



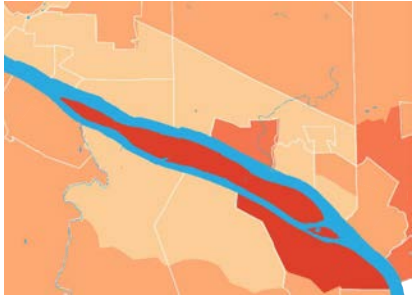
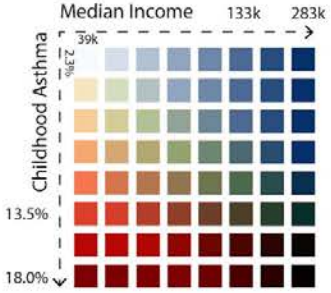
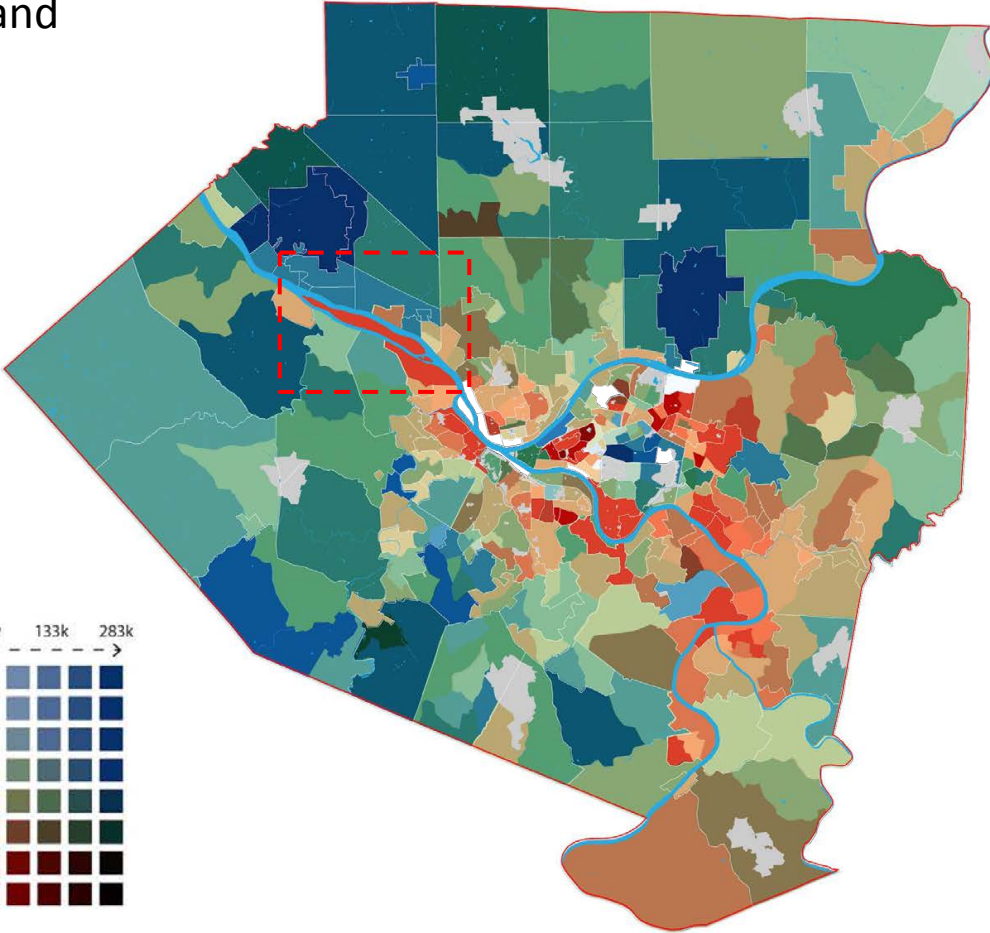
Neville island

Industrial transformation

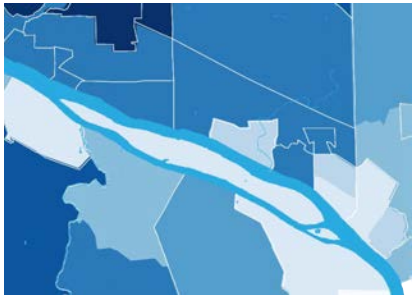
Harvest.Su

May 8, 2020

Neville Island



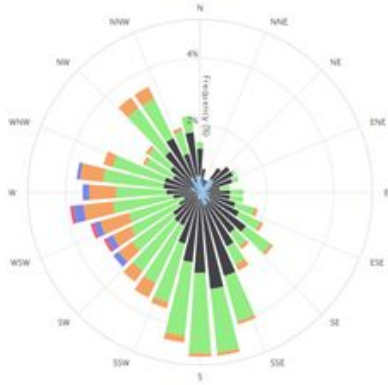
Childhood Asthma Rate



Median Income

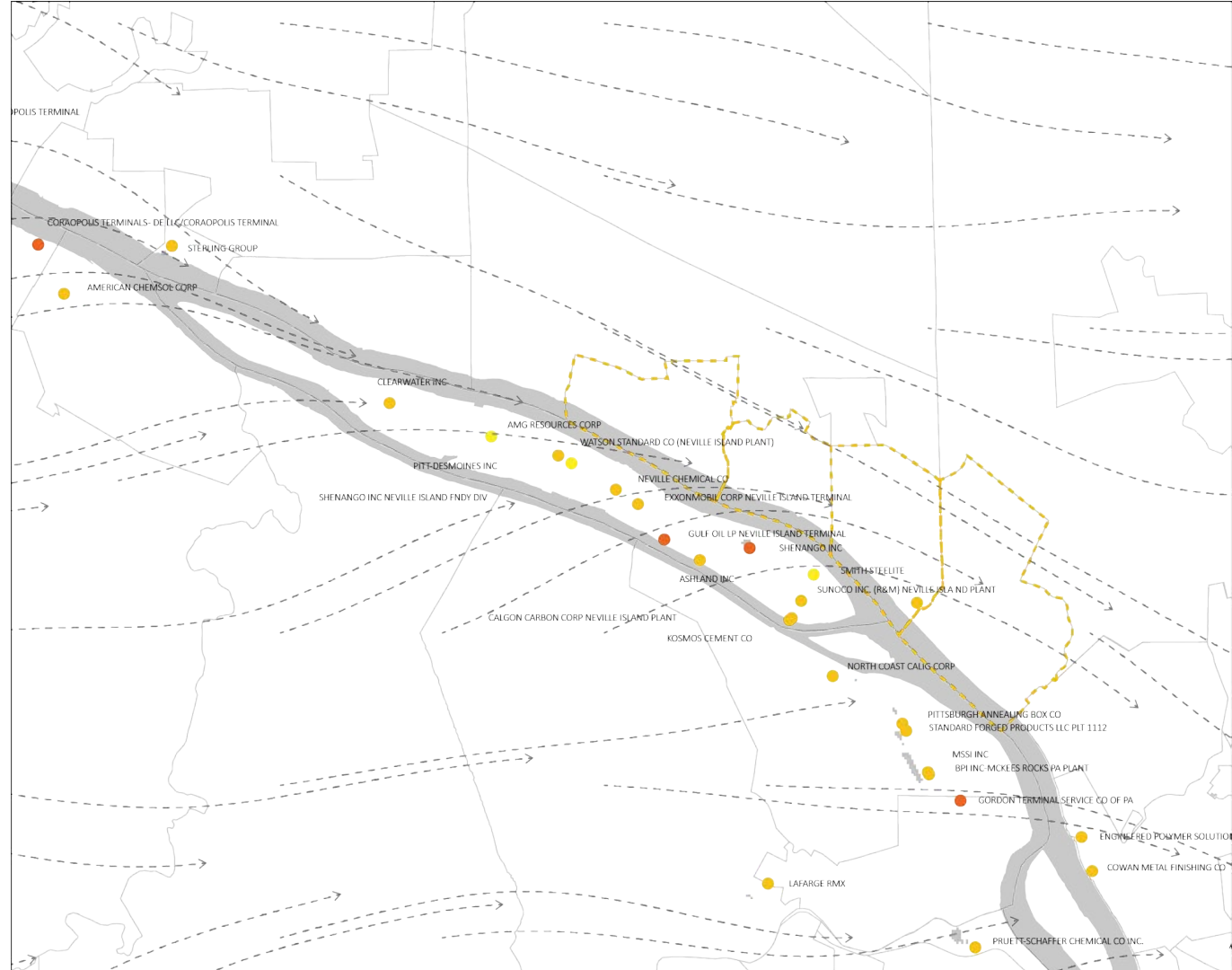
Source: <https://data.wprdc.org/dataset/childhood-asthma-healthcare-utilization>
<https://data.census.gov/cedsci/>

Pollution



- Energy provider
- Raw material processing
- Machine

Source: Generated from the EPW file.



Pollution

ALAN HOROWITZ (Ross)

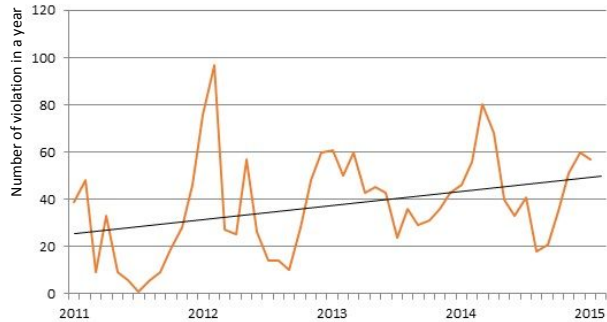
“Three of the five women I know within 3 miles of Shenango had cancer, including my wife who had breast cancer.”

FRANK MEACCI (Ben Avon)

“Shenango is an old company. I remember going down to Neville Island in 1954 or 1955 to look for summer jobs and they were active then.”

GASP (Organization)

“Shenango violated the applicable limitation on the sulfur content of its coke oven gas three times in the third quarter of 2015.”



Trend of violations of 20% on emission standard from Battery Combustion Stack

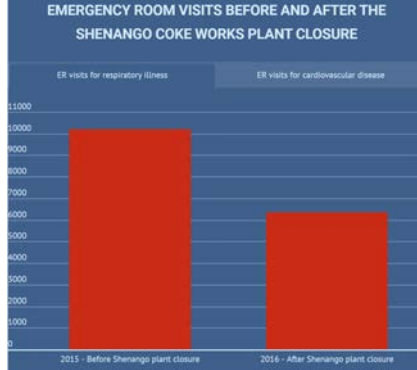


Pollution

'The plant closed in January 2016.'

'Shenango coke plant smokestacks come crumbling down' (May 8, 2018)

'Emergency room visits for asthma and chronic obstructive pulmonary disease (COPD) dropped by 37.9 percent in the region the year after the plant closed.'



Reimagining the future

Post-gazette

“Sun instead of coal? Group wants owner to build solar array at shuttered Shenango Coke Works”

Alleghenyfront

'Are we heading for a hydropower boom on the three rivers?'

Char-West Multi-Municipal Comprehensive Plan

‘The two main roads in Neville Township, Grand Avenue and Neville Road have a surplus in traffic volume capacity for existing and future growth.’

A citizen from Ben Avon Council

“... hope that the former Shenango Site will be redeveloped in a way that benefits the surrounding community and is compatible with our quality of life.”



February 19, 2020 Public Meeting at Robert Morris University Island Sports Center on Neville Island

Existing Conditions Reviewed	
Communities impacted by Shenango's past/the Site's future	Compliance/enforcement of environmental regulations
Local and regional planning documents	Environmental impact of local industries
Employment, jobs, workforce	Outlook for local industrial growth
Income and wages	Local trends in sustainable growth
Property tax assessment/revenue generation	

Economic crisis

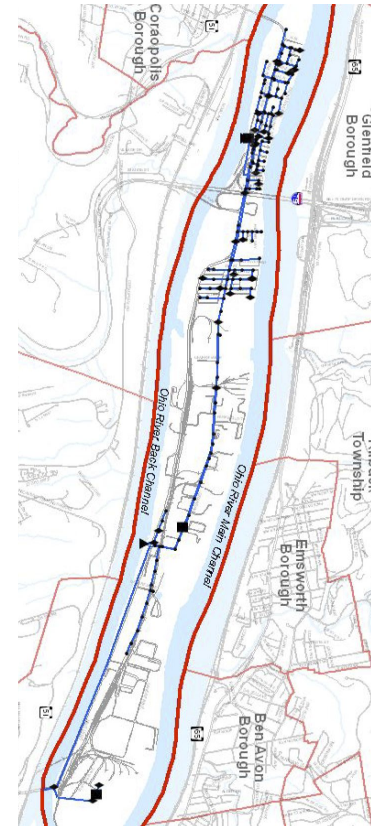
Neville is one of the richest neighborhood in 1970s.

