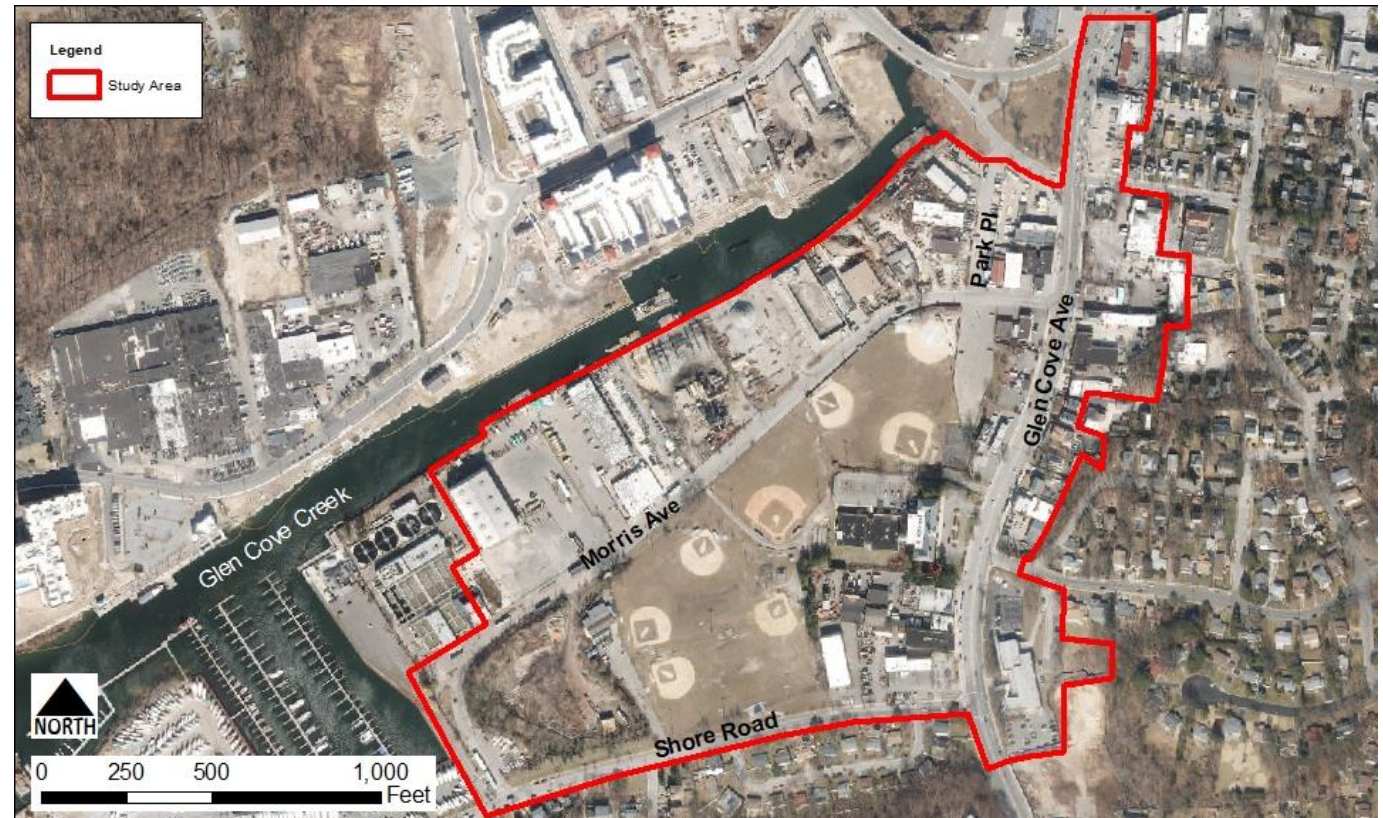




Western Gateway Climate Vulnerability Assessment & Adaptation Strategies Plan

Working Session
September 21, 2022

Known for Excellence. Built on Trust.



NYSDEC Acknowledgement

“This project has been funded in part by the Climate Smart Communities Grant Program, Title 15 of the Environmental Protection Fund through the New York State Department of Environmental Conservation.”



Project Team

Advisory Committee

Organization

Mayor's Office, City of Glen Cove

Glen Cove City Council

Public Works Department, City of Glen Cove (DPW)

Building Department, City of Glen Cove

Youth Services and Recreation Department, City of Glen Cove

Glen Cove Community Development Agency (CDA)

Recreation Commission, City of Glen Cove

Glen Cove Police Department

Cove Animal Rescue

Glen Cove Housing Authority

Glen Cove Downtown Business Improvement District (BID)

InterAgency Council (IAC) of Glen Cove

Glen Cove Chamber of Commerce

Shore Road Neighbors Organization

Organization

Tiegerman Schools

Glen Cove Boys & Girls Club

Glen Cove Yacht Yard (Brewer Yacht Yard)

RXR / Garvies Point and Village Square

Hempstead Harbor Protection Committee (HHPC)

Nassau County Department of Public Works (DPW)

Consultant Team

Organization

GZA GeoEnvironmental of New York

Presentation Overview

- Project Team
- Project Overview
- Climate Adaptation Public Engagement and Outreach
- Climate Adaptation Recommendation Priorities and Implementation
- Next Steps



Project Overview

- Hazards Characterization
- Climate Vulnerability Assessment
- Resilience and Adaptation Strategies and Measures
- Survey Results



Observed ponding in baseball fields to north of Tiegerman School.

