

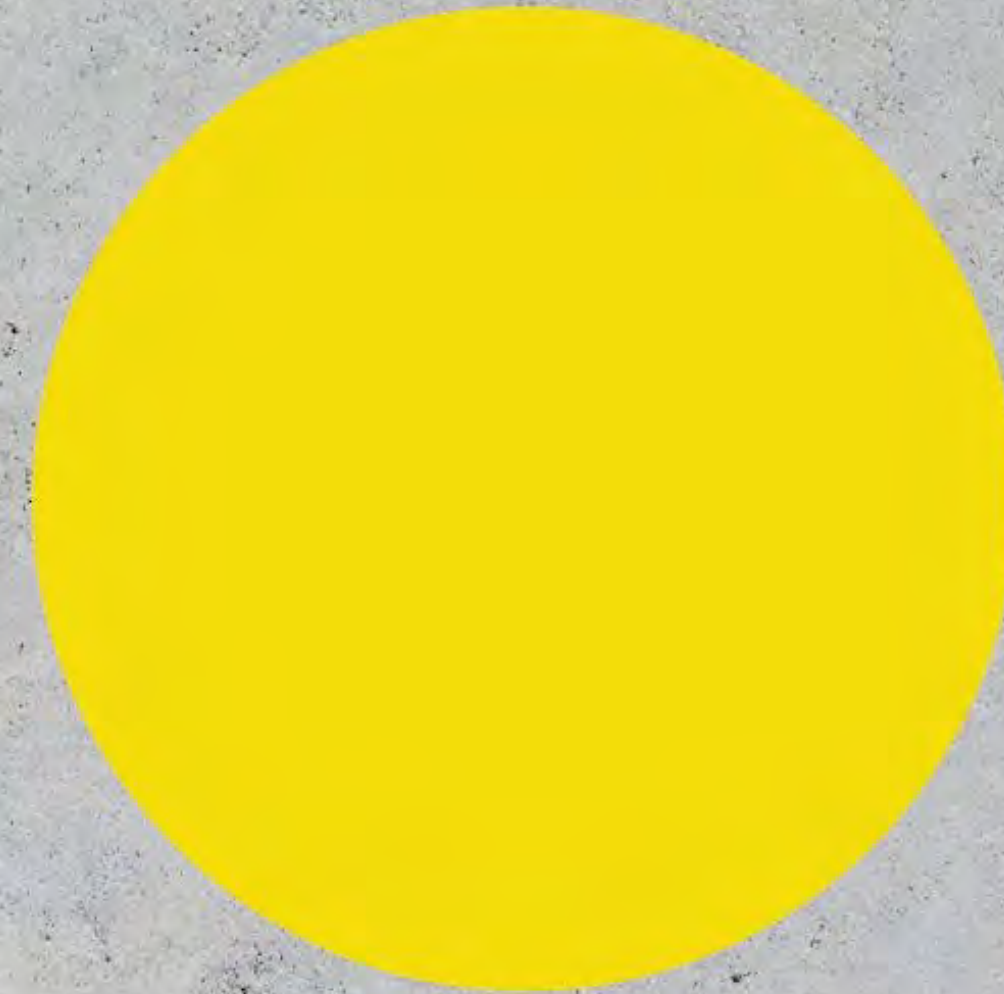


GREENPRINT PARTNERS

Getting the most good out of green infrastructure


St. Anne | Student Design Workshop

February 17, 2022





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An aerial photograph of a city street. In the foreground, a building has a green roof. A yellow speech bubble with a white border is overlaid on the image, containing text. The background shows a multi-lane road with cars, trees, and buildings.

We help schools like yours
build grant-funded green
infrastructure together with
students, teachers, and staff.



CONGRATULATIONS!

St. Anne of the Sunset has been awarded a \$1.5M grant to fund a green schoolyard transformation!



San Francisco
Water Power Sewer

AGENDA

History of Western Sewer Systems
Combined Sewer Systems
What is GSI and Why is it so Great?
St. Anne's GSI Plans
Student Designers

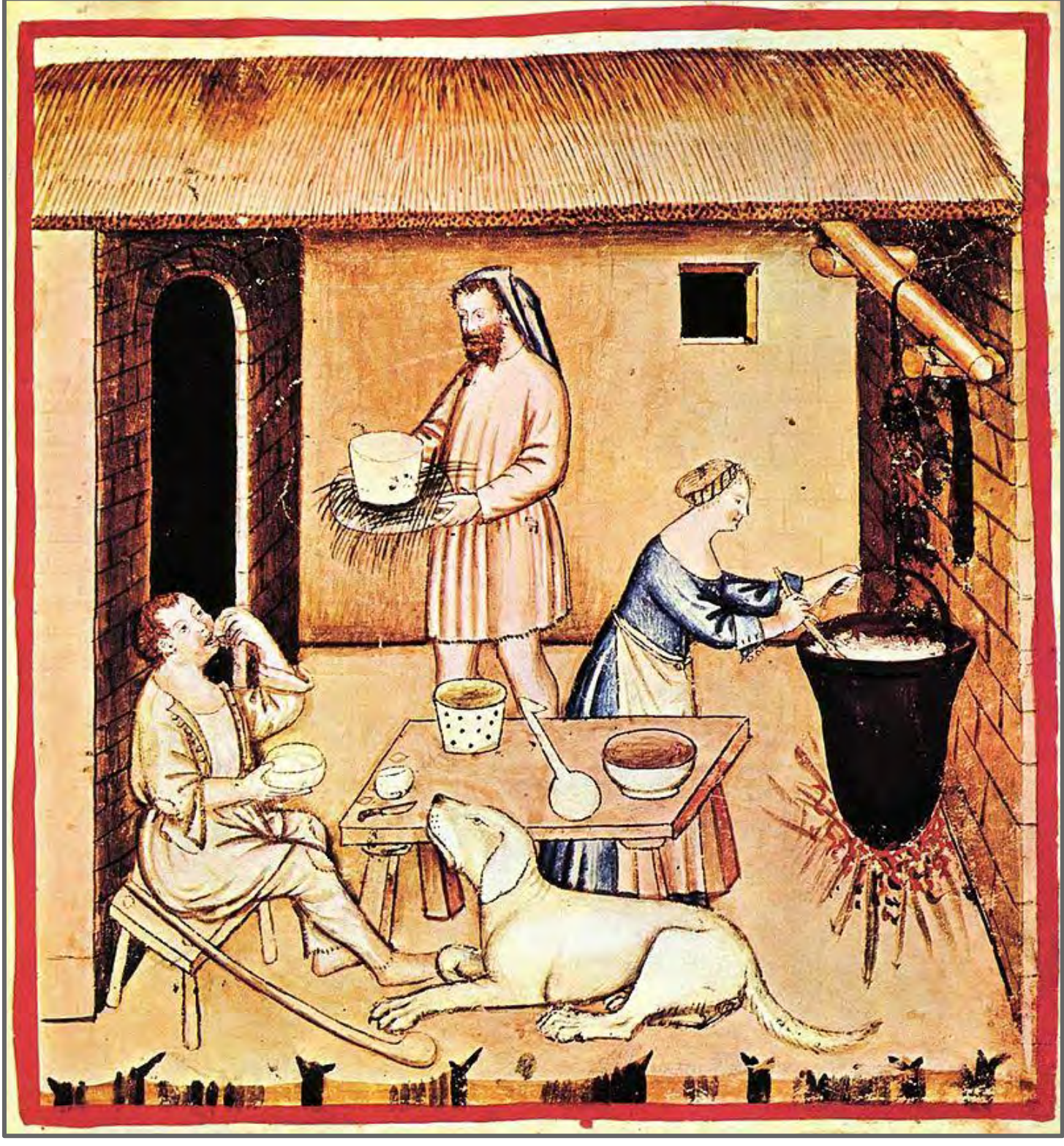
History of Western Sewer Systems



Managing water is one of humanity's tough challenges.
This includes drinking water, wastewater, and stormwater.