Most income of Neville island comes from industrial customers.(84%)

The comparative isolated infrastructure systems imposed great challenge to the management. The cost is very high.(81 higher in sewage fund rate)

	Neville 2008/2011 ¹
Financial Analysis	
Total annual revenues	\$768,200
Annual residential revenues	\$121,400
Annual non-residential revenues	\$646,800
Annual costs (includes ALCOSAN charges)	\$679,625
Surplus/Deficit (Revenues - Expenditures)	\$88,575
Annual contribution to the sewer fund for capital expenditures ²	\$66,000
Sewer fund balance	\$607,173
Quarterly residential rates/revenues	
Current quarterly rate (with ALCOSAN costs) charged per residential customer (provided by engineers)	\$160
Annual cost per mile of sewer pipe	\$90,502
Actual quarterly cost per customer (annual cost divided by number of customers)	\$269
Debt service and principal	
principal	\$32,184
interest	\$11,117
ALCOSAN annual treatment charges (to each municipality- a portion of annual costs)	\$300,387
ALCOSAN cost per customer	\$118.82
Estimated costs for level 4&5 repairs/improvements through 2016	\$100,000
Level 4 & 5 repairs percent completed	100%

Financial(2011)



Sewage system

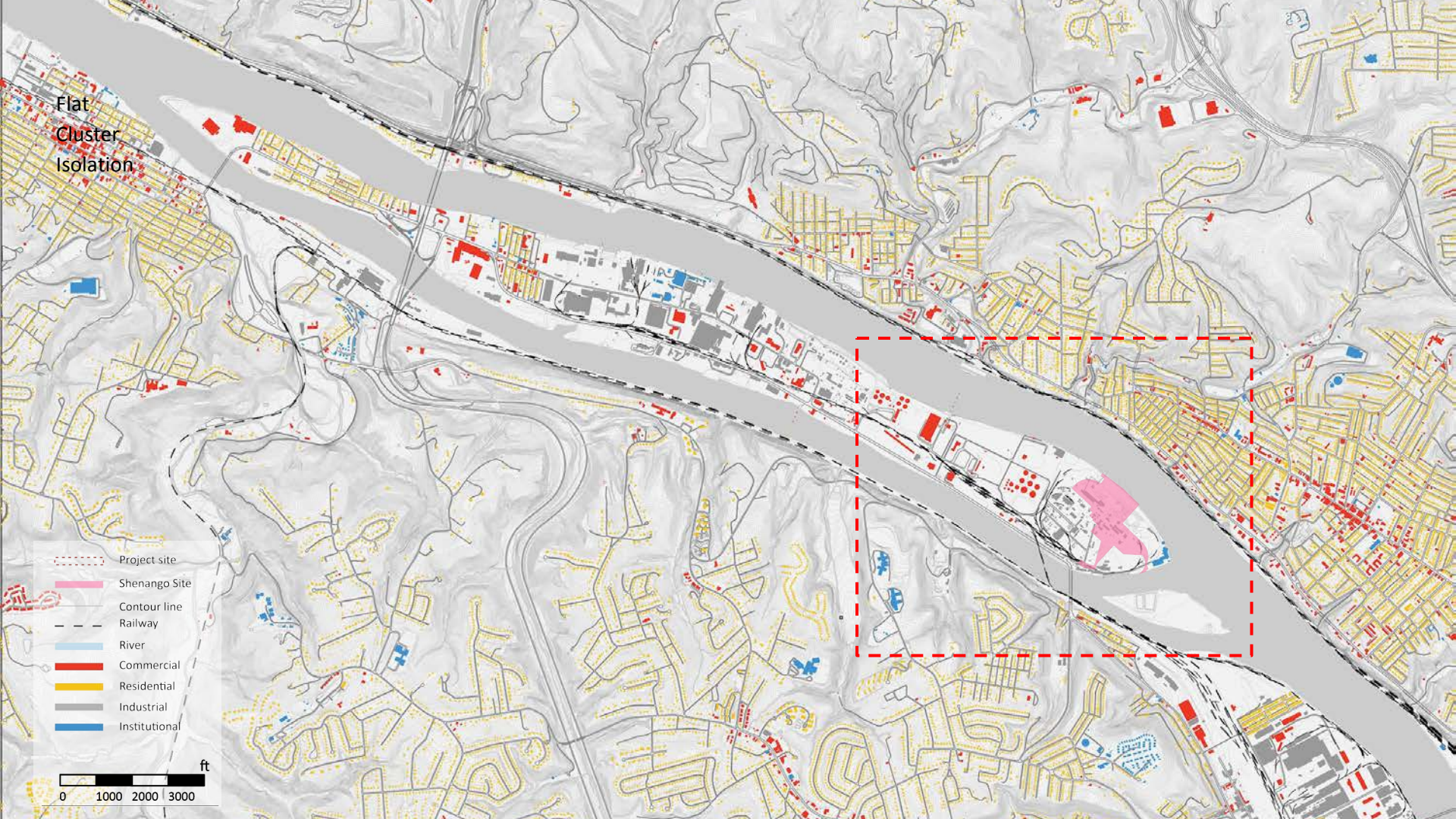
Vision

No more pollution so that people's health won't be badly affected.

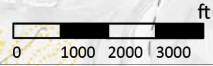
Township becomes more financially sustainable and residents in the neighborhood and nearby can have more job opportunities.

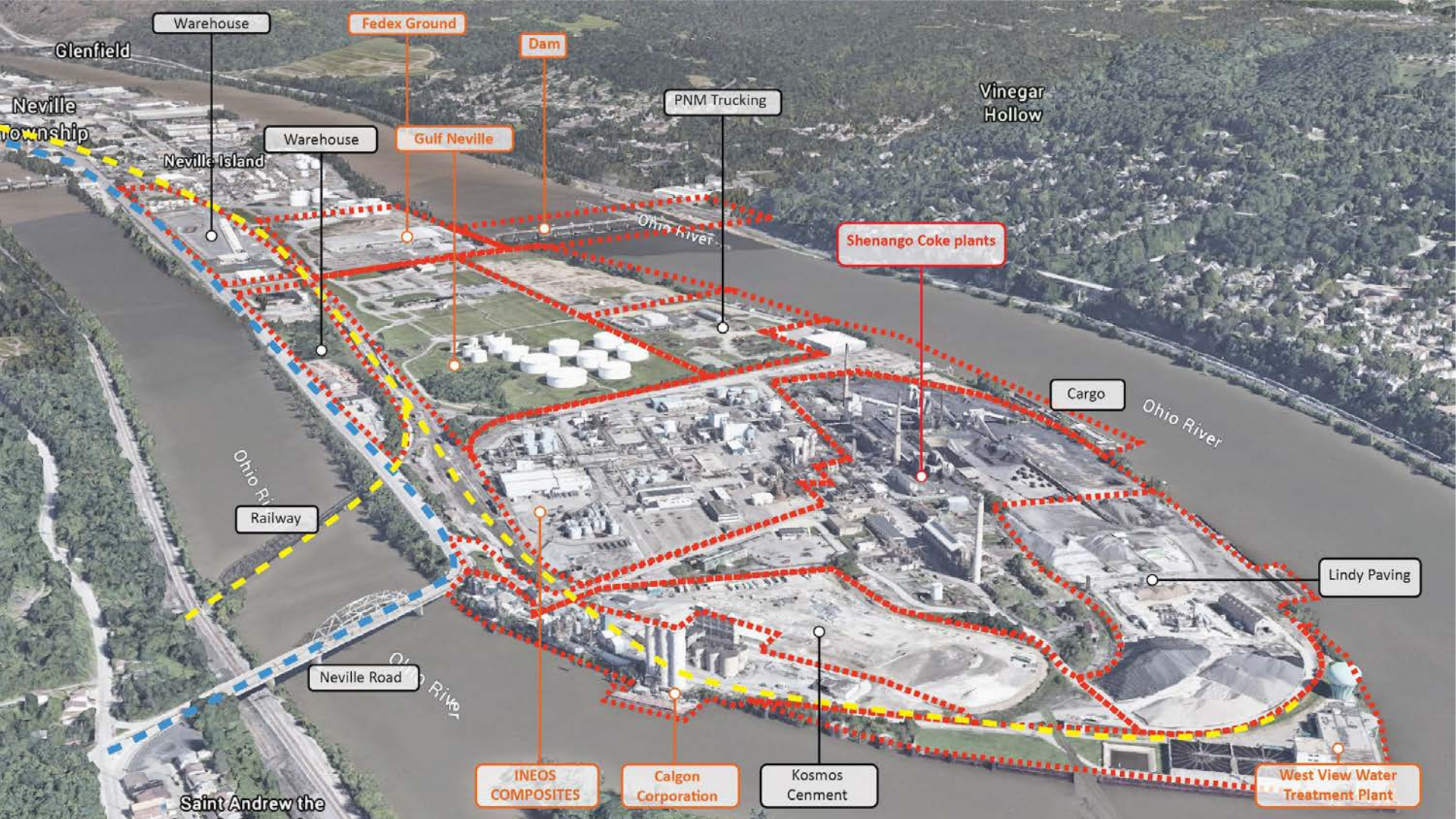
An industrial area that lead the future of the Allegheny county.

Flat
Cluster
Isolation



- Project site
- Shenango Site
- Contour line
- Railway
- River
- Commercial
- Residential
- Industrial
- Institutional





Warehouse

Fedex Ground

Dam

PNM Trucking

Warehouse

Gulf Neville

Shenango Coke plants

Cargo

Lindy Paving

INEOS COMPOSITES

Calgon Corporation

Kosmos Cement

West View Water Treatment Plant

Glenfield

Neville Township

Neville Island

Ohio River

Vinegar Hollow

Ohio River

Ohio River

Railway

Neville Road

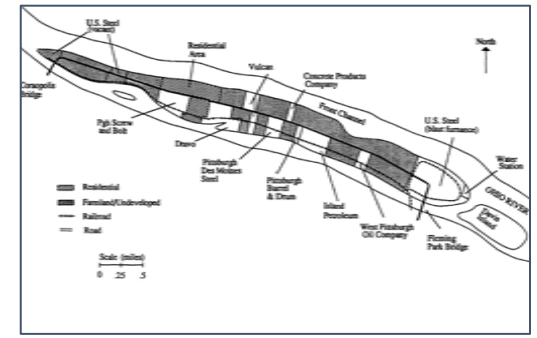
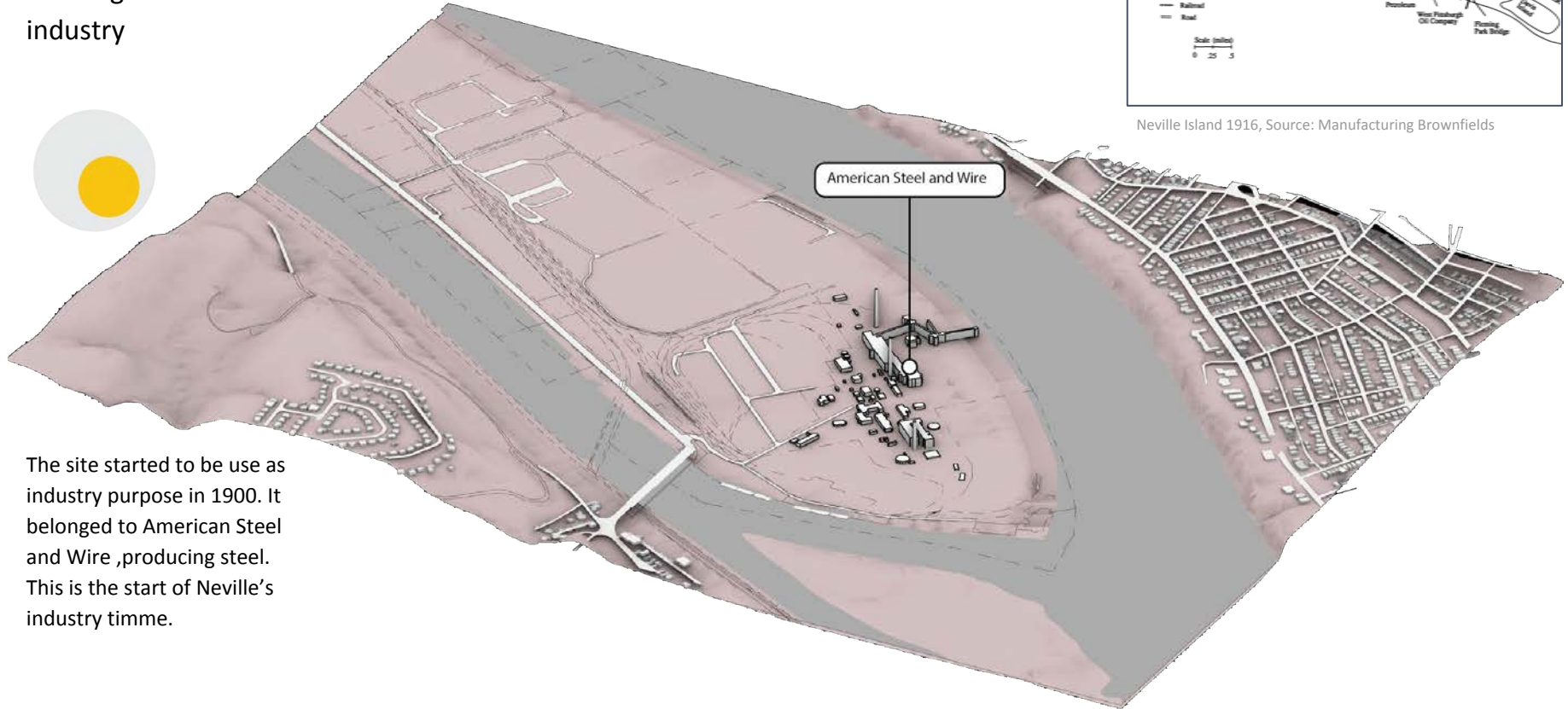
Ohio River