Flooding

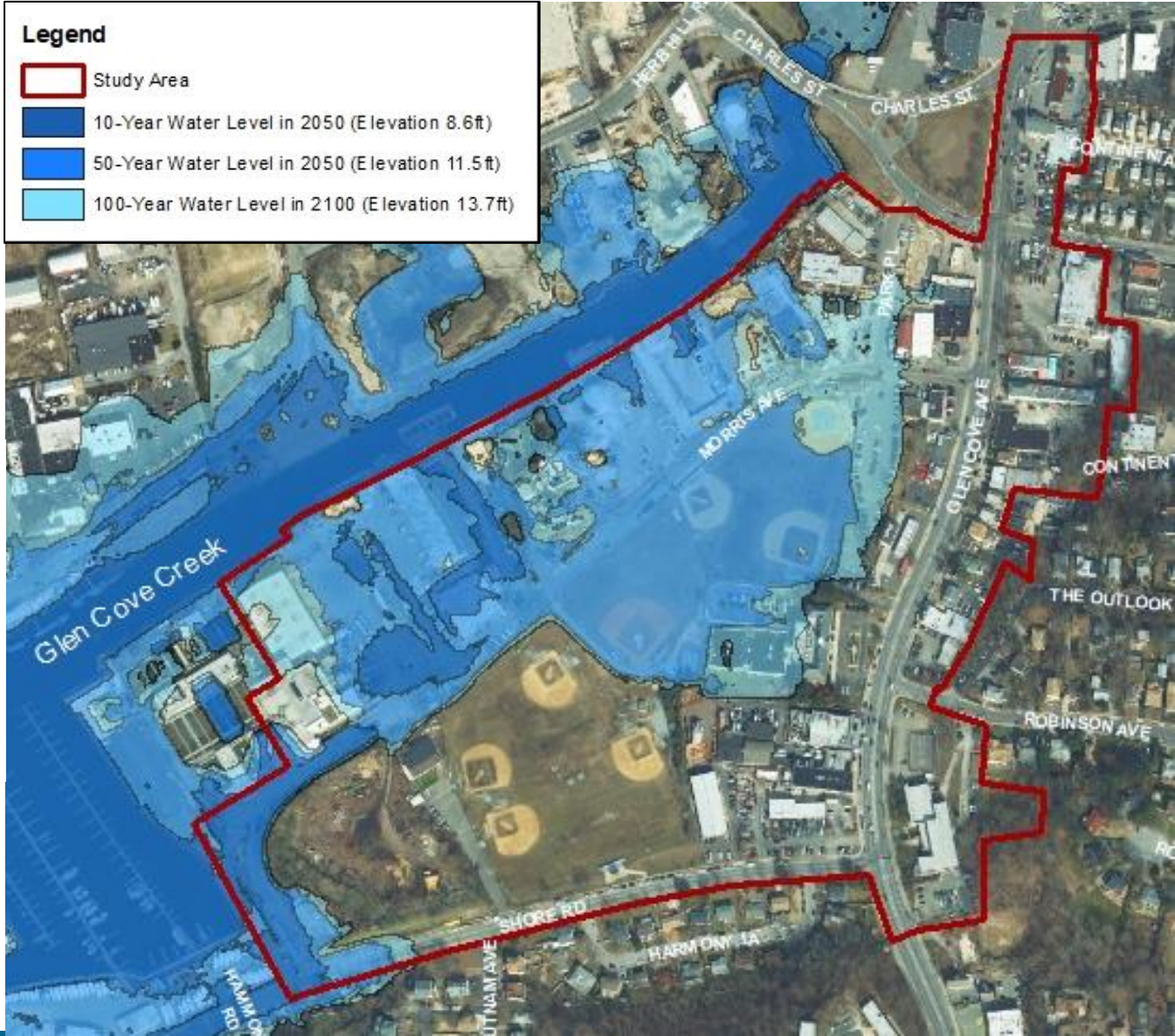
-
- This map illustrates the Study Area, which is outlined in orange. The area is divided into several flood zones: Zone X (hatched pattern), Zone AE (CL 15) (blue wavy pattern), and Zone AE (CL 10) (green wavy pattern). A red line indicates the 'LIMIT OF MODERATE WAVE ACTION'. The map also shows various streets including SON ST, HERB MIL RD, MORRIS AVE, PARKER, GLENDOVE AVE, CONTINENTAL PL, BYRD ST, CROW LA, THE OUTLOOK, ROBINSON AVE, ROONEY CT, GLENCOCK AVE, MARINERS WAY, HARMONY LA, and NEW WYOMING AVE. Callouts indicate the '100-yr flood' (blue wavy pattern) and the '500-yr flood' (green wavy pattern).

