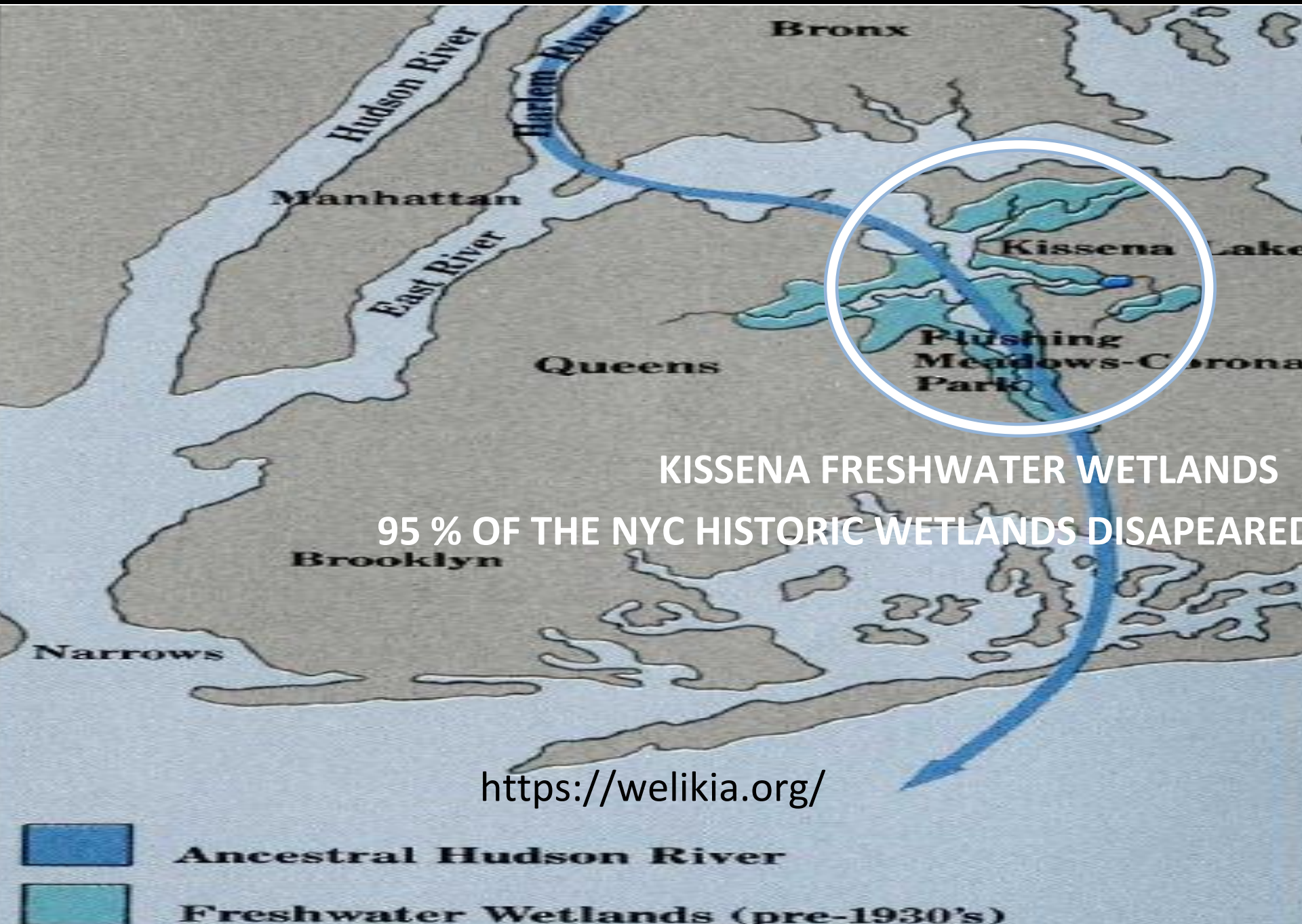
FLUSHING/KISSENA CORRIDOR PARK SOCIAL-ECOLOGICAL SYSTEM SUSTAINABLE STRATEGIC ACTION PLAN 2030-2050

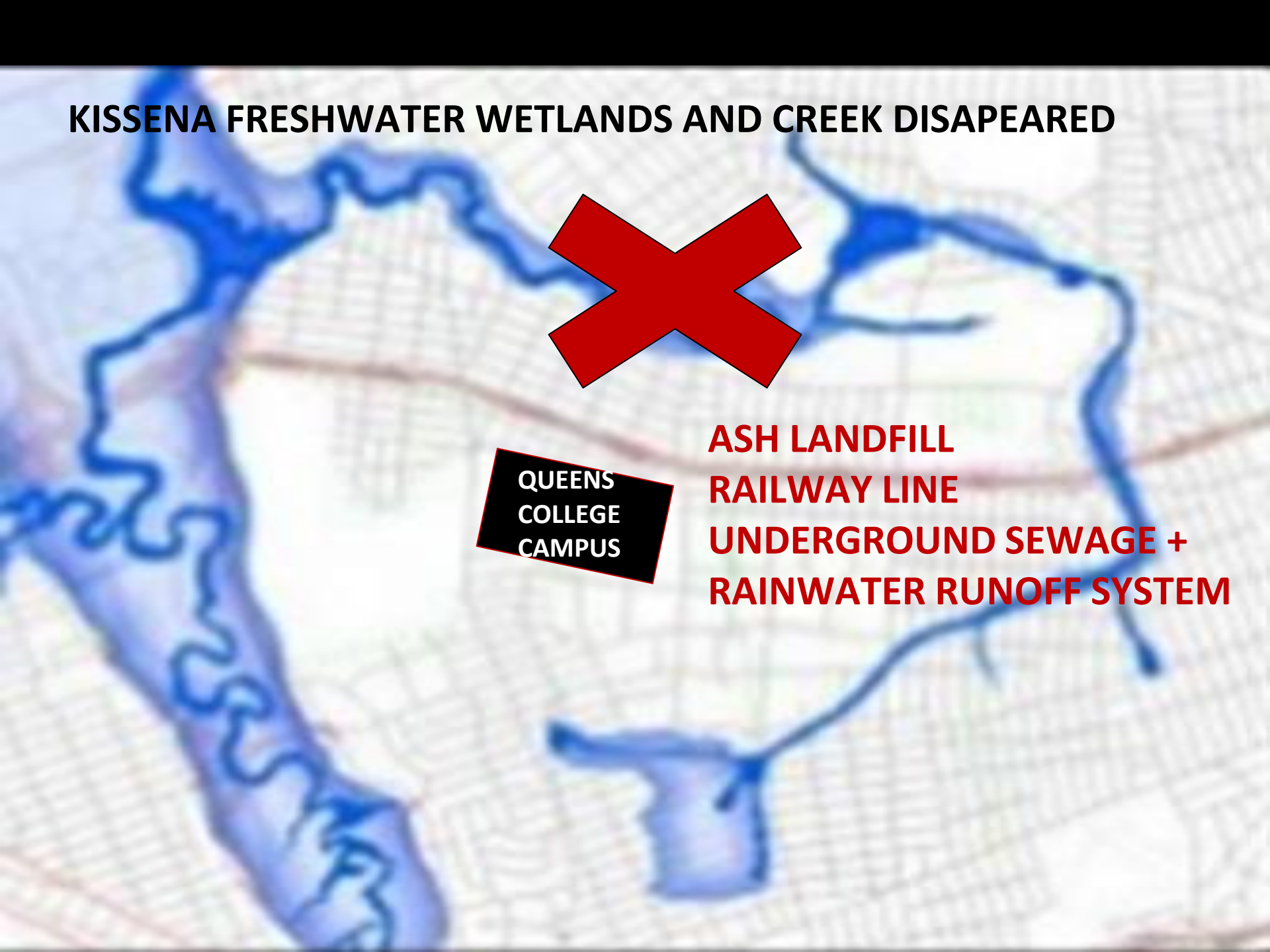
- URBAN SOCIAL-ECOLOGICAL CONTEXT
- STRATEGIC ACTION PLAN FRAMEWORK
- STRATEGIC ACTION PLAN TOOLS
- FLUSHING/KISSENA PARK STRATEGIC ACTION PLAN 2030/2050