Saint Andrew the

1900-1935

Start

From agriculture to industry



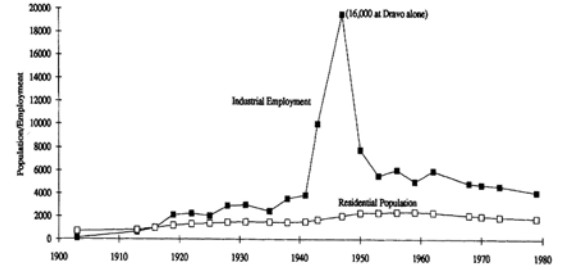
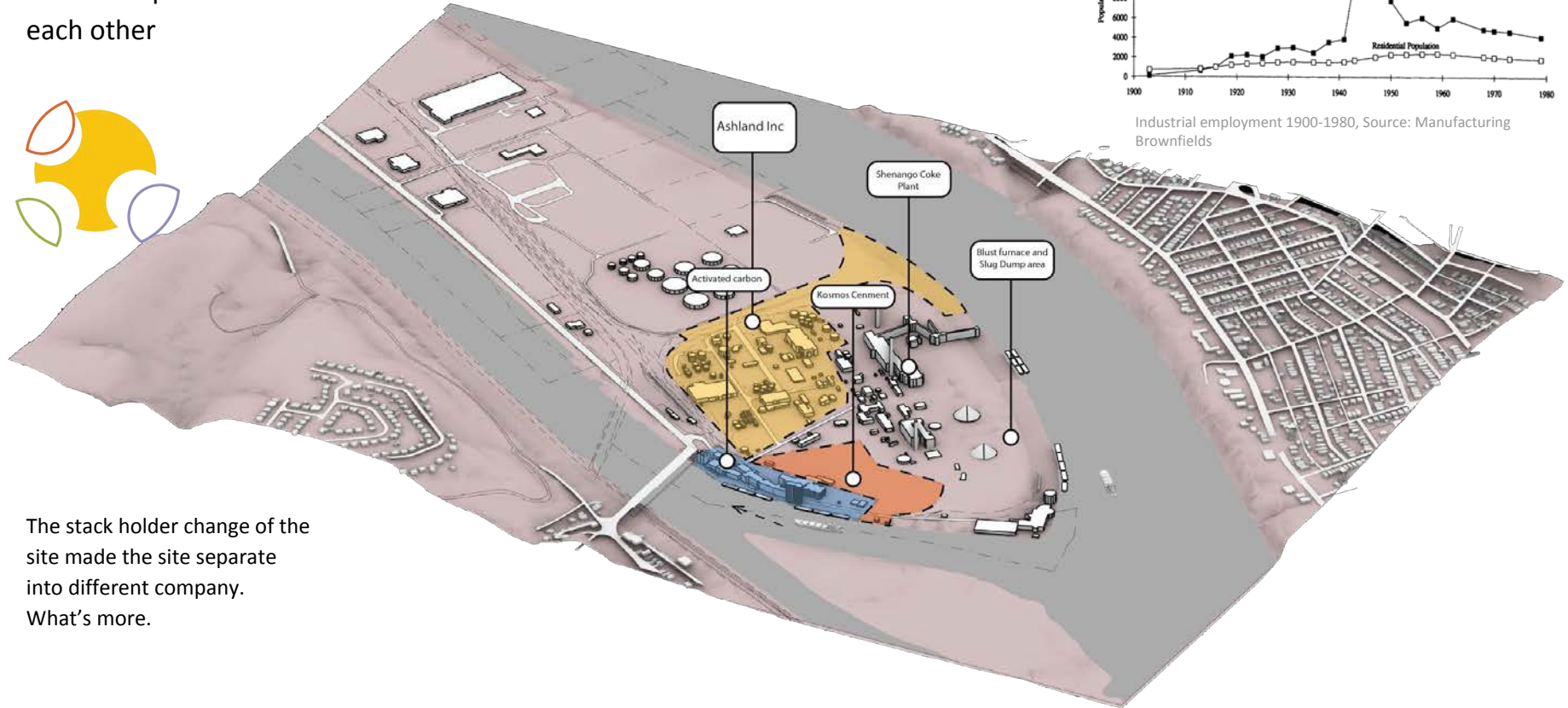
Neville Island 1916, Source: Manufacturing Brownfields

The site started to be use as industry purpose in 1900. It belonged to American Steel and Wire ,producing steel. This is the start of Neville's industry timme.

1962-1994

Seperation

Reduce dependence on each other



Industrial employment 1900-1980, Source: Manufacturing Brownfields

The stack holder change of the site made the site separate into different company.
What's more.

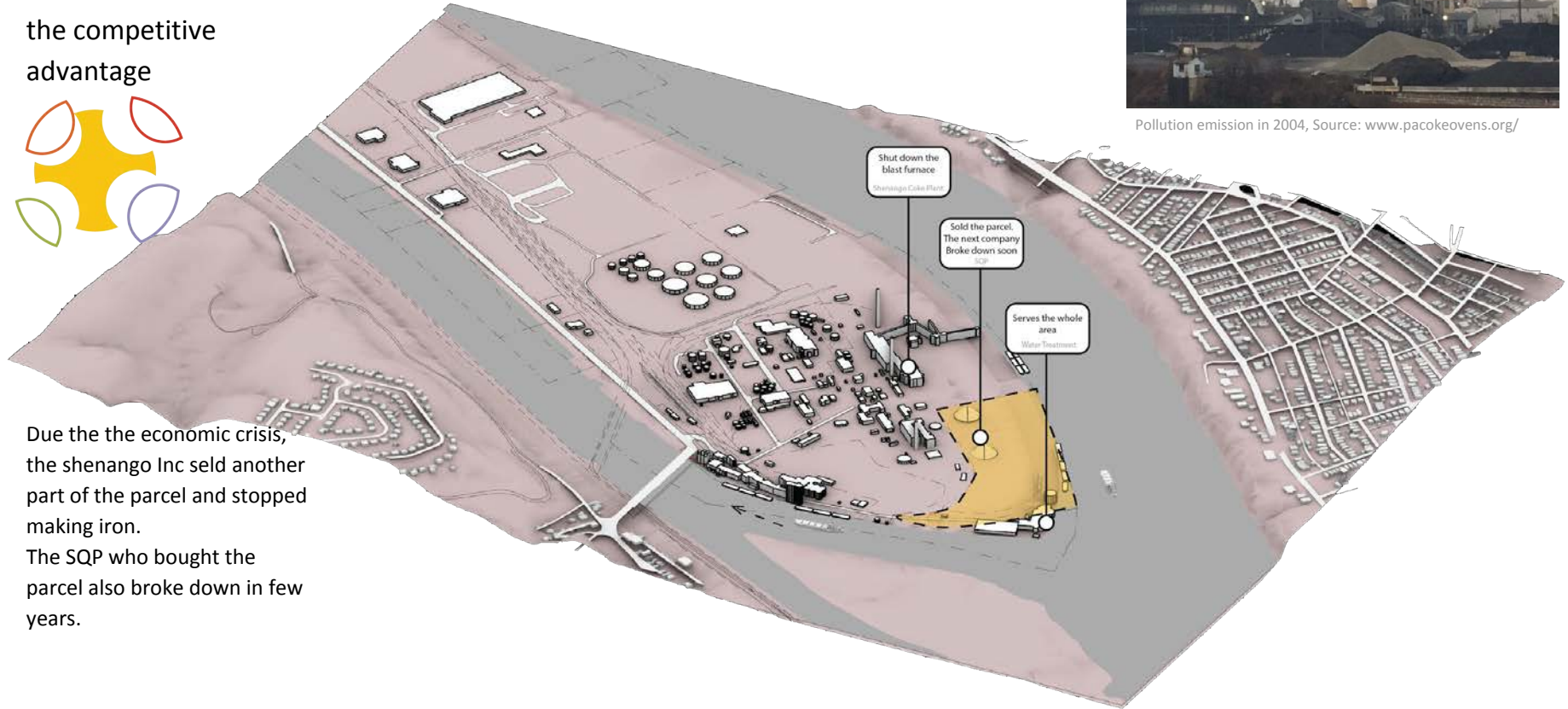
1994-2007

Dilemma

Crisis and weakened of the competitive advantage



Due to the economic crisis, the Shenango Inc sold another part of the parcel and stopped making iron. The SQP who bought the parcel also broke down in few years.



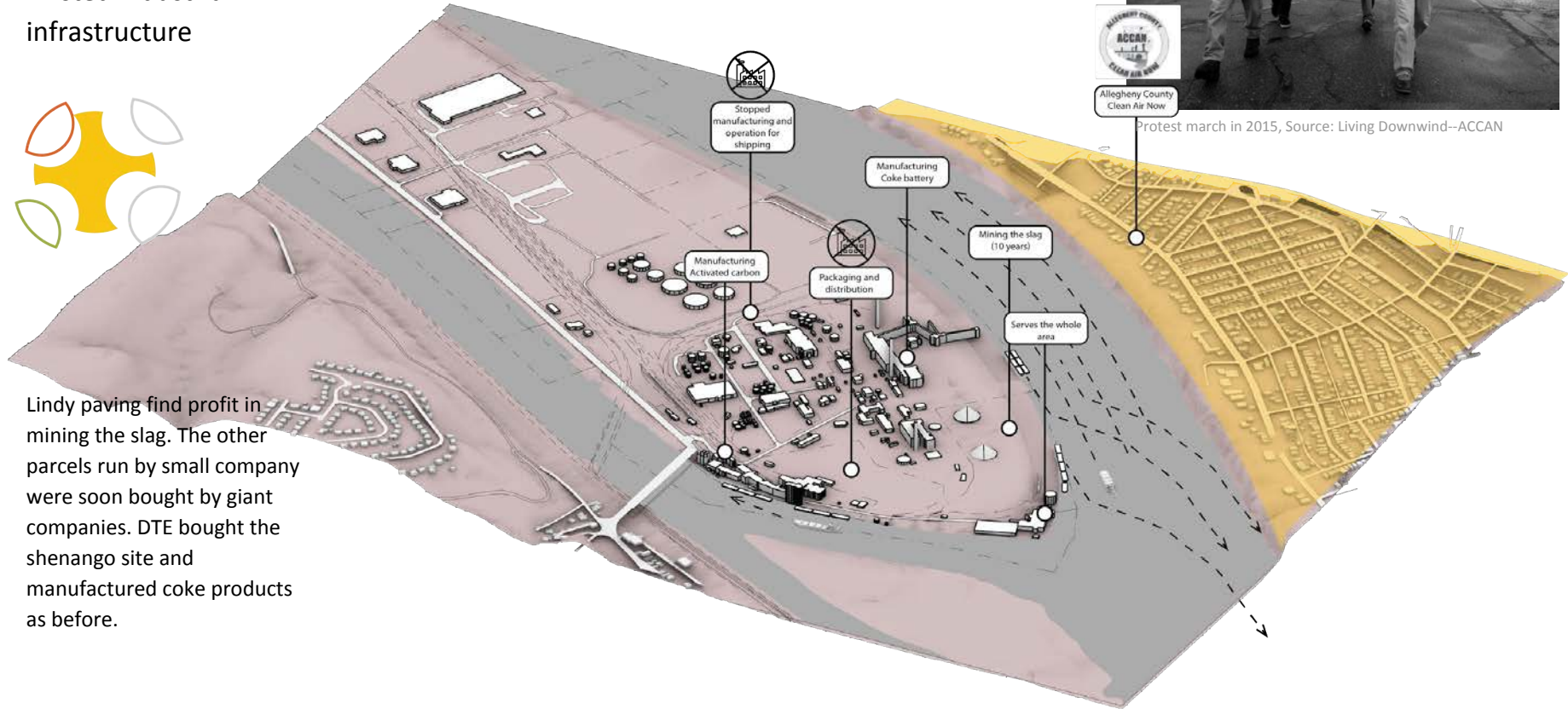
Pollution emission in 2004, Source: www.pacokeovens.org/