Project Overview: Hazard Characterization

Flooding

- Flooding with New York State Projected Sea Level Rise added

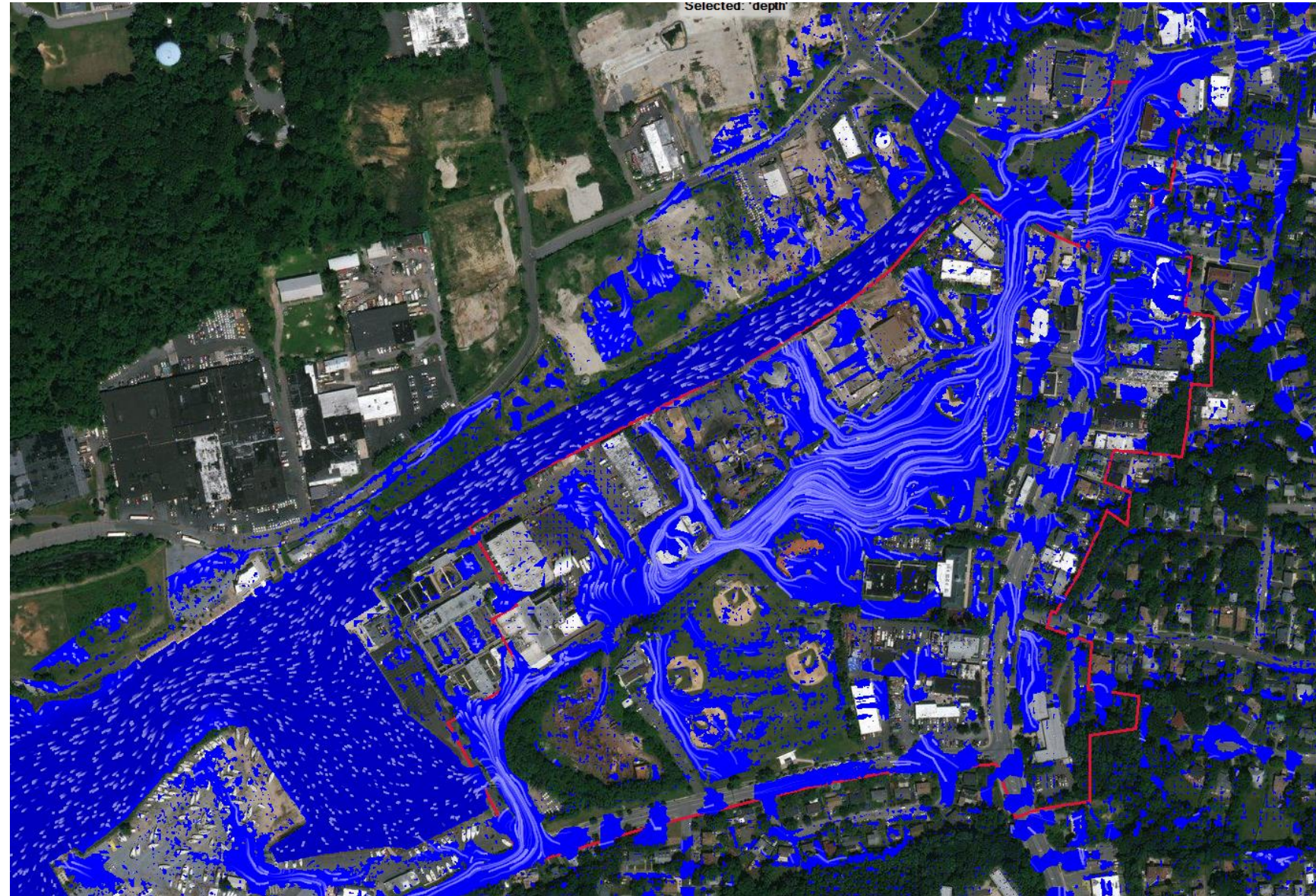
Time Interval	Low Projection	Low-Medium Projection	Medium Projection	High-Medium Projection	High Projection
2020s	2 inches	4 inches	6 inches	8 inches	10 inches
2050s	8 inches	11 inches	16 inches	21 inches	30 inches
2080s	13 inches	18 inches	29 inches	39 inches	58 inches
2100	15 inches	21 inches	34 inches	47 inches	72 inches