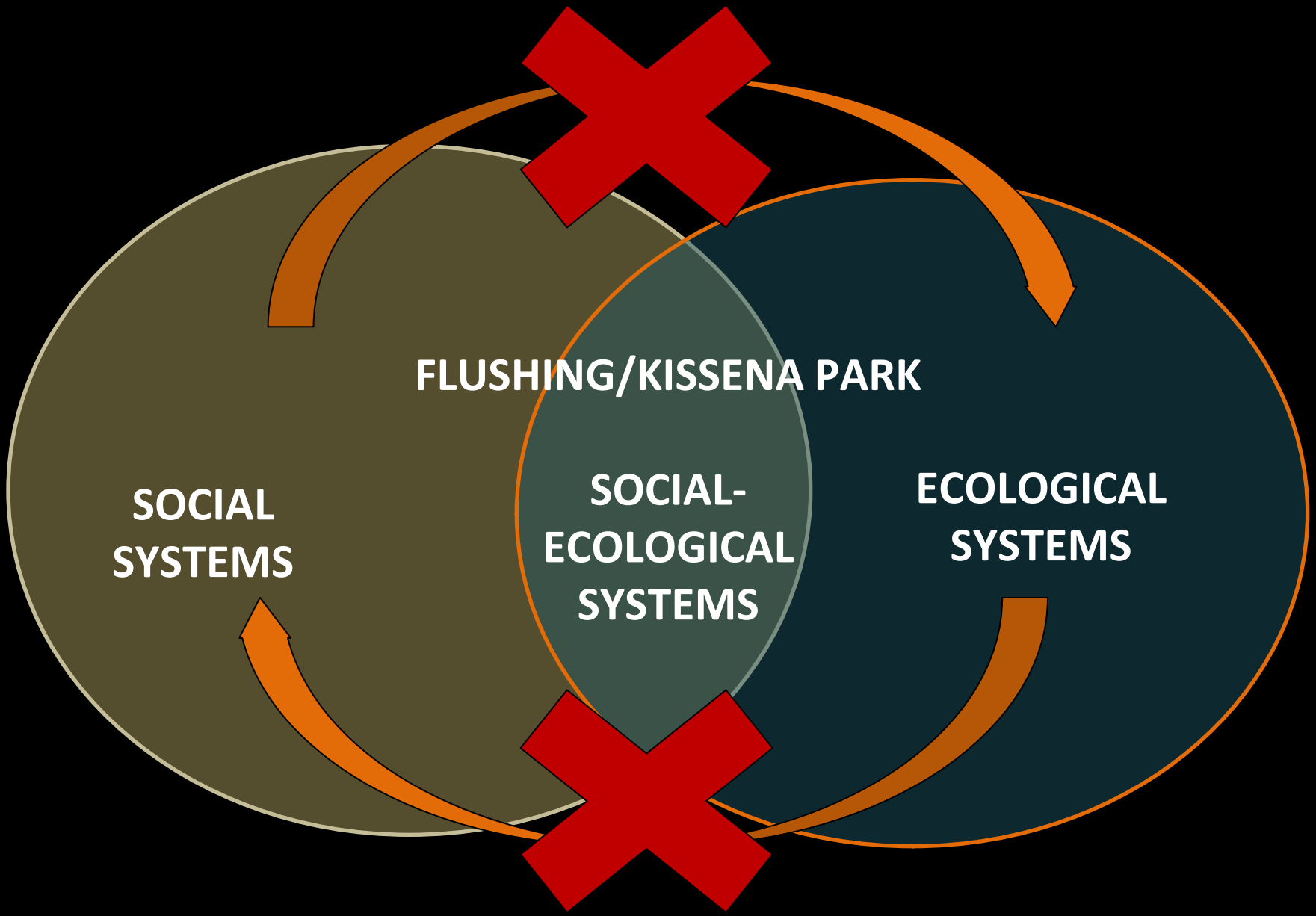
URBAN STUDIES AT QUEENS COLLEGE

CUNY The City University of New York


FLUSHING
MURRAY HILL
35th Ave
Whitestone Expres
Main St
Roosevelt Ave
Crocheron Ave
WILLETS POINT
126th St
162nd St
Municipal Parking
Flushing #3
Citi Field
FLUSHING SOCIAL SYSTEM
Queens
Botanical
Garden
FLUSHING/KISSENA
SOCIAL-ECOLOGICAL
SYSTEM
Mets-Willets Point
USTA Billie Jean King
National Tennis Center
Kissena
Corridor Park
Booth Memorial
Kissena Park
Queens Museum
New York State Pavilion
KISSENA ECOLOGICAL SYSTEM
Grand Central Pkwy
Long Island Expy
Flushing
Meadows
Corona Park
World's Fair Playground
Kissena Park Golf Course
HILLS
QUEENS
COLLEGE
CAMPUS
Queens College
164th St

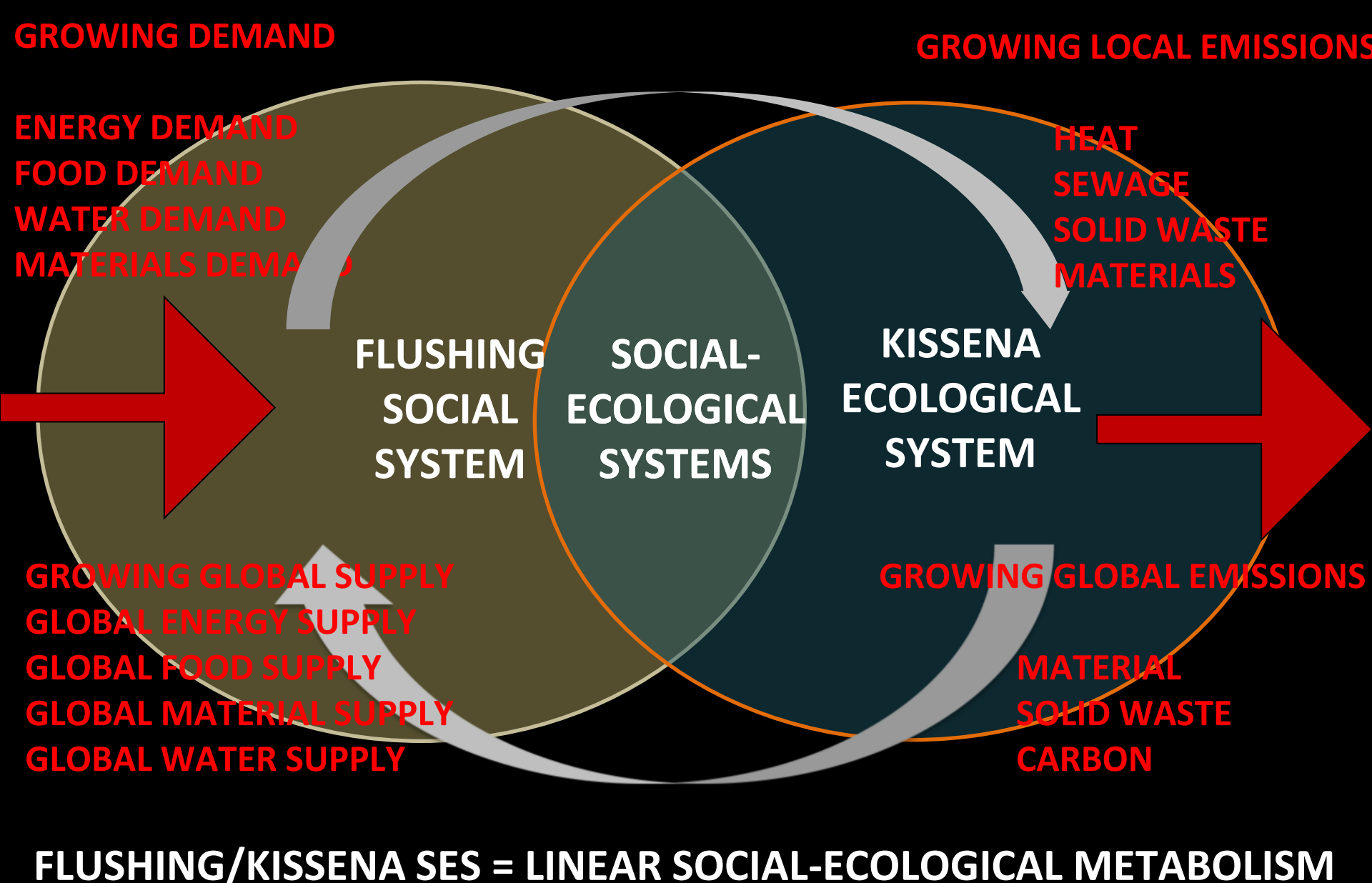

Bronx
Hudson River
Harlem River
Manhattan
East River
Kissena Lake
Flushing Meadows-Corona Park
Queens
KISSENA FRESHWATER WETLANDS
95 % OF THE NYC HISTORIC WETLANDS DISAPEARED
Brooklyn
Narrows
https://welikia.org/
Ancestral Hudson River
Freshwater Wetlands (pre-1930's)