2007-2018

Terminal Existed industrial infrastructure



Lindy paving find profit in mining the slag. The other parcels run by small company were soon bought by giant companies. DTE bought the shenango site and manufactured coke products as before.

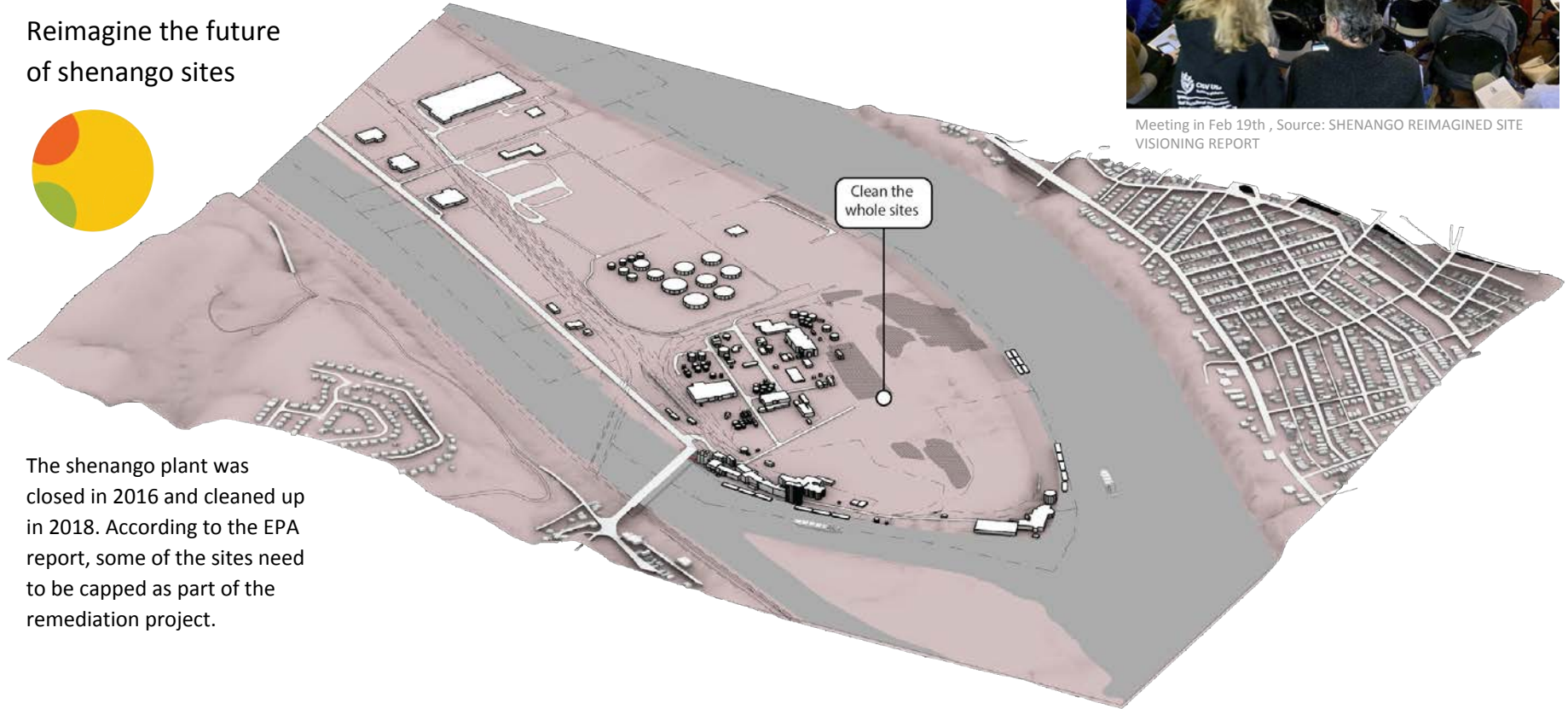


Protest march in 2015, Source: Living Downwind--ACCAN

2018-2020

Clean up and evaluate the site

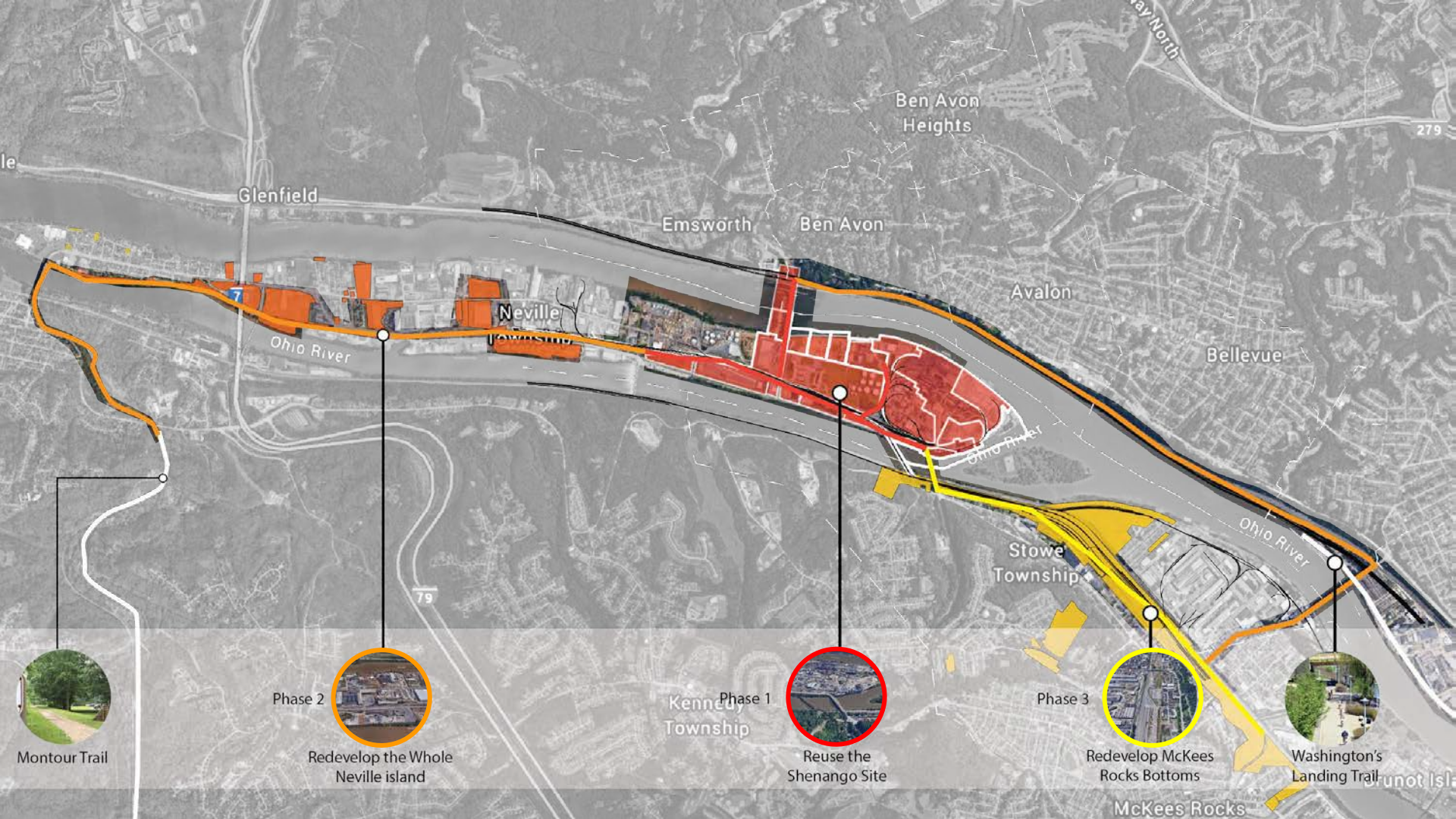
Reimagine the future of shenango sites



The shenango plant was closed in 2016 and cleaned up in 2018. According to the EPA report, some of the sites need to be capped as part of the remediation project.



Meeting in Feb 19th , Source: SHENANGO REIMAGINED SITE VISIONING REPORT



Montour Trail

Phase 2



Redevelop the Whole Neville island

Phase 1



Reuse the Shenango Site

Phase 3



Redevelop McKees Rocks Bottoms



Washington's Landing Trail

Context of the site

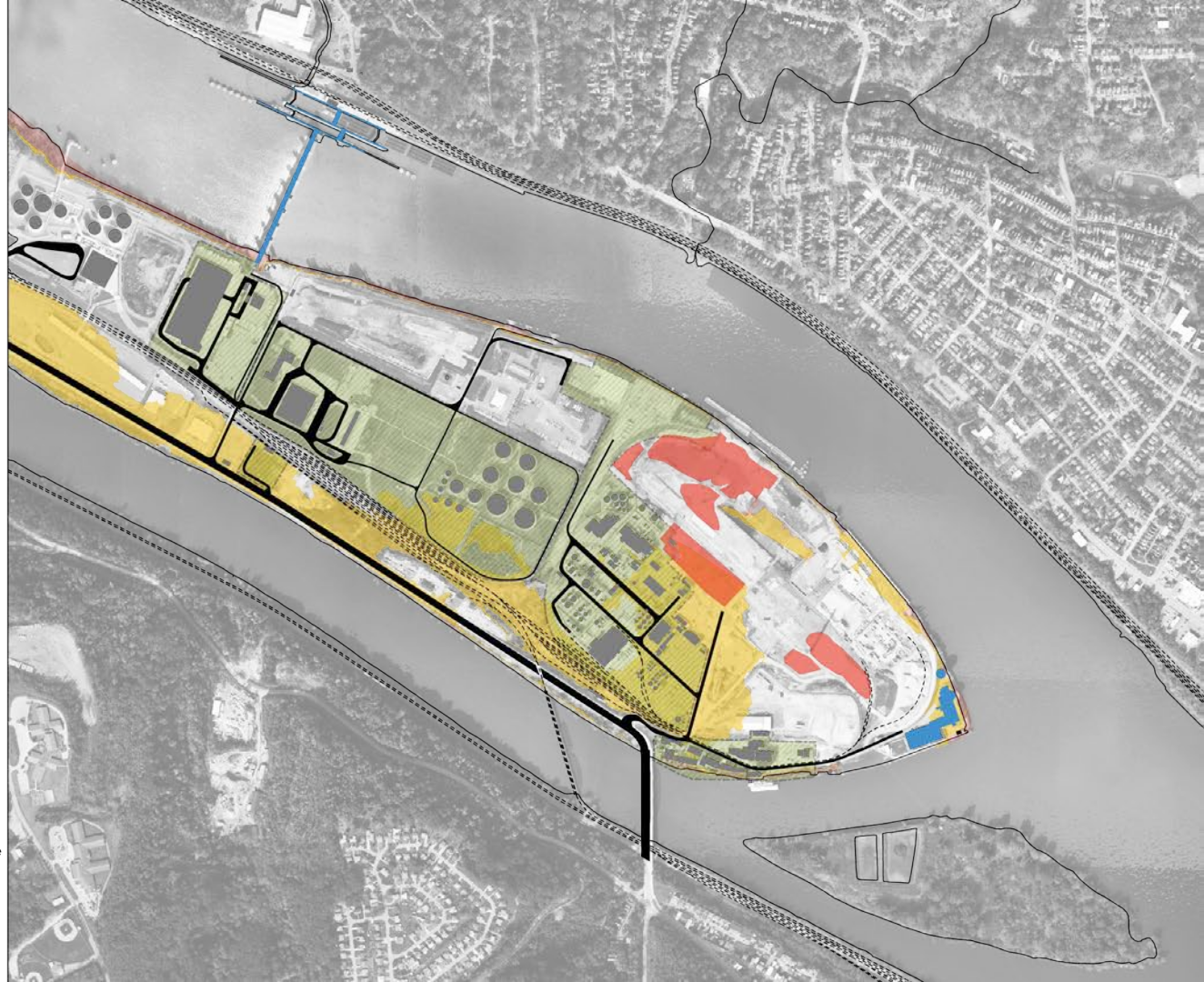
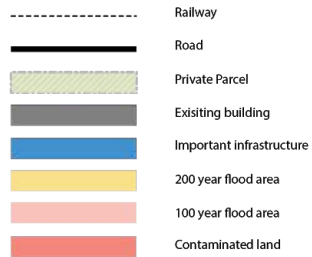
Parcel owned by private