Project Overview: Hazard Characterization

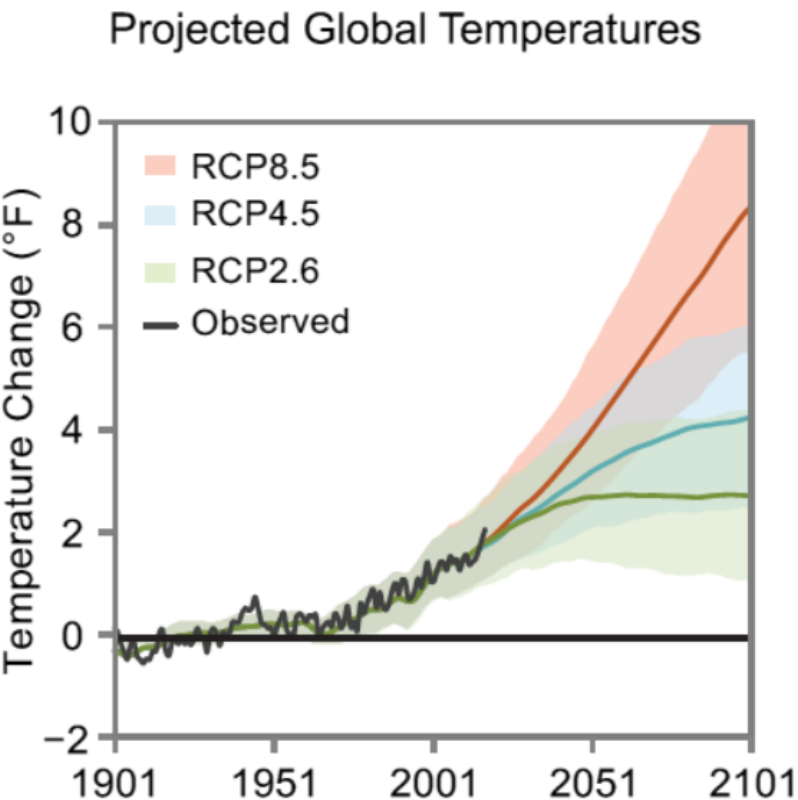
Flooding

- Stormwater Runoff Flow Patterns



Project Overview: Hazard Characterization

Temperature

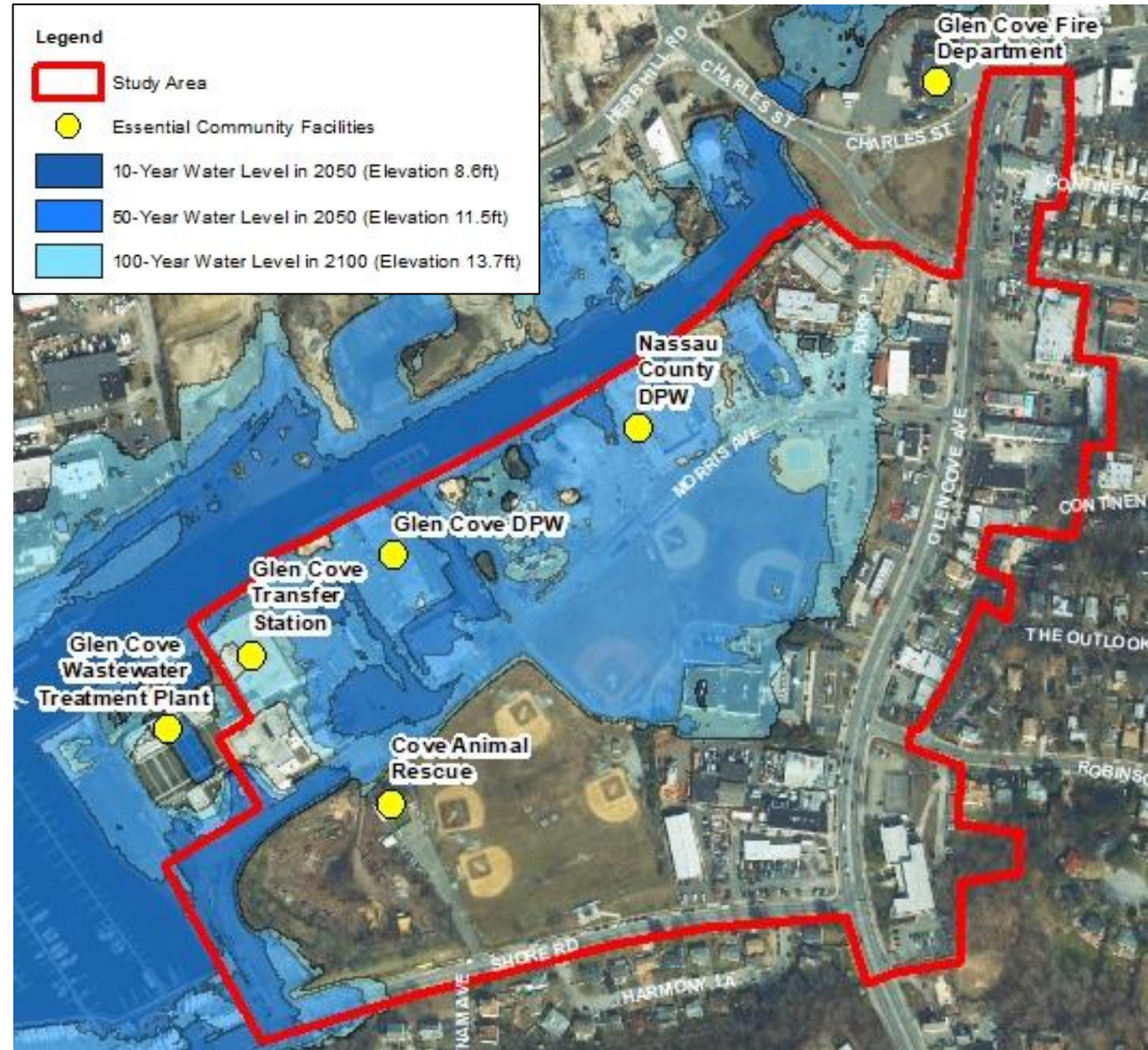


Time Period	Change in Temperature	Degrees Fahrenheit
Mid Century (2036-2065)	Change in Annual Average Temperature (RCP4.5)	4.0
	Change in Annual Average Temperature (RCP8.5)	5.1
Late Century (2071-2100)	Change in Annual Average Temperature (RCP4.5)	5.3
	Change in Annual Average Temperature (RCP8.5)	9.1

Project Overview: Climate Vulnerability Assessment

Flooding

- Essential Facilities



Project Overview: Climate Vulnerability Assessment

Temperature

- High vulnerability to increasing temperatures:
 - Daily maximum temperature is increasing by about 5°F per century;
 - Number of days with maximum temperature above 90°F is increasing by about 13 days per century; and
 - Number of days with maximum temperature above 70°F is increasing by about 16 days per century.



Project Overview: Resilience and Adaptation Measures

Flooding

- Resilience Strategies
 - Protect
 - Accommodate
 - Retreat (not applicable to study area)
- Policies, Plans and Procedures (i.e., non-structural measures)
- Physical Projects:
 - Structural
 - Natural and Nature-Based Features (e.g., Living Shorelines)

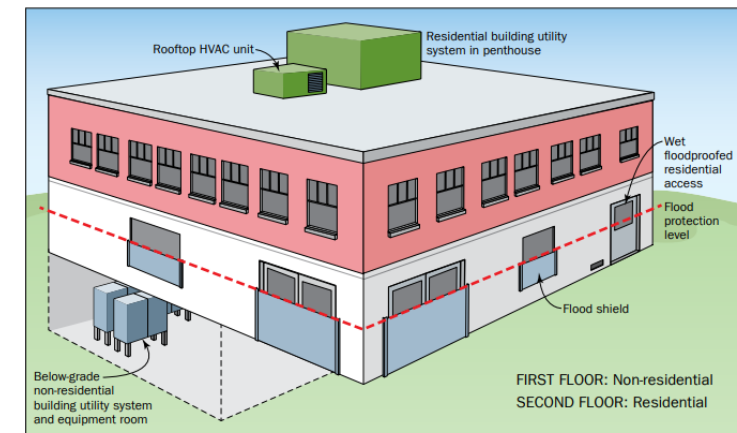
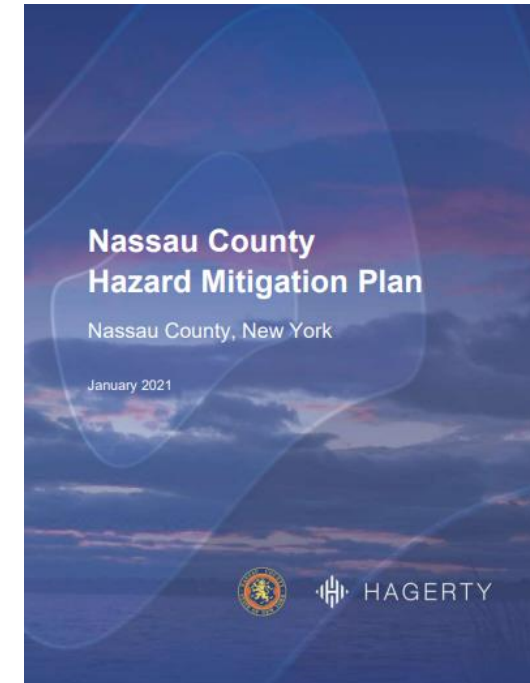


