

# The Bellwether District Community Meeting November 14, 2023



### AGENDA

- Welcome & Introductions
- Development Update
  - Flood Study
  - Stormwater Management Overview
- Community Update
- Q&A



## **PUBLIC BENEFITS**

#### **ECONOMIC BENEFITS**



#### \$4 Billion Total Investment

\$100 Million Philadelphia Projected Annual Tax Revenue

\$120 Million Pennsylvania Annual Tax Revenue **COMMUNITY INVESTMENT** 



Internships, Pre-Apprenticeships Programs for Local Students

\$250,000 Scholarship Commitment to S/SW Philly Students

\$75,000 in Environmental Grants in 2023

#### **Regular CAP Meetings**







Apprenticeships/ Annual Jobs Fair

> +/-19,000 + Direct Permanent Jobs

> +/-28,000 + Direct Construction Jobs

\$850k in Workforce Development Investment





### **PUBLIC BENEFITS**

### TRANSPORTATION & CONNECTIVITY



Reconnecting Historically Closed Off Area of the City

New Internal Streets and Infrastructure Improvements

New Bicycle and Pedestrian Connections

SUSTAINABILITY & RESILIENCY



**LEED Certified Buildings** 

Bioswales to Absorb CO2

Electric Vehicle and Solar Ready Facilities

Microgrid Infrastructure

Raising Low-Lying Areas Out of 100 and 500-Year Floodplain





Reduced Emissions in Philadelphia by 16%

880 Miles of Pipe Removed

18.5 Million Gallons of Petroleum Product Removed









# MASTERPLAN FRAMEWORK

### **PHASE 1 SCHEDULE**



### **SITE OVERVIEW**



### **MASTER PLAN**









### RE-INTEGRATE THE SITE

- New Internal Streets
- Offsite Street and
  Intersection Upgrades
- New Bicycle and Pedestrian Pathways
- Upgraded Transit Connectivity and Access To and From Site







- Thousands of New Plantings and Trees Across Site
- Enhanced Tree Canopy
- Stormwater Retention
  Onsite
- Protected Two-Way Bicycle Lanes and Buffered Sidewalks





### 3 CREATE A SUSTAINABLE DISTRICT

- Reduced Emissions in Philadelphia by 16%
- Fossil Fuel Reduction
- New Solar and Electric
  Vehicle Infrastructure
- Raising the Site Out of 100 and 500-Year Flood Plain
- LEED Certified
  Buildings





# FLOOD STUDY & STORMWATER MANAGEMENT

### **FLOOD MAPPING**

#### What is a Flood Map (FIRM)?

A Flood Insurance Rate Map (FIRM) shows a community's flood zone, floodplain boundaries, and base flood elevation.

They are prepared by the Federal Emergency Management Agency (FEMA) based on a multitude of factors.

Mapping is used to determine mandatory purchase requirements, building code requirements, and floodplain management requirements.

#### What flood zone am I in?

Everywhere is prone to some flood risk the FIRM maps are used to identify high-, moderate-, and low-risk flooding areas.

Moderate to Low Risk areas are designated as B, C, and X on the Map.

High Risk areas are designated as beginning with A or V on the Map.







### **Typical FEMA FIRM Panel**

#### NOTES TO USERS

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### FEMA FIRM Panel – Zoom in on the Details



## **The Schuylkill River Facts**

### **Drainage Area**

- 1,893 square miles
- 13x bigger than the City of Philadelphia
- 4.1% of the State of Pennsylvania (46,055 square miles)

### **Flow Rate**

- 100-Year Storm = 128,000 CFS
- Fills an Olympic size swimming pool in 0.7 seconds

### Tidal vs. Fluvial

- 100-Year Storm Surge Elevation = 8.93' (NAVD88)
- Tidal Flood Elevation Controls at the site





Source: PWD Schuylkill River Watershed Source Water Protection Plan





# **The CLOMR Process**

The Conditional Letter of Map Revision (CLOMR) is a process for FEMA to review proposed changes in the floodplain which could affect the hydrology or hydraulics of a flooding source.

#### What does that mean?

- An application is submitted to FEMA which includes:
  - Proposed project improvements
  - Revised Hydrology & Hydraulic Calculations
  - Annotated FIRM panels showing the proposed changes

#### **Initial Engagement**

- City of Philadelphia Floodplain Manager
- Delaware Valley Regional Planning Commission (DVRPC) Urban Waterfront Action Group (UWAG)

#### What does FEMA do?

- The application is reviewed for technical accuracy.
- The review team works closely with the applicant to refine modeling and ensure an accurate model of the floodplain.
- FEMA issues a conditional letter recognizing the new floodplain.
- Upon completion of the project, as-builts are required to be submitted to update the impacted FIRMs.