Contaminated land that need to cap

Existing industrial infrastructure

Flood zone

Existing public facility



Guide lines for design



Existing Dam



Parcel line



Railway



Contained land border



Main Road



Direction of solar panels



Grid Line for Solar array



Railway



Design reference line



Road



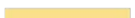
Private Parcel



Existing building



Important infrastructure



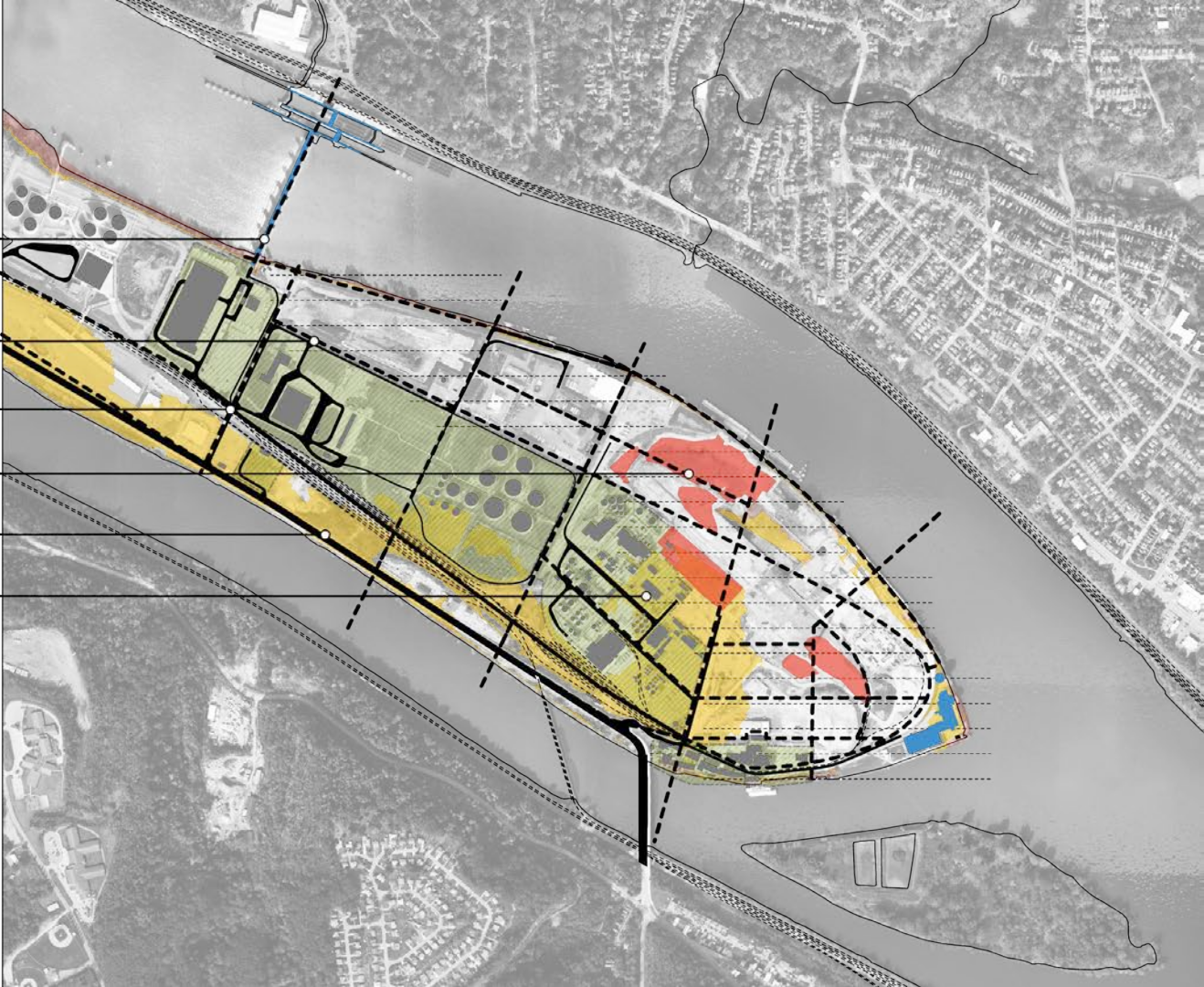
200 year flood area



100 year flood area



Contaminated land



Future of manufacture

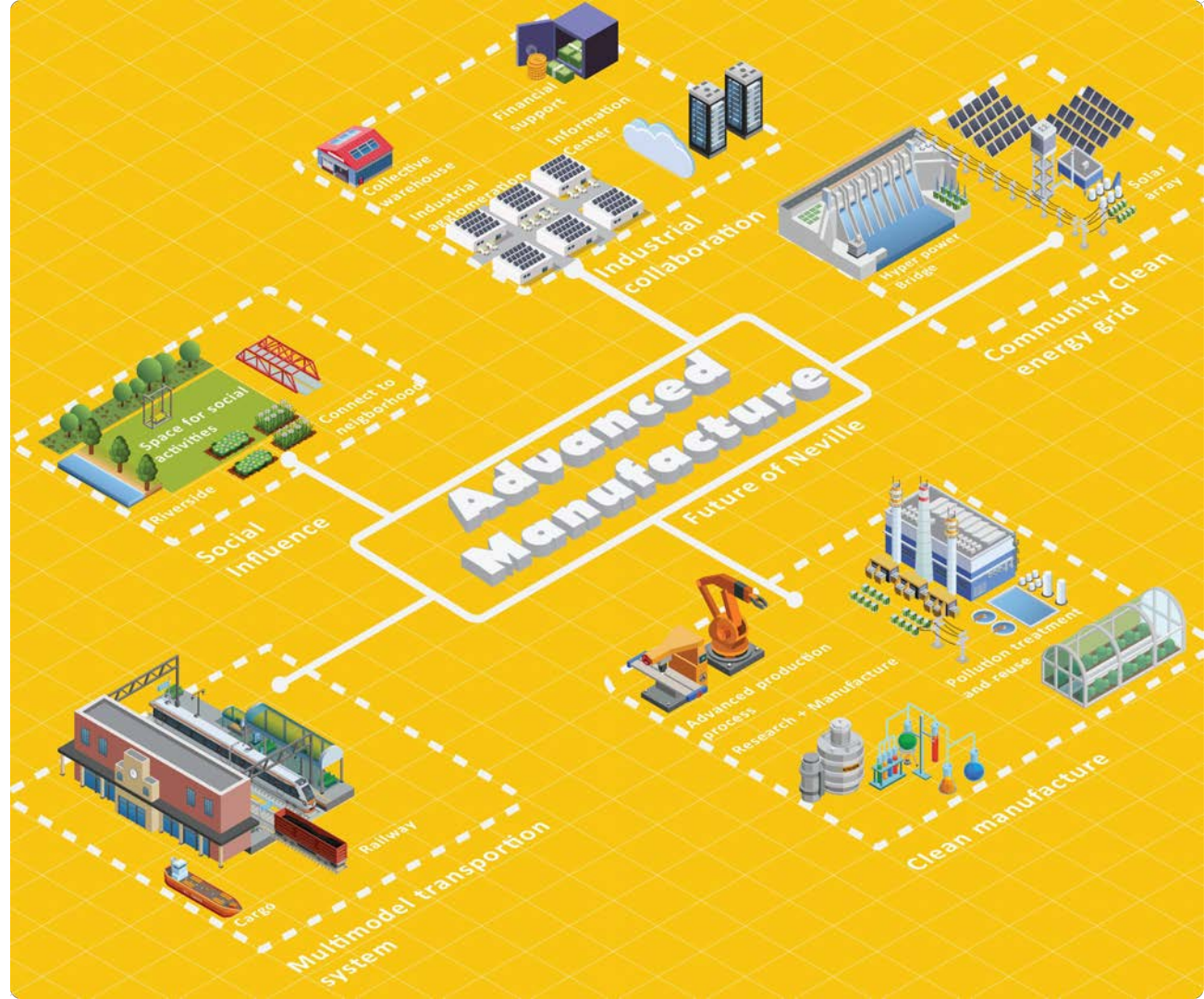
Clean energy

Clean Manufacture
(waste treatment)

Industrial collaboration
(Finance, Collective use warehouse, policy, commercial)

Social influence
(better connection with nearby neighborhood)

Multimodel transportation
(Cargo, Railway for materials. Railway for passengers, Van, Car)