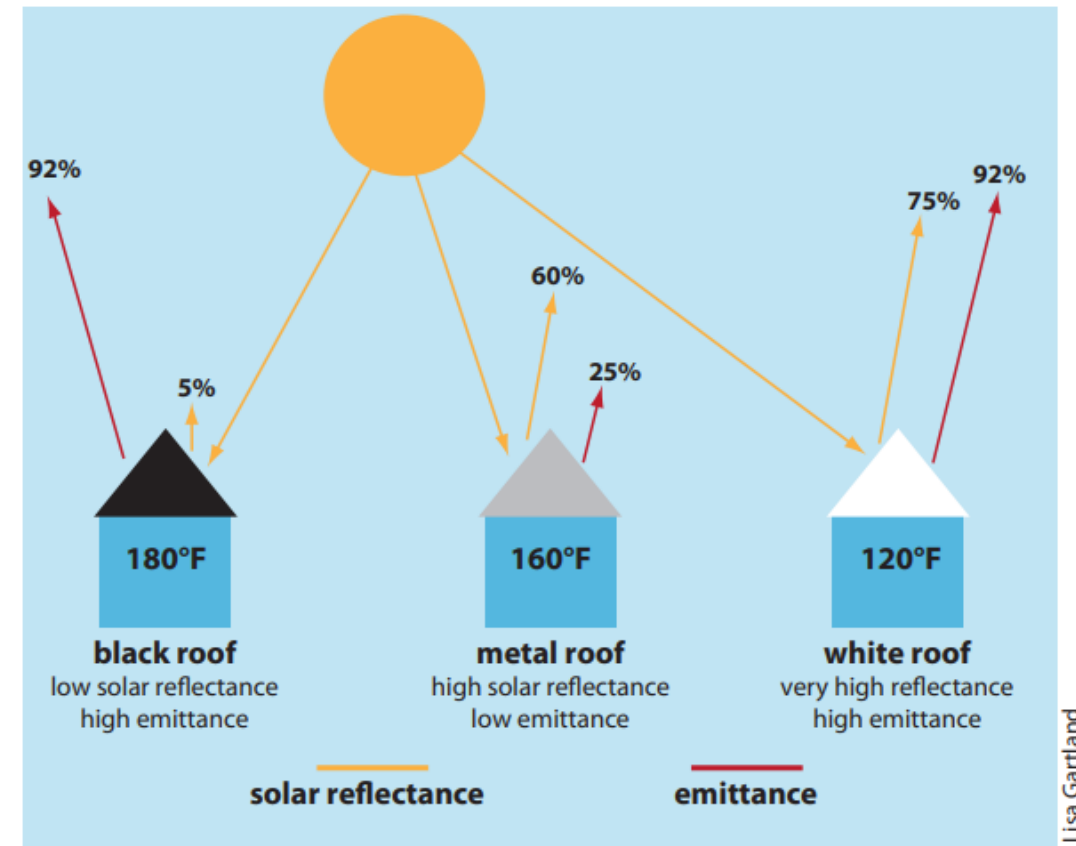
Figure 5: Mixed-use building with non-residential building utility systems and equipment in a dry floodproofed below-grade equipment room and elevated systems that serve the residential uses

Project Overview: Resilience and Adaptation Measures

Temperature

- Increased public education about heat health risks, side effects, and heat-health awareness.
- Non-structural long-term or people-based strategies (e.g., scheduling outdoor activities to cooler times of the day).
- Add cooling measures such as cooling centers, splash parks, pools, etc.
- Increase vegetation, tree cover, or awnings and canopies
- Require construction with heat-resistant materials or materials that reduce heat island effects such as “cool” pavements.

Figure 5: Example of Combined Effects of Solar Reflectance and Thermal Emittance on Roof Surface Temperature⁴