Stormwater management was left to nature.



The Great Stink of London was a key turning point for stormwater management and modern sewers.



As cities grew, so did stormwater management problems.
The decrease of natural green spaces and growth of paved surfaces compounded stormwater management problems.



San Francisco, 1848 Population ~1,000



San Francisco, 2020 Population: 873,965

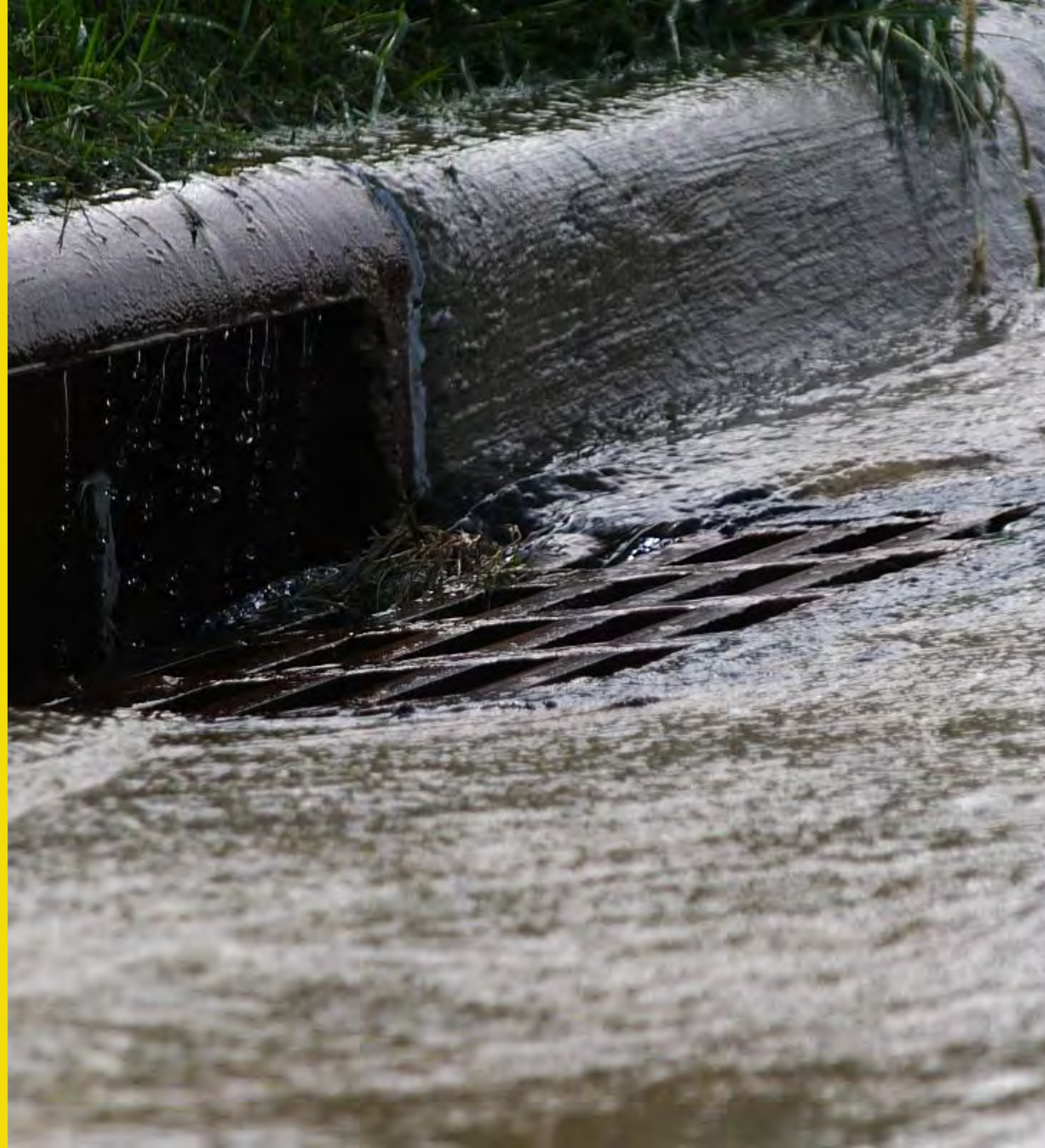
The Great Stink was solved through better sewers.

Draining away wastewater and stormwater saved lives and drastically improved people's quality of life.