Multimodal transportation

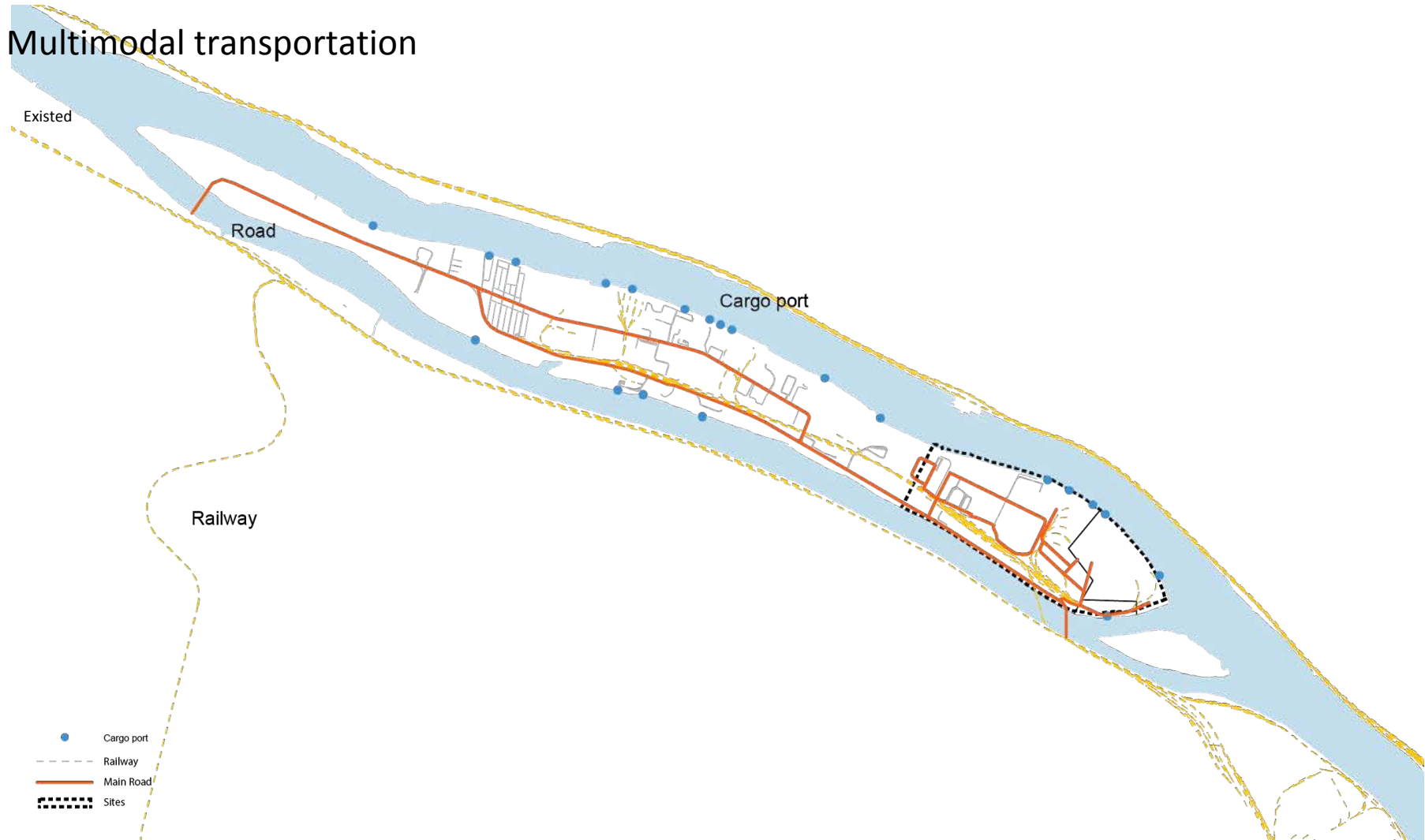
Existed

Road

Cargo port

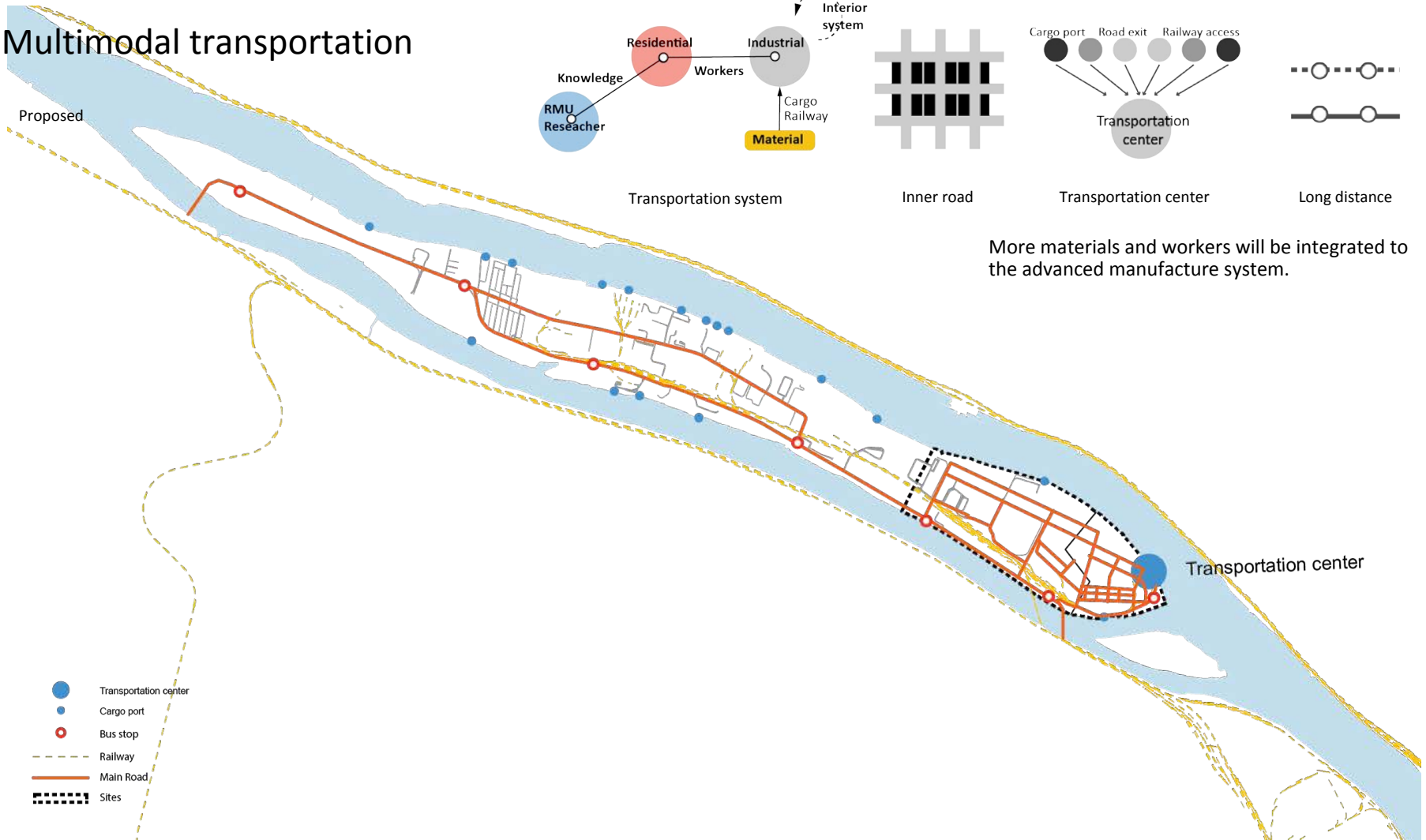
Railway

- Cargo port
- - - Railway
- Main Road
- ▣ Sites



Multimodal transportation

Proposed



Transportation system

Inner road

Transportation center

Long distance

More materials and workers will be integrated to the advanced manufacture system.

- Transportation center
- Cargo port
- Bus stop
- Railway
- Main Road
- Sites

Industrial collaboration

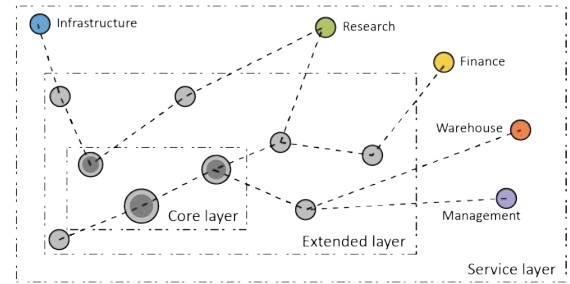
Existed



- Factory
- Service (Truck providers and equipment providers)
- Sites

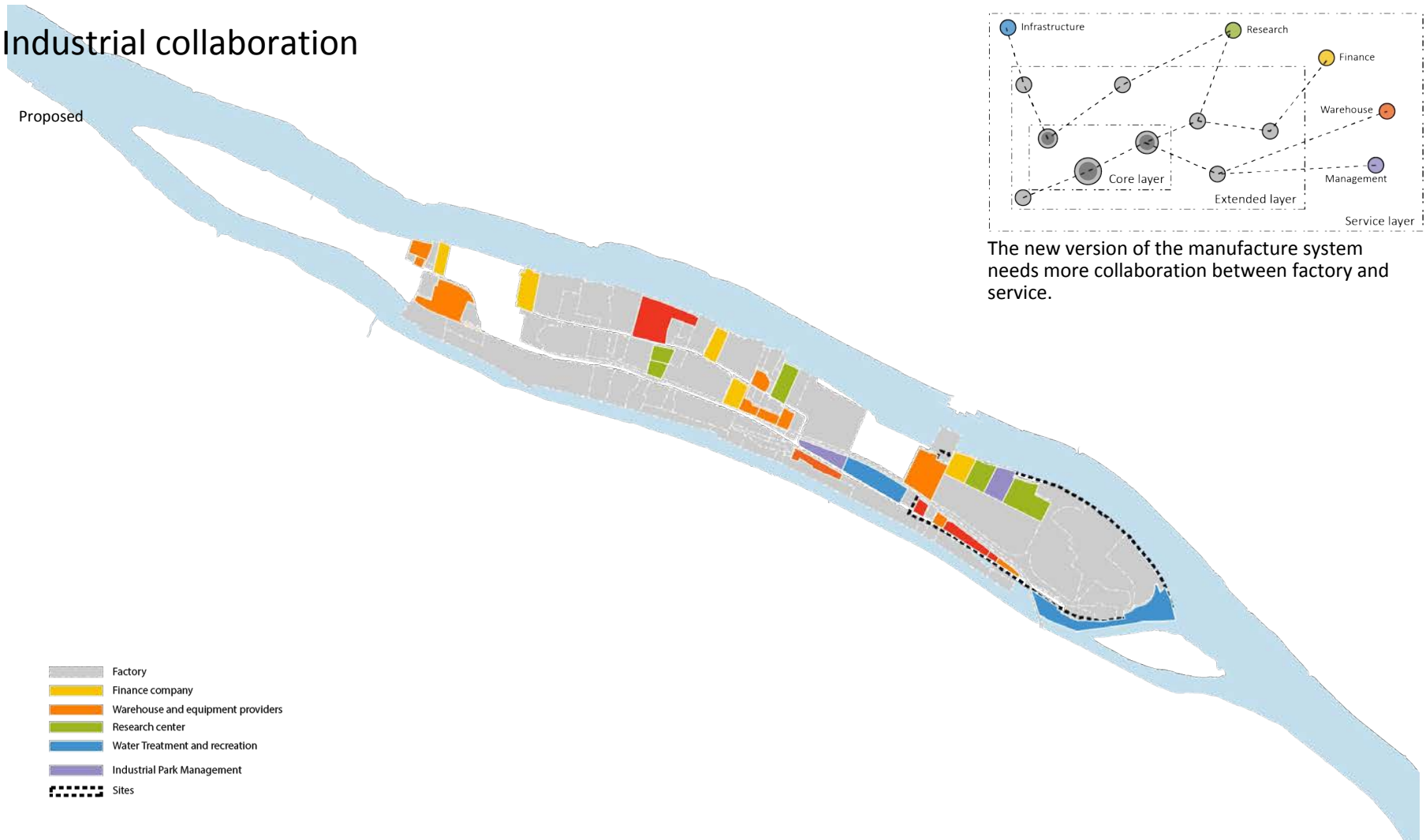
Industrial collaboration

Proposed



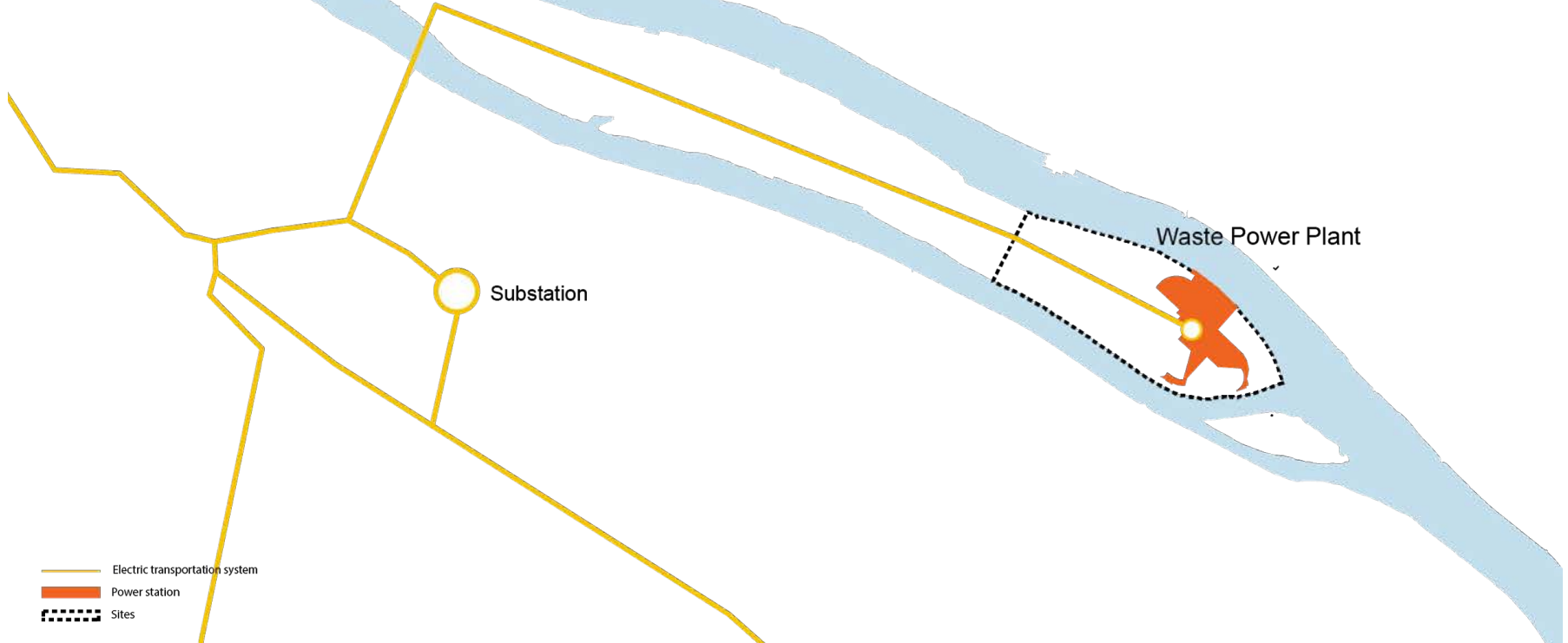
The new version of the manufacture system needs more collaboration between factory and service.