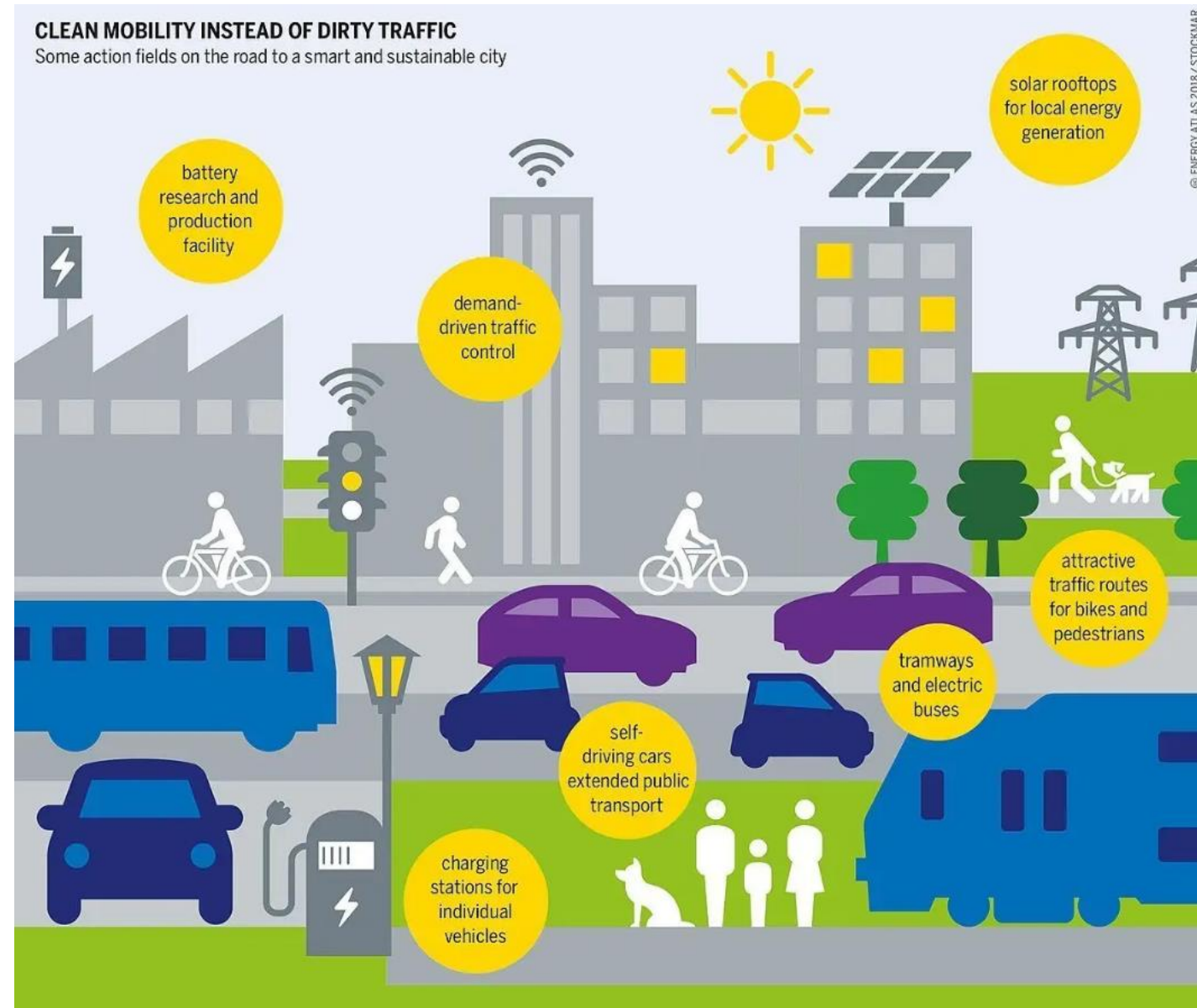


EPA 2008

Project Overview: Resilience and Adaptation Measures

Non-motorized Activities to Reduce Greenhouse Gas Emissions

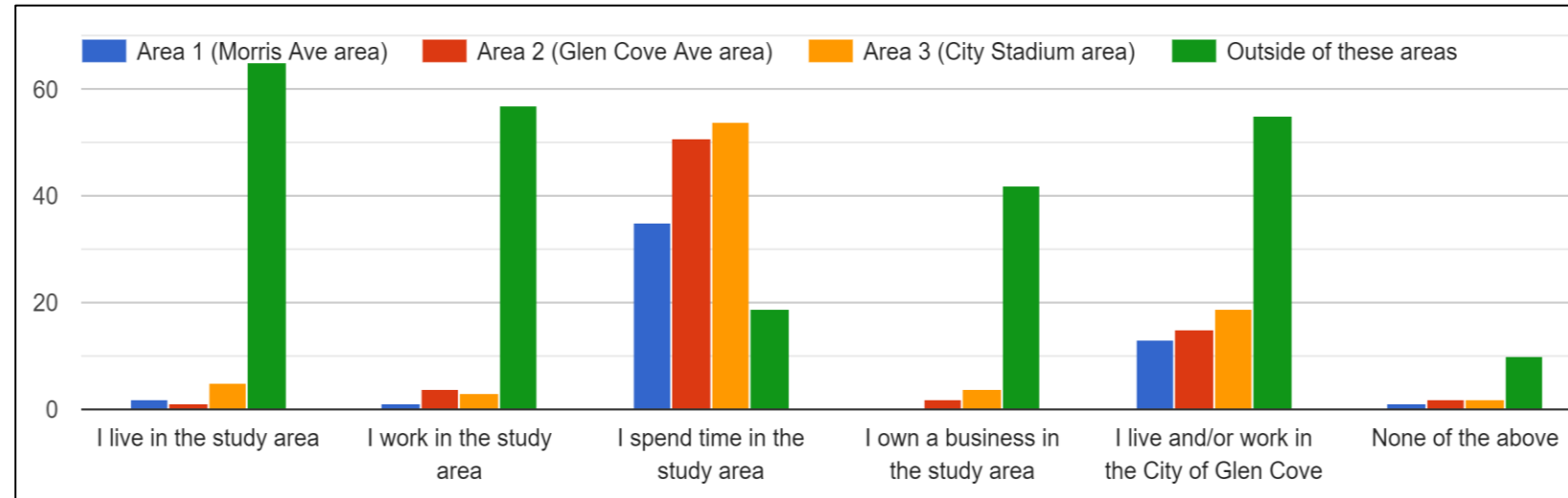
- Increase pedestrian accessibility
- Increase bicycle accessibility
- Increase connectivity of the Western Gateway study area to public transit
- Install traffic calming measures