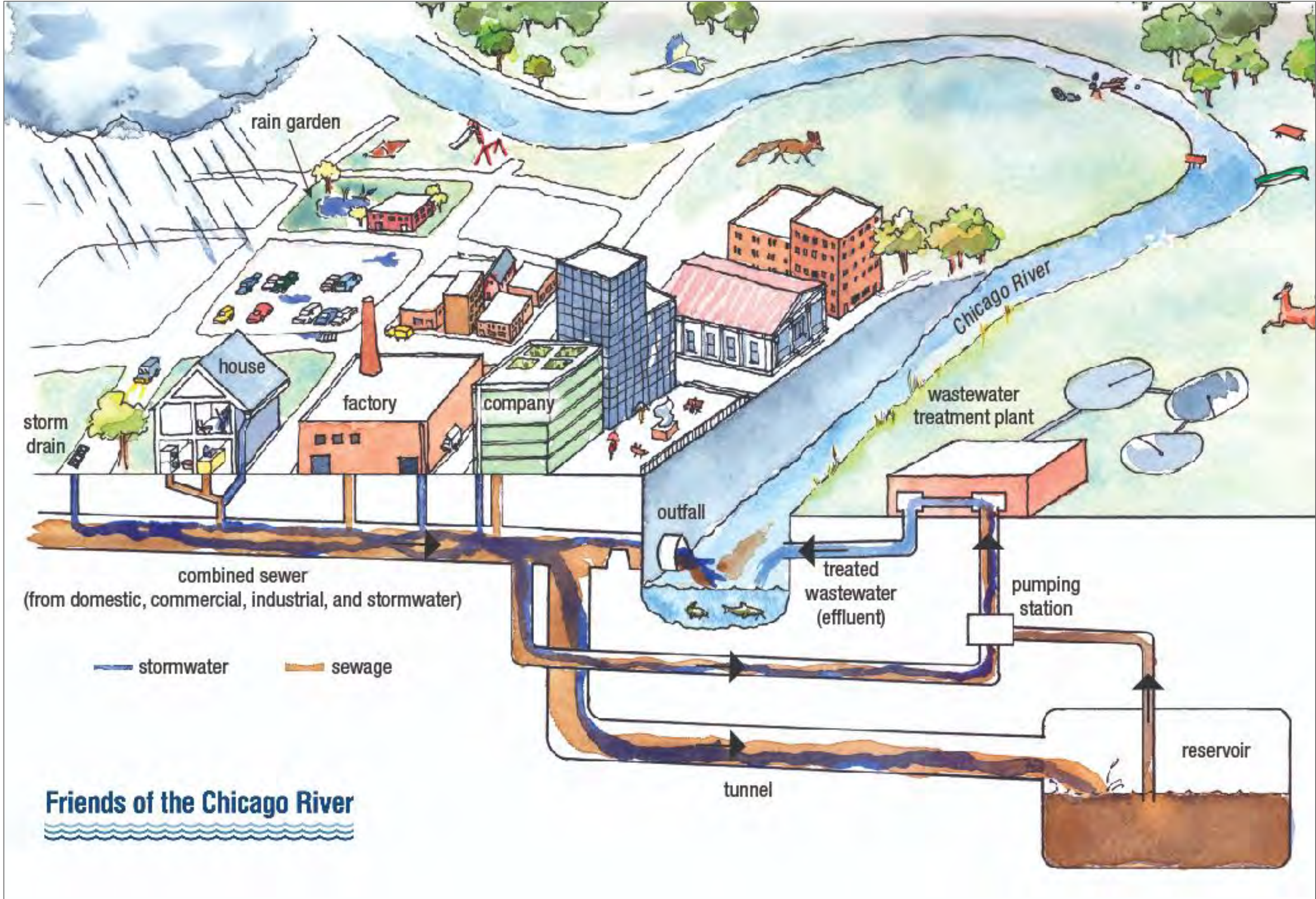
<https://www.zocalopublicsquare.org/2020/01/09/when-sewers-were-new-clean-and-amazing/viewings/glimpses/>

COMBINED
SEWER
SYSTEMS



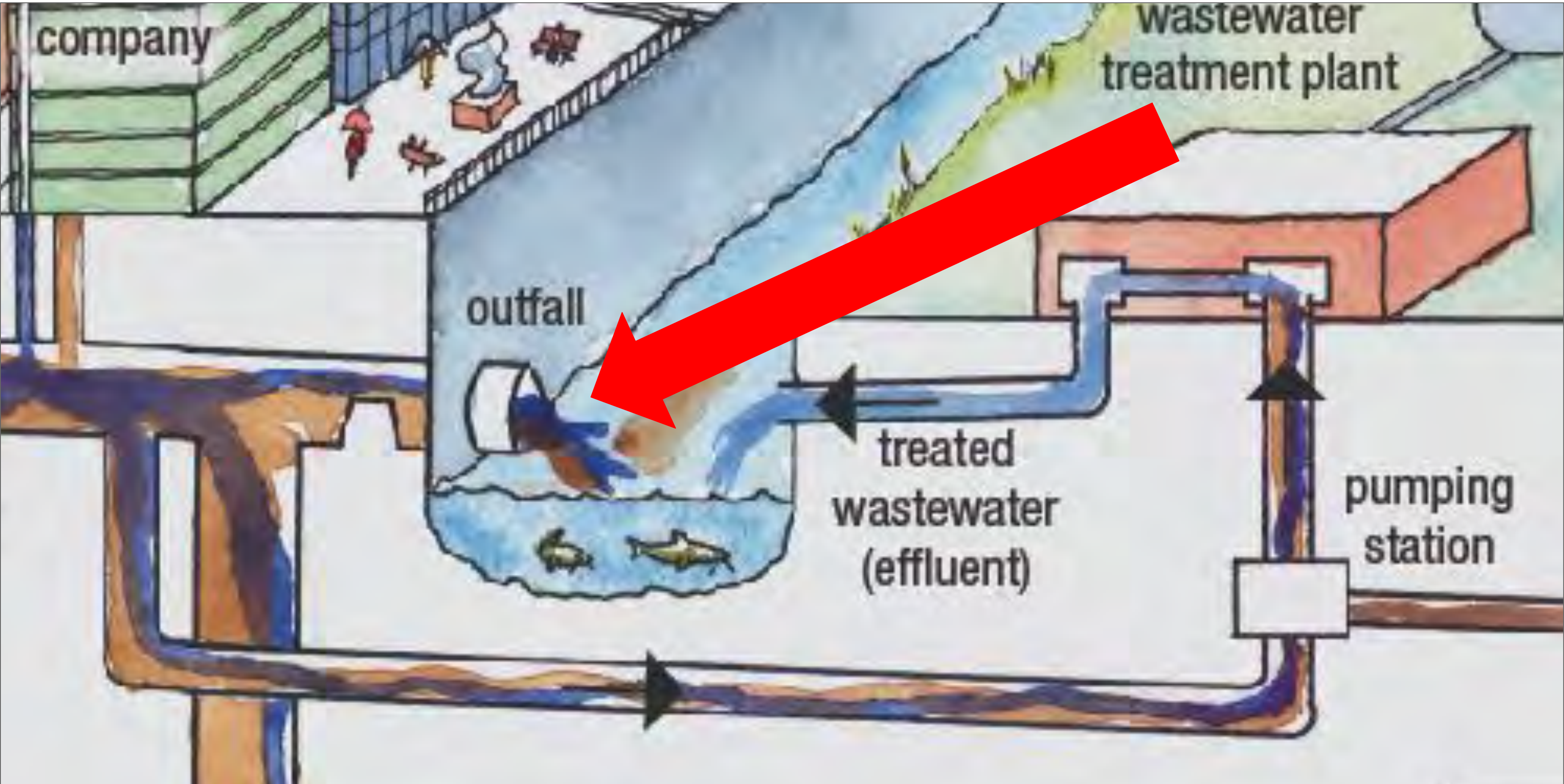
Combined sewer systems

These systems collect rainwater, domestic sewage, and industrial wastewater in a *combined* pipe.



New century, same problem.

We are still dumping our untreated sewage in our rivers, lakes, bays, and streams!



Combined sewer overflows are a major problem.



More local flooding



Worsening basement leaks



Increased sewer backups

Why do combined sewer overflows happen?

The natural water cycle has been disrupted with the growth of development and paved surfaces.



GREEN
STORMWATER
INFRASTRUCTURE



What is green stormwater infrastructure?

