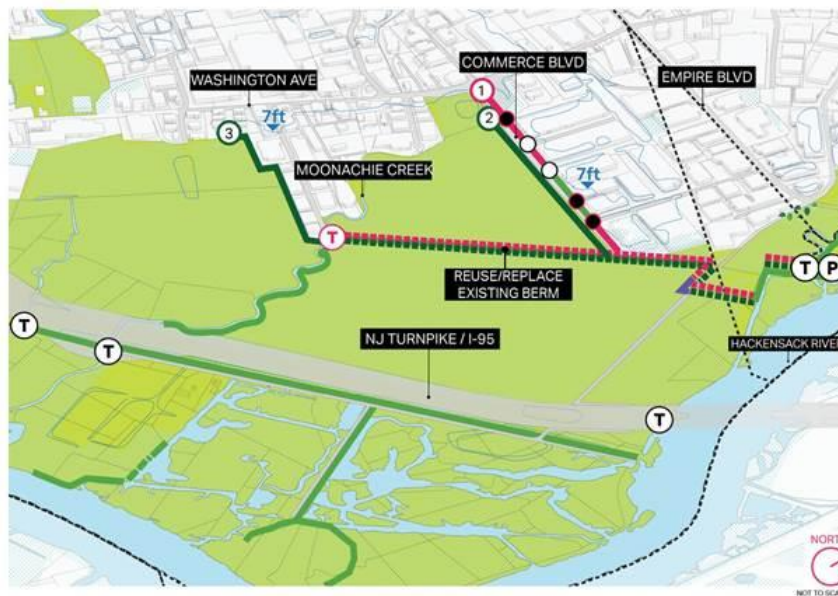
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ALIGNMENT OPTION – ZONE 5

26



- OPTION 1: TIE-OFF ON NORTH SIDE OF COMMERCE BLVD. WOULD REQUIRE ROAD REGRADING AND CLOSURE GATES (CROSSES ACCESS POINTS).
- OPTION 2: TIE-OFF ON SOUTHSIDE OF COMMERCE BLVD. COULD BE A BERM OR A WALL. NO REGRADING OR STREET CROSSINGS
- OPTION 3: TIE-OFF TO 7' CONTOUR. FOLLOWS PATH OF EXISTING BERM TO LIMIT POTENTIAL WETLAND DISTURBANCE.



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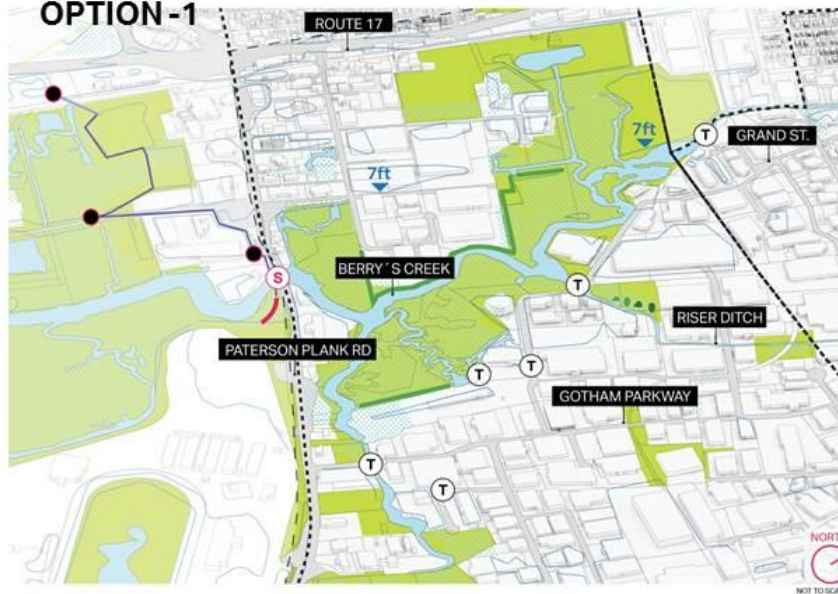
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ALIGNMENT OPTION – ZONE 6

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OPTION - 1



• SURGE BARRIER AT PATERSON PLANK ROAD (SOUTH OF THE BRIDGE) WOULD PROTECT OVER 50% OF THE PROJECT AREA.

• (3) CLOSURE GATES, REGRADING, AND MINOR WALL TO TIE-OFF.

• NEW PUMP STATION TO CONTROL WATER LEVEL IN BERRY'S CREEK DUE TO RAINFALL.



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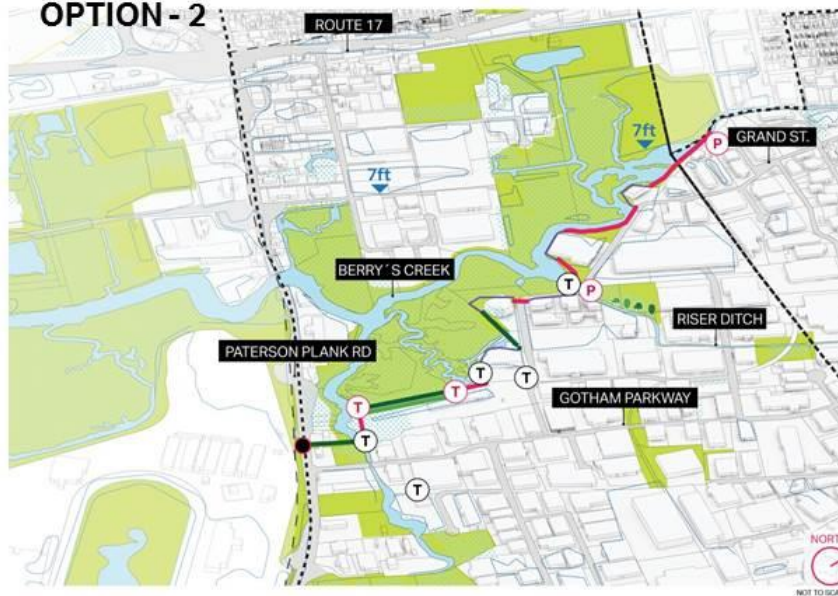
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ALIGNMENT OPTION – ZONE 6

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OPTION - 2



• INTERIOR ALIGNMENT ALONG THE EAST BANK OF BERRY'S CREEK.

• CONNECTS EXISTING TIDE GATES AND SURROUNDING POINTS AT 7' GROUND ELEVATION.

• WOULD REQUIRE ADDITIONAL TIDE GATES AND NEW PUMP STATION.



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ALIGNMENT OPTION – ZONE 6

29

OPTION - 3



• INTERIOR CONNECTIONS TYING OFF TO 7' CONTOURS.



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CAG Meeting #6 // December 6, 2016

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DESIGN ELEMENTS

APPLYING THE "KIT OF PARTS"

SUSAN BEMIS, AECOM



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"KIT OF PARTS" – INITIAL IDEAS

31

BASIC FLOOD WALL



SHEET PILE



BERM + WALL



VINE PLANTING



BENCH



BERM + PATH



PLANTER



CANOPY



CANTILEVERED WALKWAY



ART



AMPHITHEATER



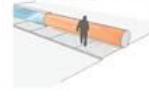
FLIP DEPLOYABLE



PANEL DEPLOYABLE



INFLATABLE DEPLOYABLE



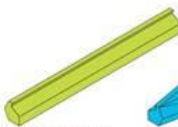
REBUILD BY DESIGN MEADOWLANDS

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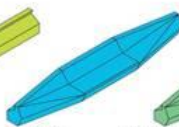
AECOM

MODULARIZING THE "KIT OF PARTS" WHAT GOES WHERE?

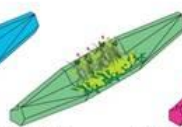
32



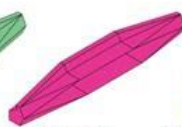
BASIC WALL



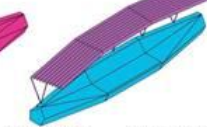
BENCH



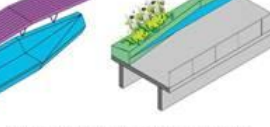
PLANTER



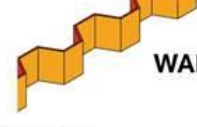
AMPHITHEATER



CANOPY



CANTILEVERED WALKWAY

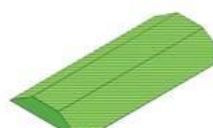


SHEET PILE

WALLS

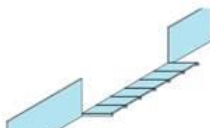


BERM + PATH



BASIC BERM

BERMS



FLIP DEPLOYABLE



INFLATABLE DEPLOYABLE



ROLLER DEPLOYABLE

DEPLOYABLES



REBUILD BY DESIGN MEADOWLANDS

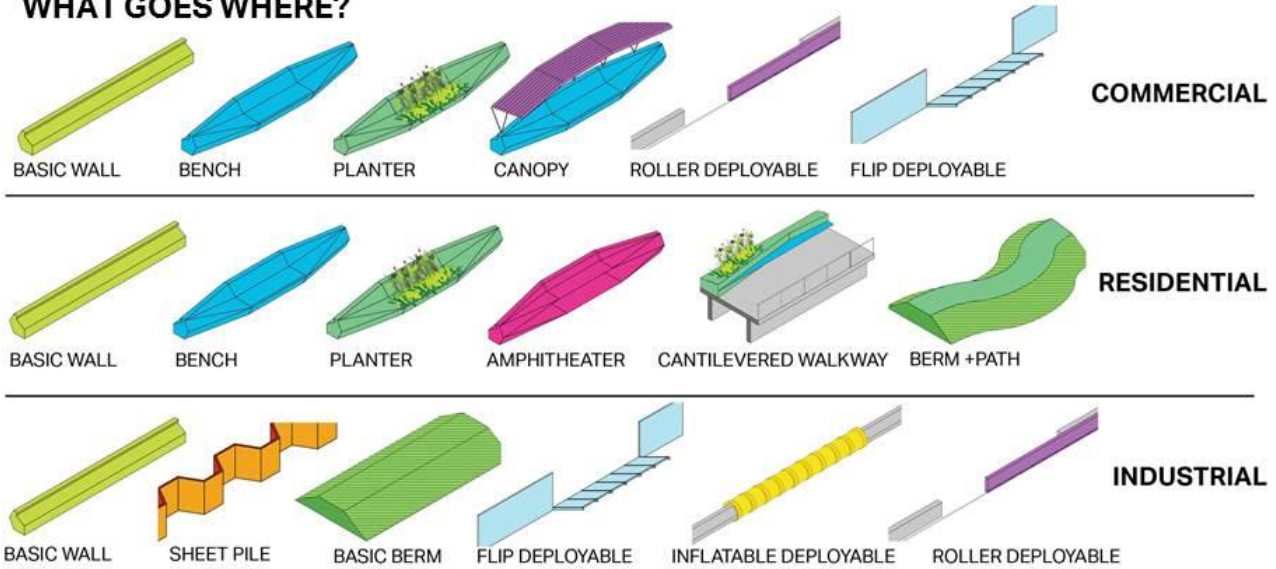
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MODULARIZING THE "KIT OF PARTS"

33

WHAT GOES WHERE?



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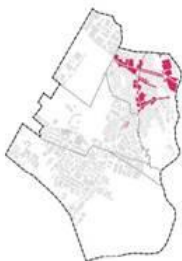
COMMERCIAL ZONE

34

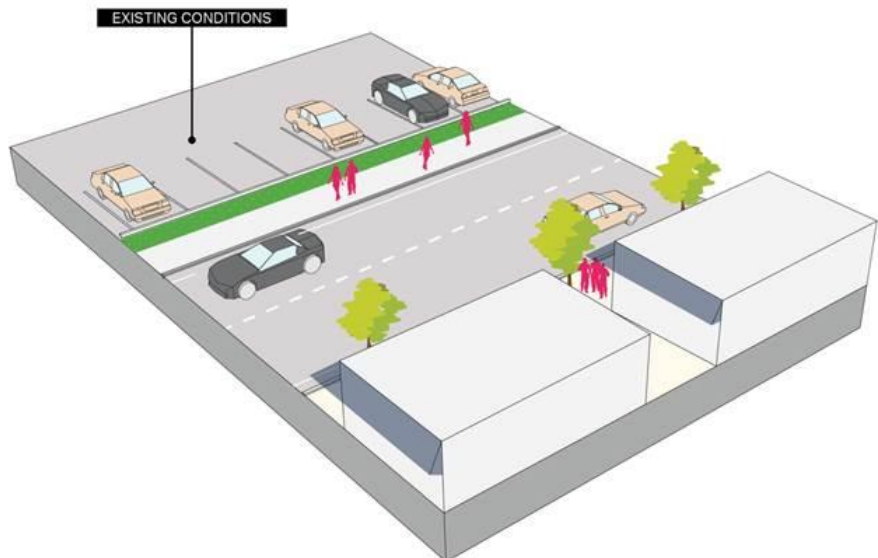
EXISTING CONDITIONS

▪ BUILDING THE LINE OF PROTECTION

▪ RESPONDING TO THE EXISTING COMMERCIAL ENVIRONMENT



COMMERCIAL ZONE



REBUILD BY DESIGN MEADOWLANDS

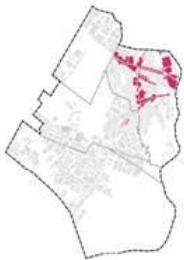
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AECOM

COMMERCIAL ZONE BUILDING THE PROTECTION

35

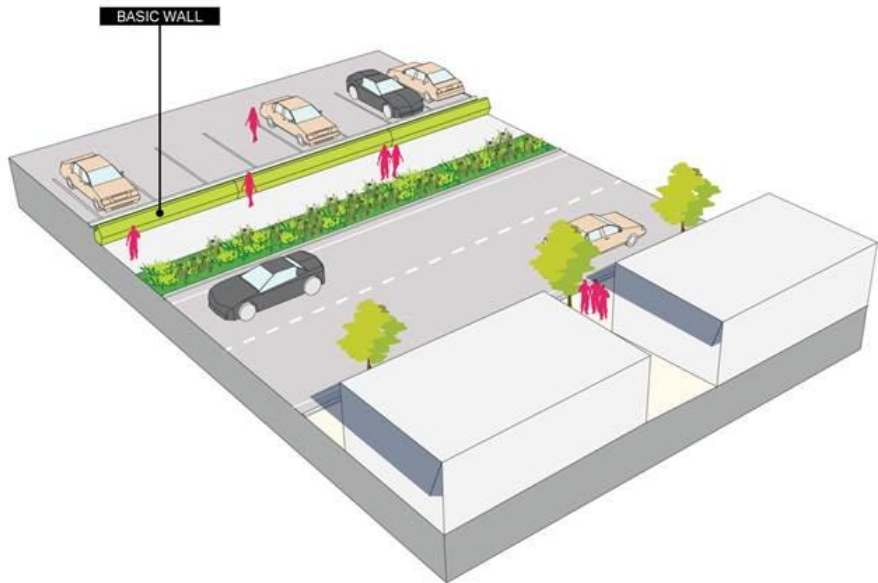
- **STARTING WITH THE BASIC WALL**
- **BUILDING THE SYSTEM WHERE APPROPRIATE**



COMMERCIAL ZONE



REBUILD BY DESIGN MEADOWLANDS



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COMMERCIAL ZONE BUILDING THE PROTECTION

36

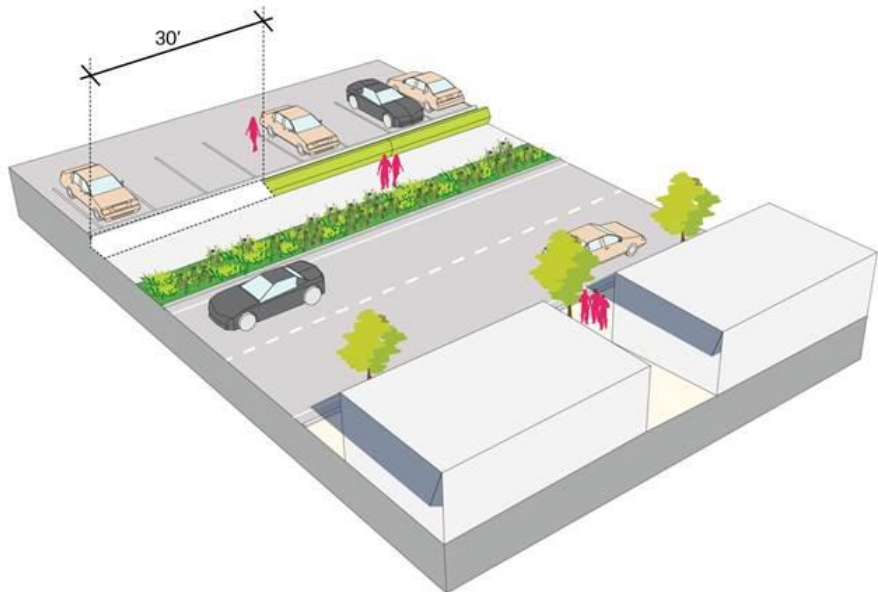
- **MODULAR SYSTEM WORKS IN 30' UNITS**
- **SYSTEM REDUCES COST AND TIME OF CONSTRUCTION**



COMMERCIAL ZONE



REBUILD BY DESIGN MEADOWLANDS



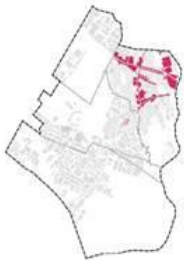
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AECOM

COMMERCIAL ZONE BUILDING THE PROTECTION

37

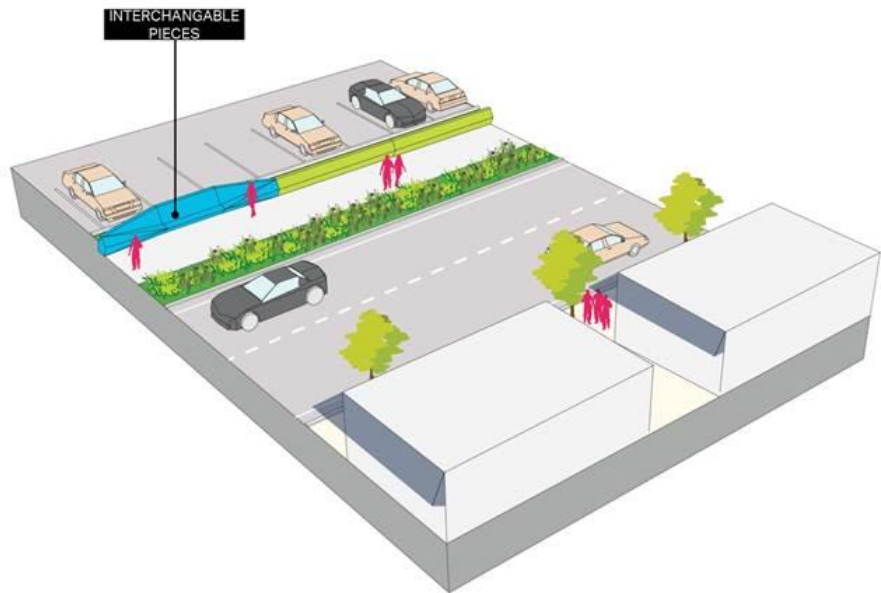
- **UNITS ARE INTERCHANGEABLE**



COMMERCIAL ZONE



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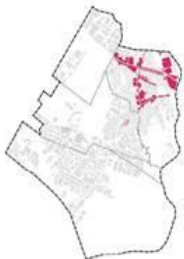
AECOM