- Factory
- Finance company
- Warehouse and equipment providers
- Research center
- Water Treatment and recreation
- Industrial Park Management
- Sites



Energy

Existed



Waste Power Plant

Substation

Electric transportation system

Power station

Sites

Energy

Proposed



Hydro power

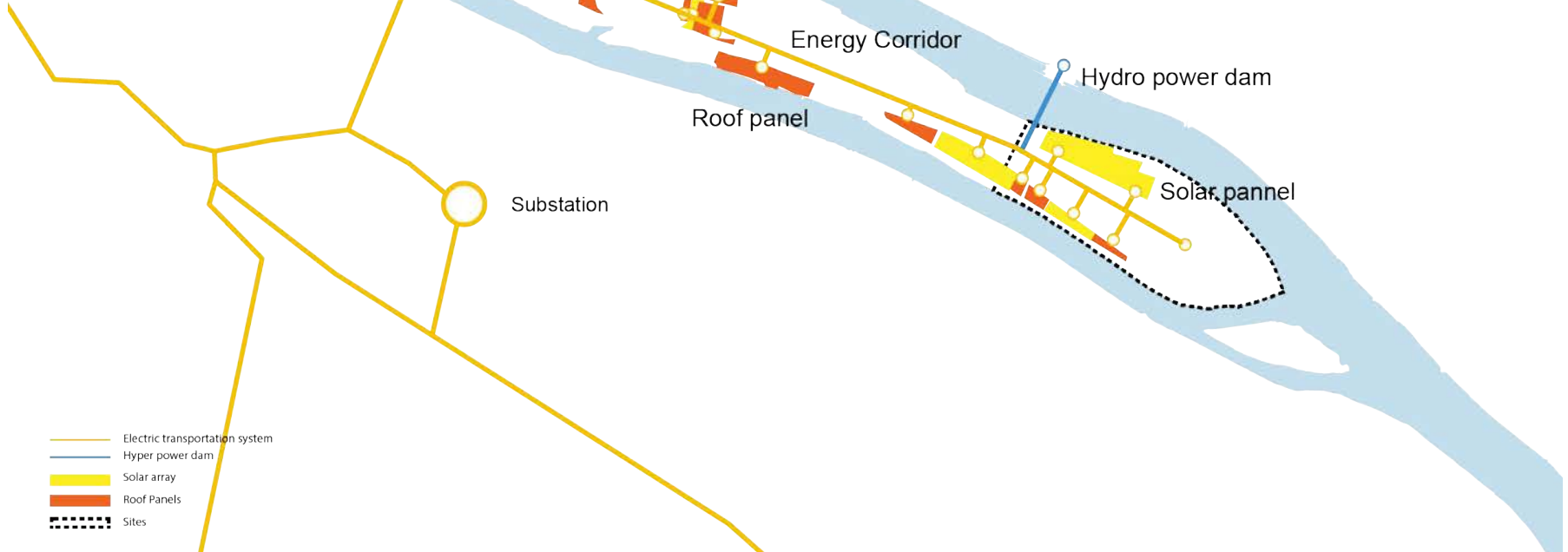


Roof Panel



Solar Panel

Due to a large number of vacant land in the island, there is great opportunities to build solar array and roof panel to provide clean energy for industrial use.

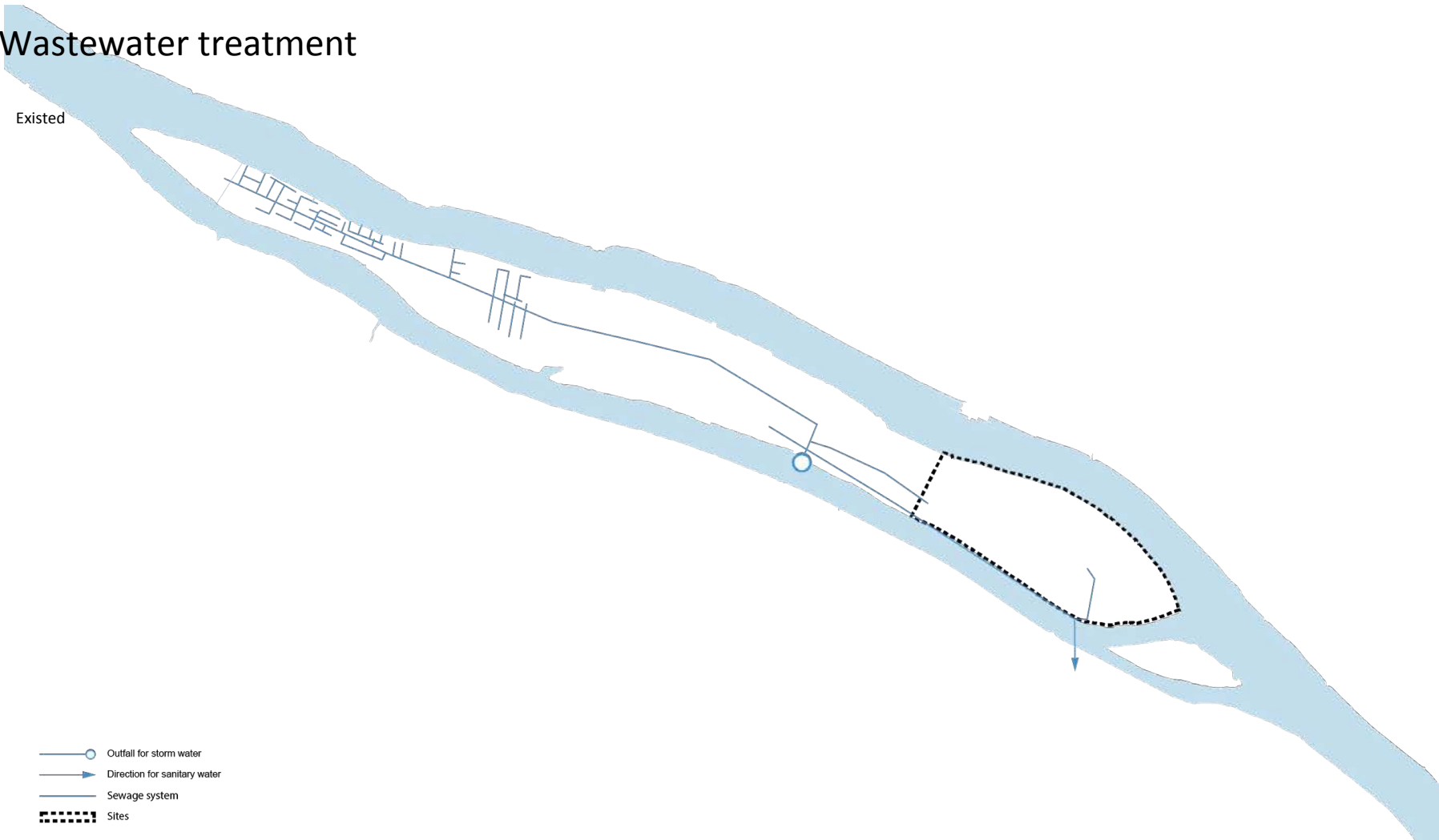


- Electric transportation system
- Hyper power dam
- Solar array
- Roof Panels
- Sites

Wastewater treatment

Existed

- Outfall for storm water
- ➔ Direction for sanitary water
- Sewage system
- ▬ Sites



Wastewater treatment

Proposed



Living machine









Wetland



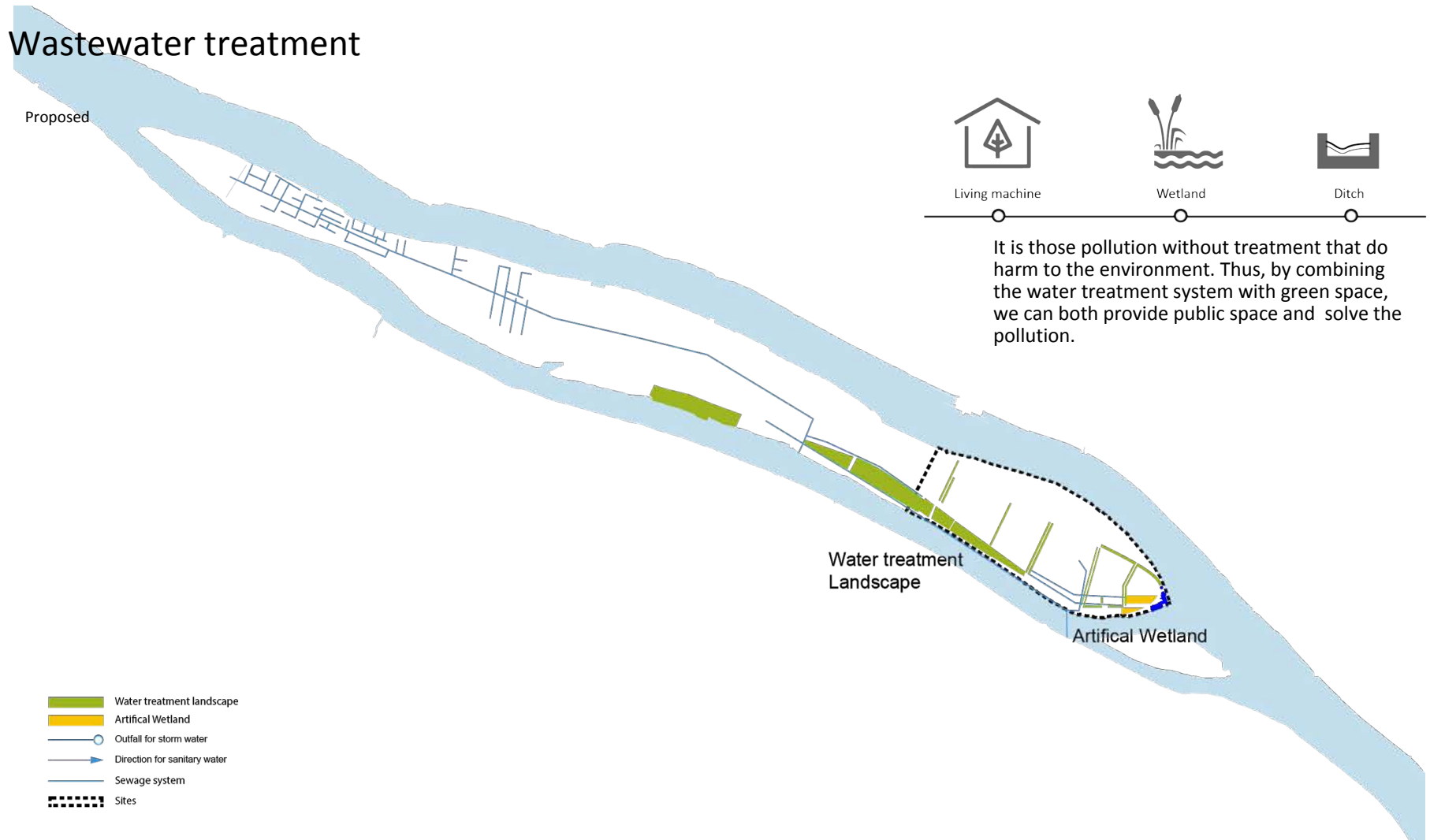
Ditch

It is those pollution without treatment that do harm to the environment. Thus, by combining the water treatment system with green space, we can both provide public space and solve the pollution.