Existing 100-year Floodplain





# **Hydrology & Hydraulic Calculations**

**Date of FEMA Effective Study:** November, 1993

Downstream Limit: Delaware River

**Upstream Limit:** Penn Central Railroad Bridge

Length of Study: 49,323 Feet (9.5 Miles)

#### **Surface Modeling:**

- Over 17.5 square miles ٠
- Compilation of 4 supplemental ٠ data sets
- 17 bridges modeled ٠
- 135 cross sections established ٠

#### **Schuylkill River Flows:**

- 10-year storm = 74,000 CFS ٠
- 50-year storm = 110,000 CFS







### Hydraulic Calculations – Topographic Data



### Hydraulic Calculations – Typical Cross Section







# Hydraulic Calculations – Typical Bridge Section







### **Climate Change & Sea Level Rise**

Delaware Valley Regional Planning Commission (DVRPC) – PA Coastal Resiliency Flooding Scenarios			
	Current Conditions (NAVD88)	MHHW + Projected Conditions (NAVD88)*	
Sea Level + MHHW	3.94 ft	7.01 ft	
10-Year Storm (10%) + MHHW	6.99 ft	10.06 ft	
100-Year Storm (1%) + MHHW	8.07 ft	11.14 ft	

\*Based on 2100 High-Emissions Scenario

FEMA Flood Elevations	Elevations (ft) (NAVD88)
100-Year Storm (1% Annual Chance) Tidal Flood Elevation	8.93
500-Year Storm (0.2% Annual Chance) Tidal Flood Elevation	11.53

Proposed Improvements	Elevations (ft) (NAVD88)
City of Philadelphia Regulatory Flood Elevation (100-Year Effective Elevation + 18")	10.43
Minimum Proposed Finished Floor for Building (100-Year Effective Elevation + 4')	12.93





# RESULTS

### Process

• Approval process with FEMA and the City of Philadelphia



- Studied over **9.5 miles** of the Schuylkill River from the confluence with the Delaware River to the Penn Central Railroad Bridge
- Worked with FEMA reviewers for over **2 years** to refine and establish a new floodplain model
- FEMA provided final determination to the City of Philadelphia based on HRP's mapping revision plan in November 2022
- Study **accepted** by the City of Philadelphia Floodplain Manager





Results of the study demonstrate that the post-construction site improvements and elevations do **NOT** impact the floodplain elevation



# **STORMWATER MANAGEMENT**

#### What is a Post Construction Stormwater Management (PCSM)?

Management and Control of Stormwater Discharge

Analysis existing and proposed stormwater runoff

Compliance with regulations enforced by:

- Philadelphia Water Department (PWD)
- Pennsylvania Department of Environmental Protection (PA DEP)

#### Where are we in the process?

**Phased approach** due to the immense nature of the improvements.

Mass Grading

Infrastructure Construction

Pad Specific Development





# **EXISTING DRAINAGE CONDITIONS**

Analysis of stormwater runoff begins with identifying the Discharge Point of the runoff in the existing conditions

### **Onsite Runoff:**

- Drains through existing private infrastructure
- Mechanical means of conveyance necessary due to existing topography
- Processed in existing wastewater treatment plants (to be decommissioned)
- Construction runoff processed by a temporary treatment system
- Discharged through existing outfalls to the Schuylkill River





### **PROPOSED DRAINAGE CONDITIONS**

Analysis of stormwater runoff in the proposed development is compared to the existing conditions at the Discharge Point

### **Onsite Runoff:**

- Drains through proposed public/private infrastructure
- Conveyed by gravity based on the proposed topography
- Managed in lined surface and subsurface stormwater basins
- Discharged through existing and proposed outfalls to the Schuylkill River





### **STORMWATER MANAGEMENT PERMITTING**

**PWD** Existing Resources and Site Analysis (ERSA) Approval

**Determination of Applicable Regulations** 

**Determine Appropriate Review Path** 



PWD Post Construction Stormwater Management (PCSM) Approval

Determination of Compliance with Regulations: Erosion and Sediment (E&S) Control Flood Control Channel Protection Water Quality

#### PA DEP

Individual National Pollution Discharge Elimination System (NPDES) Permit

Implement and maintain Best Management Practices (BMPs) Minimize Potential for Accelerated Erosion Manage Post Construction Stormwater



### **STORMWATER MANAGEMENT COMPLIANCE**

**Basin** 

Meet or exceed regulatory stormwater management requirements

### Typical BMPs Approved by PWD and proposed onsite







Example from PWD Stormwater Guidance Manual



Channel

# SITE PROGRESS



# EARTHWORK PROGRESS

- Lot 15 Surcharge complete with removal ongoing
- Lot 16 Surcharge placement and site preparation ongoing
- Future Frances Harper Drive subgrade preparation ongoing



# COMMUNITY UPDATE

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### **Bellwether District Community Resource Fair**











### **2023 Bellwether District Turkey Drive**



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### **Community Benefits Agreement Update**

### **CBA TIMELINE**

- Process began in May 2023.
- Mix of in-person and virtual meetings.
- Aiming to have completed CBA by early-mid 2024.

### **CBA PARTICIPANTS**

- Utilizing HRP's Community Advisory Panel for CBA process.
- Community Advisory Panel made up of 25 Registered Community Organizations (RCOs) and other key stakeholders that serve South and Southwest Philadelphia.
- Continue to collect feedback from the broader community.

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# **Thank You**

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