Green stormwater infrastructure (“GSI”) is the use of vibrant natural systems to manage water where it falls. It uses natural processes of soils and plants to slow, store, and clean stormwater to keep it from overwhelming the sewer system.

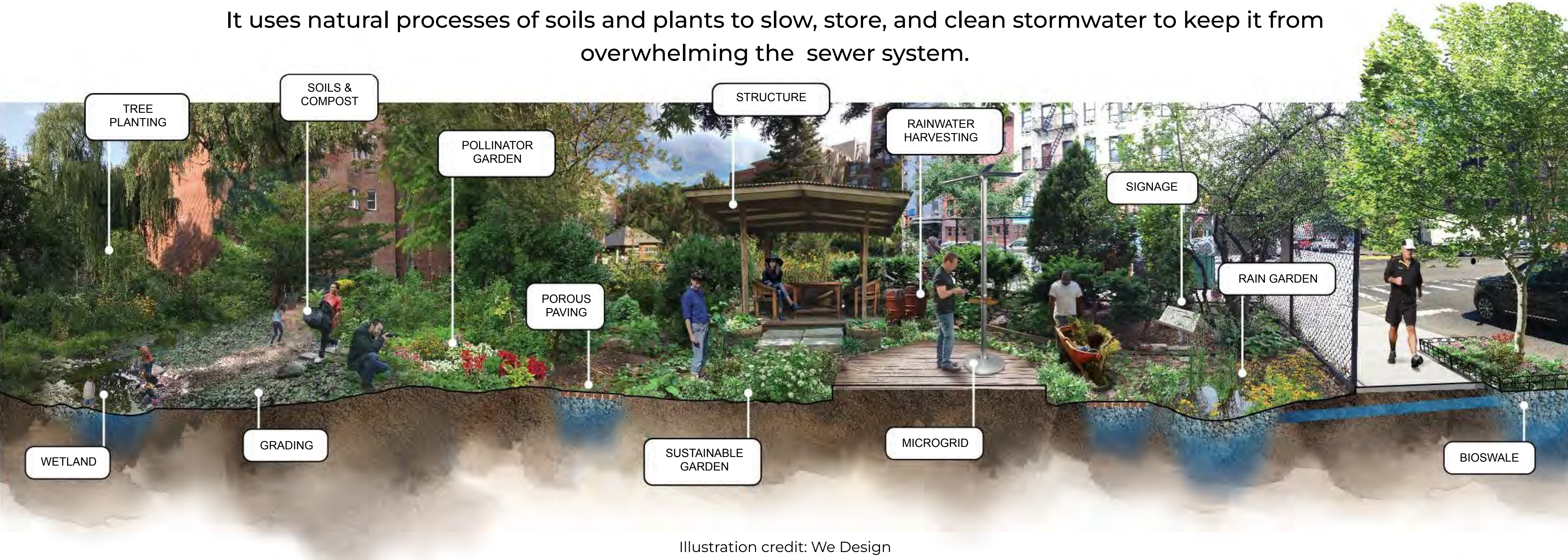


Illustration credit: We Design

Rain Gardens

Rain gardens collect stormwater from paved surfaces. The plants absorb and treat polluted water. Rain gardens filter water into the ground or direct it into the sewer system.



© Philadelphia Water Department

Swale

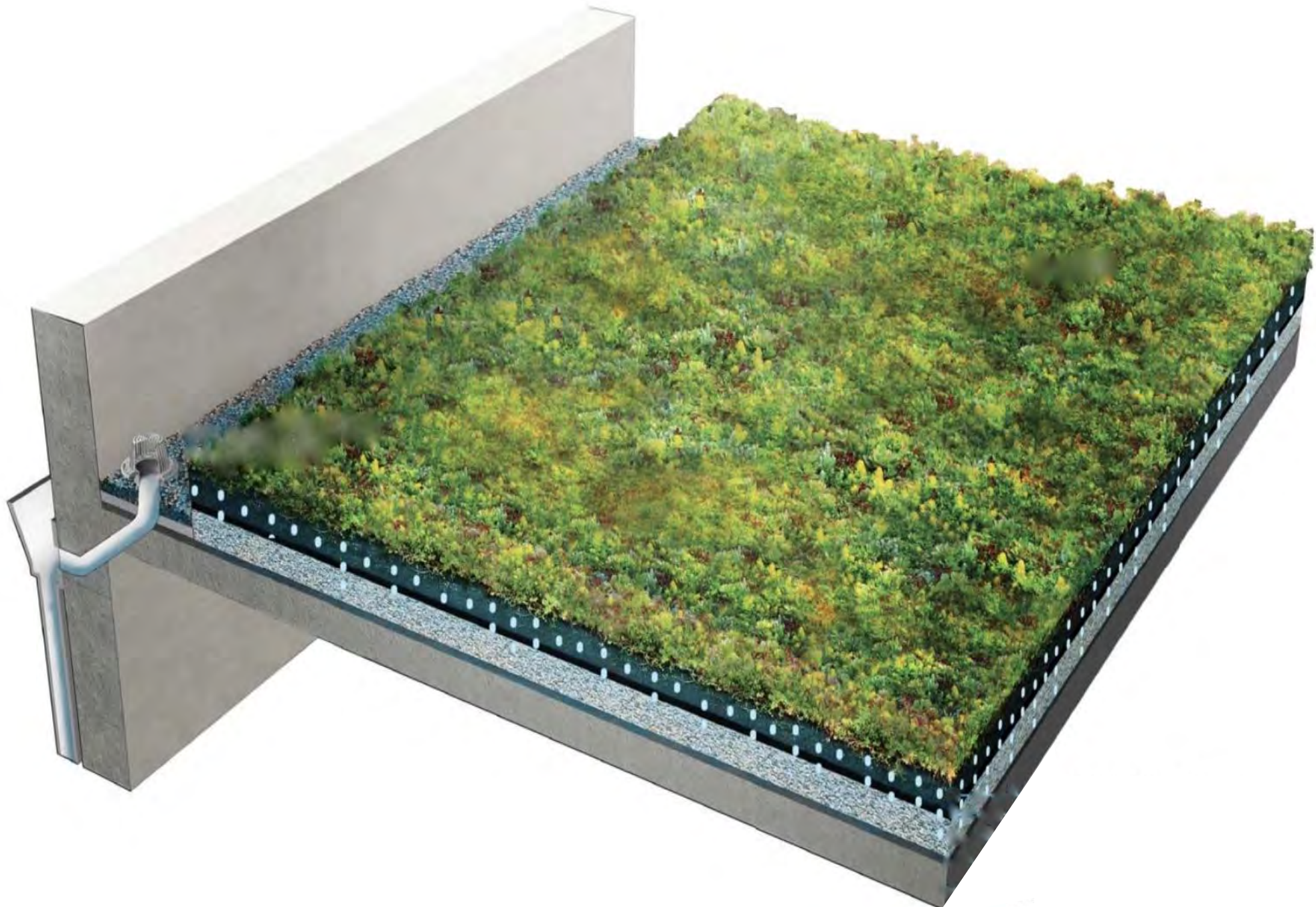
Stormwater swales are planted ditches that redirect stormwater from paved surfaces. Swale's plants and gravel slow down stormwater, increasing filtration and absorption.