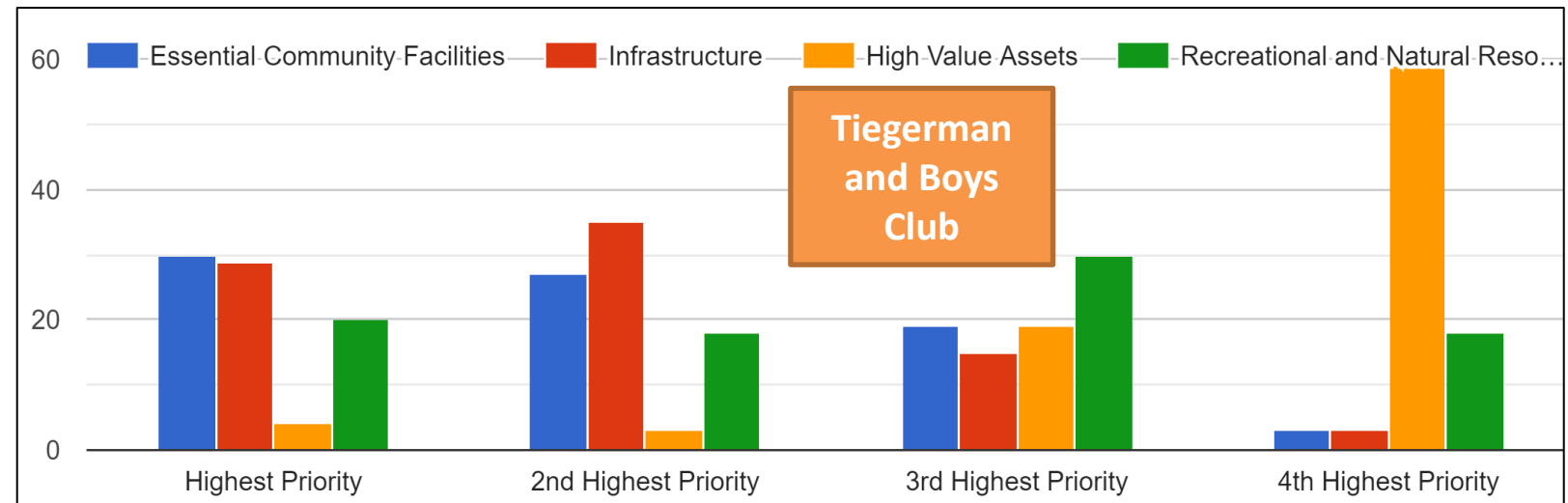
Project Overview: Survey

- Open from August 9th to September 21st, 2021
- 24 multiple choice or short answer questions
- 84 total responses
- Respondents generally people who spent time in Study area
- Results used to help rank potential adaptation measures

Do you live, work, or spend time in the area?

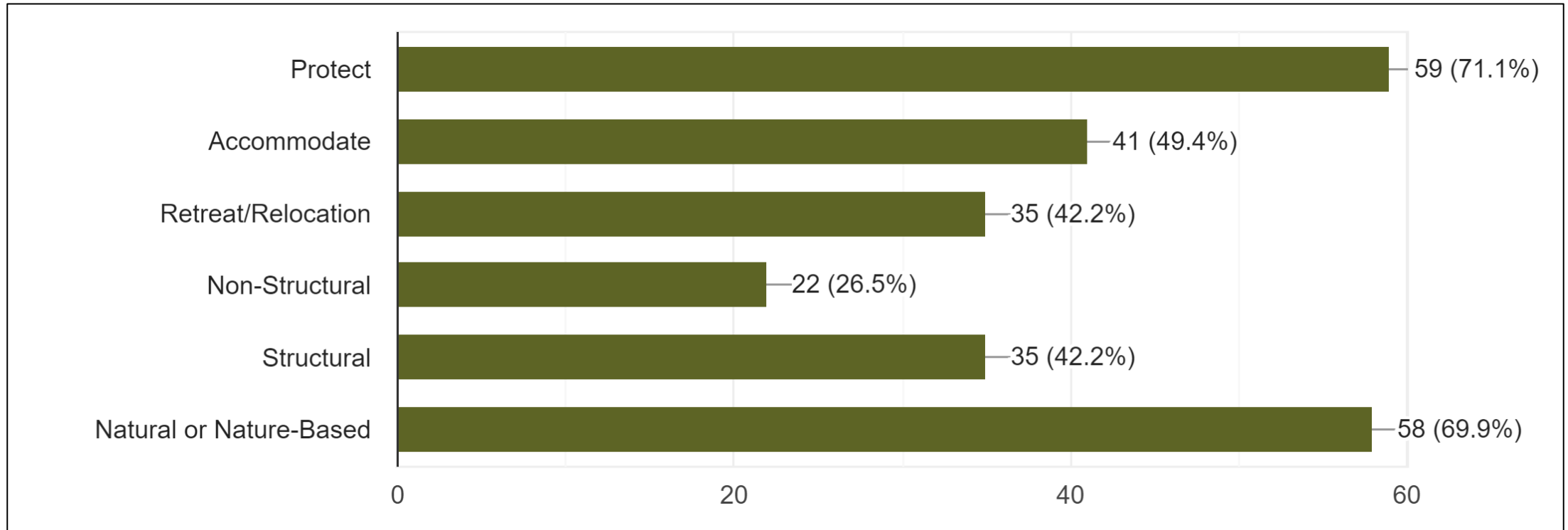


How would you prioritize assets?