KISSENA FRESHWATER WETLANDS AND CREEK DISAPEARED
QUEENS COLLEGE CAMPUS
ASH LANDFILL
RAILWAY LINE
UNDERGROUND SEWAGE + RAINWATER RUNOFF SYSTEM

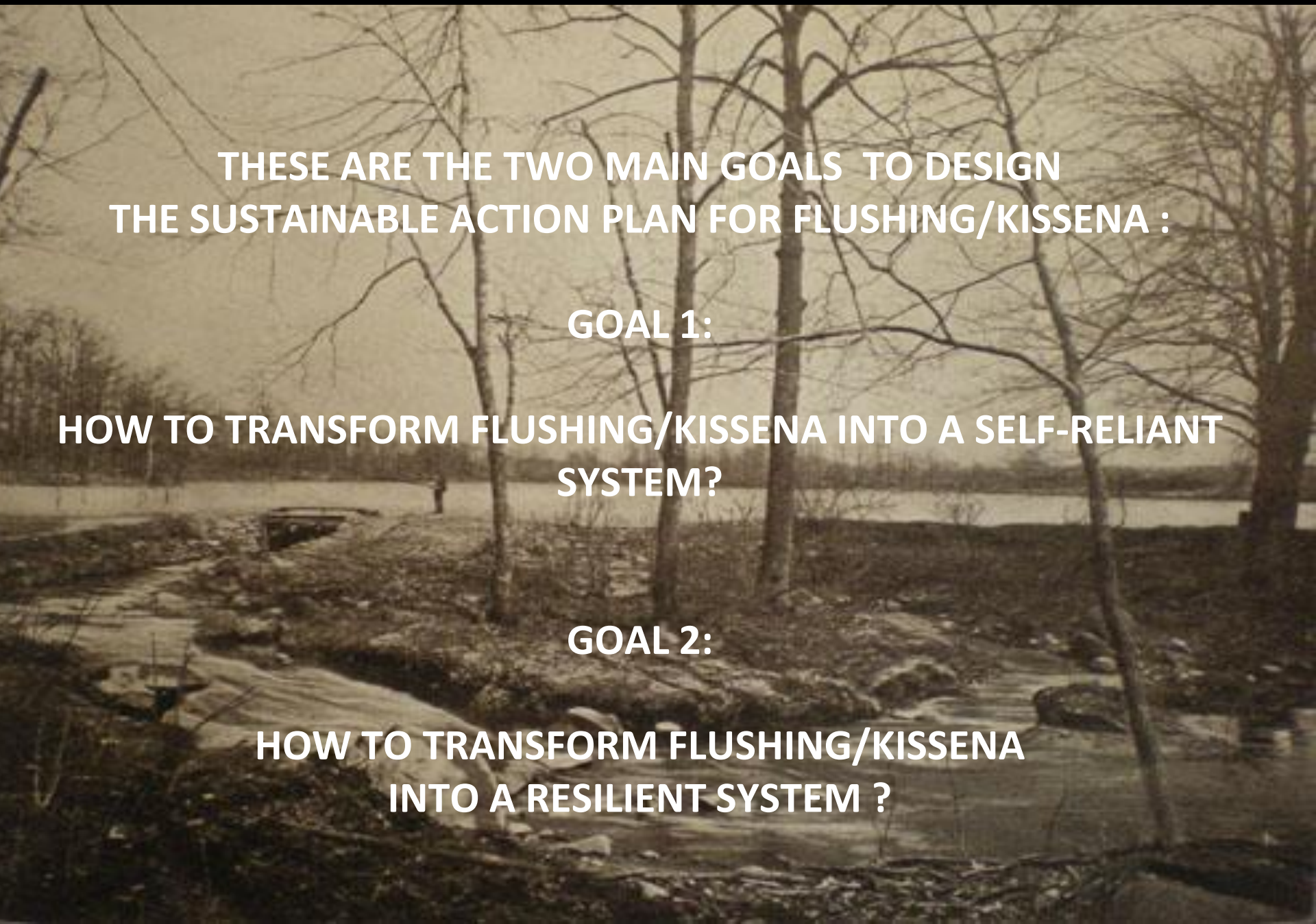


FLUSHING/KISSENA METABOLISM IS A LINEAR AND OPEN LOOP

FLUSHING/KISSENA IS NO SELF-RELIANT



FLUSHING/KISSENA SES = LINEAR SOCIAL-ECOLOGICAL METABOLISM



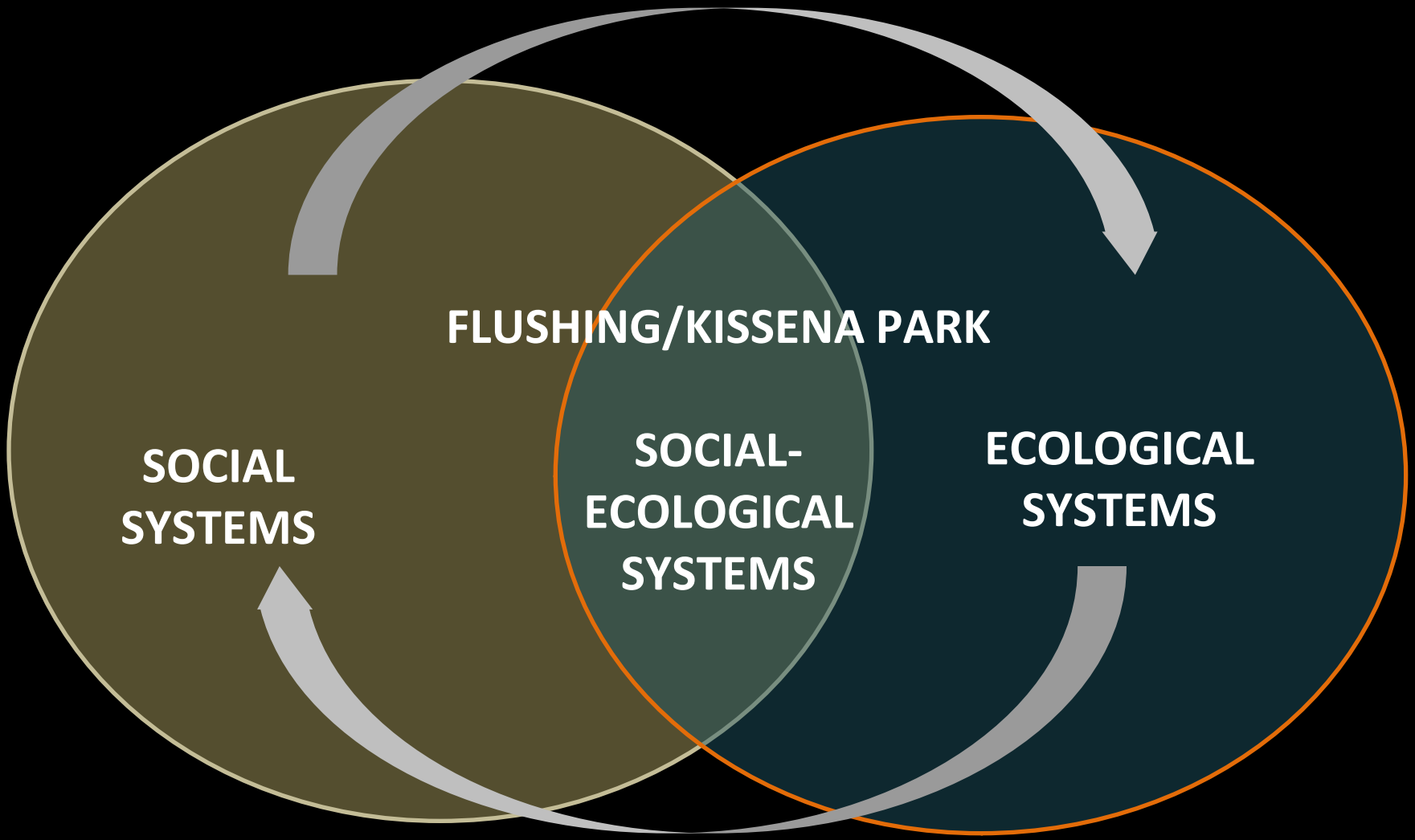
THESE ARE THE TWO MAIN GOALS TO DESIGN
THE SUSTAINABLE ACTION PLAN FOR FLUSHING/KISSENA :

GOAL 1:

HOW TO TRANSFORM FLUSHING/KISSENA INTO A SELF-RELIANT SYSTEM?