© Philadelphia Water Department

Green Roof

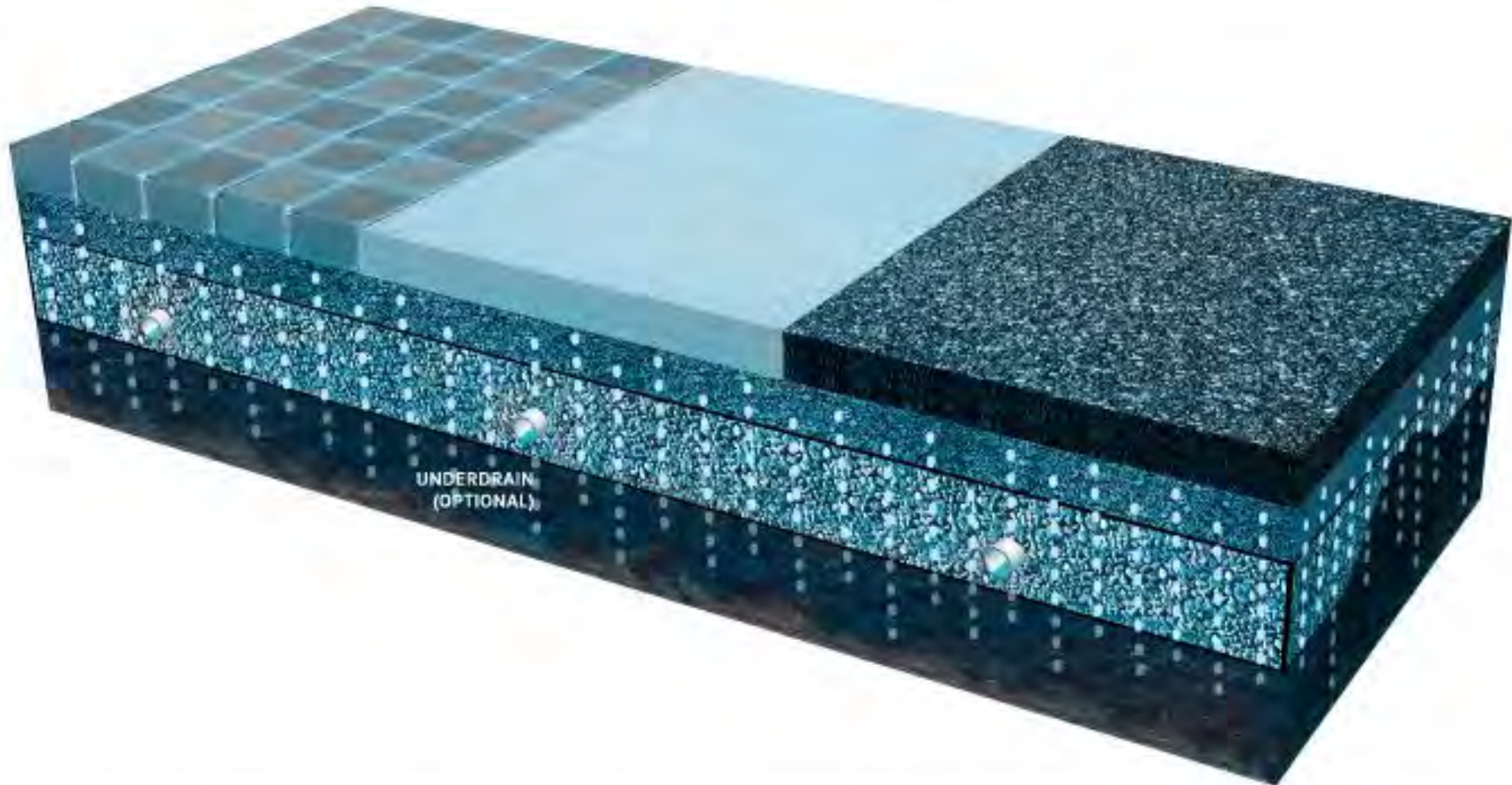
Green roofs are layered, vegetative systems that include a waterproof layer and engineered soil. Its plants slow down, absorb, and filter stormwater while helping regulate building temperatures.



© Philadelphia Water Department

Permeable Pavement

Permeable pavement is a porous surface system whose tiny holes allow water to soak into the ground below and/or into sewer systems.



© Philadelphia Water Department

GREEN
INFRASTRUCTURE
BENEFITS



TRUE/ FALSE ACTIVITY

Please answer the following statements by giving a thumbs up or down reaction.

Green stormwater infrastructure doesn't change the way our community looks on the surface.

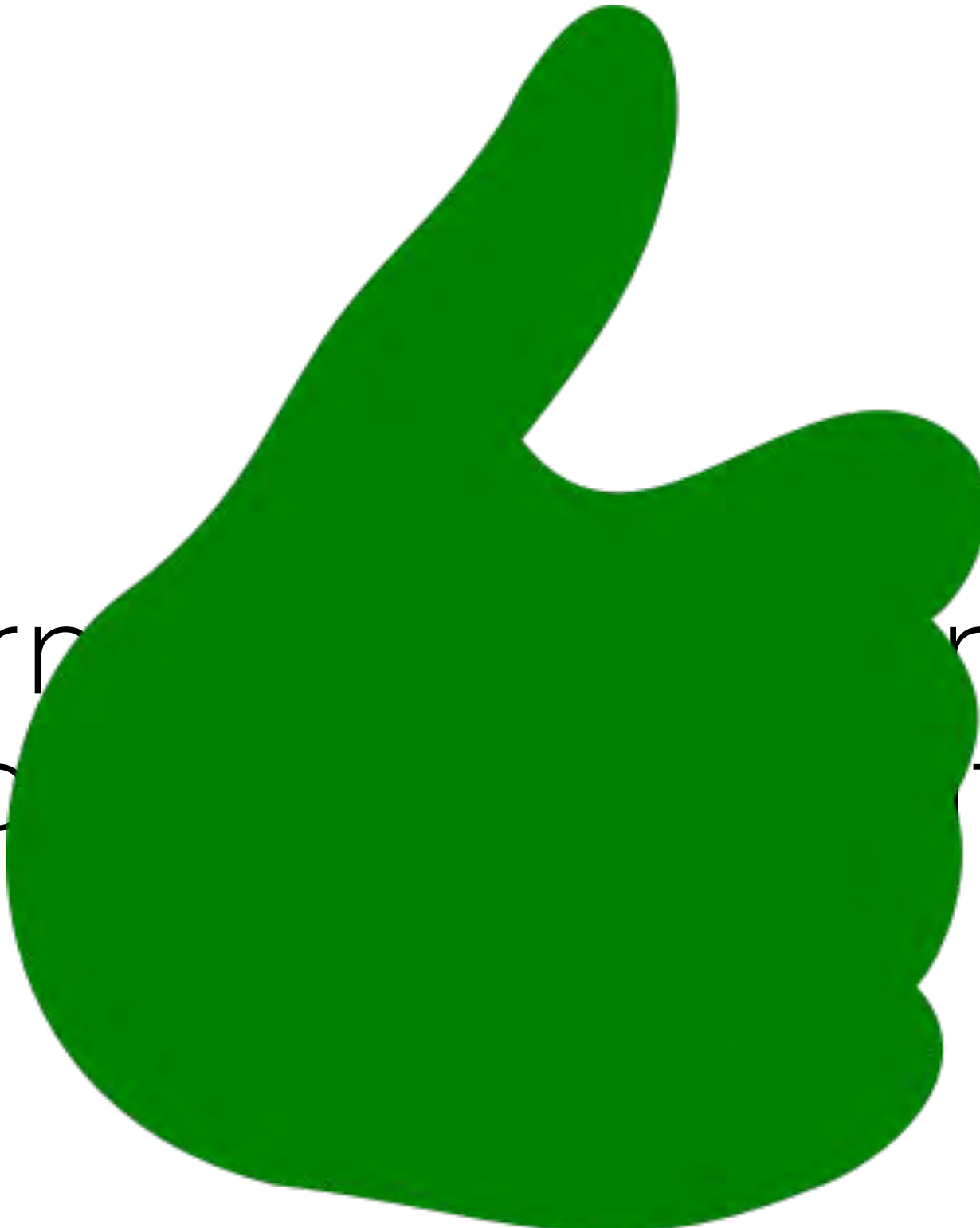
Green stormwater in  doesn't change the way our comm  the surface.