COMMERCIAL ZONE MODULAR SYSTEM EXAMPLE

38

- **FLOOD PROTECTION + STREET AND PUBLIC BENEFITS**

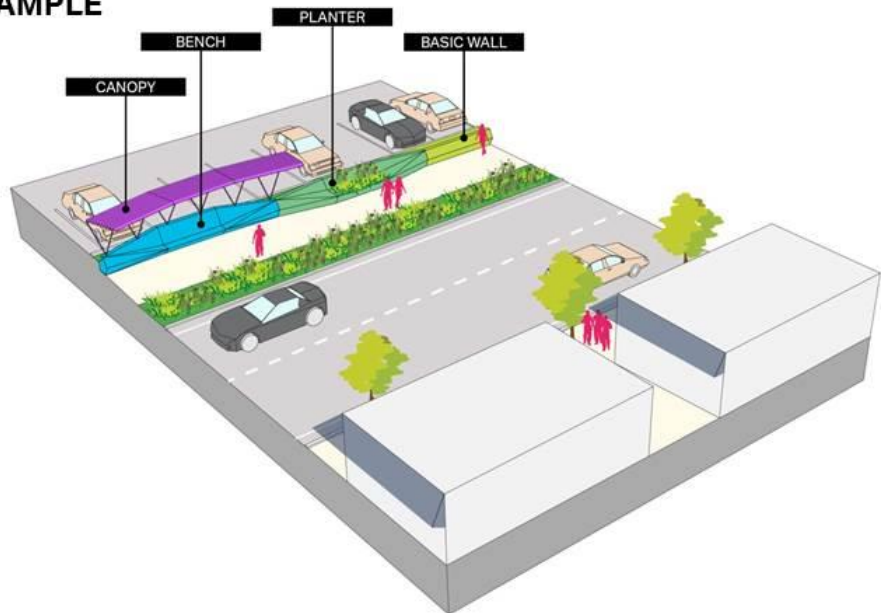
- **INTERIOR CONDITION**



COMMERCIAL ZONE



REBUILD BY DESIGN MEADOWLANDS



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RESIDENTIAL ZONE

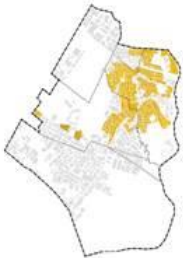
EXISTING CONDITIONS

39

▪ **RESPONDING TO THE RESIDENTIAL CONTEXT**

▪ **PROVIDE ACCESS AND VIEWS TO THE HACKENSACK RIVER**

▪ **POTENTIAL FOR RECREATION AND NEIGHBORHOOD CONNECTIONS**



RESIDENTIAL ZONE



REBUILD BY DESIGN MEADOWLANDS



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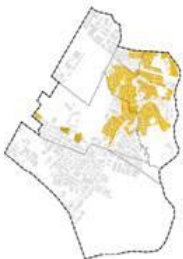
AECOM

RESIDENTIAL ZONE

MODULAR SYSTEM EXAMPLE

40

▪ **THE MODULAR SYSTEM PROVIDES PLACES TO SIT AND ENGAGE WITH THE HACKENSACK RIVER**

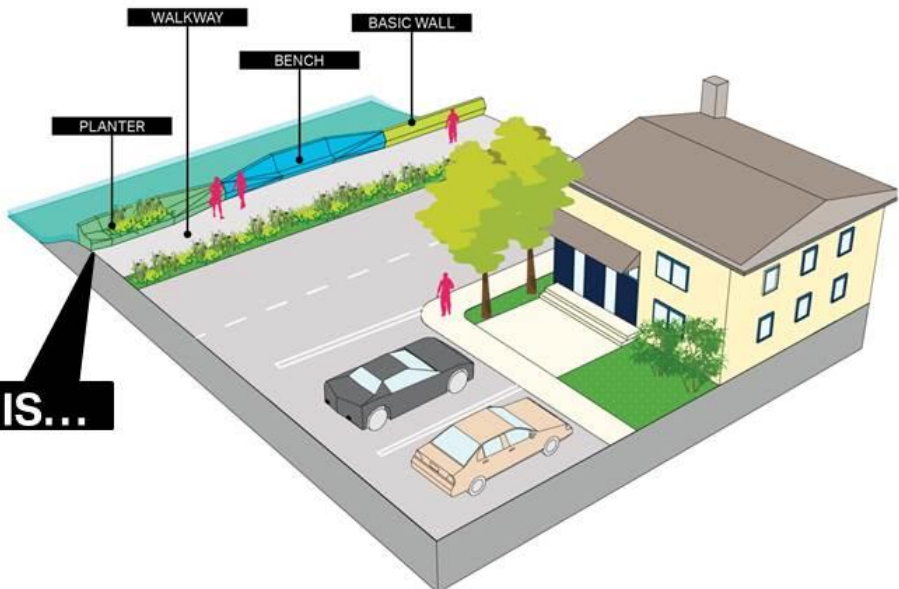


RESIDENTIAL ZONE



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THIS...



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RESIDENTIAL ZONE

BERM + WALKWAY EXAMPLE

41

- *IN AREAS THAT ALLOW FOR A GREATER FOOTPRINT, A SOFT BERM COULD BE INCORPORATED*



RESIDENTIAL ZONE



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OR THIS...



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RESIDENTIAL ZONE

CANTILEVERED WALKWAY EXAMPLE

42

- *CANTILEVERED WALKWAY IS STILL BEING CONSIDERED WHERE POSSIBLE*

- *PROVIDES RECREATION AND WATER ACCESS*

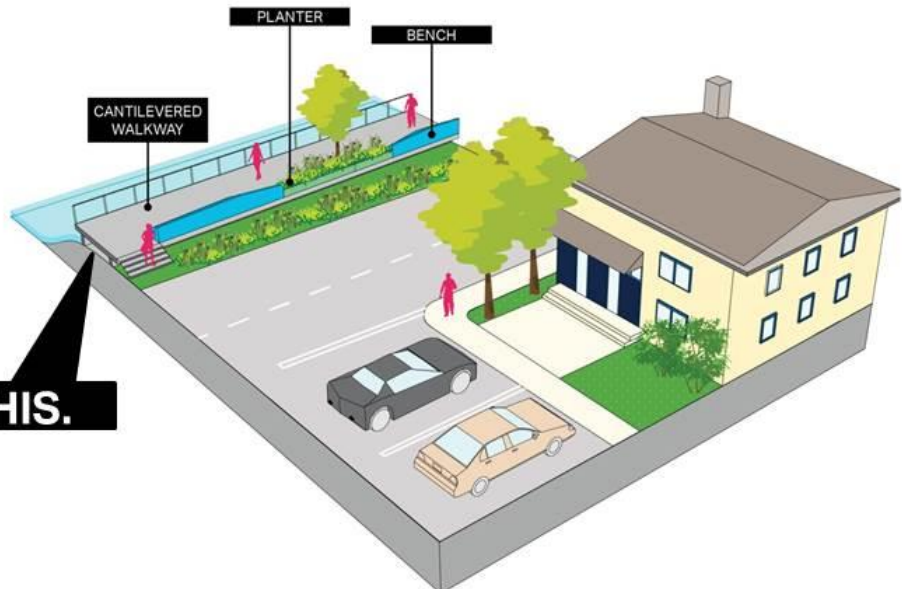


RESIDENTIAL ZONE



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OR THIS.



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INDUSTRIAL ZONE

EXISTING CONDITIONS

43

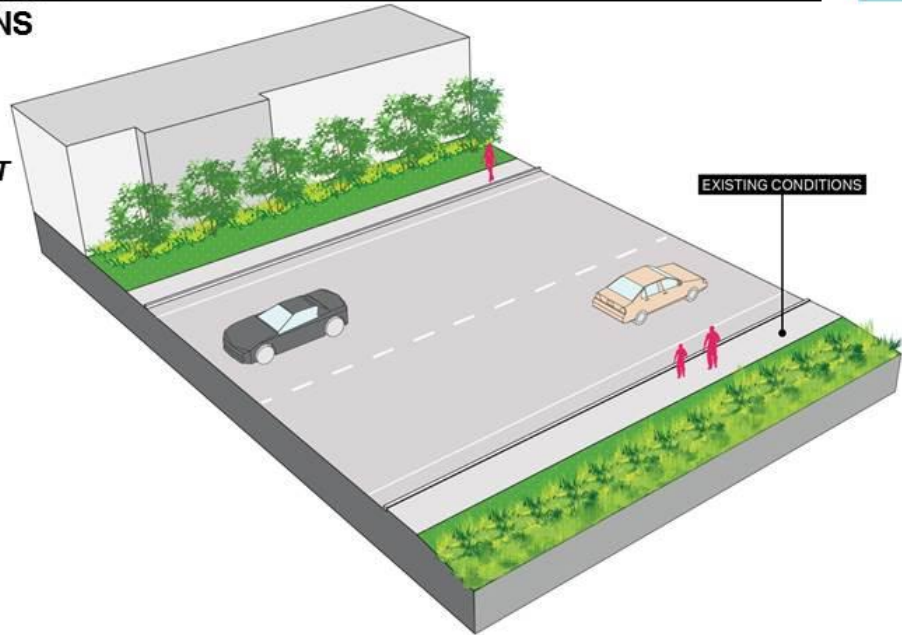
- **BLENDING INTO THE INDUSTRIAL ENVIRONMENT**
- **COST EFFICIENCY**



INDUSTRIAL ZONE



REBUILD BY DESIGN MEADOWLANDS



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INDUSTRIAL ZONE

MODULAR SYSTEM EXAMPLE

44

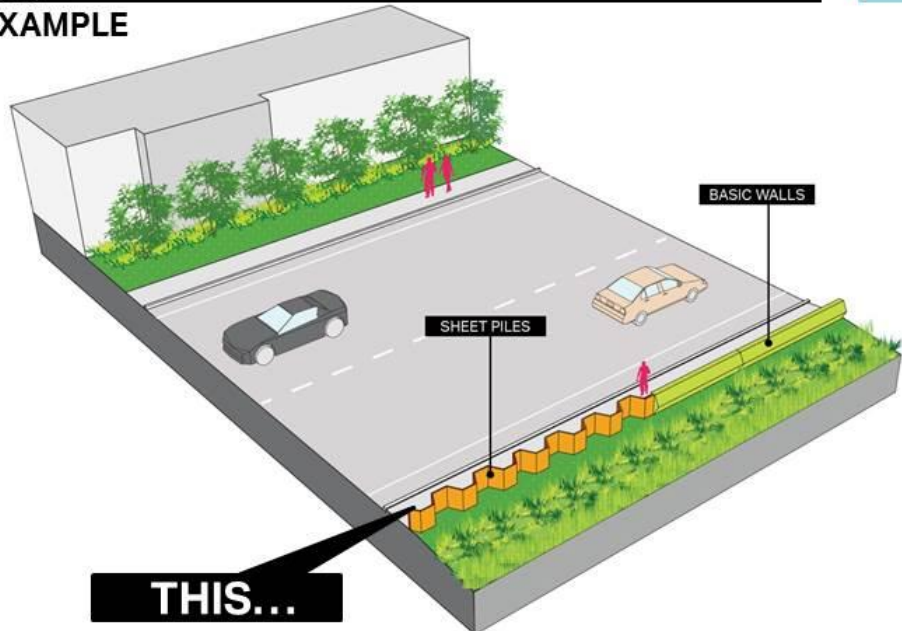
- **SHEET PILE AND BASIC WALLS FOR AREAS WITH SMALL FOOTPRINTS**



INDUSTRIAL ZONE



REBUILD BY DESIGN MEADOWLANDS



THIS...

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INDUSTRIAL ZONE

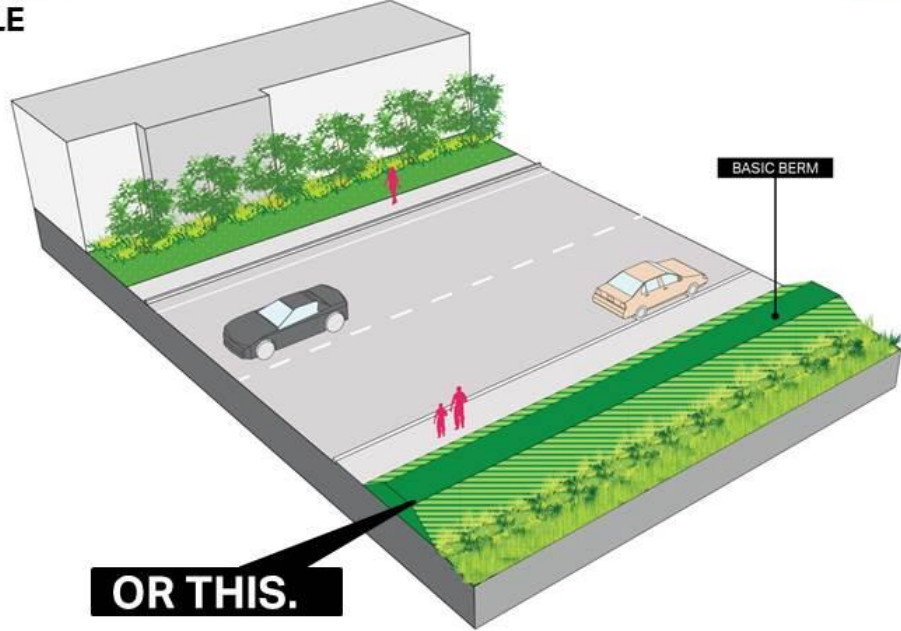
BASIC BERM EXAMPLE

45

- **BASIC BERM WHEN LARGER FOOTPRINT CAN BE ACCOMMODATED**



INDUSTRIAL ZONE



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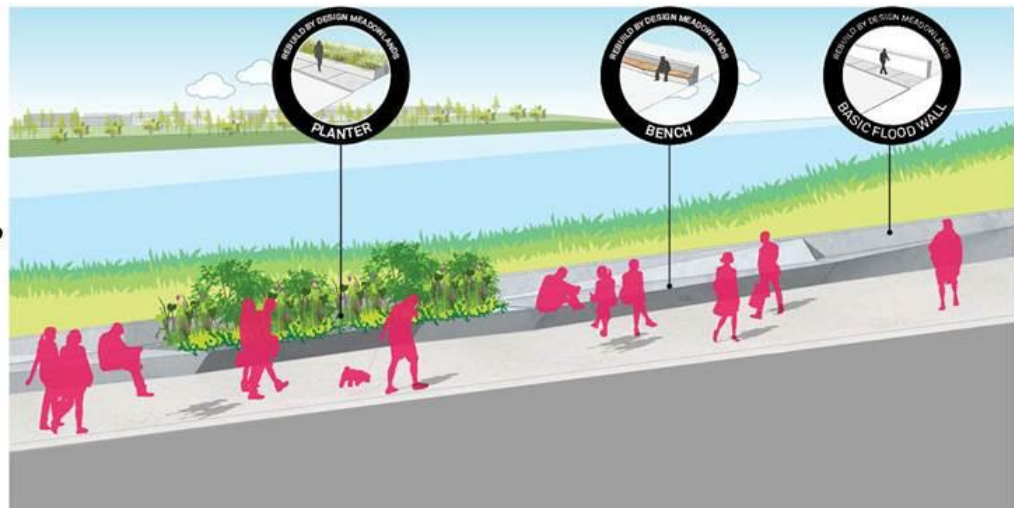
MODULAR COMPONENT DEVELOPMENT

INVESTIGATION: 1

46

- **THE DESIGN TEAM IS CURRENTLY DEVELOPING THE MODULAR SYSTEM BASED ON FEEDBACK FROM CAG #4 WORKSHOP**

- **THE FOLLOWING IMAGES REFLECT CURRENT SYSTEM DESIGN STUDIES**



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MODULAR COMPONENT DEVELOPMENT

INVESTIGATION:2

47



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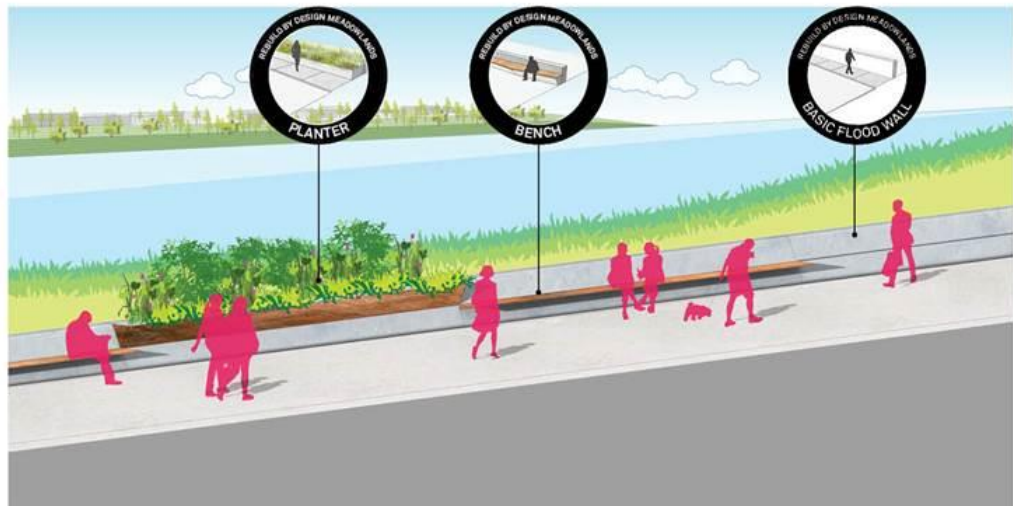
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MODULAR COMPONENT DEVELOPMENT

INVESTIGATION:3

48



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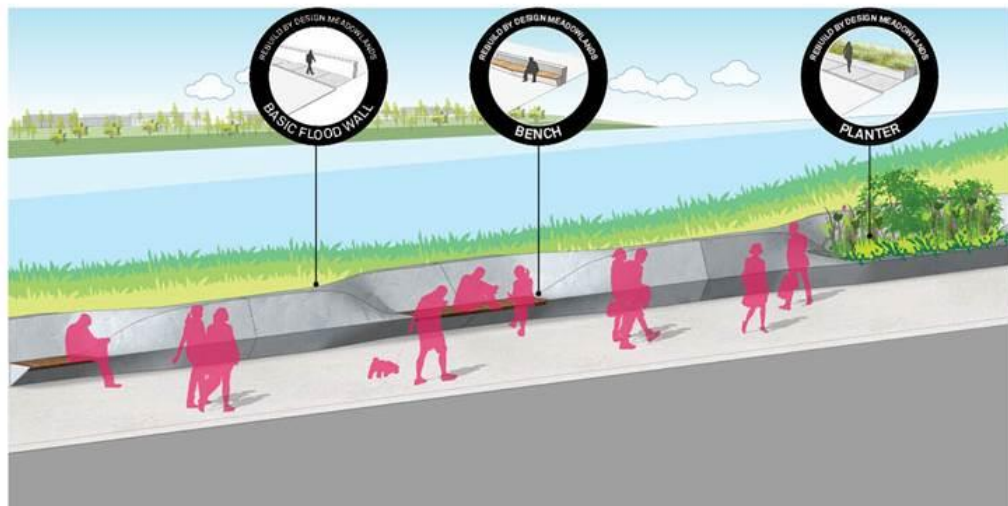
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MODULAR COMPONENT DEVELOPMENT

49

INVESTIGATION:4



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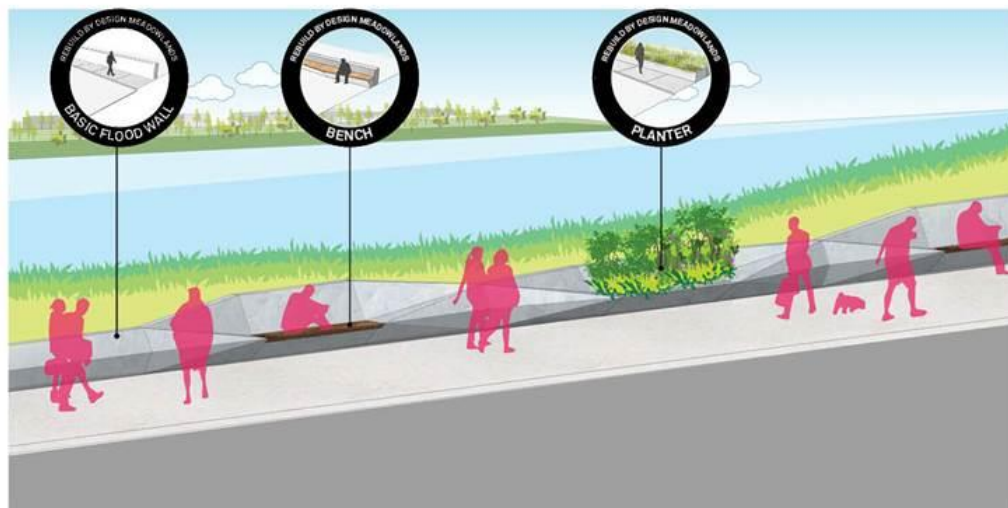
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MODULAR COMPONENT DEVELOPMENT

50

INVESTIGATION:5



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NEXT STEPS

CHRIS BENOSKY, AECOM



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NEXT STEPS

Chris Benosky, AECOM

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NJDEP / AECOM UPCOMING ACTIVITIES

- Prepare Meeting Summary for CAG #6
- Continue developing:
 - Concepts and Alternatives
- CAG #7 in January
 - Alternative 3 - Hybrid



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NEXT STEPS

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CAG: CALL TO ACTION

- Submit comments & worksheet from CAG #6 meeting on **December 16, 2016**
- Share information from this Meeting with friends and neighbors
- Continue to build interest in the Project
- Ensure the public knows about upcoming information (to be posted on Project website)



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NEXT STEPS

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Critical Information

January 31, 2017

CAG Meeting #7: Alternative 3 (Hybrid)

Project Website

www.rbd-meadowlands.nj.gov

Project Email

rbd-meadowlands@dep.nj.gov

Question & Answer



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THANK YOU!