GOAL 2:

HOW TO TRANSFORM FLUSHING/KISSENA
INTO A RESILIENT SYSTEM ?



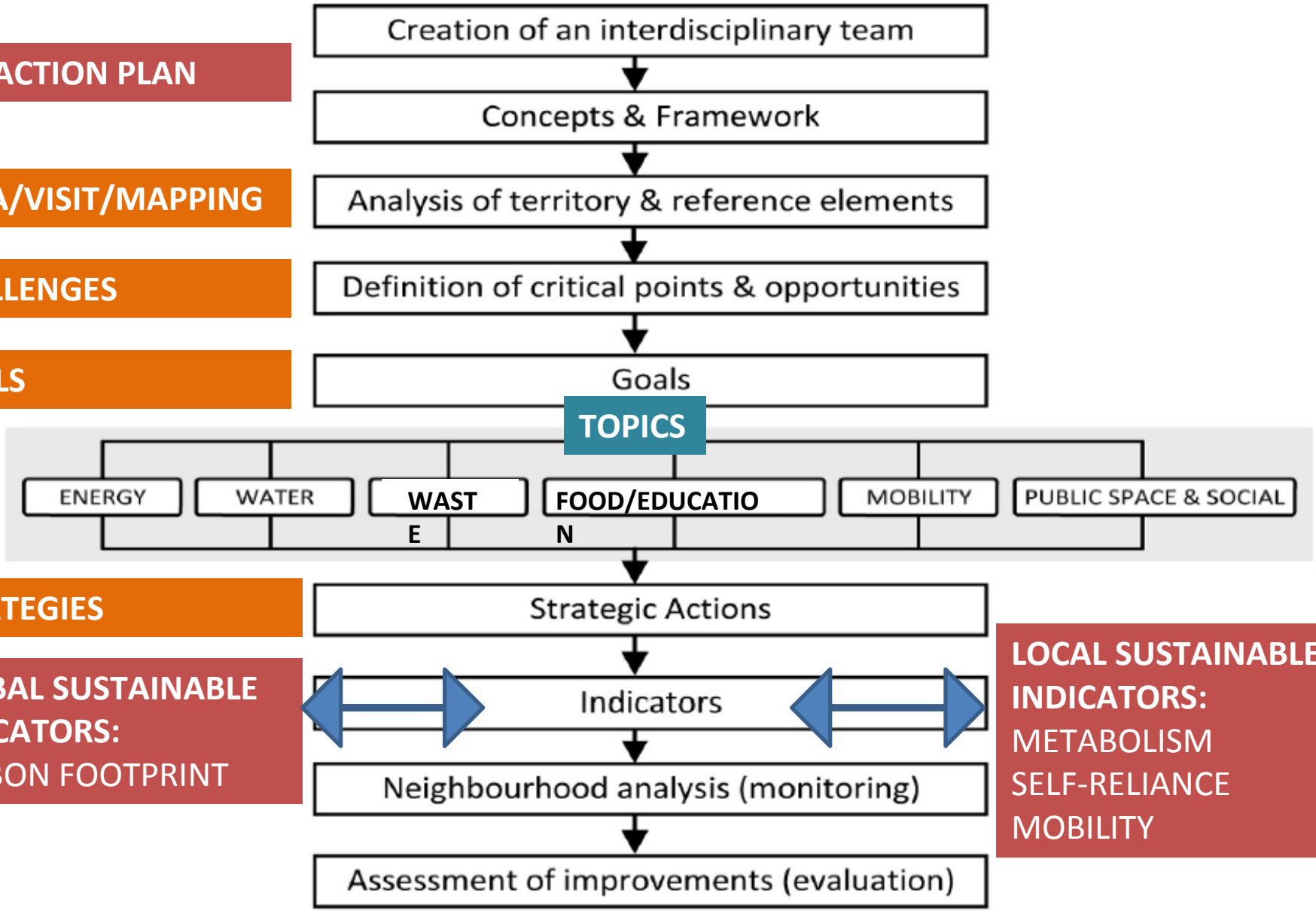
FLUSHING/KISSENA METABOLISM CIRCULAR AND CLOSED LOOP
FLUSHING/KISSENA SELF-RELIANT SES SYSTEM

SES ACTION PLAN

DATA/VISIT/MAPPING

CHALLENGES

GOALS



STRATEGIES

GLOBAL SUSTAINABLE INDICATORS:
CARBON FOOTPRINT

LOCAL SUSTAINABLE INDICATORS:
METABOLISM
SELF-RELIANCE
MOBILITY

SUSTAINABILITY ACTION PLAN TOOLS

ANALYSIS TOOLS

SES ANALYSIS EXERCISE
VISIT KISSENA PARK/DISCUSSIONS WITH THE KPCA
COMPARISON NYC PLAN 2030

MAPPING TOOLS

MAPPING
MAPPING CHALLENGES
MAPPING STRATEGIES

GOVERNANCE TOOLS

MULTI-SCALE GOVERNANCE
WORLD CAFÉ WORKSHOP
MULTI-CRITERIA EVALUATION (SPIDER-GRID)

INDICATORS TOOLS

SES URBAN SUSTAINABILITY INDICATORS ESTIMATION
SELF-RELIANT INDICATORS (ENERGY, WATER, FOOD, WASTE, MATERIALS, MOBILITY, ETC.)

FLUSHING/KISSENA PARK CORRIDOR SOCIAL-ECOLOGICAL SYSTEM

STUDENT FINAL RESEARCH PROJECT

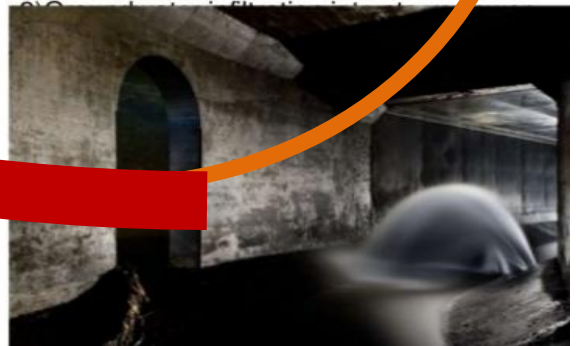
HOW TO PROMOTE THE FLUSHING/ KISSENA SOCIAL-ECOLOGICAL SELF-RELIANCE

?