BEAUTY



Green stormwater infrastructure can help keep our bodies and minds healthy.

Green storm structure helps
p thy.





HEALTHY BODIES + MINDS

Green stormwater infrastructure has no impact on student achievement.

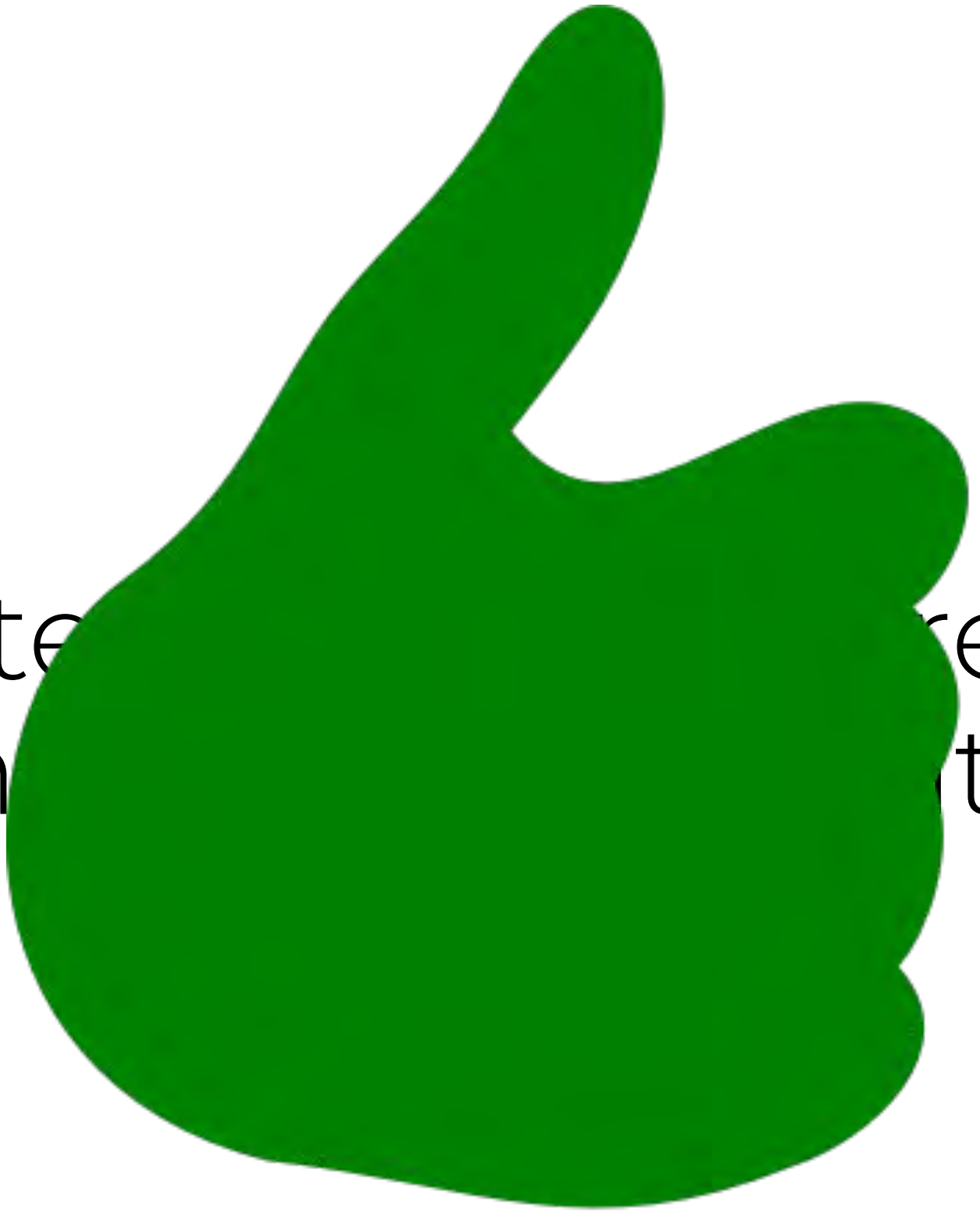
Green stormwater i  has no impact on
stude  nt.



STUDENT SUCCESS

Green stormwater infrastructure can make the air healthier to breathe.

Green stormwater infrastructure can make the air
healthier.





HEALTHIER AIR

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BEAUTY

Beautiful, maintained landscaping are placed where people can enjoy the view.



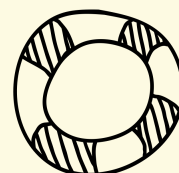
HEALTHY BODIES

Green infrastructure draws people outside to walk, bike, and play, and get our bodies moving.



HEALTHY MINDS

Research shows that rainscaping can help reduce stress and improve mental well-being.



PERSONAL SAFETY

Well maintained green spaces can deter illegal activities, making communities safer.



TRAFFIC SAFETY

Attractive landscaping often slows down drivers which makes the space safer for walkers and bikers.



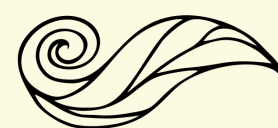
STUDENT ACHIEVEMENT

Having views of nature improves student focus and learning.



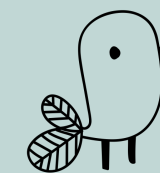
SOCIAL SPACE

Beautiful outdoor gathering places can foster a sense of community and belonging.