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Attachment 2.

CAG Meeting Packet #6 (provided as handout at meeting)

REBUILD BY DESIGN MEADOWLANDS

CITIZEN ADVISORY GROUP (CAG) MEETING #6

**ALTERNATIVE 1: STRUCTURAL FLOOD
REDUCTION CONCEPT DEVELOPMENT**

December 6, 2016



PREPARED BY **AECOM**

Español 中文:繁體版 Việt-ngữ 한국어 Tagalog
Português العربية Kreyòl ગુજરાતી Italiano Polski
www.renewjerseystronger.org

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4.0 Concept Worksheets	32
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1.0 List of Acronyms

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

2.0 Agenda

Alternative 1: Structural Flood Reduction Concept Development

6-8 PM

December 6, 2016

Conference Room 90

Port Authority Conference Room

90 Moonachie Ave

Teterboro, NJ 07608

Project Website

www.rbd-meadowlands.nj.gov

Project email

rbd-meadowlands@dep.nj.gov

Welcome

Presentation

Opening Remarks (10 Minutes)

Agenda (Linda Fisher, NJDEP)

Project Status Update and Introduction to Alternative 1 (Chris Benosky, AECOM)

Alternative 1: Structural Flood Reduction Concept Development (40 Minutes)

Flood Conditions (Chris Benosky, AECOM)

Preliminary Flood Reduction Alignment Options (Garrett Avery, AECOM)

Design Elements- Applying the “Kit of Parts” (Susan Bemis, AECOM)

Next Steps & Q&A/Closure (30 Minutes)

Next Steps (Chris Benosky, AECOM)

Question and Answers

3.0 Power Point Presentation

REBUILD BY DESIGN MEADOWLANDS

CITIZEN ADVISORY GROUP (CAG) MEETING #6

ALTERNATIVE 1: STRUCTURAL FLOOD REDUCTION CONCEPT DEVELOPMENT

AGENDA

Linda Fisher, NJDEP

2

- Welcome & Opening Remarks
- Project Status Update and Schedule
- Alternative 1: Structural Flood Reduction Concept Development
 - Flood Conditions
 - Flood Reduction Alignment Options
 - Developing the "Kit of Parts"



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PROJECT STATUS UPDATE**Chris Benosky, AECOM**

3

- Developed working draft Concept Screening Criteria
- Completed and published to Project Website:
 - Meeting Minutes from CAG Meeting #5
 - November 2016 Newsletter
- Developing Alignment Options



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AECOM**ALTERNATIVE 1:****STRUCTURAL FLOOD REDUCTION****CHRIS BENOSKY, AECOM**

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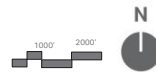
AECOM

EXISTING 100-YEAR FLOODPLAIN

5

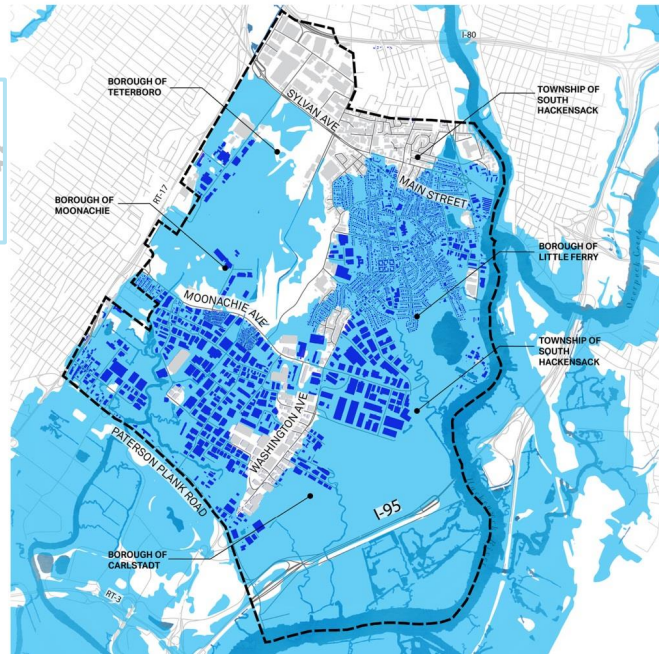
▪ **NEARLY ALL THE PROJECT AREA IS WITHIN THE 100-YEAR FLOODPLAIN.**

Location Key



Legend

- Municipality
- 100-Year Floodplain
- Properties Within 100-Year Floodplain
- Properties Not Within 100-Year Floodplain



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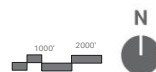
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ESTIMATED SEA LEVEL CHANGE IN ~35 YEARS SEA LEVEL RISE BY 2050

6

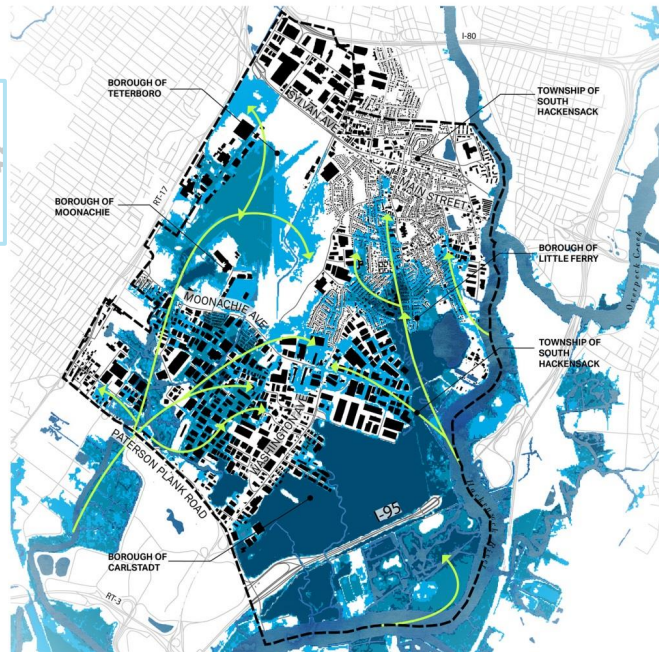
▪ **SEA LEVEL IS ESTIMATED TO RISE BETWEEN 0.5 – 1.1 FEET**

Location Key



Legend

- Municipality
- Direction of Water
- Water
- 0' Sea Level Rise
- 1' Sea Level Rise
- 2' Sea Level Rise
- 3' Sea Level Rise
- 4' Sea Level Rise
- 5' Sea Level Rise
- 6' Sea Level Rise



Data Sources: NOAA Int-High, NOAA Int-Low/USACE Intermediate (Modified NRC Curve II, Sea Level Rise (SLR) Inundation Data, NOAA Coastal Services Center (2015)



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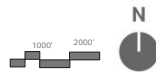
ESTIMATED SEA LEVEL CHANGE IN ~60 YEARS

7

SEA LEVEL RISE BY 2075

SEA LEVEL IS ESTIMATED TO RISE BETWEEN 1.2 – 2.4 FEET

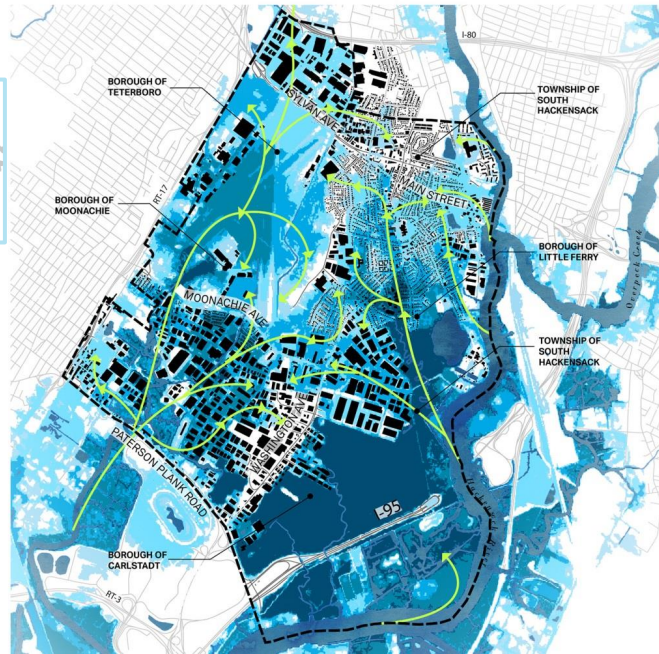
Location Key



Legend

- Municipality
- Direction of Water
- Water
- 0' Sea Level Rise
- 1' Sea Level Rise
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- 5' Sea Level Rise
- 6' Sea Level Rise

Data Sources: NOAA Int-High, NOAA Int-Low/USACE Intermediate (Modified NRC Curve II, Sea Level Rise (SLR) Inundation Data, NOAA Coastal Services Center (2015)



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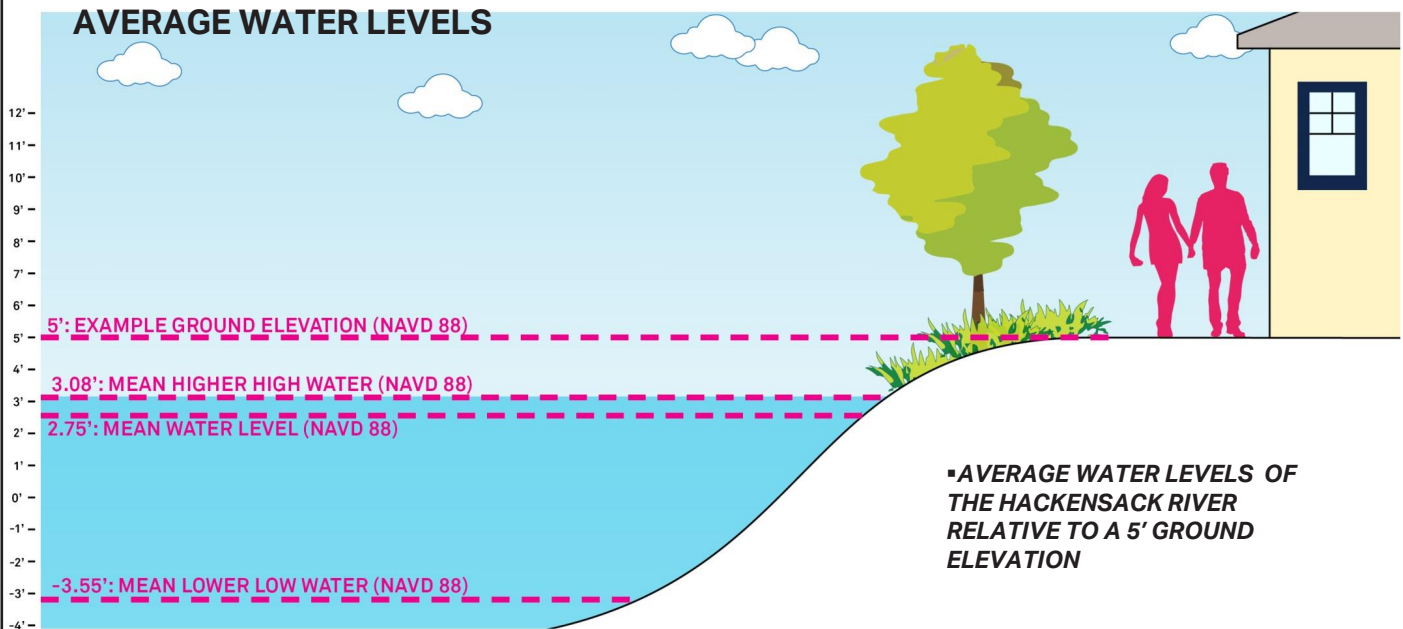
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HACKENSACK RIVER EXISTING CONDITIONS

8

AVERAGE WATER LEVELS



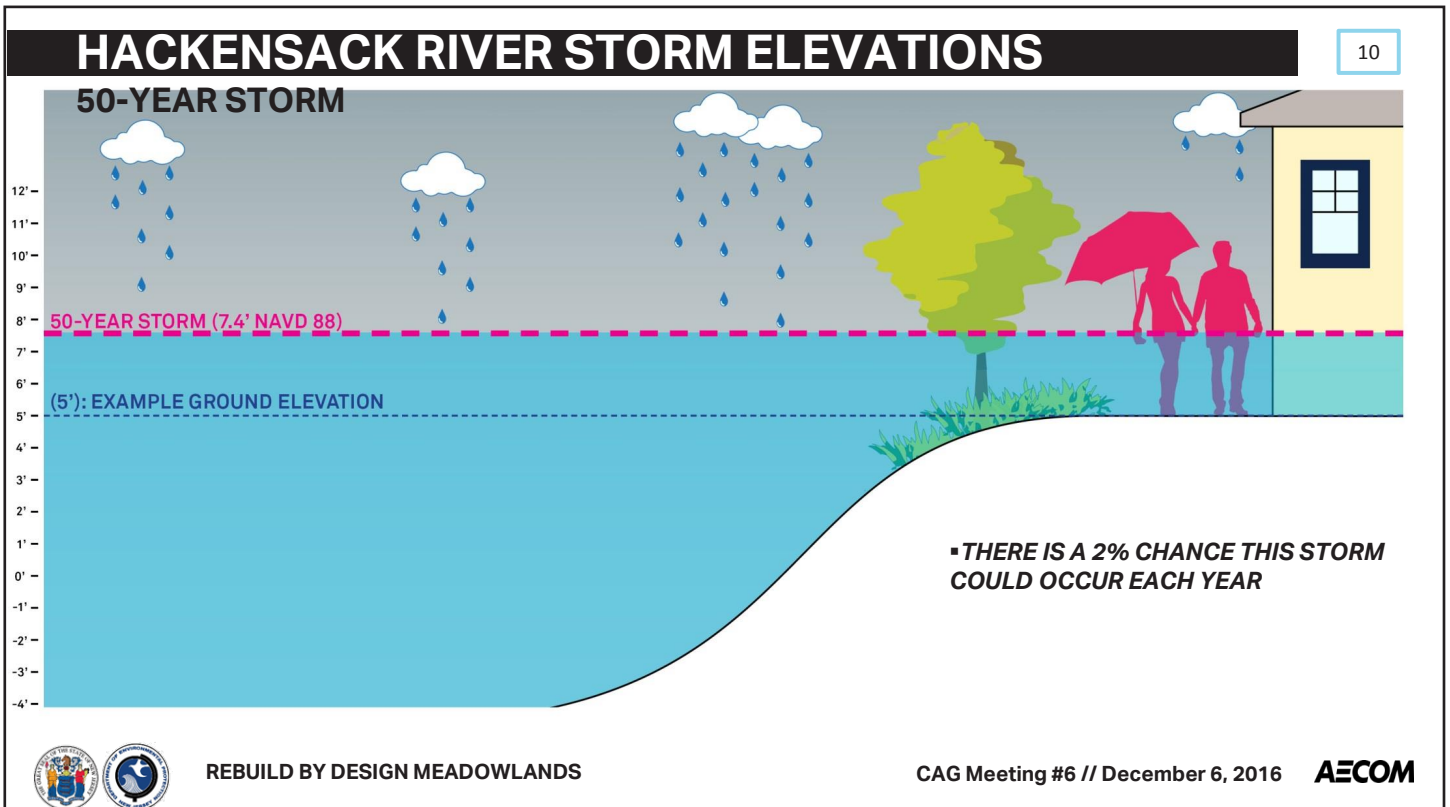
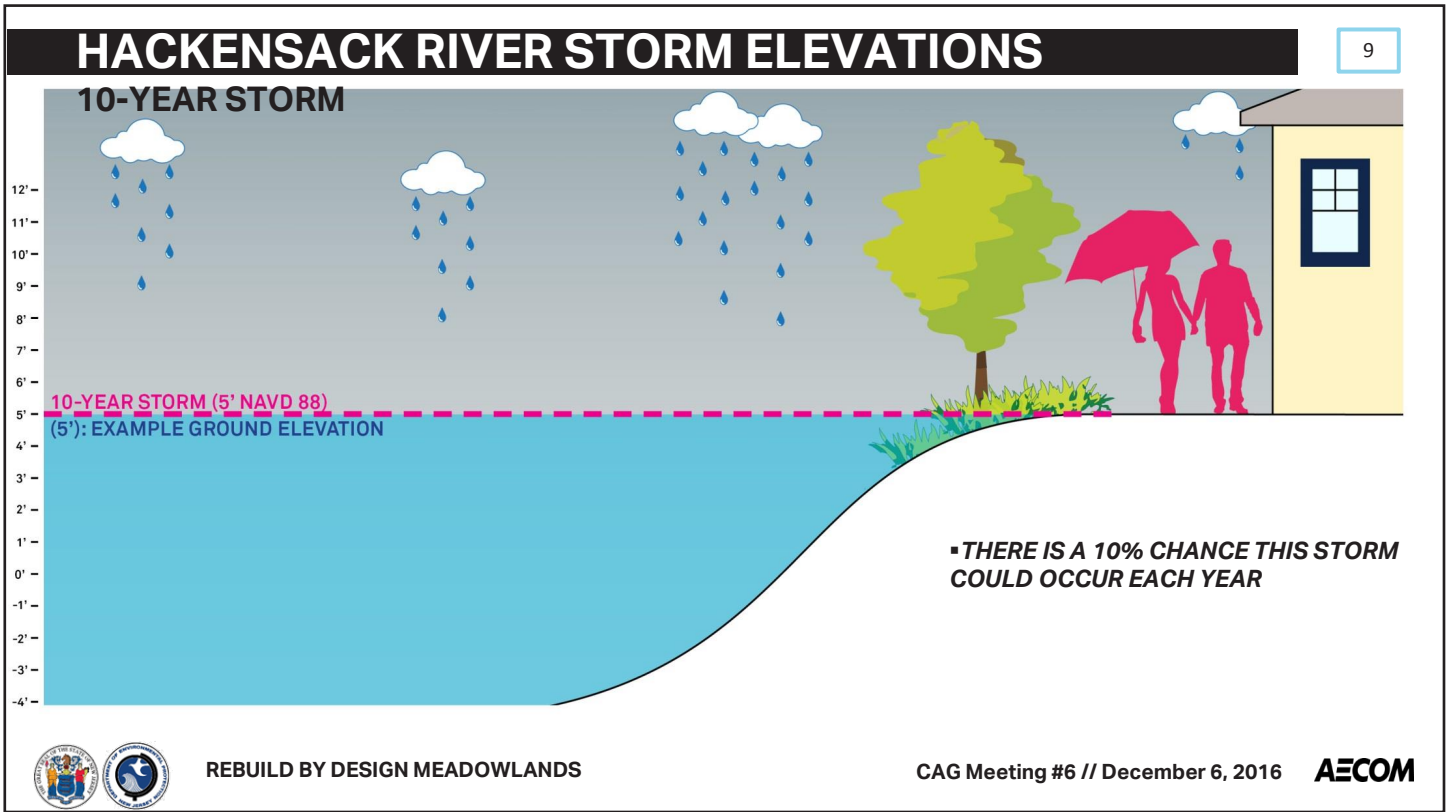
AVERAGE WATER LEVELS OF THE HACKENSACK RIVER RELATIVE TO A 5' GROUND ELEVATION