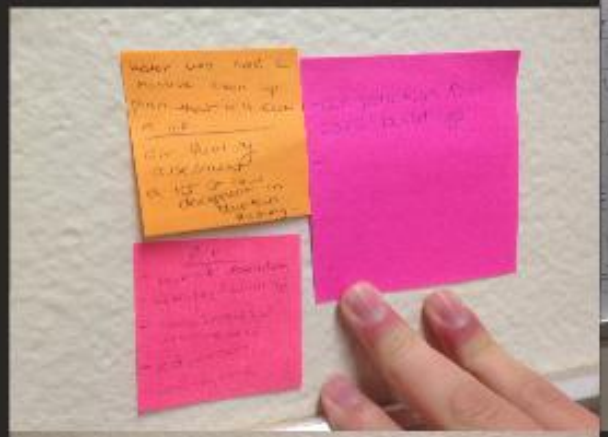
Kissena Creek, Queens

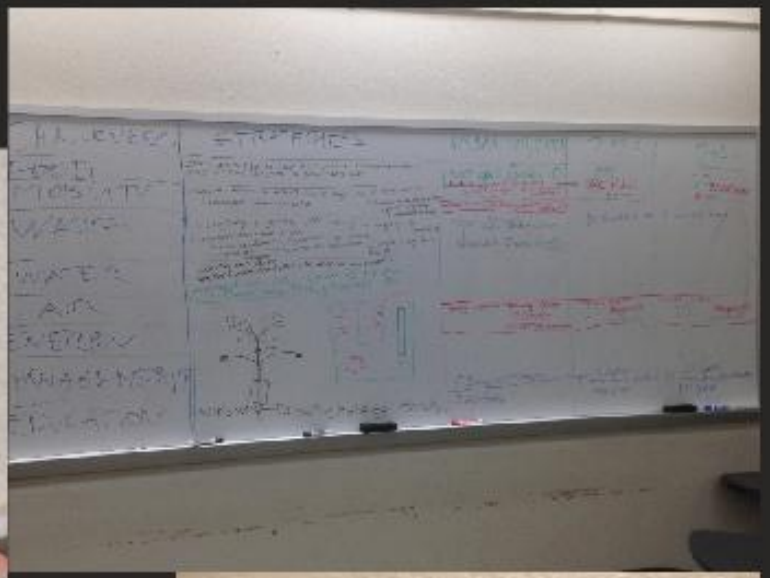
Two sources of water for daylighting:

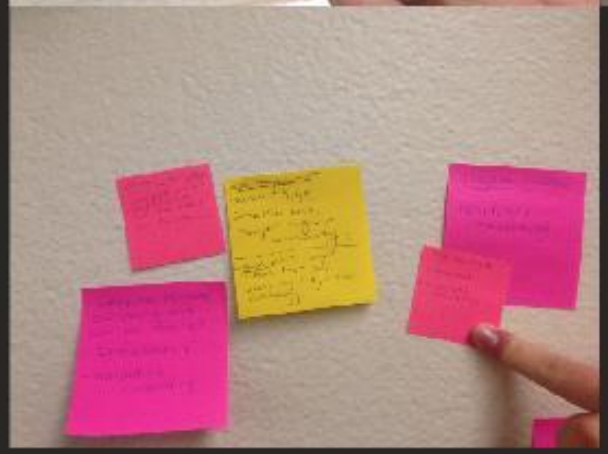
1) Inflow from Kissena Pond, in Kissena Park (left)

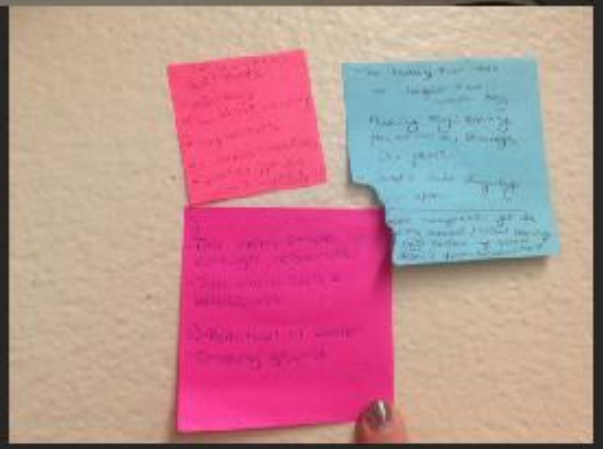


THE WORKSHOP









THE PARK VISIT

Flushing/ Kissena Corridor Park (NY)

Social Ecological System

Flushing/ Kissena Corridor Park (NY)

Social Ecological System Challenges

- Water/Green Space
- Mobility/Energy
- Food Production/Waste

1- No recycling bins

2- Lack of Green Space in the street

3- Lack of healthy food options through community argiculture

4- Lack of local farmers markets

5- Lack of pollinators

6- No fruit bearing trees

7- No local energy supply

8-No bike lanes

9-No disater water supply or water catchment facilities

10- Lack of green space made avaiable to the public

11- Waste in the wetlands

12- No local food production

13- No lighting

14- No native trees- high density of trees planted

15- Litter in the park

16- Queens College- No education connection

WATER & GREEN SPACE challenges

10 LACK OF GREEN SPACE

14 HOW TO DEAL WITH FLOODING AREAS

2 LACK OF GREEN STREETS

9 LACK OF PERMEABLE SURFACES TO ABSORB STORMWATER

11 WASTE IN WETLANDS IS HARMFUL TO THE ECOSYSTEM

ONE NYC / PLAN NYC 2030

•Goal 5 of the ONENYC plan is that New York City will mitigate neighborhood flooding and offer high-quality water services. We will use this plan as a guideline by:

Expanding green infrastructure and smart design for stormwater management in neighborhoods across the City.

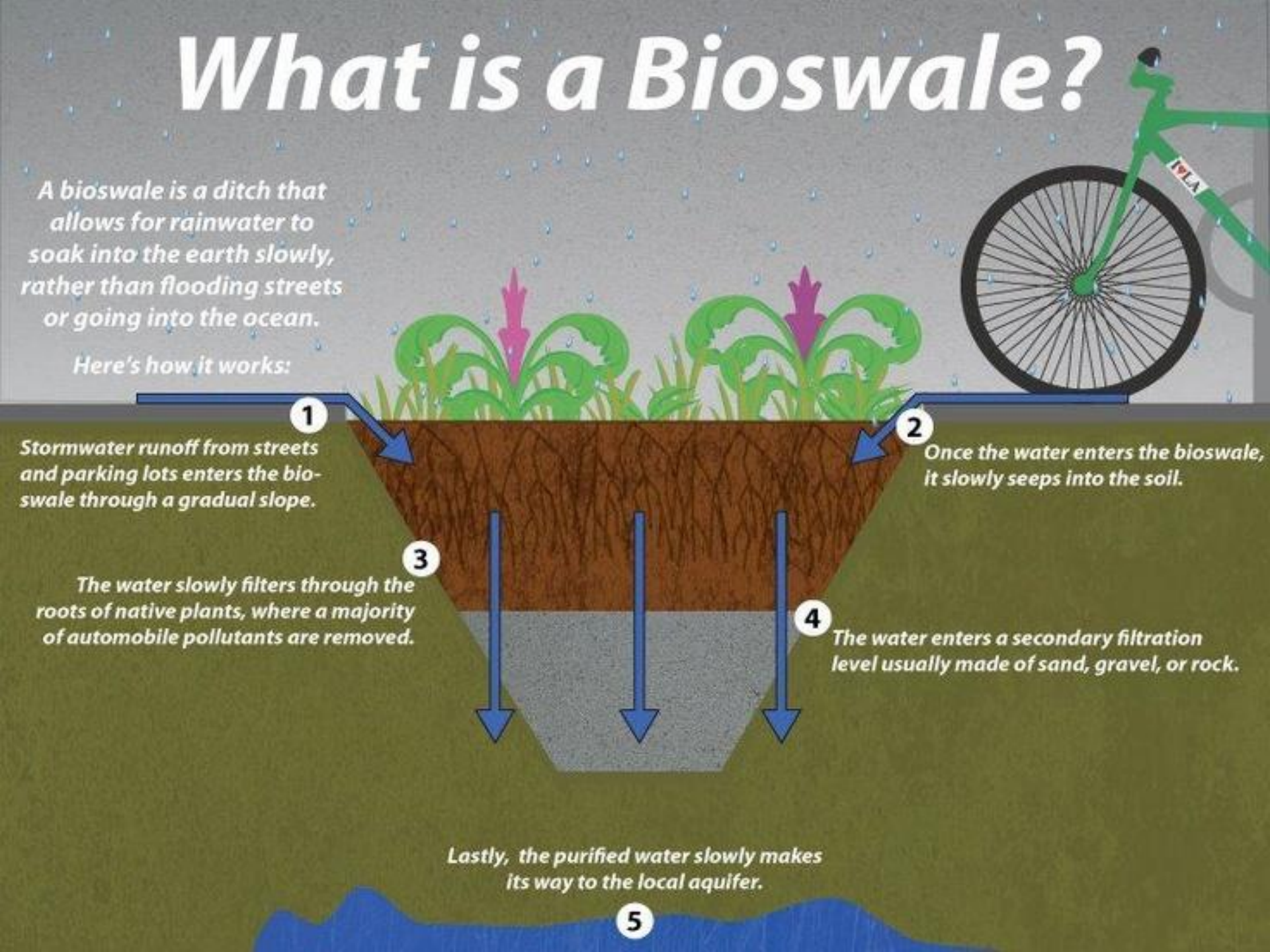
The NYC Green Infrastructure Program, led by the Department of Environmental Protection (DEP), is investing over $900 million over a ten year period in green infrastructure practices such as curbside gardens.