AIR QUALITY

Plants - especially trees - can filter the air, making it cleaner to breathe.



HABITAT

Native plants attract pollinators like butterflies and bees and offer shelter and food for beneficial insects and birds.

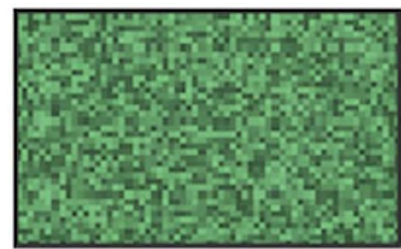
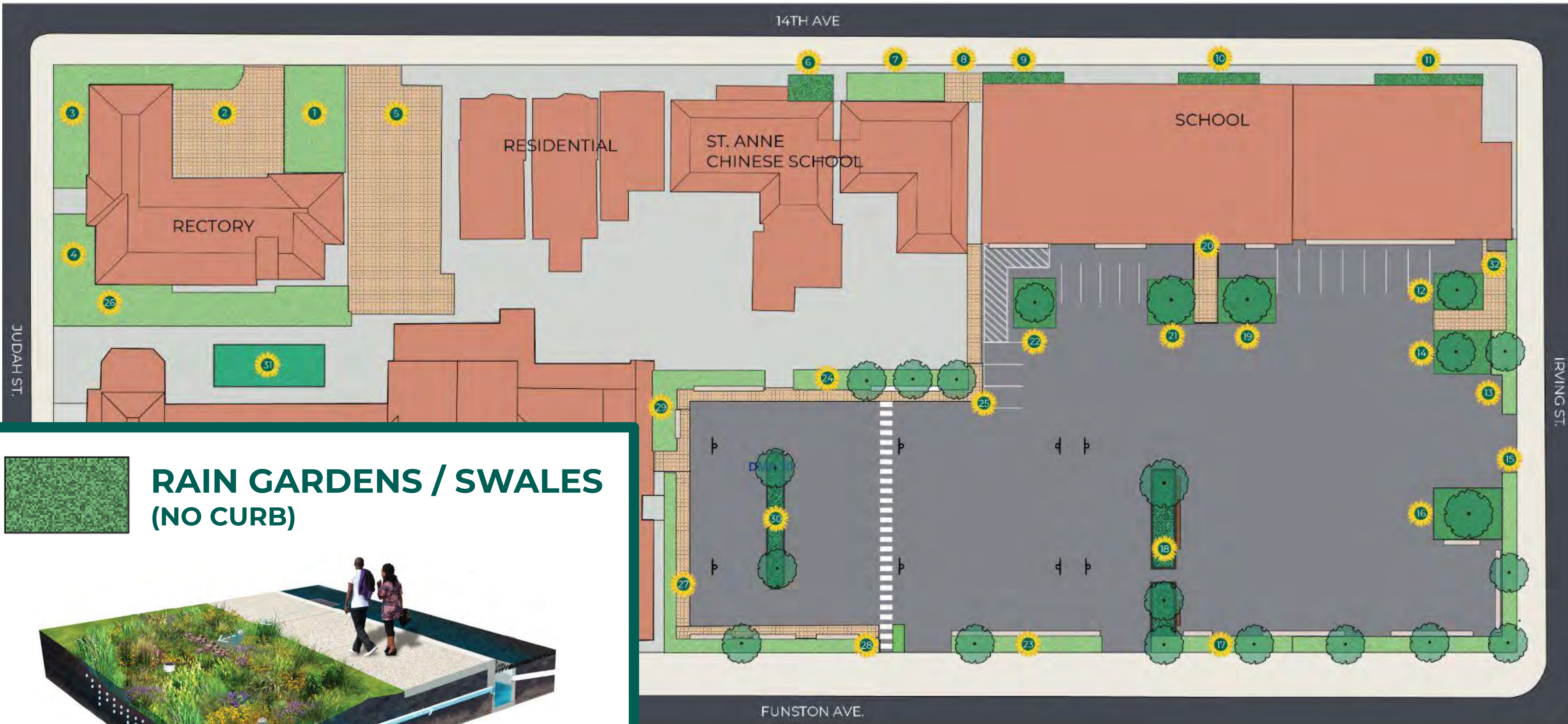
YOUR PROJECT





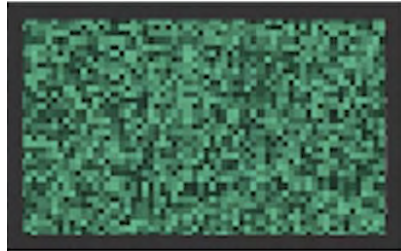
LEGEND

NEW GREEN STORMWATER INFRASTRUCTURE (GSI) GSI FEATURE TYPES LISTED BELOW	NEW TREES	SIDEWALK
NEW RAIN GARDEN WITH RAISED CURB	EXISTING BENCHES	PARKING LOT
NEW RAIN GARDEN WITHOUT CURB	NEW BENCHES	BUILDING
NEW LANDSCAPE	STEPPING STONES	STREET
PERMEABLE PAVEMENT	BASKETBALL HOOPS	