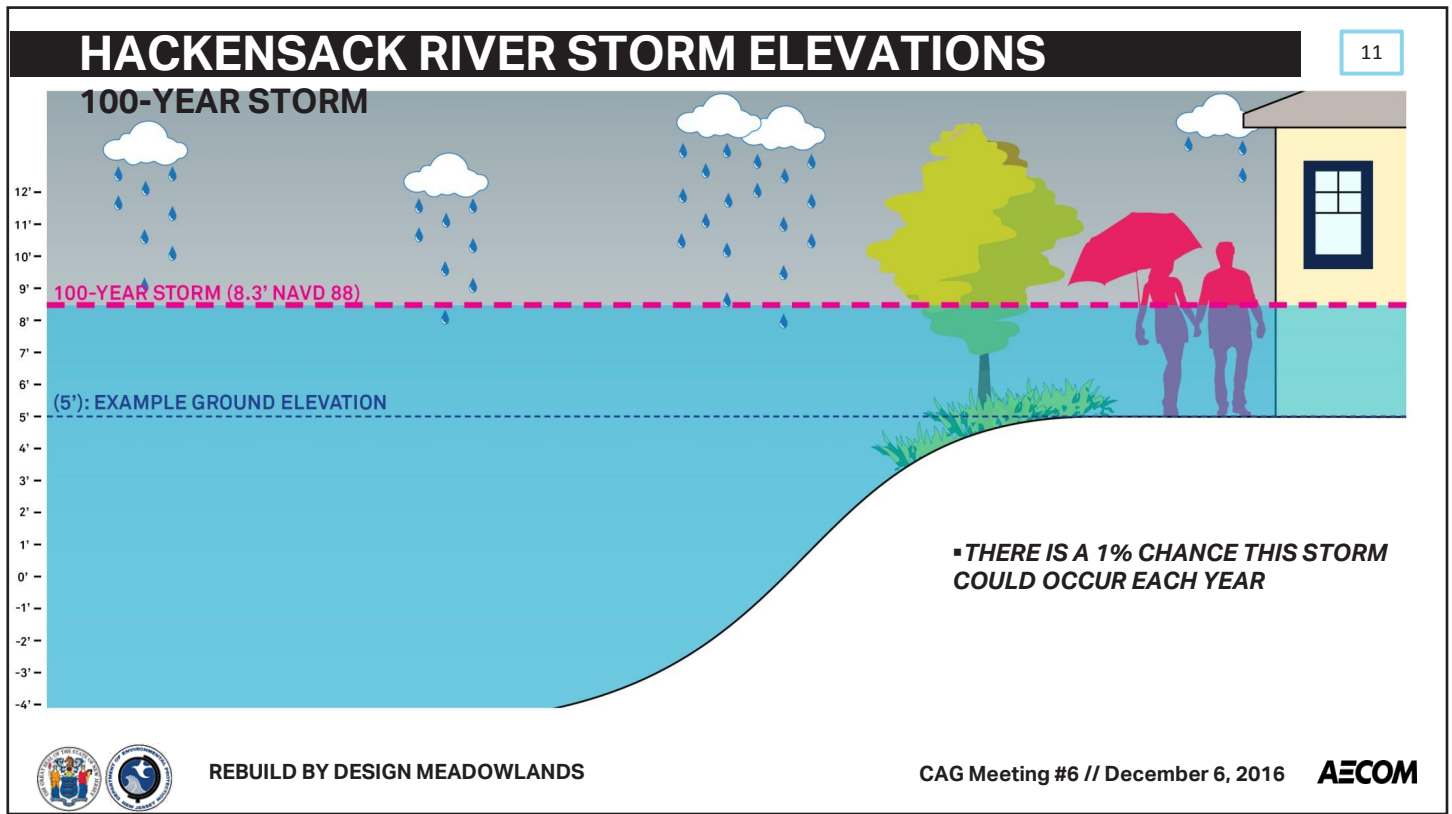


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DEVELOPING THE ALIGNMENT

Chris Benosky, AECOM

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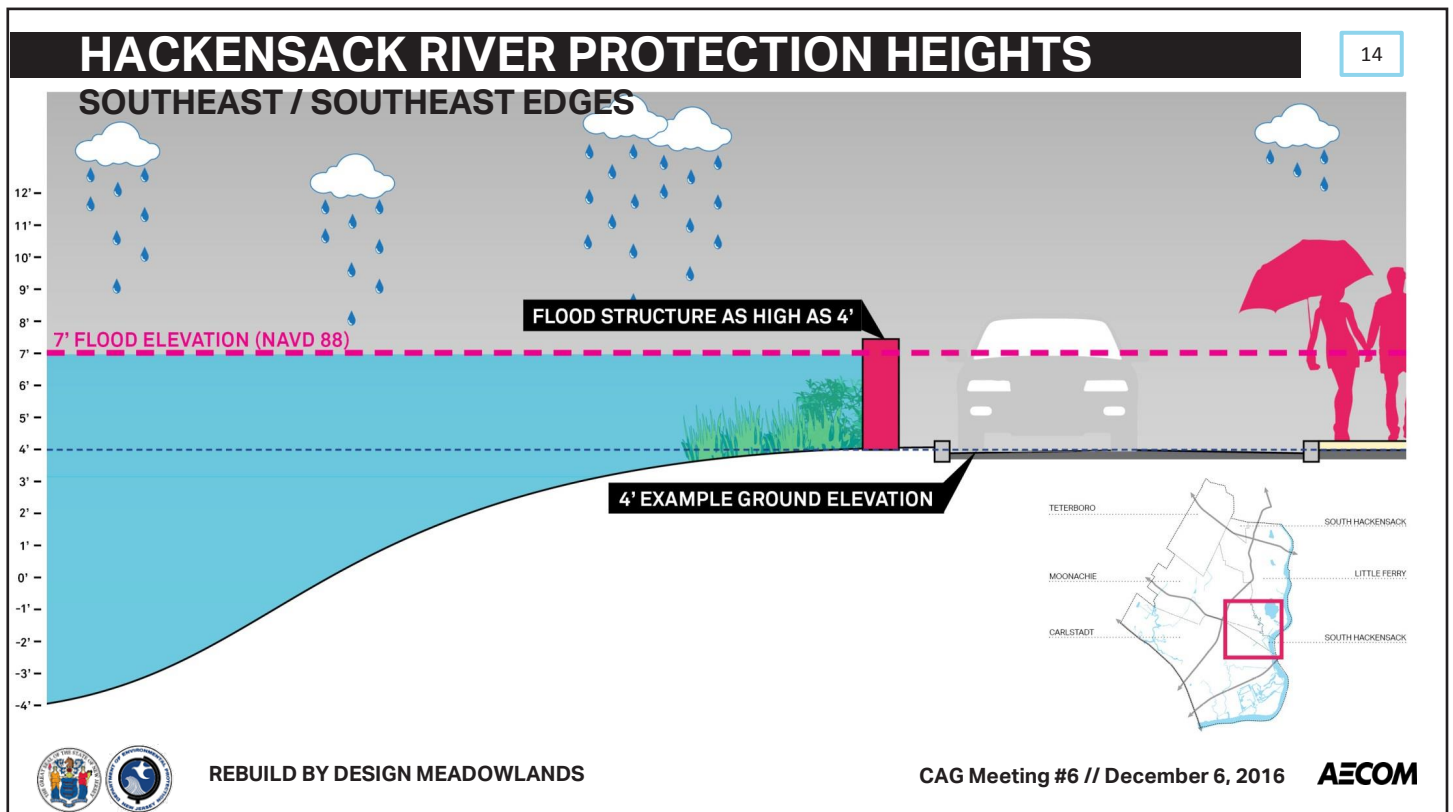
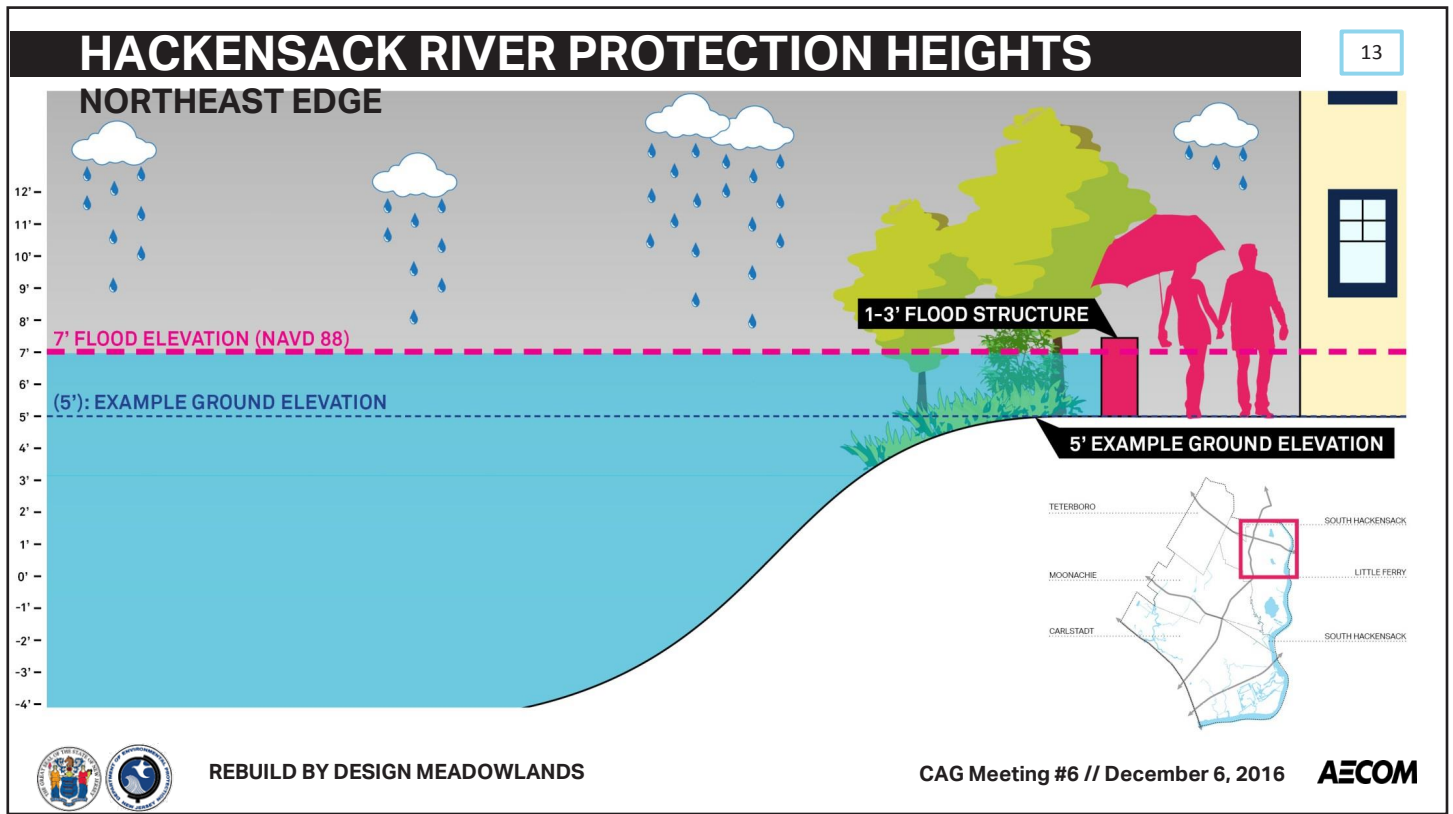
STARTING AT A 7' ELEVATION

- 7' NAVD88 is approximately 8' NGVD29
- Using the 7' elevation as a study baseline
- 7' elevation maintains existing level of protection with Sea Level Rise through 2050
- Other elevation heights are being considered and will be included as costs and feasibility inputs are identified
- Currently investigating tie-in options and footprint locations

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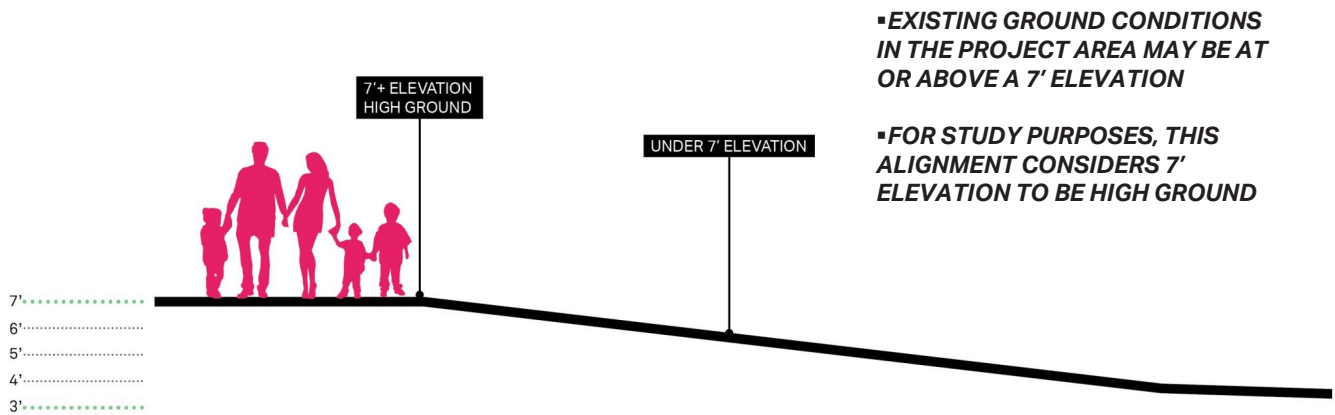
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CONNECTING HIGH GROUND

7' ELEVATION - FILLING IN THE GAPS

15



▪EXISTING GROUND CONDITIONS
IN THE PROJECT AREA MAY BE AT
OR ABOVE A 7' ELEVATION

▪FOR STUDY PURPOSES, THIS
ALIGNMENT CONSIDERS 7'
ELEVATION TO BE HIGH GROUND



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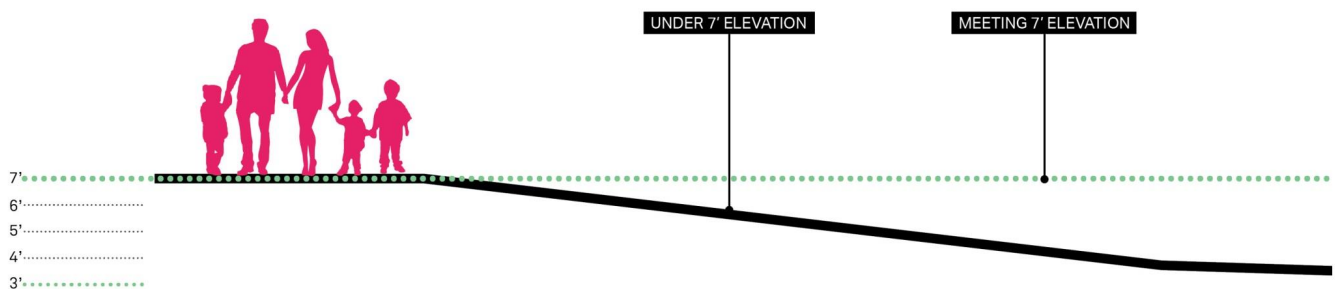
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CONNECTING HIGH GROUND

7' ELEVATION - FILLING IN THE GAPS

16



▪A FLOOD REDUCTION STRATEGY
WILL BE PROPOSED IN AREAS
WHERE GROUND ELEVATION IS
BELOW 7'



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3.0 Power Point Presentation

CONNECTING HIGH GROUND

HOW TIE-INS WORK

▪ **STRUCTURAL FLOOD REDUCTION CONNECTS EXISTING HIGH GROUND (7' ELEVATION)**

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PRIMARY FLOOD REDUCTION TYPES

HARD & SOFT EDGES

▪ **THE COLORS ON THE FOLLOWING ALIGNMENT MAPS REPRESENT POTENTIAL LOCATION OF WALLS AND BERMS**

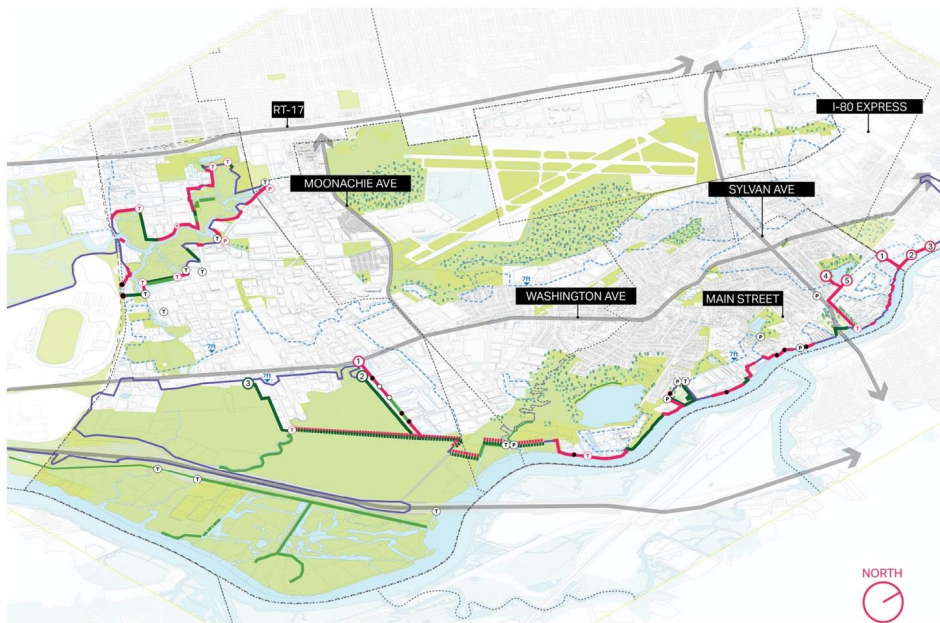
18

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7' ELEVATION ALIGNMENT OVERVIEW

19



- OVERVIEW OF ALL ALIGNMENT OPTIONS AT 7' ELEVATION
- SCREENING OF OPTIONS IS ONGOING
- INTERACTIVE MAPS AVAILABLE POST-MEETING



*** MUNICIPAL BOUNDARY	WATER
--- PROJECT AREA	ROAD
- - - EXISTING 7' CONTOUR	EVACUATION ROUTE
--- EXISTING HIGH GROUND	GREEN SPACE
--- LEGACY BERM	WETLAND
--- WALL	GREEN OPPORTUNITIES
--- BERM	PROPOSED SURGE BARRIER
--- UNDER CONSIDERATION	EXISTING TIDAL GATE
--- REGRAIDING	PROPOSED TIDAL GATE
--- DEPLOYABLE	EXISTING PUMP STATION
--- REGRAIDING OR DEPLOYABLE	PROPOSED PUMP STATION
--- PARCEL BOUNDARY	EXISTING CLOSURE GATE
	PROPOSED CLOSURE GATE