ONE NYC / PLAN NYC 2030

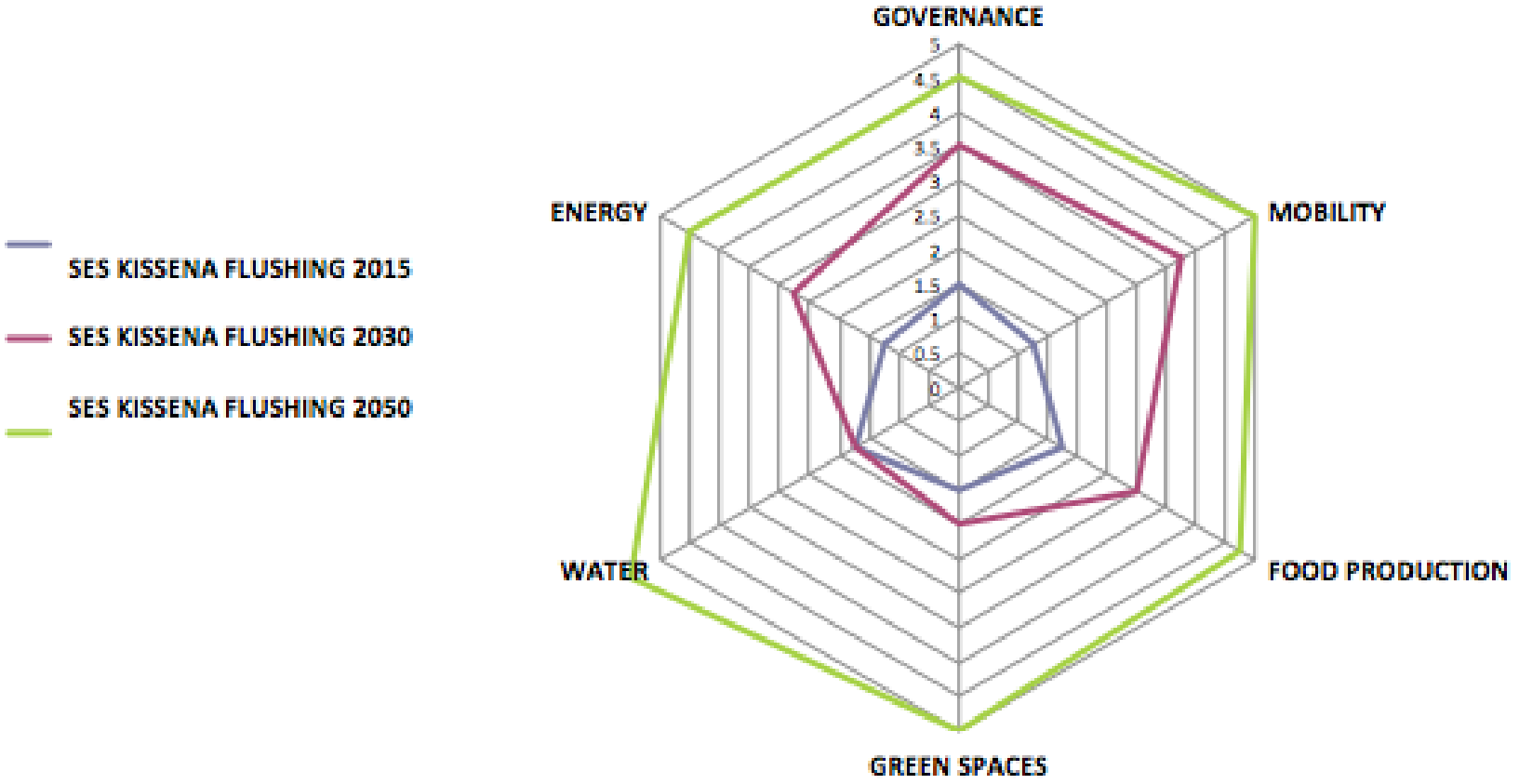
- Bioswales and Stormwater Greenstreets

Bioswales and Stormwater Greenstreets

What is a Bioswale?



WATER & GREEN SPACE SPIDER GRID



WATER & GREEN SPACE strategies

10 MORE GREEN SPACE WOULD DECREASE FLOODING IN PROBLEMATIC AREAS

2 MORE GREEN SPACE IN THE CENTER OF STREETS WOULD DECREASE FLOODING

9 RAIN BASINS WOULD STORE WATER AND REDUCE FLOODING

14 LARGE ROOT TREES COULD BE USED TO ABSORB WATER AND REDUCE FLOODING

11 CLEANING OF WETLAND AREAS

MOBILITY & ENERGY challenges

1 LACK OF RECYCLING BINS

8 LACK OF BIKE LANES

13 LACK OF LIGHTING IN PARK

7 LACK OF LOCAL RENEWABLE ENERGY SUPPLY


1. No lights
2. No bike lanes
3. No recycling bins
4. No local energy supply
5. No local food production
Booth Memorial Ave
Oak Ave
Kissena Park
Kissena Blvd
Parsons Blvd
Show
3D