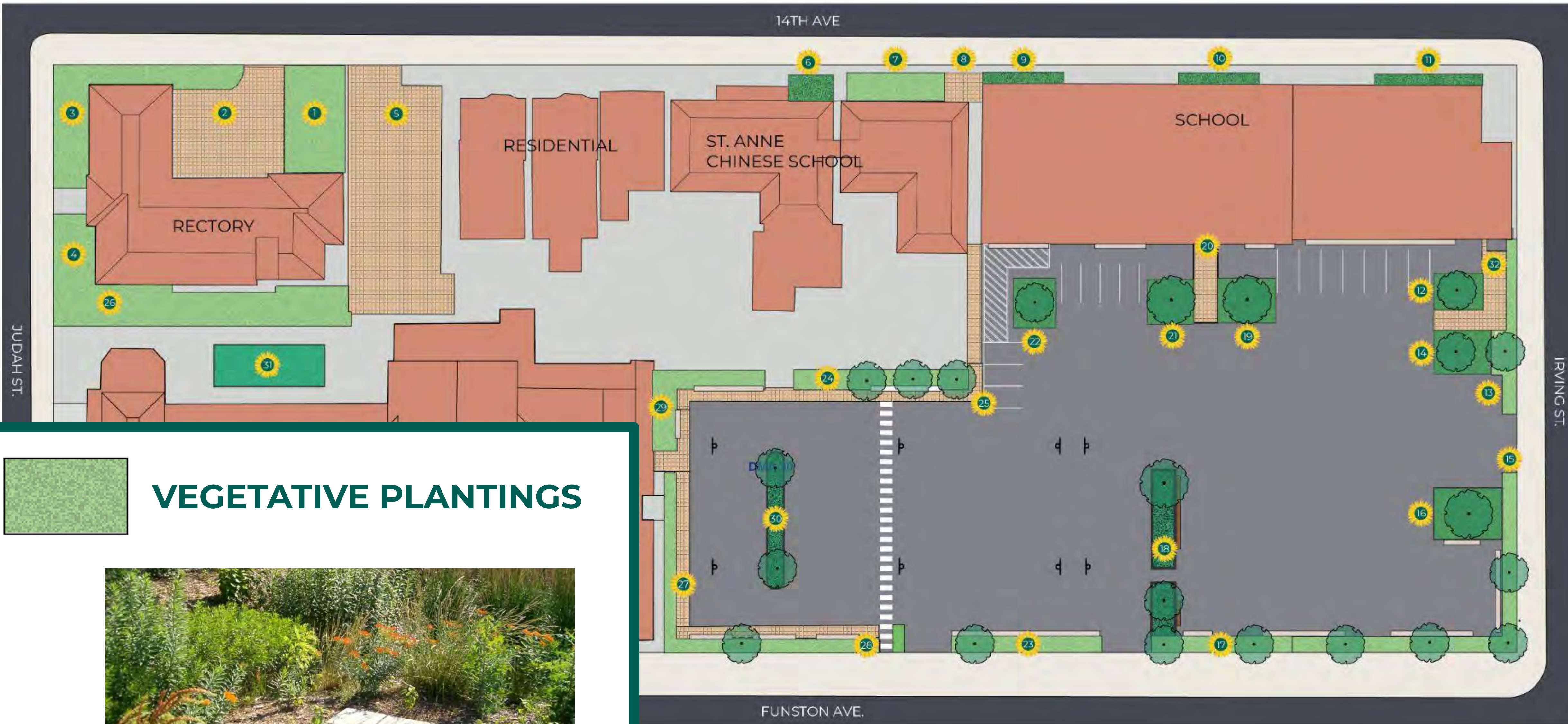
**RAIN GARDENS / SWALES
(NO CURB)**





STORMWATER PLANTER (WITH CURB)



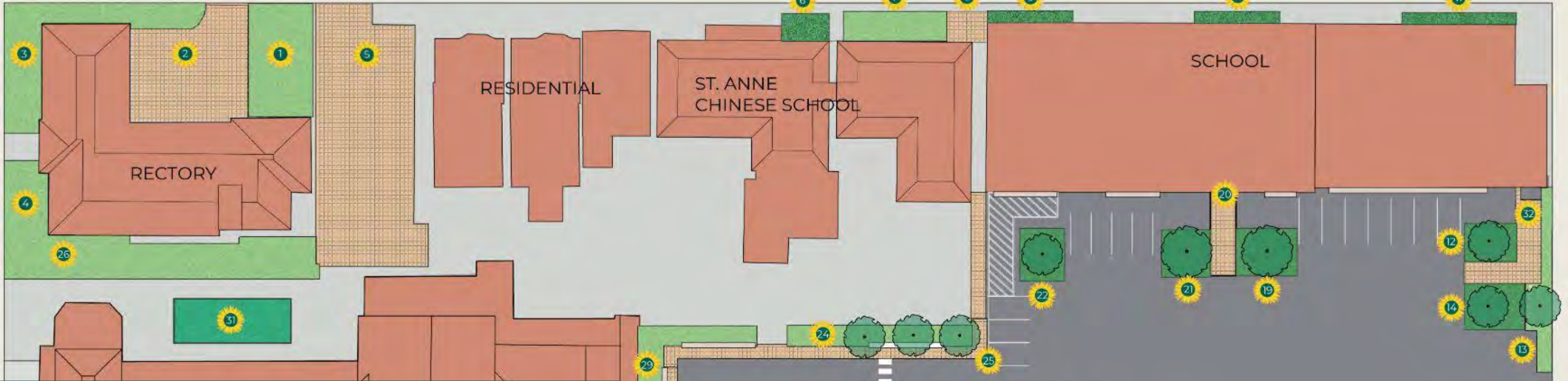


14TH AVE

JUDAH ST.

IRVING ST.

FUNSTON AVE.



TREES





PERMEABLE PAVEMENT



NOW IT'S YOUR
TURN TO BE THE
DESIGNER



Mediterranean Garden



1. Swan Hill Olive (low branching)



2. Blue Gem Coast Rosemary



3. Sunset Rockrose

- 1. Swan Hill Olive Trees don't produce fruit and have 1% of the pollen that other olive trees do.
- 2. Blue Gem Coast Rosemary is an evergreen shrub meaning it has leaves all year round.
- 3. Sunset Rockrose produces a sweet smelling resin that is used in perfumes.
- 4. Rosemary is highly drought toleran, fragrant, and attracts many species of pollinators.
- 5. Pacific Coast Hybrid Irises come in many different colors and are flood and drought tolerant.
- 6. Hidcote Superior Lavender is drought resistant and has a smell known for its calming effects.
- 7. Jerusalem Sage is native to the Middle East, has fuzzy leaves, and is in the mint family.



4. Rosemary



5. Pacific Coast Hybrid Iris



6. Hidcote Superior Lavender



7. Jerusalem Sage

Sensory Garden



1. Southern Magnolia



2. Powis Castle Wormwood



3. Mexican Bush Sage



4. Moonshine Yarrow



5. Salmon Autumn Sage



6. Trailing Lantana



7. Foothill Sedge

- 1. Southern Magnolia trees have a wonderful sweet aroma that smells a bit like citrus.
- 2. Powis Castle Wormwood has shimmering silver leaves and a sweet aroma.
- 3. Mexican Bush Sage's purple flowers produce nectar that attracts hummingbirds.
- 4. Moonshine Yarrow has medicinal qualities, improves soil health, and repels certain insects.
- 5. Salmon Autumn Sage has a minty aroma and attracts hummingbirds.
- 6. Trailing Lantana produces purple flowers nearly year-round and provides food for butterflies.
- 7. Foothill Sedge seeds provide food for birds.

Time to Vote!

Mediterranean Garden



1. Swan Hill Olive (low branching)



2. Blue Gem Coast Rosemary



3. Sunset Rockrose



4. Rosemary



5. Pacific Coast Hybrid Iris



6. Hidcote Superior Lavender



7. Jerusalem Sage

Sensory Garden



1. Southern Magnolia



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7. Foothill Sedge

Circle any pollinators or birds you're excited to see.



Anna's Hummingbird



Allen's Hummingbird



Monarch Butterfly



Anise Swallowtail Butterfly



Western Tiger Swallowtail Butterfly



Cedar Waxwing



IMPACTS

25,000

bathtubs worth of stormwater managed each year

\$1.5M+

invested into St. Anne site improvements by SFPUC

96%

of water managed is managed by vegetative GSI, letting nature do the work

20+

new trees, adding beauty, shade, and air purification

Want to get more involved?


Email Rose@greenprintpartners.com

with a **Description About Why You're Excited for this Project** or a **Green Infrastructure Drawing**

One or more submissions may be highlighted in the public materials!

Please send your art or quote before May 15!





Q&A

Get in touch
rose@greenprintpartners.com