REBUILD BY DESIGN MEADOWLANDS

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AECOM

PRELIMINARY

FLOOD REDUCTION ALIGNMENT OPTIONS

GARRETT AVERY, AECOM



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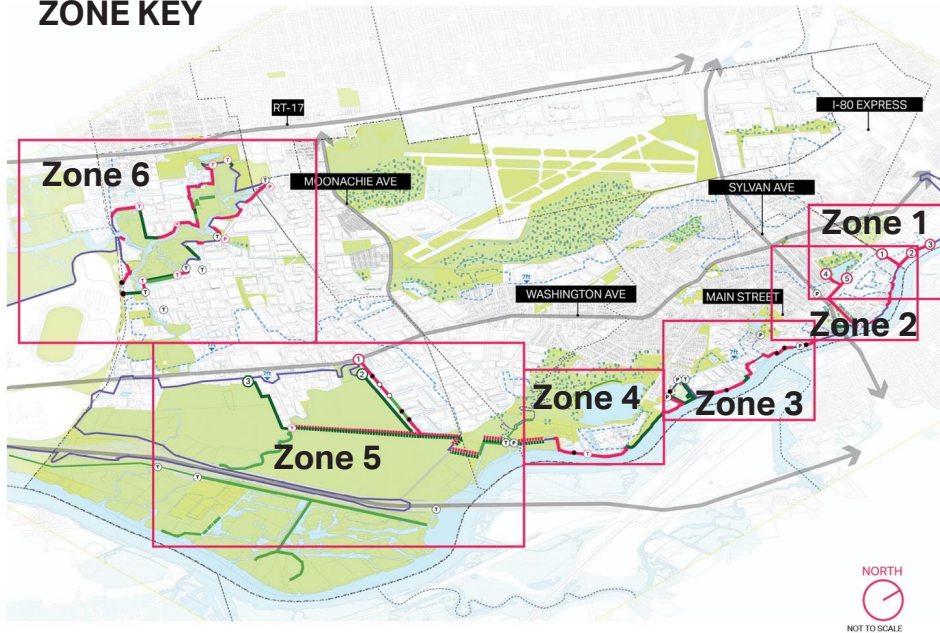
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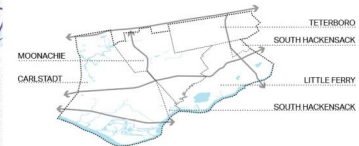
ALIGNMENT OVERVIEW

21

ZONE KEY



- SIX AREAS WITH SEVERAL OPTIONS
- MIX OF WALLS AND BERMS PROVIDE FLOOD PROTECTION
- NEW TIDAL GATES AND PUMP STATIONS



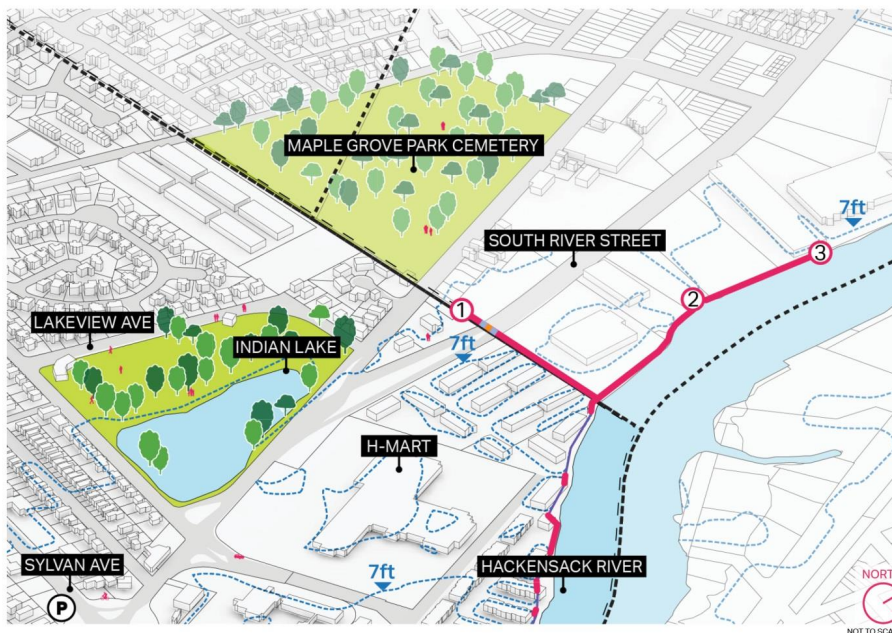
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ALIGNMENT OPTION – ZONE 1

22



- OPTION 1: TIE-IN WEST OF BERGEN TNP. ROAD REGRADING OR A DEPLOYABLE WOULD BE REQUIRED.
- OPTION 2: TIE-IN NORTH OF PROJECT AREA. NO ROAD CROSSINGS OR REGRADING NEEDED.
- OPTION 3: TIE INTO HACKENSACK RIVERWALK NORTH OF PROJECT AREA. NO ROAD-CROSSING REQUIRED.



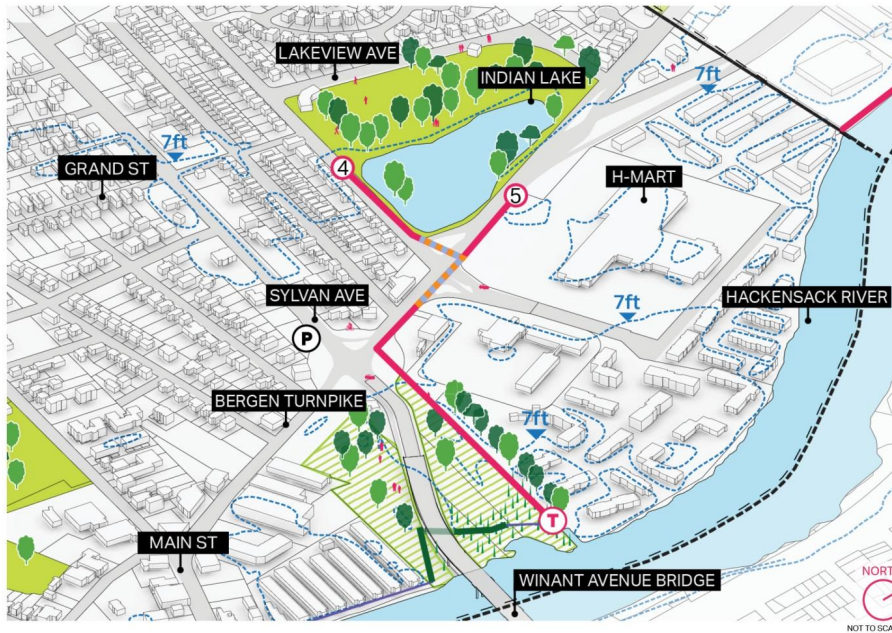
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ALIGNMENT OPTION – ZONE 2

23



- **OPTION 4: INTERIOR ALIGNMENT, TIE-IN AT 7' CONTOUR AT INDIAN LAKE. WOULD REQUIRE ROAD REGRADING AND DEPLOYABLES.**
- **OPTION 5: INTERIOR ALIGNMENT, TIE-IN AT 7' CONTOUR ON THE EAST SIDE OF BERGEN TNP. WOULD REQUIRE ROAD REGRADING AND DEPLOYABLES.**



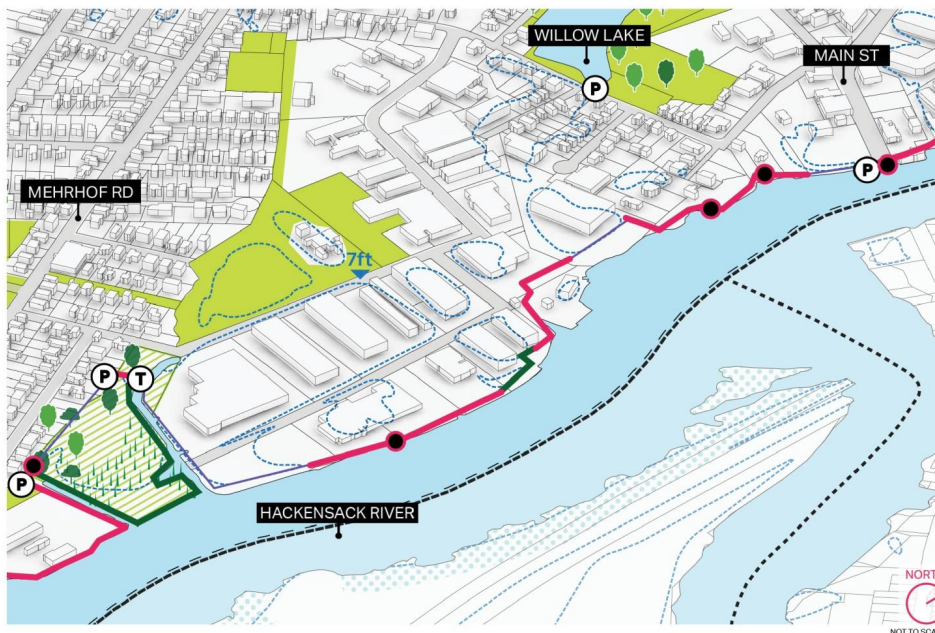
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ALIGNMENT OPTION – ZONE 3

24



- **ELEVATION 7' ALIGNMENT CONTINUES ALONG THE EDGE.**
- **TYING INTO TO HIGHGROUND AND USING BERMS WHERE POSSIBLE.**
- **EXISTING RIVER ACCESS PRESERVED BY CLOSURE GATES.**



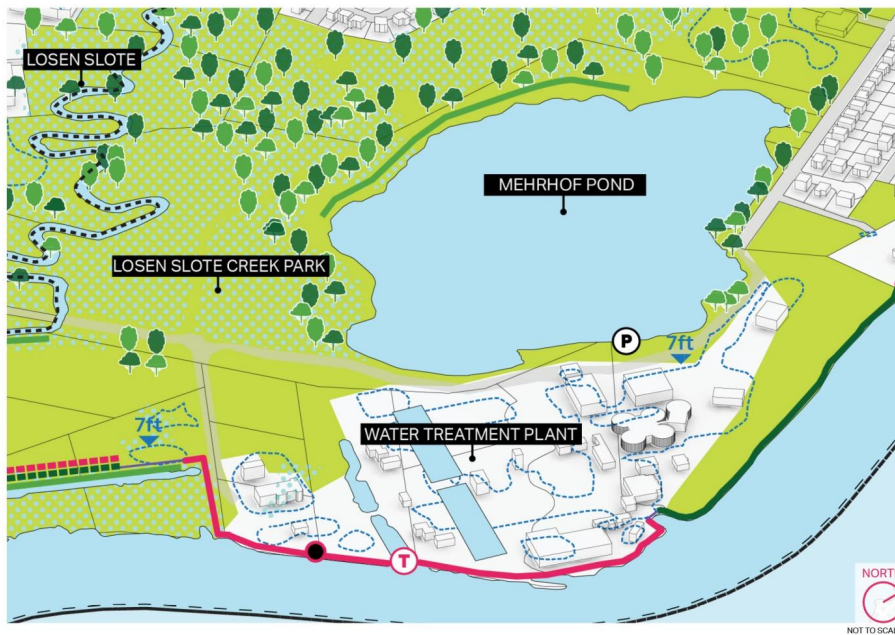
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ALIGNMENT OPTION – ZONE 4

25



- ELEVATION 7' ALIGNMENT COMPOSED OF FLOODWALL OR BERM AS SPACE ALLOWS.
- SURGE GATE TO PROTECT EXISTING TREATMENT PLANT OUTFALLS.
- REINFORCEMENT OR REPLACEMENT OF EXISTING BERMS BEING STUDIED. FLOODWALL AND BERM BEING CONSIDERED TO LIMIT POTENTIAL WETLAND DISTURBANCE.



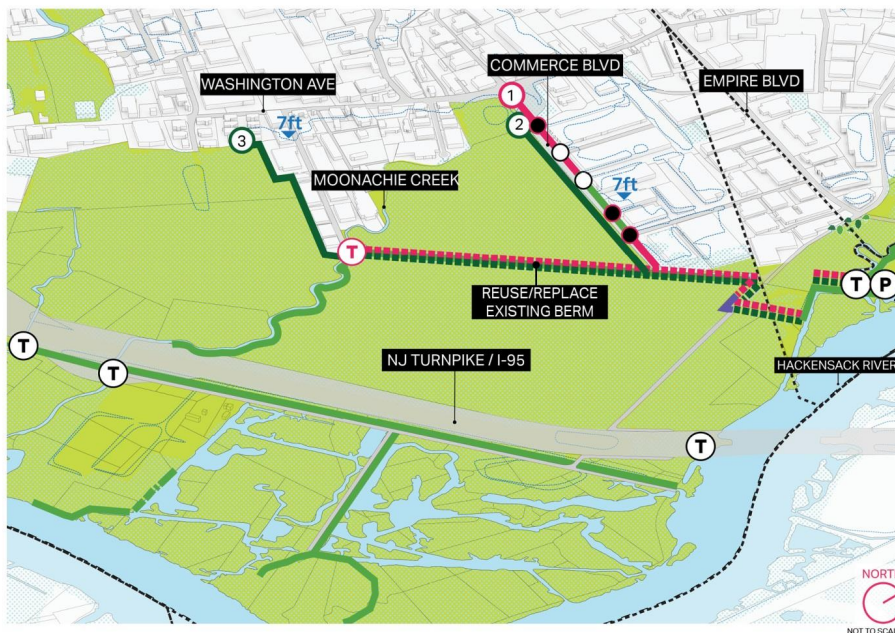
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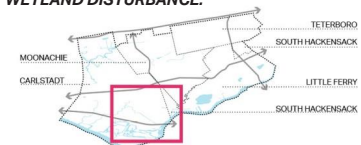
AECOM

ALIGNMENT OPTION – ZONE 5

26



- OPTION 1: TIE-OFF ON NORTH SIDE OF COMMERCE BLVD. WOULD REQUIRE ROAD REGRADING AND CLOSURE GATES (CROSSES ACCESS POINTS).
- OPTION 2: TIE-OFF ON SOUTH SIDE OF COMMERCE BLVD. COULD BE A BERM OR A WALL. NO REGRADING OR STREET CROSSINGS.
- OPTION 3: TIE-OFF TO 7' CONTOUR. FOLLOWS PATH OF EXISTING BERM TO LIMIT POTENTIAL WETLAND DISTURBANCE.



REBUILD BY DESIGN MEADOWLANDS

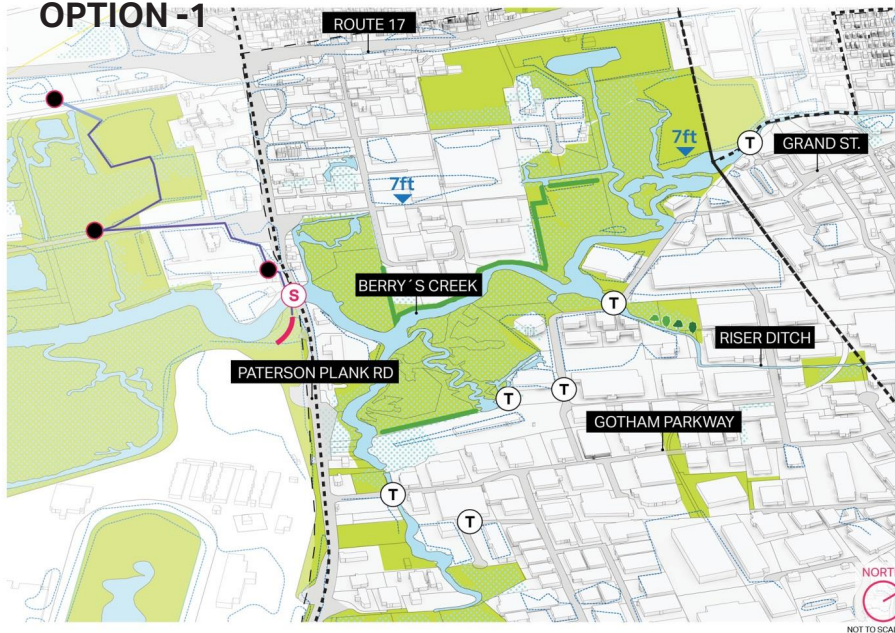
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ALIGNMENT OPTION – ZONE 6

27

OPTION - 1



- SURGE BARRIER AT PATERSON PLANK ROAD (SOUTH OF THE BRIDGE) WOULD PROTECT OVER 50% OF THE PROJECT AREA.
- (3) CLOSURE GATES, REGRADING, AND MINOR WALL TO TIE-OFF.
- NEW PUMP STATION TO CONTROL WATER LEVEL IN BERRY'S CREEK DUE TO RAINFALL.



REBUILD BY DESIGN MEADOWLANDS

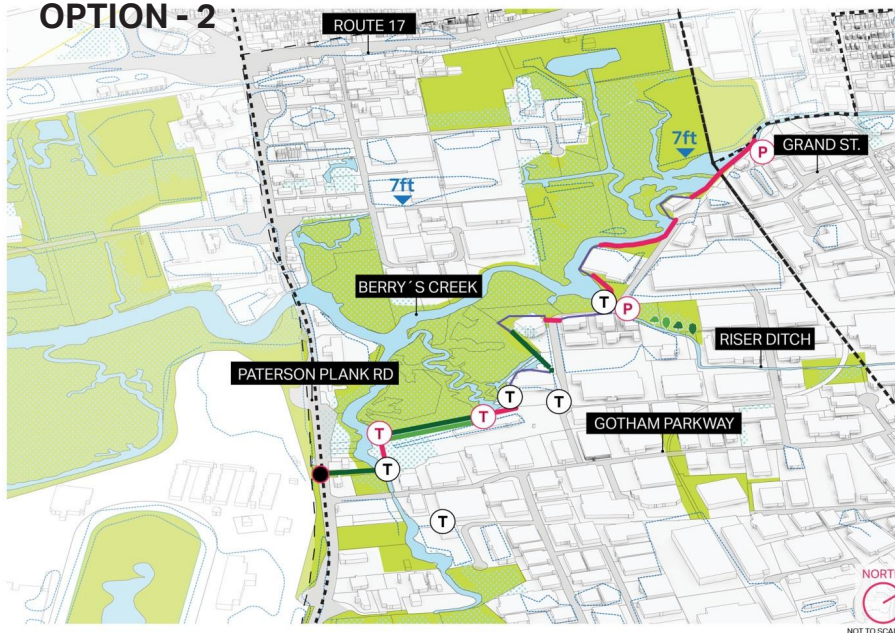
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ALIGNMENT OPTION – ZONE 6

28

OPTION - 2



- INTERIOR ALIGNMENT ALONG THE EAST BANK OF BERRY'S CREEK.
- CONNECTS EXISTING TIDE GATES AND SURROUNDING POINTS AT 7' GROUND ELEVATION.
- WOULD REQUIRE ADDITIONAL TIDE GATES AND NEW PUMP STATION.