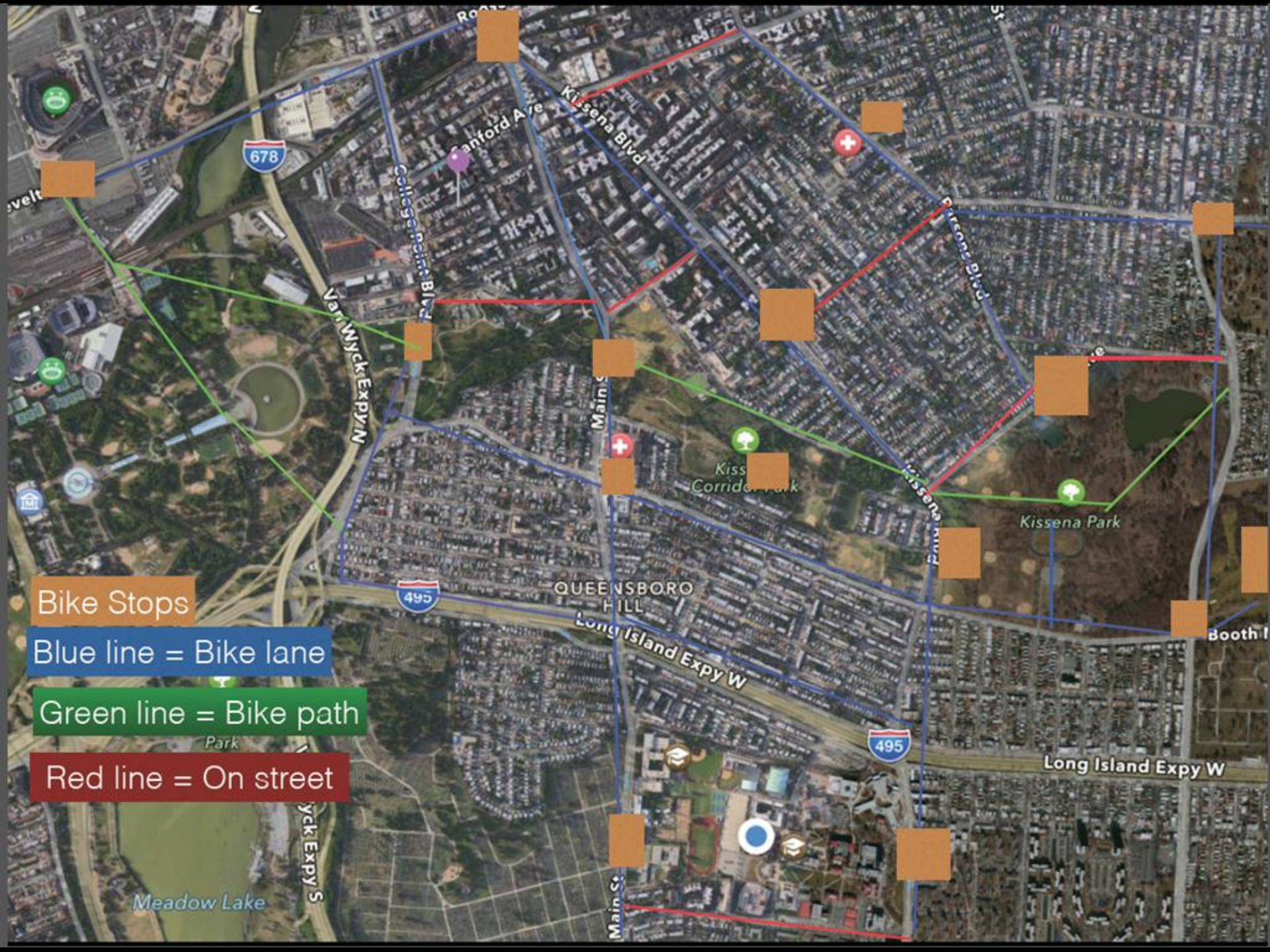
MOBILITY & ENERGY
strategies

1 ADDING MORE AND VISIBLE RECYCLING AND TRASH BINS

13 ADDING LIGHTS IN PARK

8 ADDING MORE BIKE LANES

7 ADDITION OF SOALR PANELS IN AREAS OF KISSENA PARK


Bike Stops
Blue line = Bike lane
Green line = Bike path
Red line = On street
678
495
Kissena Blvd
Van Wyck Expy N
Van Wyck Expy S
Main St
Kissena Park
QUEENSBORO HILL
Long Island Expy W
Meadow Lake

Bike shared lane

Bike lane

Bike path

Signals

Bike lane and pedestrian walkway


1. New bike system
2. New solar and wind energy lights
3. New collective points
4. New hydro and thermal energy supply
5. New local food garden
Kissena Lake
Booth Memorial Ave
Oak Ave
Show

ONE NYC / PLAN NYC 2030

- NYC plans to reduce the amount of solid waste sent to landfills by 90% by 2030(3.6M tons 2005 baseline), Kissena Park will aim for 75% by 2030 and 90% by 2050

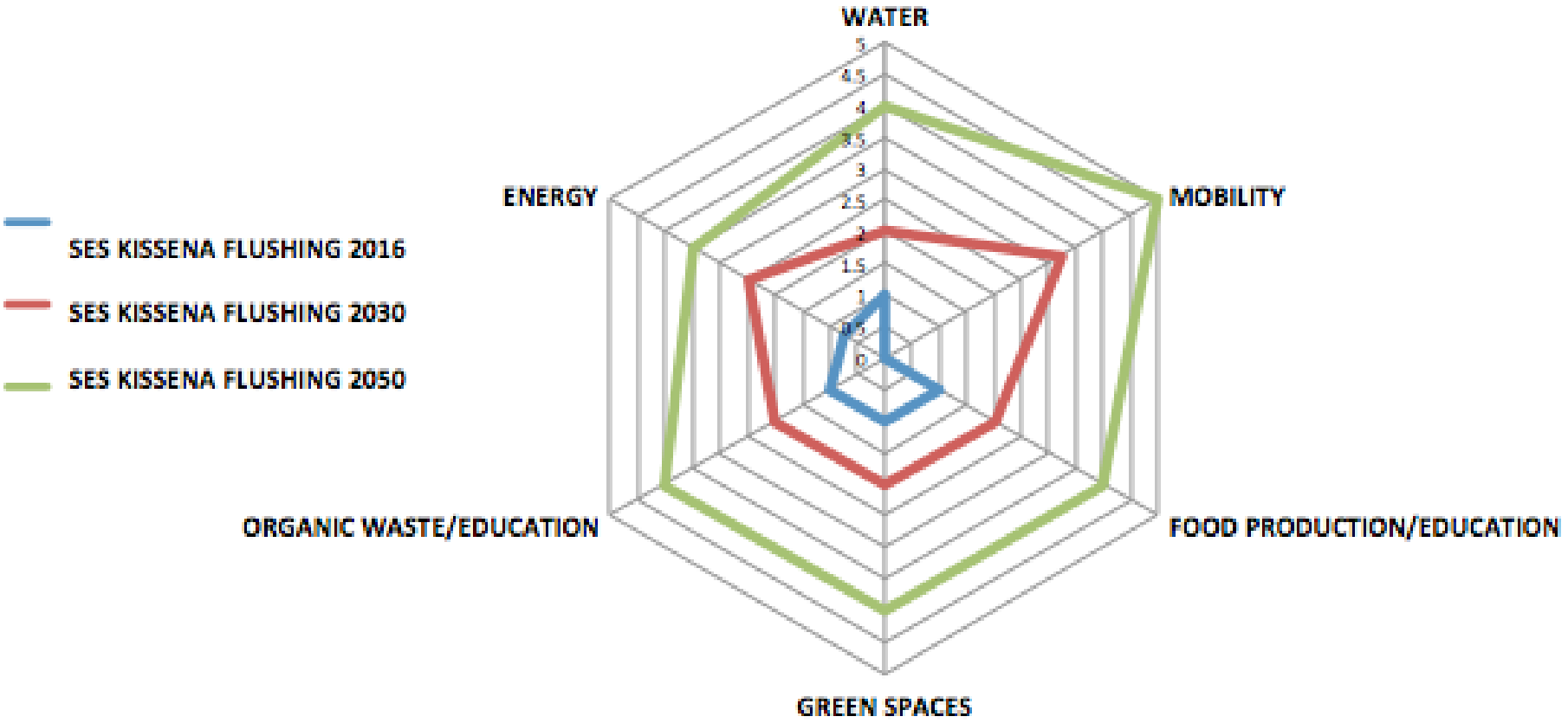
Achieved by:

- Composting of the organic waste from the local food gardens
- expanding the recycling system by adding more recycling bins
- provide incentives for recycling such as cheaper or even free food from the local agriculture

Hydro Power

- Each unit can generate about 8,000 kwh/year which is almost enough energy to power a home for a year.
- One of these can be put at the mouth of Kissena Lake and one can be put at the end of the stream flowing off of Kissena lake which empties into the sewage system
- The average streetlight consumes about 150 watts of electricity. You Multiply (0.15) x (12 hrs) = 1.8KWh per day.
- Between both units they can power 4,400 lamps, and it would be off the grid power