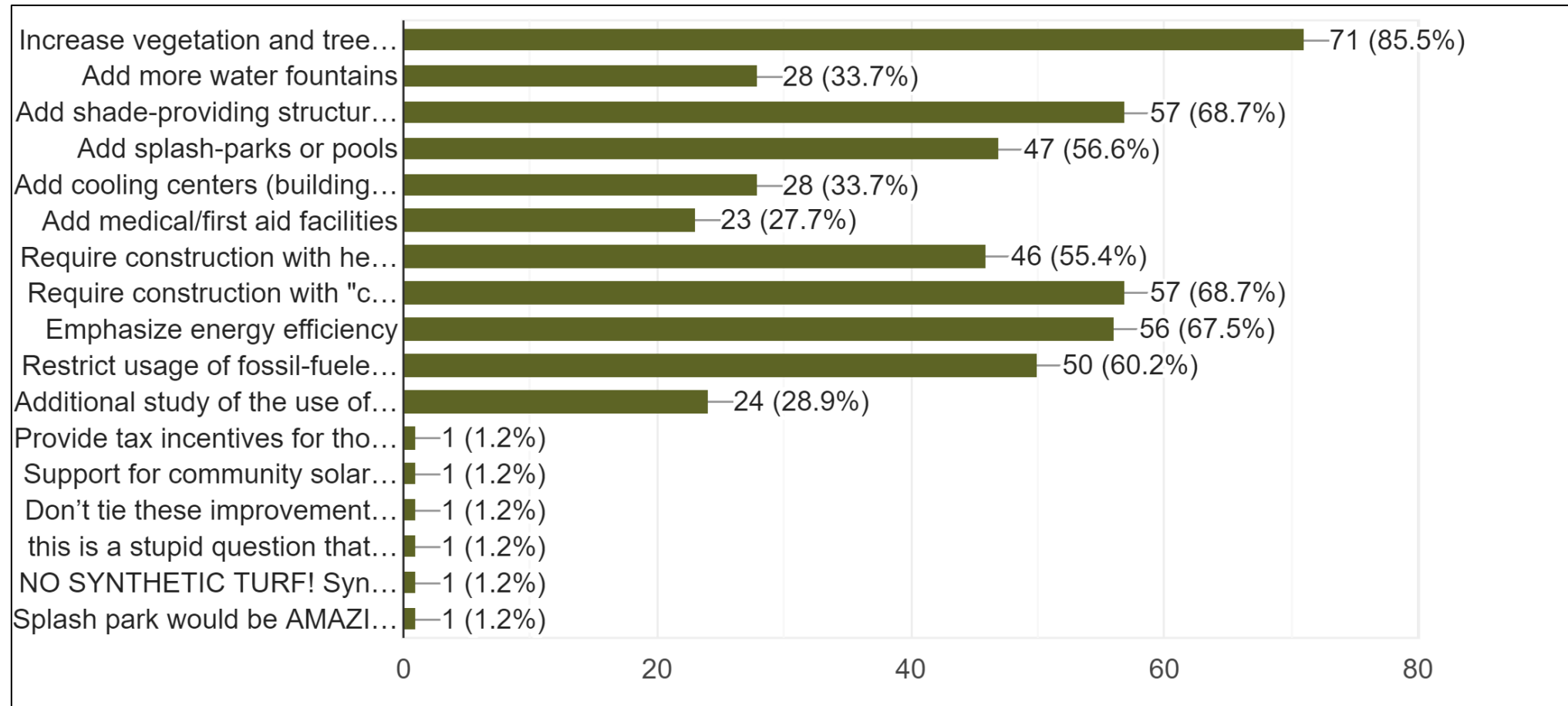
Project Overview: Survey Results

Which Flood Resiliency Approaches are Favored?




Project Overview: Survey Results

Infrastructure changes to reduce impacts of increasing heat



Climate Adaptation Recommendation Priorities and Implementation

Prioritization Approach

- Step 1. Natural hazards and climate change vulnerability assessment
- Step 2. Identify potential adaptation measures
- Step 3. Develop the decision-making criteria
 - **Hazard Vulnerability Reduction**
 - **Technical Feasibility**
 - **Ecological Impact**
 - **Public Support (Survey Results and Committee Feedback)**
- Step 4. Rate the effectiveness of each measure (from low of 1 to high of 5)
- Step 5. Weigh each criteria 
- Step 6. Rank the measures

VULNERABILITY REDUCTION	TECHNICAL FEASIBILITY	ECOLOGICAL IMPACT	PUBLIC SUPPORT
.30	.25	.20	.25

Prioritization Results:

Flood Resiliency and Adaption – Top 5 Measures

1. Update Natural Hazard Mitigation Plan with results and recommendations from this plan.
2. (tie) Revise building/zoning regulations
2. (tie) Enhance the stormwater system to promote drainage. Can consider nature-based features (e.g., green infrastructure).
3. (tie) Develop a flood emergency response plan.
3. (tie) Develop a post-storm repair and clean-up plan.

Prioritization Results

Heat Resiliency and Adaption - Top 5 Measures

1. Increase vegetation, tree cover, or awnings and canopies to provide additional shade and other benefits.
2. Non-structural long-term or people-based strategies including data-driven planning and administrative controls (e.g., scheduling outdoor activities to cooler times of the day).
3. Require construction with heat-resistant materials and/or materials that reduce heat island effects such as “cool” pavements.
4. Increased public education about heat health risks, side effects, and heat-health awareness.
5. Construct additional cooling measures such as cooling centers, splash parks, pools, etc.

Prioritization Results

Greenhouse Gas Emissions Reduction - Top 4 Recommendations

1. Increase bicycle accessibility (new bike paths, bike storage/parking).
2. (tie) Increase pedestrian accessibility (more sidewalks, crosswalks, pathways, etc.).
2. (Tie) Increase connectivity of the Western Gateway study area to public transit (bus, ferry, etc.).
3. Install traffic calming measures (raised crosswalks/intersections, lane narrowing/restriping, etc.).

Next Steps

- Environmental Review - New York State Environmental Review Act (SEQRA)
- Climate Adaptation and Resilience Funding Programs
- Provide Final Draft Plan for review
- Plan adoption by City Council
- Council Resolution to take the Climate Smart Communities Pledge

Comments & Questions



Thank You