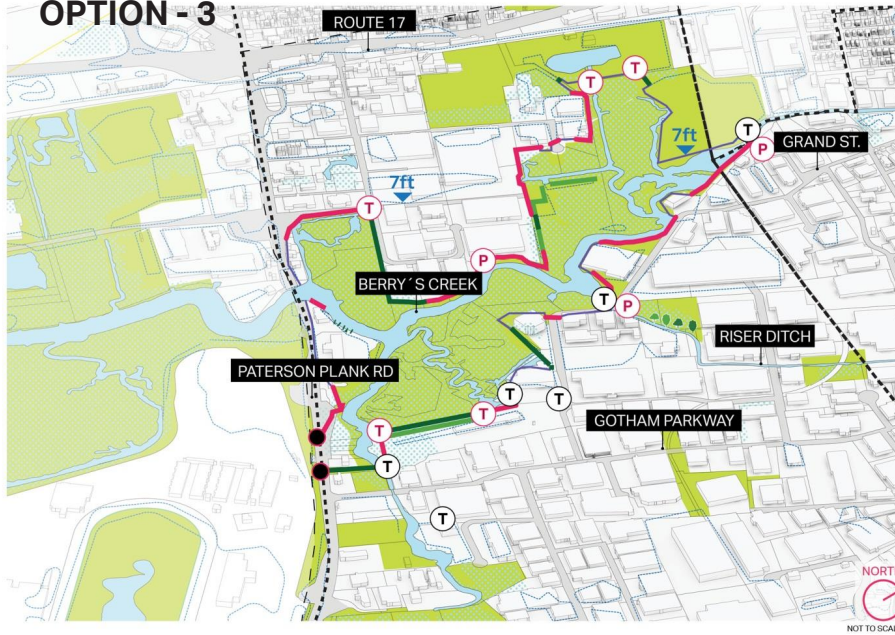
REBUILD BY DESIGN MEADOWLANDS

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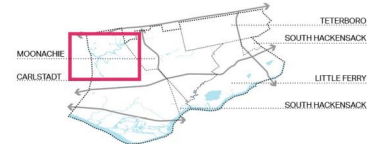
AECOM

ALIGNMENT OPTION – ZONE 6

OPTION - 3



• INTERIOR CONNECTIONS TYING OFF TO 7' CONTOURS.



*** MUNICIPAL BOUNDARY	WATER
--- PROJECT AREA	ROAD
- - - EXISTING 7' CONTOUR	EVACUATION ROUTE
- - - EXISTING HIGH GROUND	GREEN SPACE
- - - LEGACY BERM	WETLAND
- - - WALL	GREEN OPPORTUNITIES
- - - BERM	PROPOSED SURGE BARRIER
- - - UNDER CONSIDERATION	EXISTING TIDAL GATE
- - - REGRADING	PROPOSED TIDAL GATE
- - - DEPLOYABLE	EXISTING PUMP STATION
- - - REGRADING OR DEPLOYABLE	PROPOSED PUMP STATION
- - - PARCEL BOUNDARY	EXISTING CLOSURE GATE
	PROPOSED CLOSURE GATE



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DESIGN ELEMENTS

APPLYING THE "KIT OF PARTS"

SUSAN BEMIS, AECOM



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"KIT OF PARTS" – INITIAL IDEAS

31

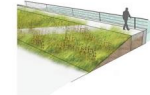
BASIC FLOOD WALL



SHEET PILE



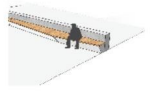
BERM + WALL



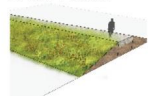
VINE PLANTING



BENCH



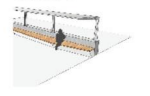
BERM + PATH



PLANTER



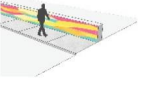
CANOPY



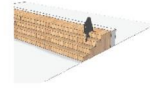
CANTILEVERED WALKWAY



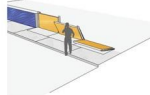
ART



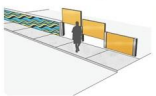
AMPHITHEATER



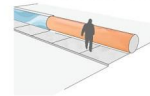
FLIP DEPLOYABLE



PANEL DEPLOYABLE



INFLATABLE DEPLOYABLE



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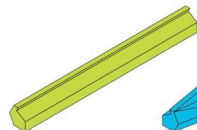
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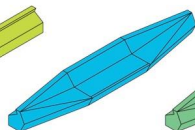
MODULARIZING THE "KIT OF PARTS"

WHAT GOES WHERE?

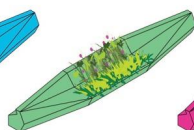
32



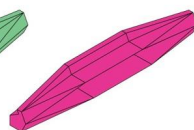
BASIC WALL



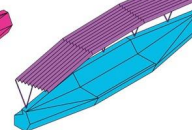
BENCH



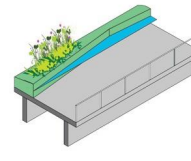
PLANTER



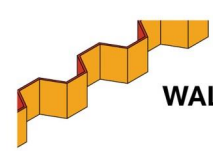
AMPHITHEATER



CANOPY

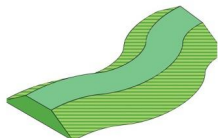


CANTILEVERED WALKWAY

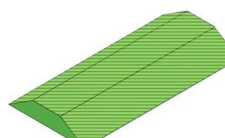


SHEET PILE

WALLS

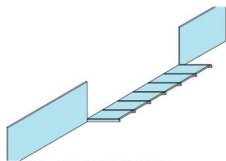


BERM + PATH

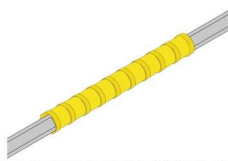


BASIC BERM

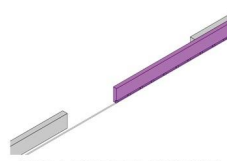
BERMS



FLIP DEPLOYABLE



INFLATABLE DEPLOYABLE



ROLLER DEPLOYABLE

DEPLOYABLES



REBUILD BY DESIGN MEADOWLANDS

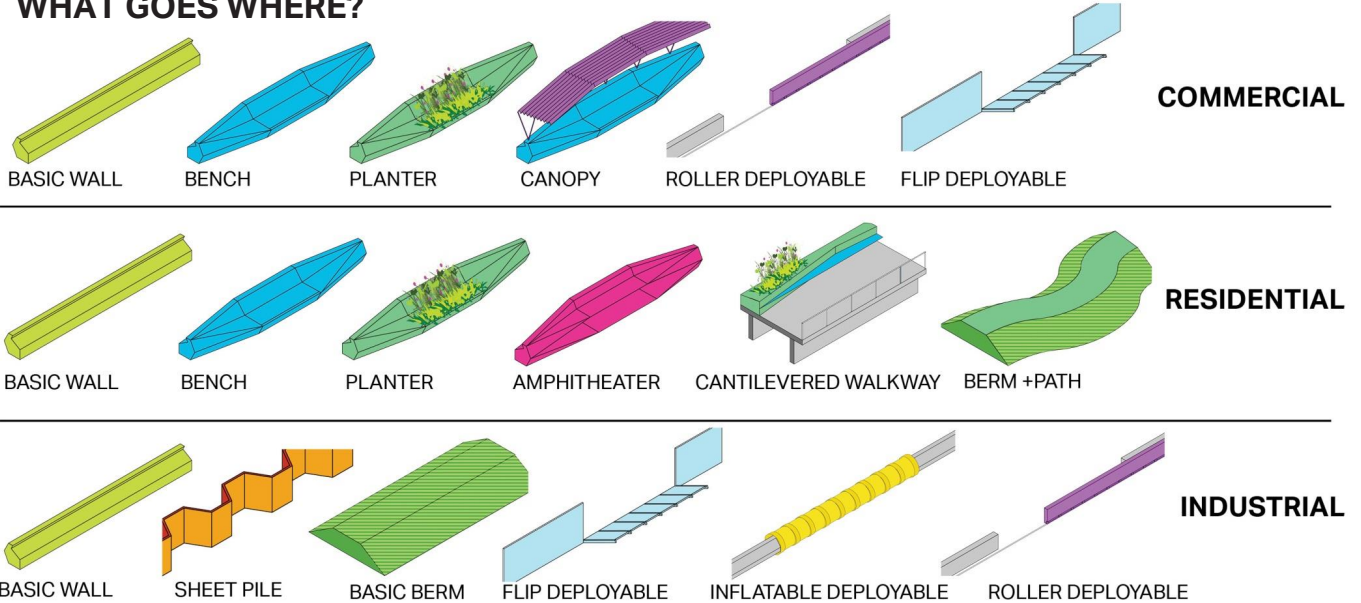
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AECOM

MODULARIZING THE "KIT OF PARTS"

33

WHAT GOES WHERE?



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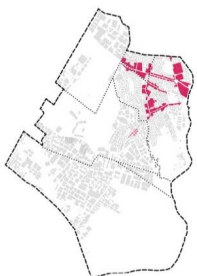
COMMERCIAL ZONE

EXISTING CONDITIONS

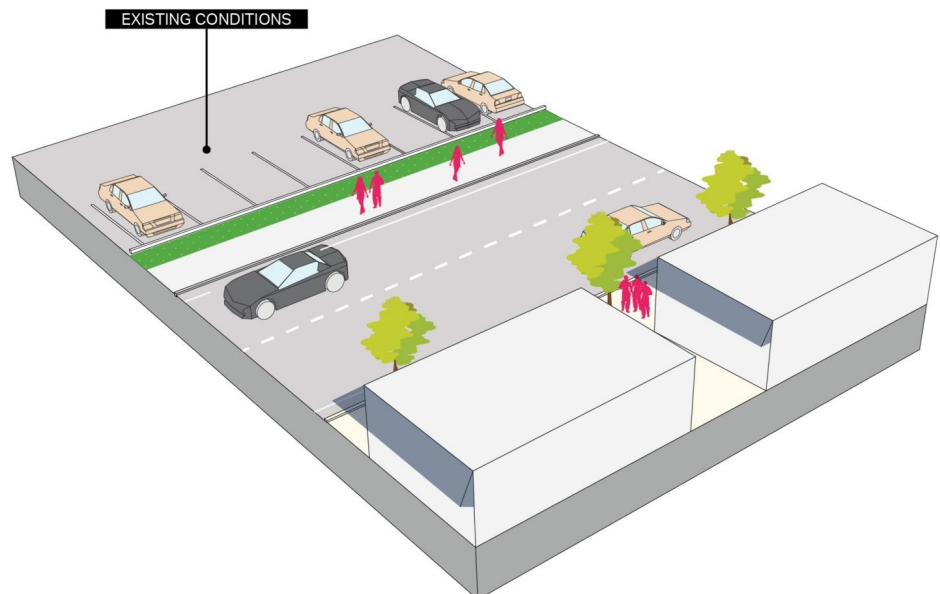
34

▪ **BUILDING THE LINE OF PROTECTION**

▪ **RESPONDING TO THE EXISTING COMMERCIAL ENVIRONMENT**



COMMERCIAL ZONE



REBUILD BY DESIGN MEADOWLANDS

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AECOM

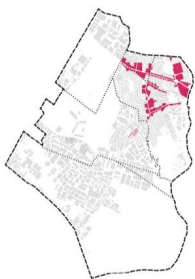
COMMERCIAL ZONE

BUILDING THE PROTECTION

35

▪ **STARTING WITH THE BASIC WALL**

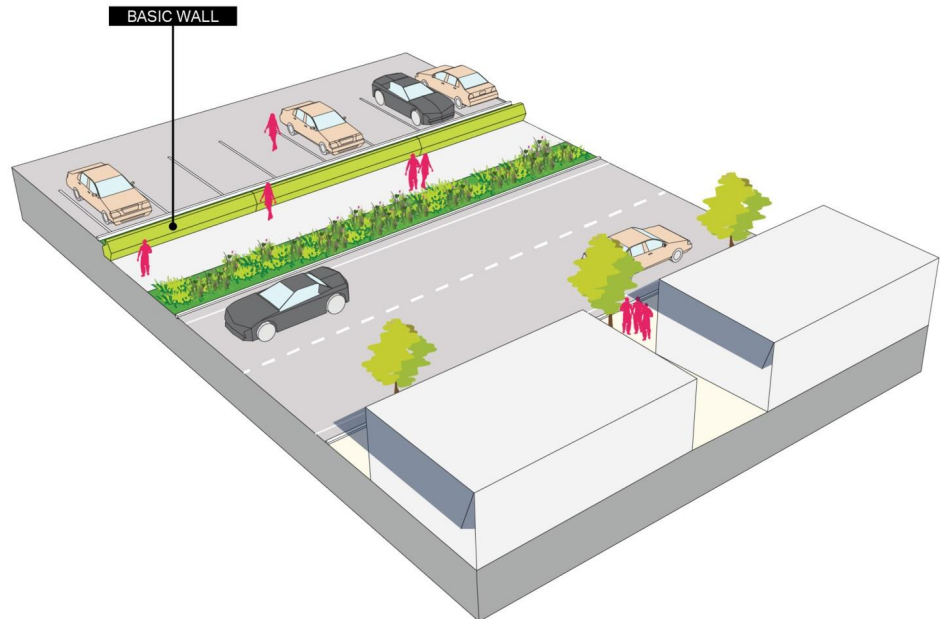
▪ **BUILDING THE SYSTEM WHERE APPROPRIATE**



COMMERCIAL ZONE



REBUILD BY DESIGN MEADOWLANDS



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AECOM

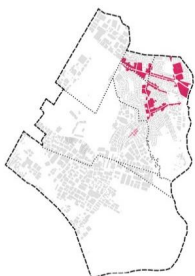
COMMERCIAL ZONE

BUILDING THE PROTECTION

36

▪ **MODULAR SYSTEM WORKS IN 30' UNITS**

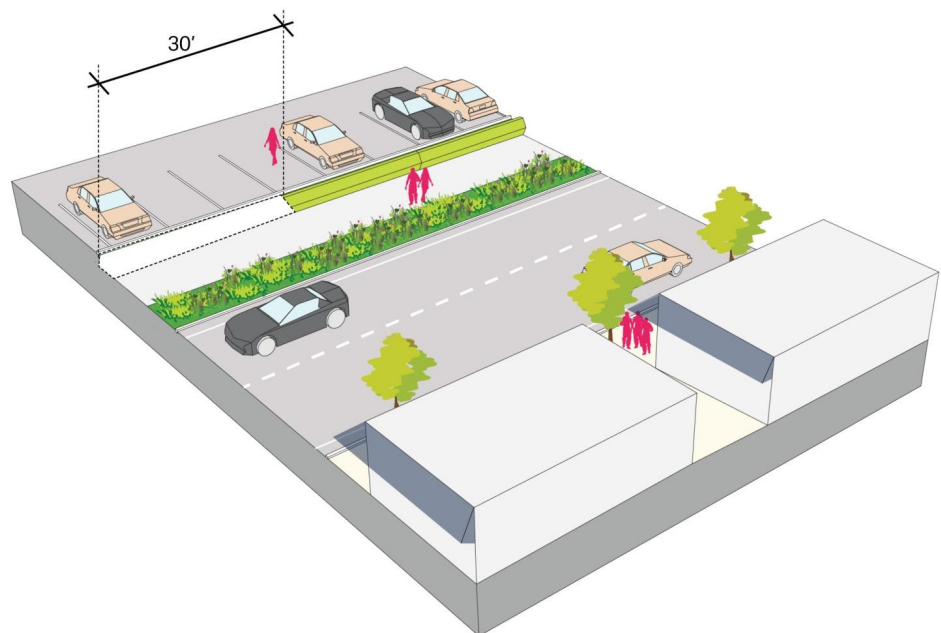
▪ **SYSTEM REDUCES COST AND TIME OF CONSTRUCTION**



COMMERCIAL ZONE



REBUILD BY DESIGN MEADOWLANDS



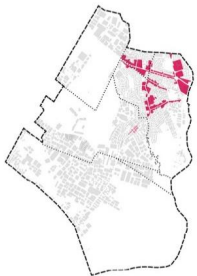
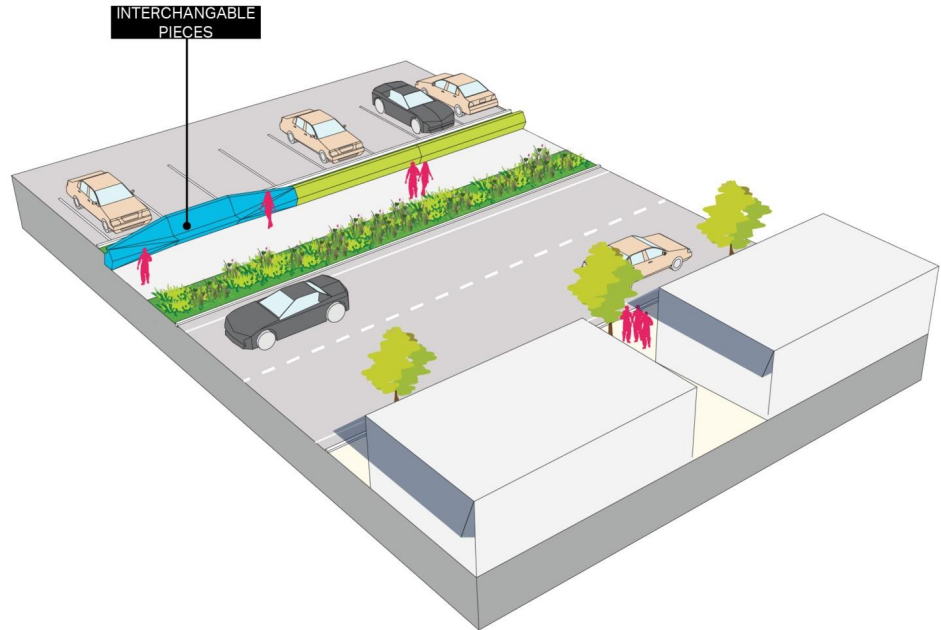
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AECOM

COMMERCIAL ZONE BUILDING THE PROTECTION

37

- **UNITS ARE INTERCHANGEABLE**



COMMERCIAL ZONE



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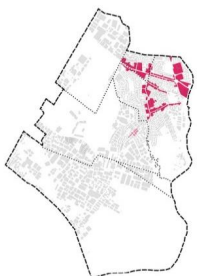
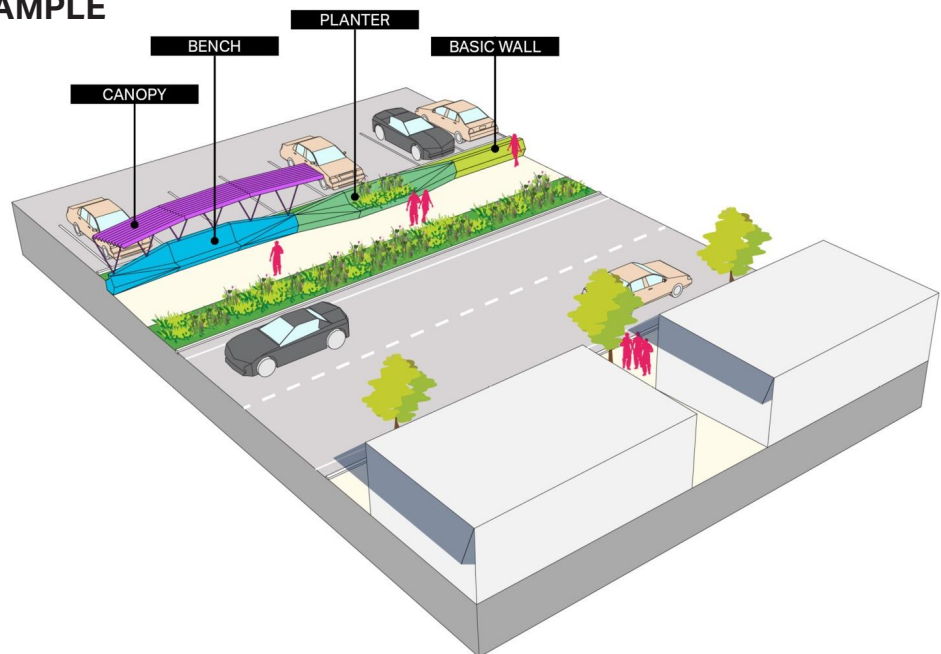
AECOM

COMMERCIAL ZONE MODULAR SYSTEM EXAMPLE

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- **FLOOD PROTECTION + STREET AND PUBLIC BENEFITS**

- **INTERIOR CONDITION**



COMMERCIAL ZONE



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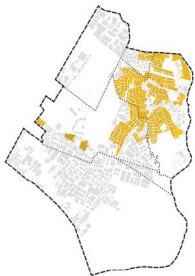
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RESIDENTIAL ZONE