-  Water treatment landscape
-  Artificial Wetland
-  Outfall for storm water
-  Direction for sanitary water
-  Sewage system
-  Sites

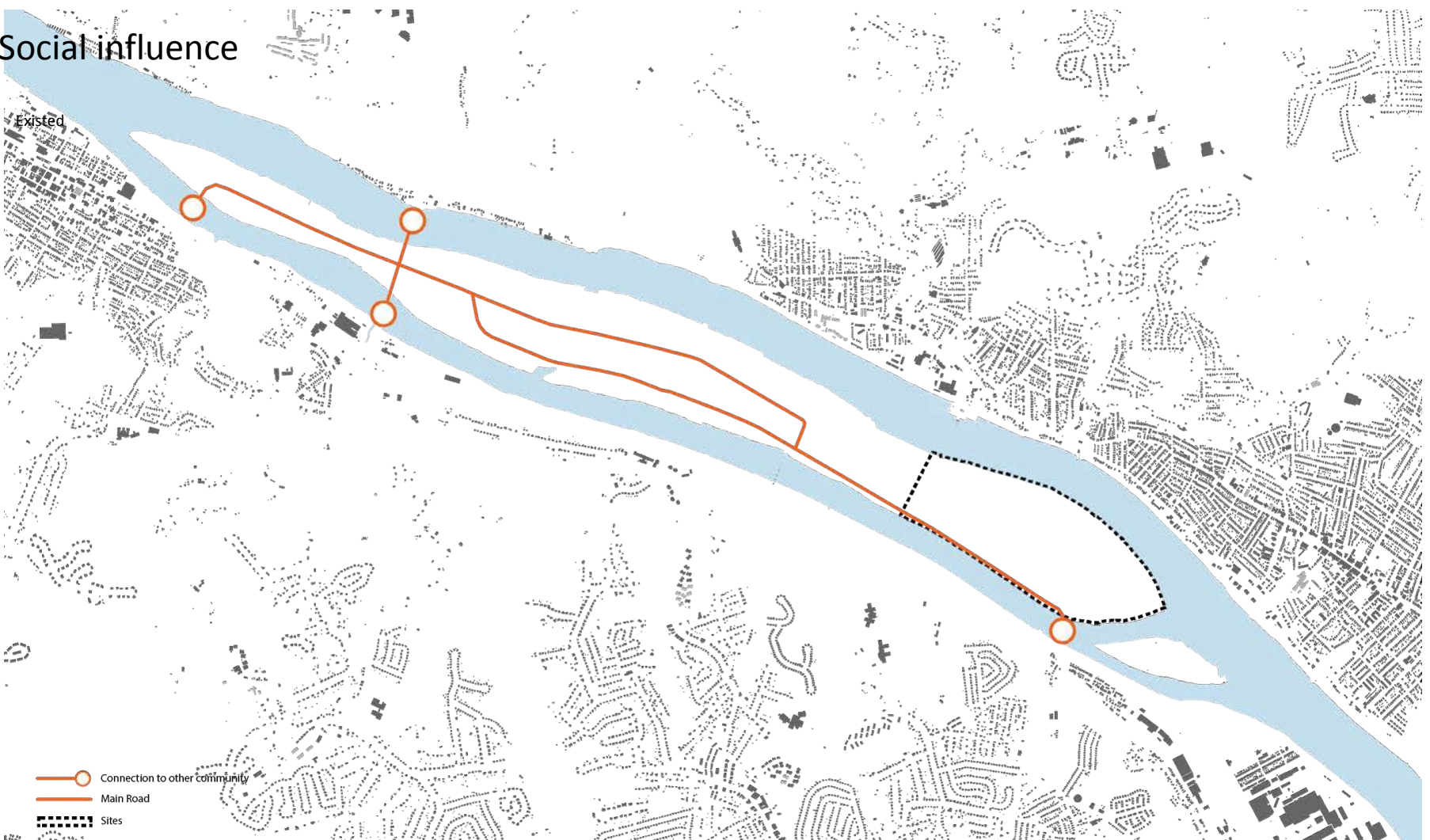
Water treatment Landscape

Artificial Wetland



Social influence

Existed



- Connection to other community
- Main Road
- Sites

Social influence

Proposed



Hyper power



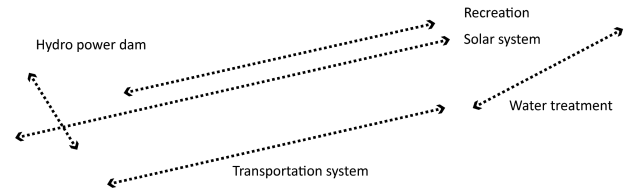
Bridge



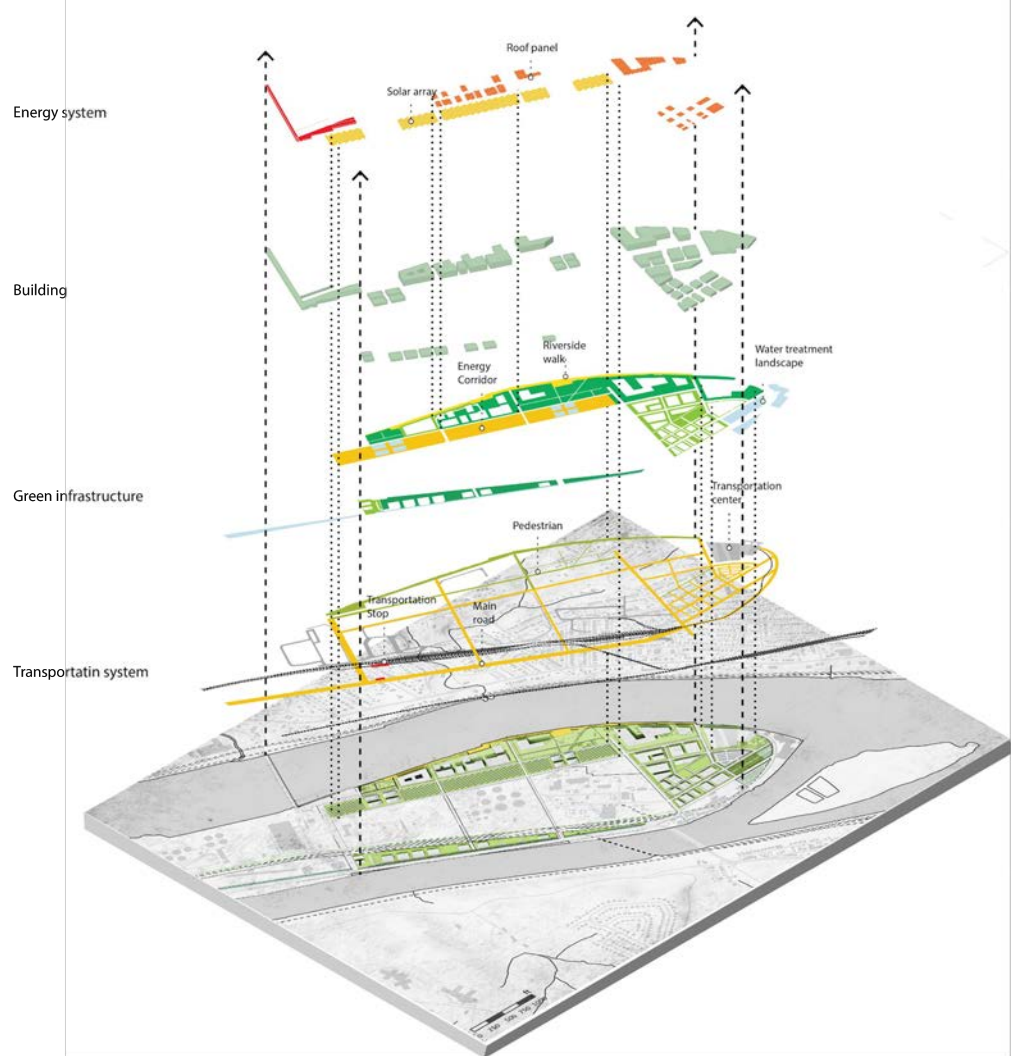
Recreation space

The island's isolation reinforces the opposition between the island and the residents of the North Shore. Thus, it is with great importance to connect to the north shore and create some public space for them.

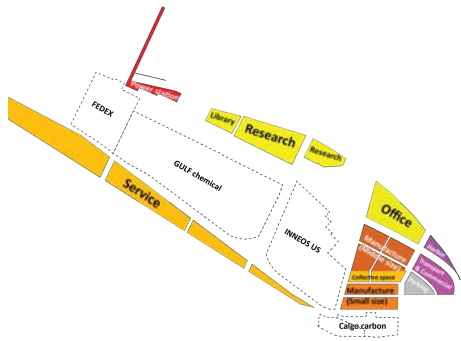
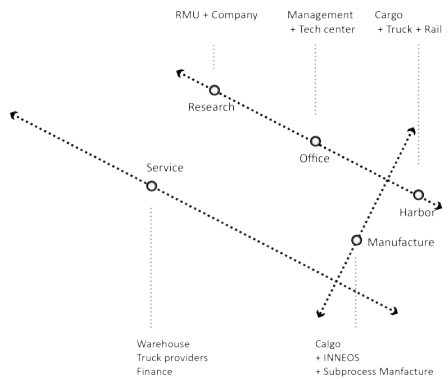
- Public space for North borough
- New Connection
- Connection to other community
- Main Road
- Sites



System Diagram







Hyper power Bridge

Research center

Service building

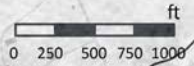
Office building

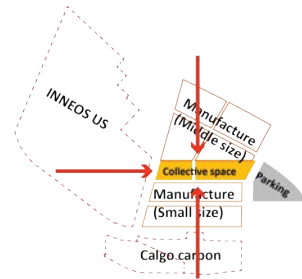
Transportation center

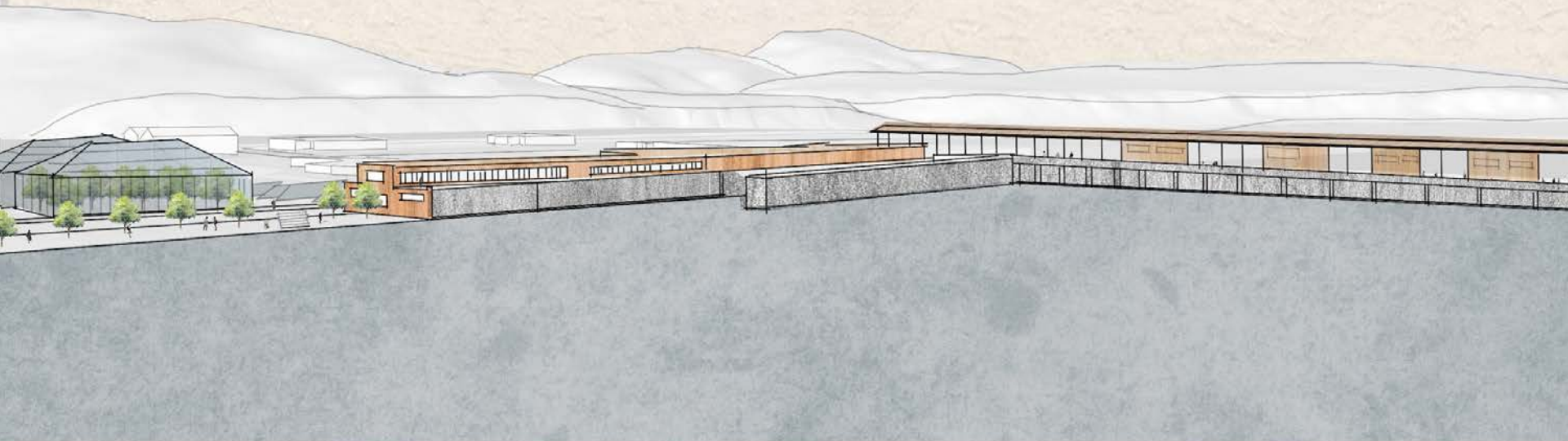
Parking

Existing water treatment plant

- Railway
- Landscape
- Wetland
- Proposed Buildings
- Original Buildings







At 12 megawatts, the Emsworth dam is a modest-sized project. It could power 6,000 to 12,000 homes

Source: <https://www.alleghenyfront.org/are-we-heading-for-a-hydropower-boom-on-the-three-rivers/>