MOBILITY & ENERGY SPIDER GRID



FOOD PRODUCTION & ORGANIC WASTE challenges

5 LACK OF POLLINATORS

6 LACK OF FRUIT BEARING TREES

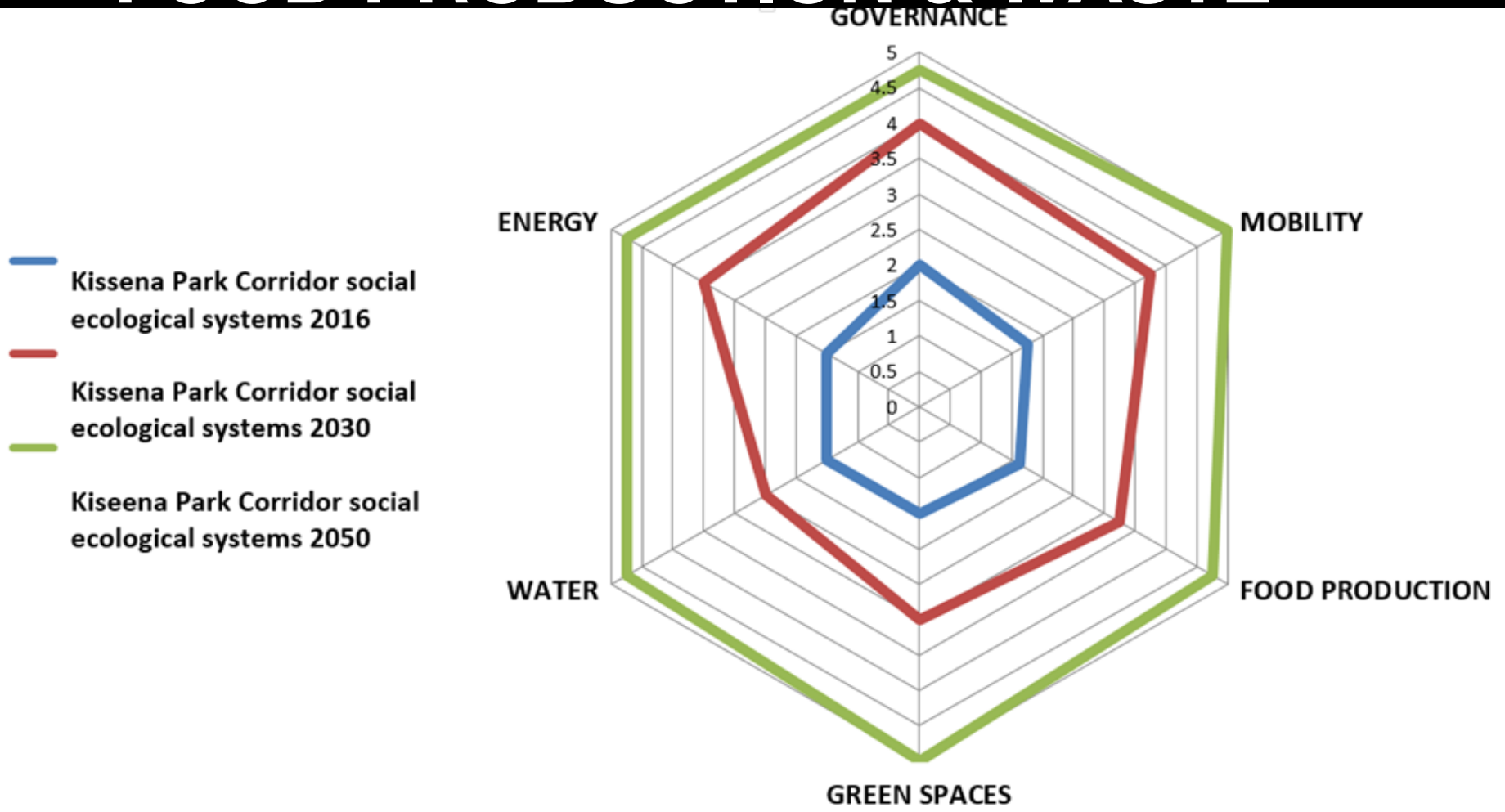
15 LITTER IN THE PARK

3 LACK OF LOCAL FOOD PRODUCTION AND EDUCATION

4 UNUSED ORGANIC WASTE


Neighborhood
GRANT WINNER
CITIZENS COMMITTEE FOR NEW YORK CITY
2013
FOR GRANTS: CITIZENSNYC.ORG
This community garden is the responsibility of the N.Y.C Department of Parks & Recreation
GARDEN HOURS
OPEN 8:00 A.M.
CLOSE 8:00 P.M.
Gardeners not allowed
EVERGREEN
COMMUNITY
GARDEN
GreenThumb
This site is a public garden which is maintained by neighborhood volunteers through GreenThumb. Founded in 1978, GreenThumb helps local residents transform vacant properties into attractive green spaces. If you want to join this garden, call (212) 788-8070.
For questions about Parks, please call 311.
You can also find out about events, wheelchair access, complete a customer survey, and more by visiting www.nyc.gov/parks.
City of New York
Parks & Recreation
www.nyc.gov/parks

FOOD PRODUCTION & WASTE



FOOD PRODUCTION & ORGANIC WASTE strategies

5 MORE POLLINATORS

6 ADDITION OF FRUIT BEARING TREES

15 CREATE COMMUNITY COMPOST PROGRAM

3 LOCAL FOOD PRODUCTION AND EDUCATION

4 ACCESS TO LOCAL FARMERS MARKETS

SELF –RELIANT FOOD PRODUCTION & ORGANIC WASTE INDICATORS ESTIMATION

Tunnel Farming produces an estimated 8.2 lbs of food per square foot.

2030 – .75 Acres = 32,670 SF; **32,670 SF * 8.2 lbs = 267,894 lbs of local vegetables for the year**

2050 – 3 Acres = 130,680 SF; **130,680 SF * 8.2 lbs = 1,071,576 lbs of local vegetables for the year**

Fruit Trees produces an estimated .82 lbs of food per square foot.

2030 – 3 Acres = 32,670 SF; **32,670 SF * .82 lbs = 26,789 lbs of local fruit for the year**

2050 – 12 Acres = 522,720 SF; **522,720 SF * .82 lbs = 428,630 lbs of local fruit for the year**

	2016	2030	2050
Pollinators	None	4 Urban Beehives 8 Butterfly Bushes (or comparable plant)	20 Urban Beehives 40 Butterfly Bushes
Tunnel Farming	None	0.75 Acre Tunnel Farming	3 Acres Tunnel Farming
Fruit Trees	None	3 Acres of Fruit Bearing Trees	12 Acres of Fruit Bearing Trees
Compost	None	Organic Waste Collection Program – 2 Local Businesses and a School Monthly Community Education and Collection Meetings	Organic Waste Collection Program – 12 Local Businesses and Area Schools Weekly Community Education and Collection Meetings
Education	None	25 Interns - Work with Queens College to Utilize Interns to Help Fuel the Park's Pollinator, Tunnel Farming, Fruit Trees, and Compost Strategies. Also to Set Up Student Powered Program to Run Community and School Education Park Programs, Supporting All Strategies	100 Interns – Have College Students Manage High School Interns and Expand Community Events and Education Programs

SCHOOL FLUSHING/KISSENA PARK FOOD PRODUCTION SELF-RELIANT ESTIMATION

- **10000 THOUSANDS STUDENTS IN PRIMARY, INTERMEDIATE, HIGH SCHOOL IN FLUSHING. 250 DAYS OF SCHOOL**
- **FOOD SCHOOL LUNCH DEMAND = 0.4 LBS VEGETABLES & FRUIT PER STUDENT/DAY**

2016: FOOD SCHOOL SUPPLY PER YEAR=0 LBS/LOCAL VEGETABLE/FRUITS
FOOD SCHOOL LUNCH DEMAND PER YEAR = 1.000.000 LBS PER YEAR

FLUSHING/KISSENA FOOD SCHOOLS SELF-RELIANCE= SUPPLY/DEMAND
0% IN 2016

FLUSHING/KISSENA FOOD SCHOOLS SELF-RELIANCE= SUPPLY/DEMAND
29.46 % IN 2030

FLUSHING/KISSENAFOOD SCHOOLS SELF-RELIANCE= SUPPLY/DEMAND
100 % IN 2050

IN 2050, THE FLUSHING NEIGHBORHOOD AND THE KISSENA PARK CORRIDOR

SELF-RELIANT GREEN HOUSE & WATER SUPPLY INDICATORS ESTIMATION

- Greenhouse production = 20L of water/ 1m2 of greenhouse
- Projected greenhouse = 100 m2

Demand = 100m^2 x (20L of water/ 1m^2) = 2,000L of water/ day

Average flat roof collects 20.15 liters of rain water/ft^2/ year

Collecting Roof Area = area of school building = 250ft x 150ft = 37,500ft^2

Supply = 37,500ft^2 x (20.15 L/ ft^2) = 755,625 L of rain water/ year

= (755,625 L/ 1 year) x (1 year/ 365 days) = about 2,070 L/ day

Supply/ demand = (2,070 L/day)/(2,000L/day) = 1.035= 100% Self-reliant

IN 2050, THE LAKE PRIMARY SCHOOL FLUSHING/KISSENA PARK CORRIDOR

WILL BE TOTALLY WATER SUPPLY SELF-RELIANT

URBAN STUDIES
AT QUEENS COLLEGE

THANK YOU !

CREDITS

Final Presentation on May 18th at 5 p.m. at the Godwin Museum at Queens College

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