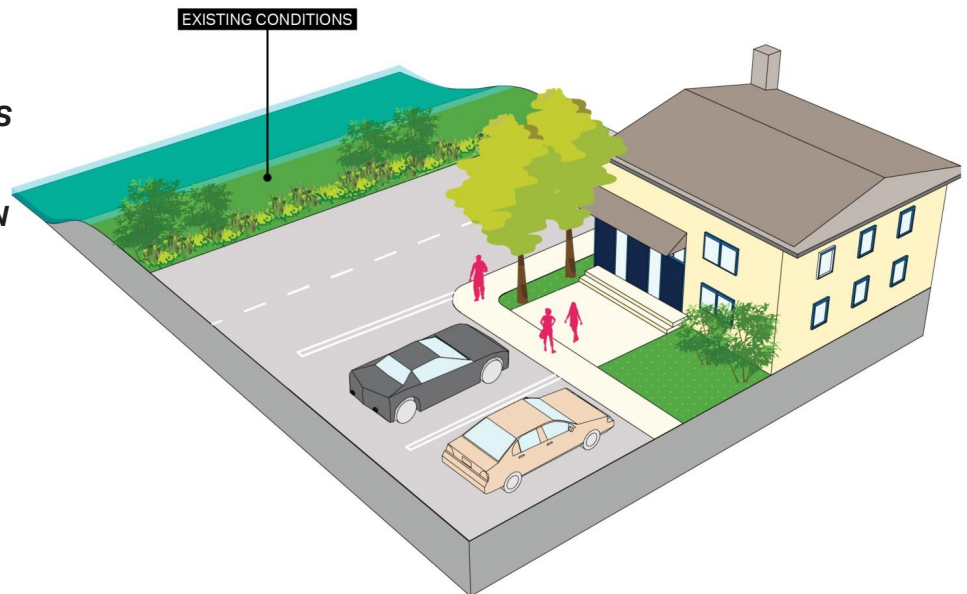
39

EXISTING CONDITIONS

- **RESPONDING TO THE RESIDENTIAL CONTEXT**
- **PROVIDE ACCESS AND VIEWS TO THE HACKENSACK RIVER**
- **POTENTIAL FOR RECREATION AND NEIGHBORHOOD CONNECTIONS**



RESIDENTIAL ZONE



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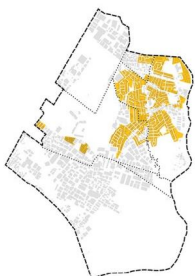
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RESIDENTIAL ZONE

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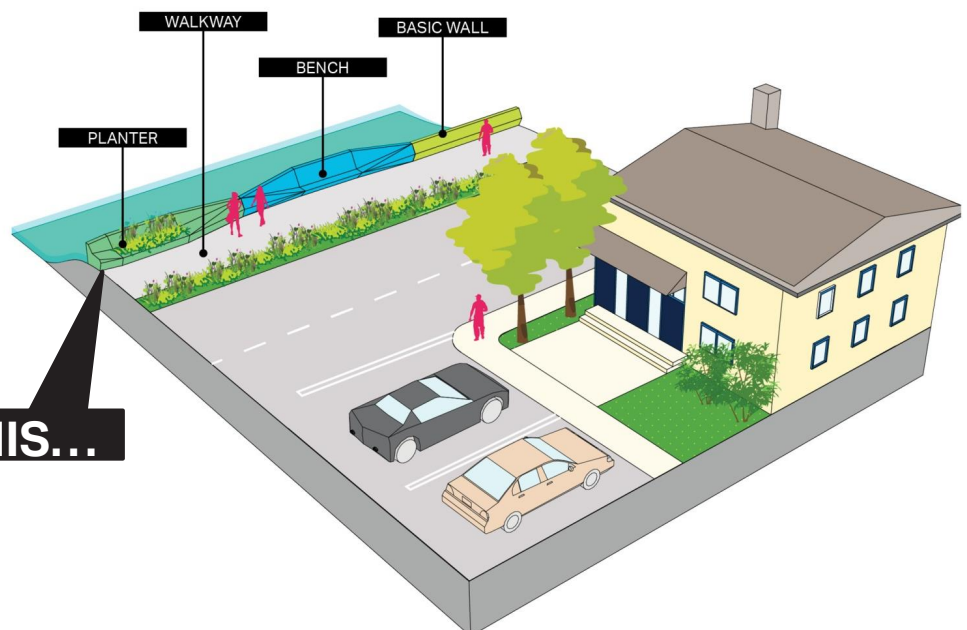
MODULAR SYSTEM EXAMPLE

- **THE MODULAR SYSTEM PROVIDES PLACES TO SIT AND ENGAGE WITH THE HACKENSACK RIVER**



RESIDENTIAL ZONE

THIS...



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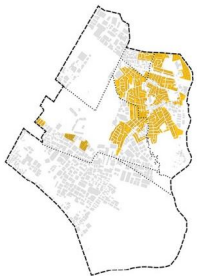
AECOM

RESIDENTIAL ZONE

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BERM + WALKWAY EXAMPLE

▪ *IN AREAS THAT ALLOW FOR A GREATER FOOTPRINT, A SOFT BERM COULD BE INCORPORATED*

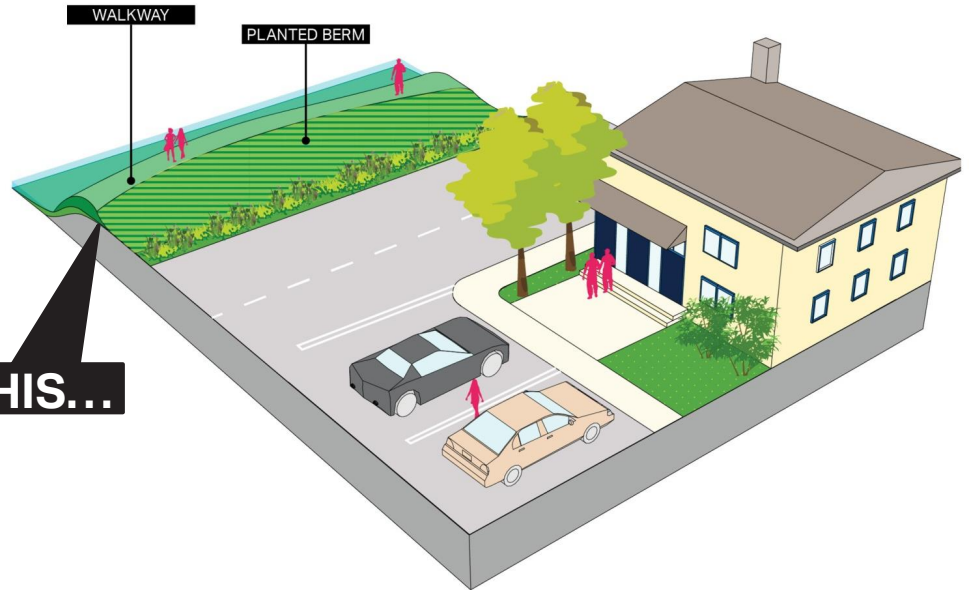


RESIDENTIAL ZONE



REBUILD BY DESIGN MEADOWLANDS

OR THIS...



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AECOM

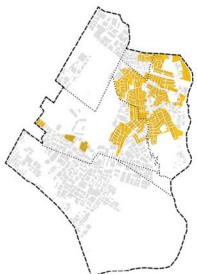
RESIDENTIAL ZONE

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CANTILEVERED WALKWAY EXAMPLE

▪ *CANTILEVERED WALKWAY IS STILL BEING CONSIDERED WHERE POSSIBLE*

▪ *PROVIDES RECREATION AND WATER ACCESS*

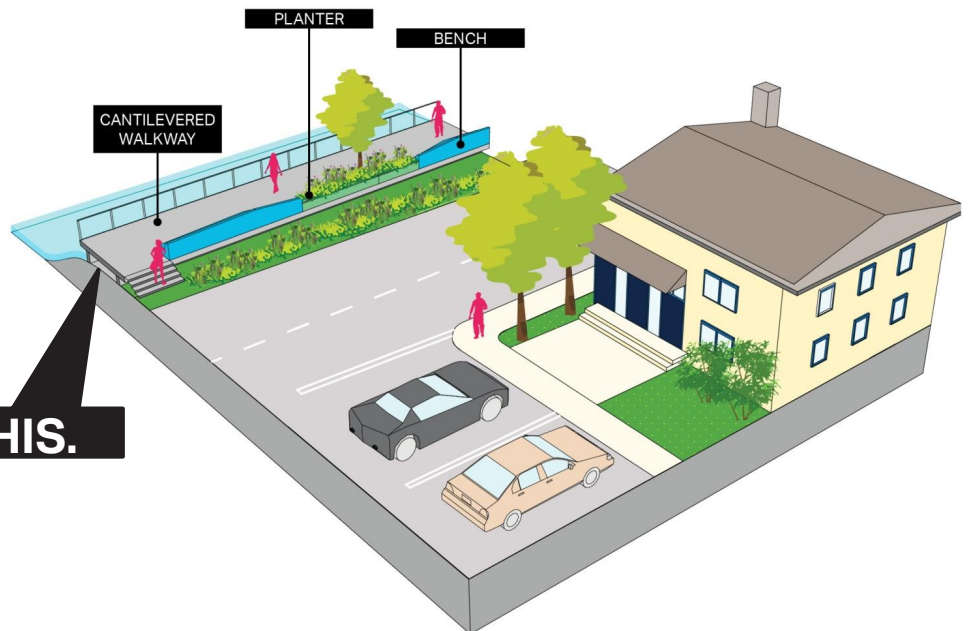


RESIDENTIAL ZONE



REBUILD BY DESIGN MEADOWLANDS

OR THIS.



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AECOM

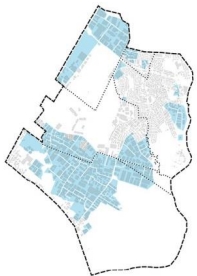
INDUSTRIAL ZONE

EXISTING CONDITIONS

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▪ **BLENDING INTO THE INDUSTRIAL ENVIRONMENT**

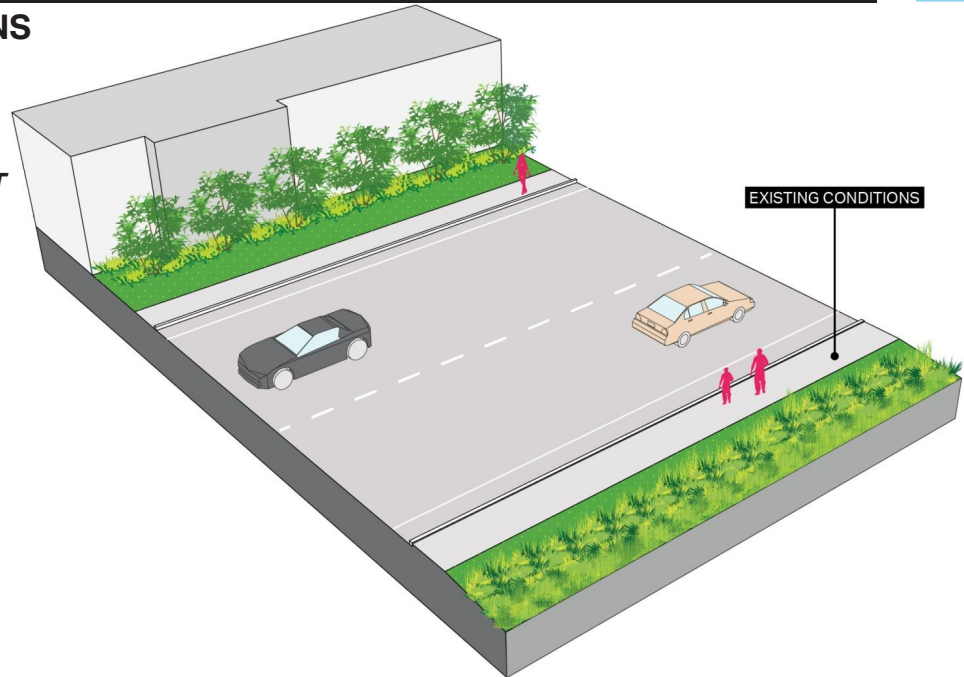
▪ **COST EFFICIENCY**



INDUSTRIAL ZONE



REBUILD BY DESIGN MEADOWLANDS



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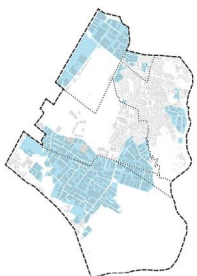
AECOM

INDUSTRIAL ZONE

MODULAR SYSTEM EXAMPLE

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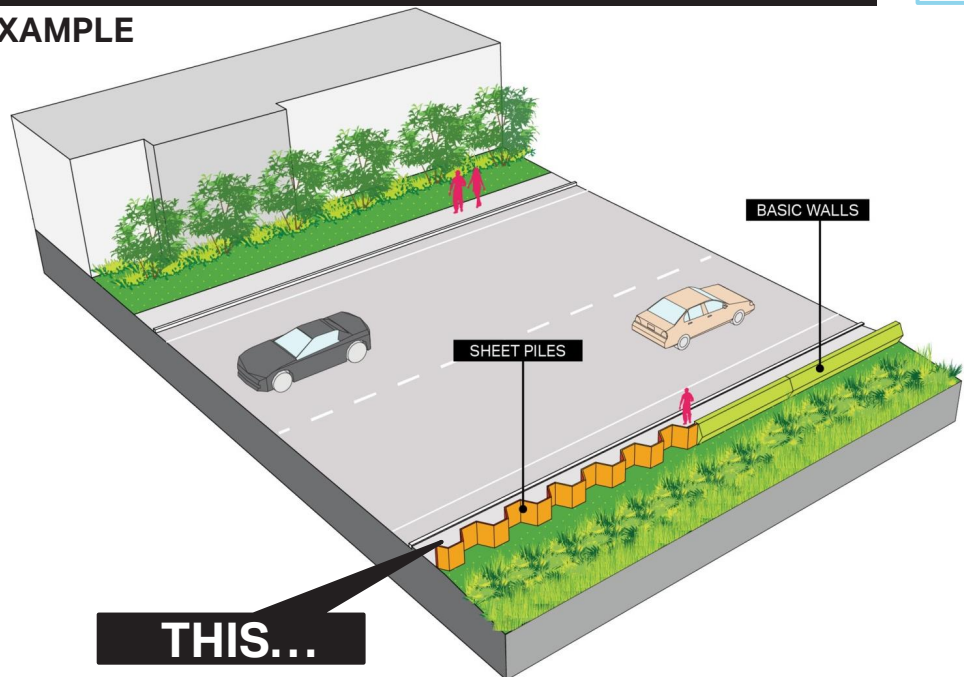
▪ **SHEET PILE AND BASIC WALLS FOR AREAS WITH SMALL FOOTPRINTS**



INDUSTRIAL ZONE



REBUILD BY DESIGN MEADOWLANDS



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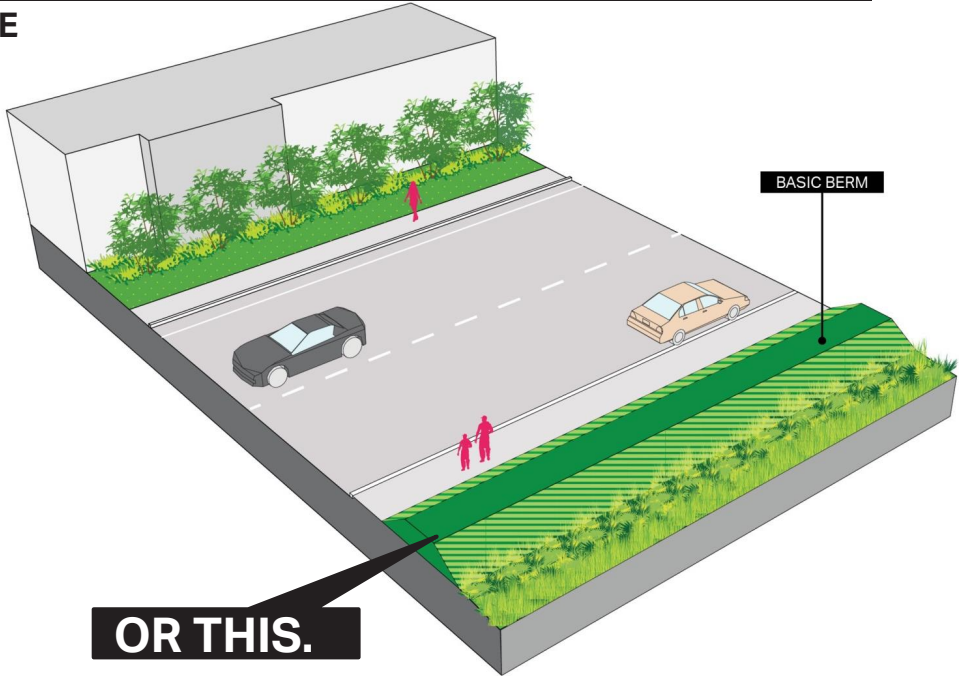
3.0 Power Point Presentation

INDUSTRIAL ZONE

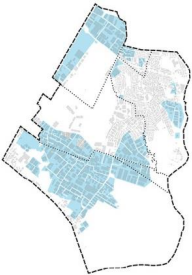
BASIC BERM EXAMPLE

- **BASIC BERM WHEN LARGER FOOTPRINT CAN BE ACCOMMODATED**

45



OR THIS.



INDUSTRIAL ZONE

REBUILD BY DESIGN MEADOWLANDS

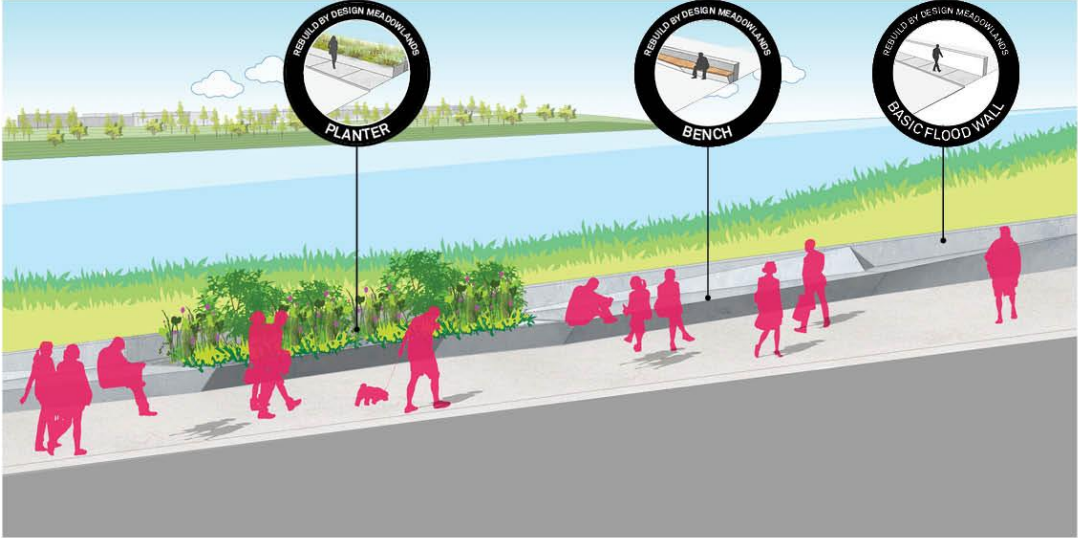
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MODULAR COMPONENT DEVELOPMENT

INVESTIGATION: 1

- **THE DESIGN TEAM IS CURRENTLY DEVELOPING THE MODULAR SYSTEM BASED ON FEEDBACK FROM CAG #4 WORKSHOP**
- **THE FOLLOWING IMAGES REFLECT CURRENT SYSTEM DESIGN STUDIES**

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REBUILD BY DESIGN MEADOWLANDS

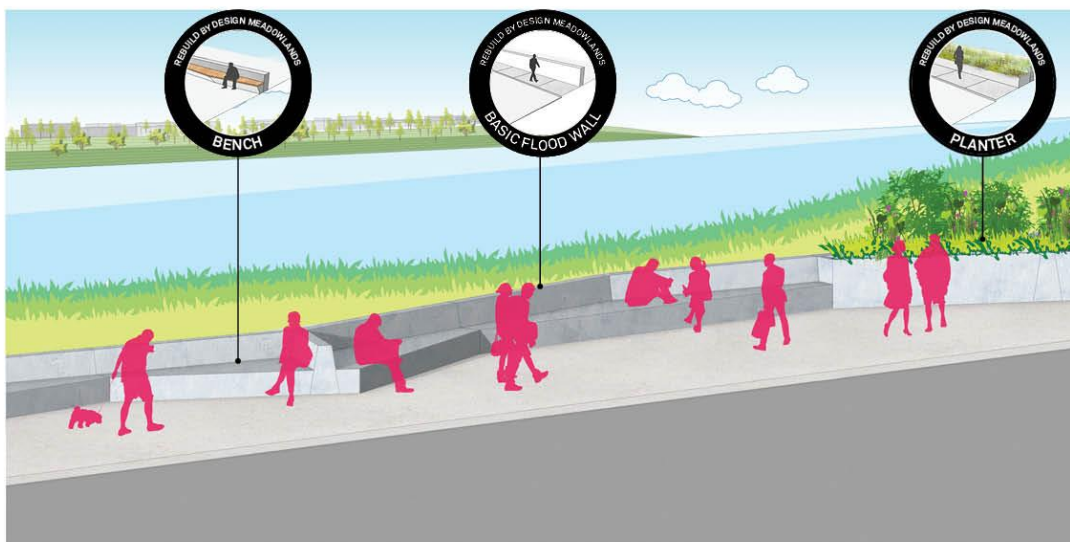
REBUILD BY DESIGN MEADOWLANDS

CAG Meeting #6 // December 6, 2016 **AECOM**

MODULAR COMPONENT DEVELOPMENT

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INVESTIGATION: 2



REBUILD BY DESIGN MEADOWLANDS

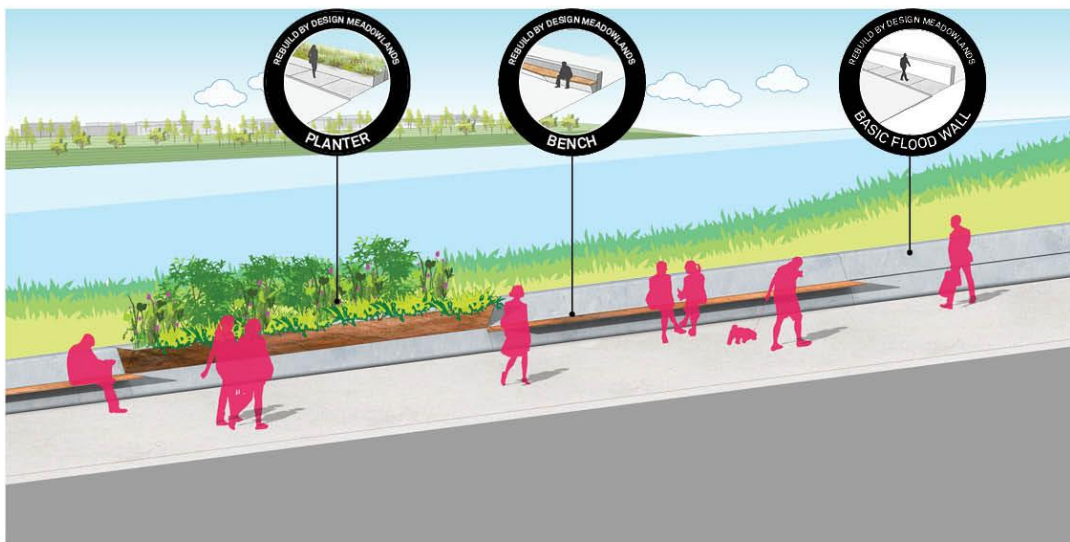
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MODULAR COMPONENT DEVELOPMENT

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INVESTIGATION: 3



REBUILD BY DESIGN MEADOWLANDS

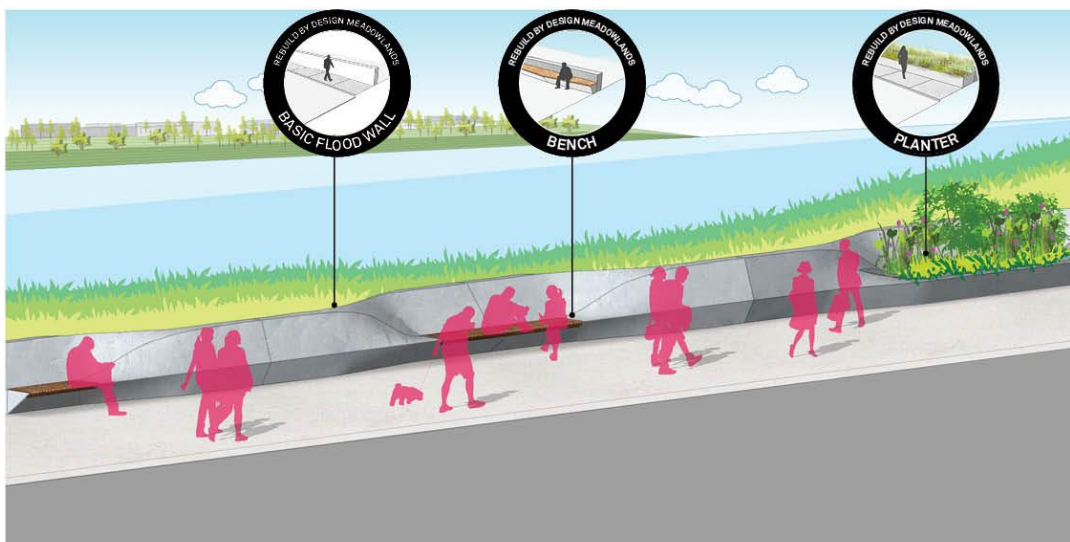
CAG Meeting #6 // December 6, 2016

AECOM

MODULAR COMPONENT DEVELOPMENT

INVESTIGATION: 4

49



REBUILD BY DESIGN MEADOWLANDS

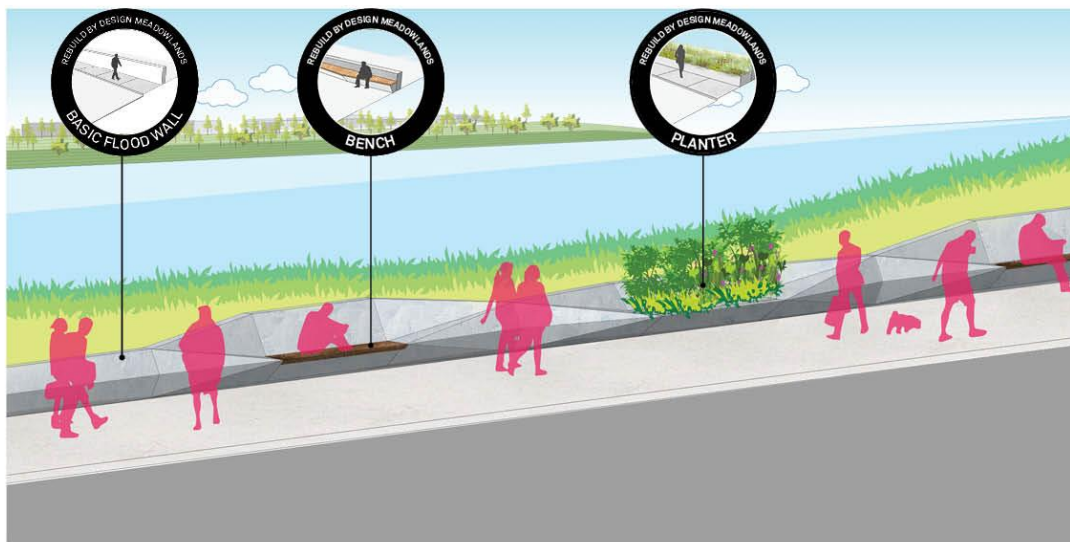
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AECOM

MODULAR COMPONENT DEVELOPMENT

INVESTIGATION: 5

50



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NEXT STEPS

CHRIS BENOSKY, AECOM



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NEXT STEPS

Chris Benosky, AECOM

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NJDEP / AECOM UPCOMING ACTIVITIES

- Prepare Meeting Summary for CAG #6
- Continue developing:
 - Concepts and Alternatives
- CAG #7 in January
 - Alternative 3 - Hybrid



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NEXT STEPS

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CAG: CALL TO ACTION

- Submit comments & worksheet from CAG #6 meeting on **December 16, 2016**
- Share information from this Meeting with friends and neighbors
- Continue to build interest in the Project
- Ensure the public knows about upcoming information (to be posted on Project website)



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NEXT STEPS

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Critical Information

January 31, 2017

CAG Meeting #7: Alternative 3 (Hybrid)

Project Website

www.rbd-meadowlands.nj.gov

Project Email

rbd-meadowlands@dep.nj.gov

Question & Answer



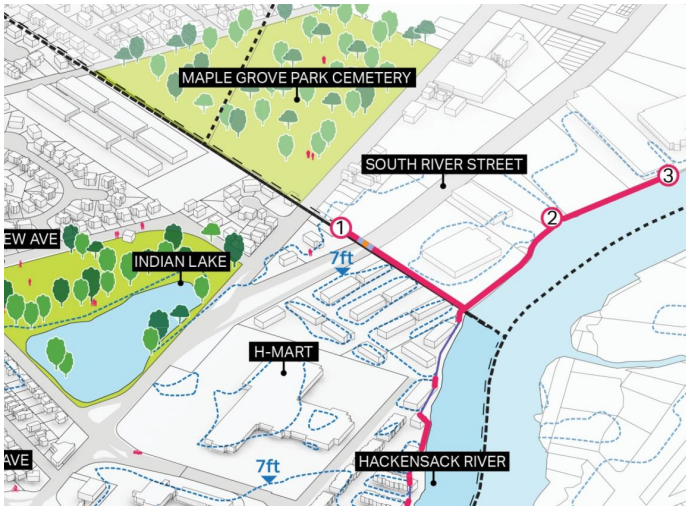
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4.0 Concept Worksheets

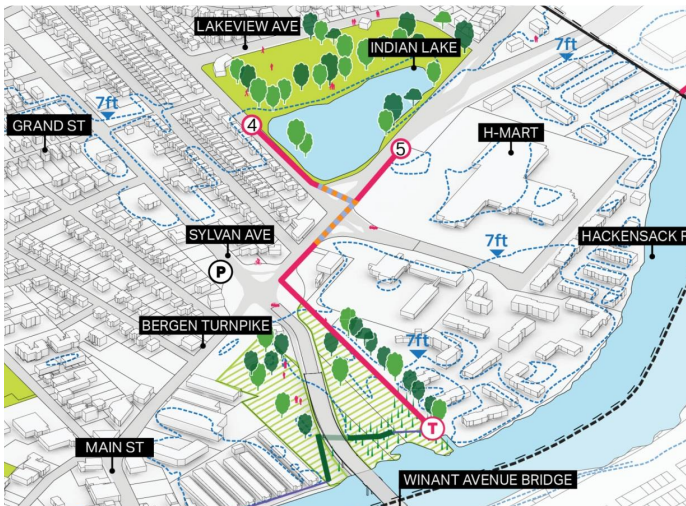
ALIGNMENT OPTION - ZONE 1



What alignment do you prefer, and why?

Are there any options you dislike, and why?

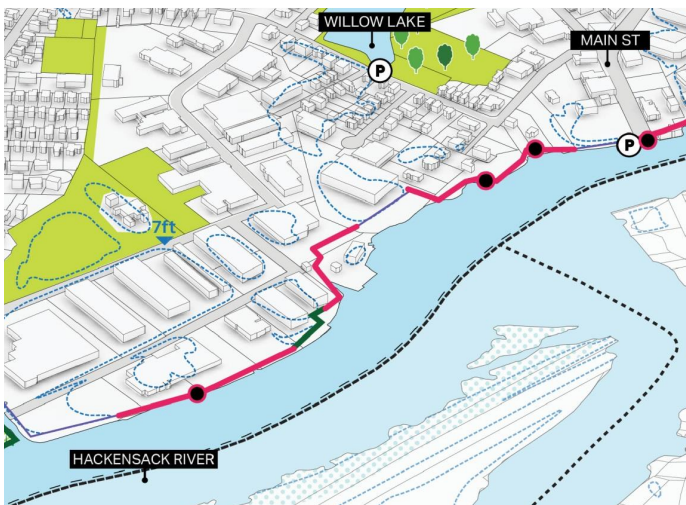
ALIGNMENT OPTION - ZONE 2



What alignment do you prefer, and why?

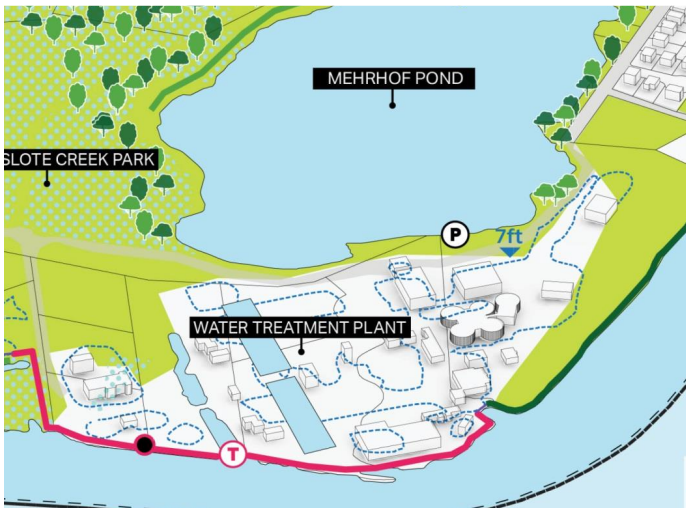
Are there any options you dislike, and why?

ALIGNMENT OPTION - ZONE 3



What alignment do you prefer, and why?

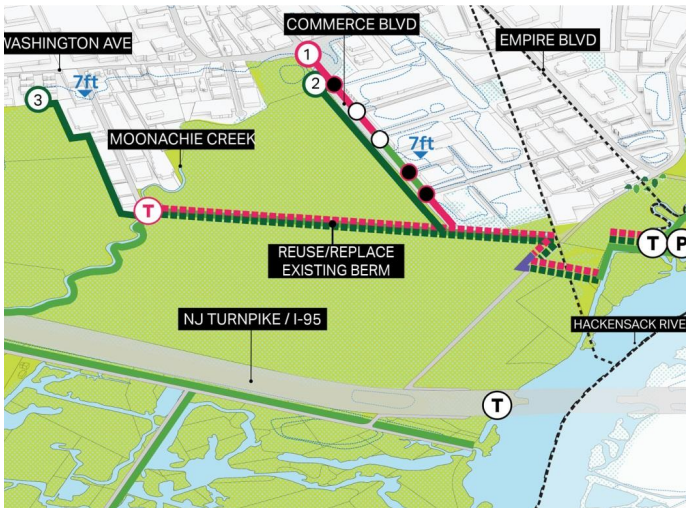
Are there any options you dislike, and why?



ALIGNMENT OPTION - ZONE 4

What alignment do you prefer, and why?

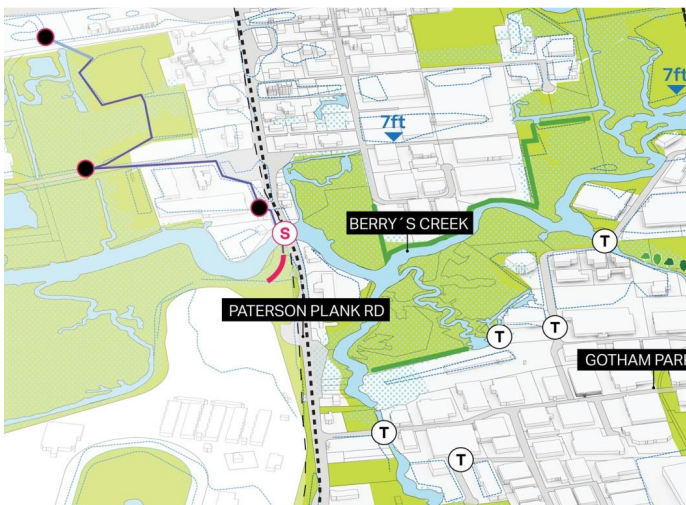
Are there any options you dislike, and why?



ALIGNMENT OPTION - ZONE 5

What alignment do you prefer, and why?

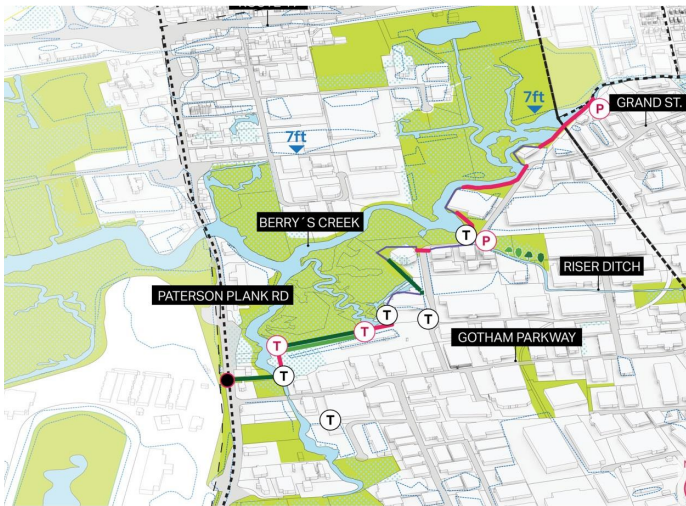
Are there any options you dislike, and why?



ALIGNMENT OPTION - ZONE 6 OPTION 1

What alignment do you prefer, and why?

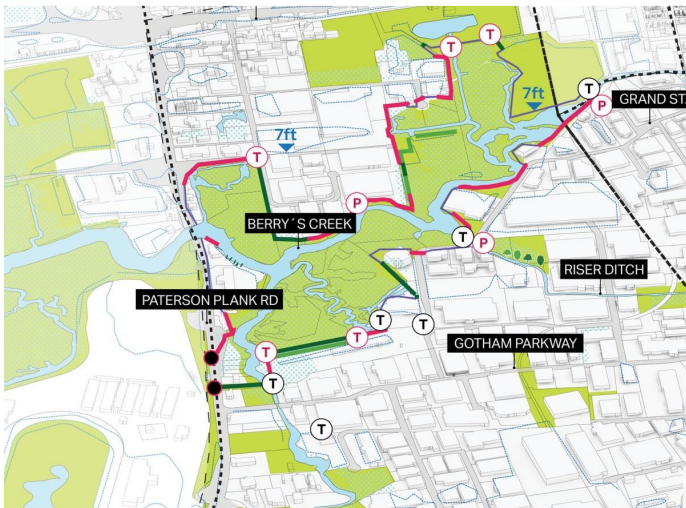
Are there any options you dislike, and why?



ALIGNMENT OPTION - ZONE 6 OPTION 2

What alignment do you prefer, and why?

Are there any options you dislike, and why?



ALIGNMENT OPTION - ZONE 6 OPTION 3

What alignment do you prefer, and why?

Are there any options you dislike, and why?

5.0 Personal Notes

This image shows a single sheet of white paper with horizontal ruling lines. The lines are evenly spaced and run across the width of the page. There are no margins, text, or other markings on the paper.

This image shows a single sheet of white paper with horizontal ruling lines. The lines are evenly spaced and run across the width of the page. There are no margins, text, or other markings on the paper.

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