Alternative Project Delivery for Green Infrastructure

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res Restoring a resilient earth for a modern world

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Presentation Overview

Objective: by the end of the presentation, you will understand what "Alternative Delivery" is, the benefits it can have for achieving your community's stormwater goals, and how you could begin incorporating Alternative Delivery strategies into your procurement process.

Overview

- Status Quo of Stormwater Management
- Benefits of Alternative Project Delivery
- Alternative Project Delivery Case Studies
- Advancing Alternative Delivery Programs

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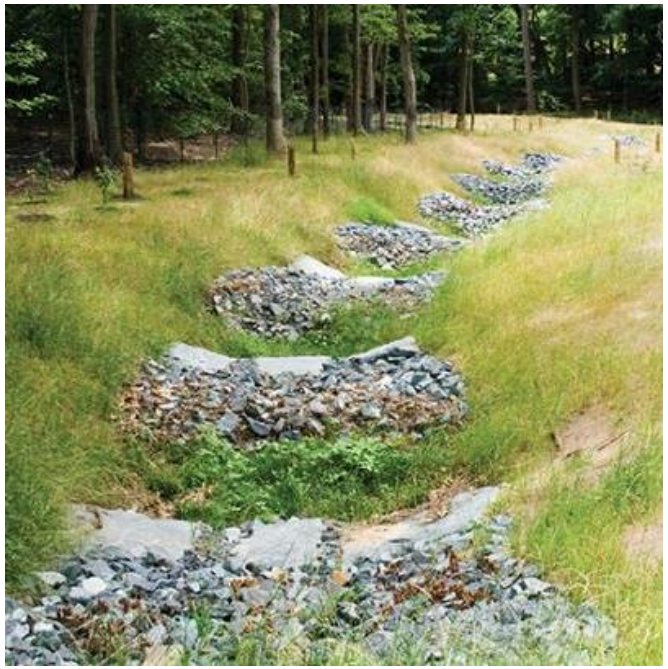
Who is RES?

RES is restoring a resilient earth for a modern world, project by project.

- Inspired by notion that restoration can be a win/win for both humanity and the environment
- Nation's largest ecological restoration company, creating ecological uplift by doubling down on nature's own processes
- Pioneered how to make environmental mitigation markets work with a turnkey, total-stewardship business model
- Innovative ecological problem solvers dedicated to being long-term stewards of the earth



Status Quo of Stormwater Management

Current Challenges Facing Midwest Urban Areas

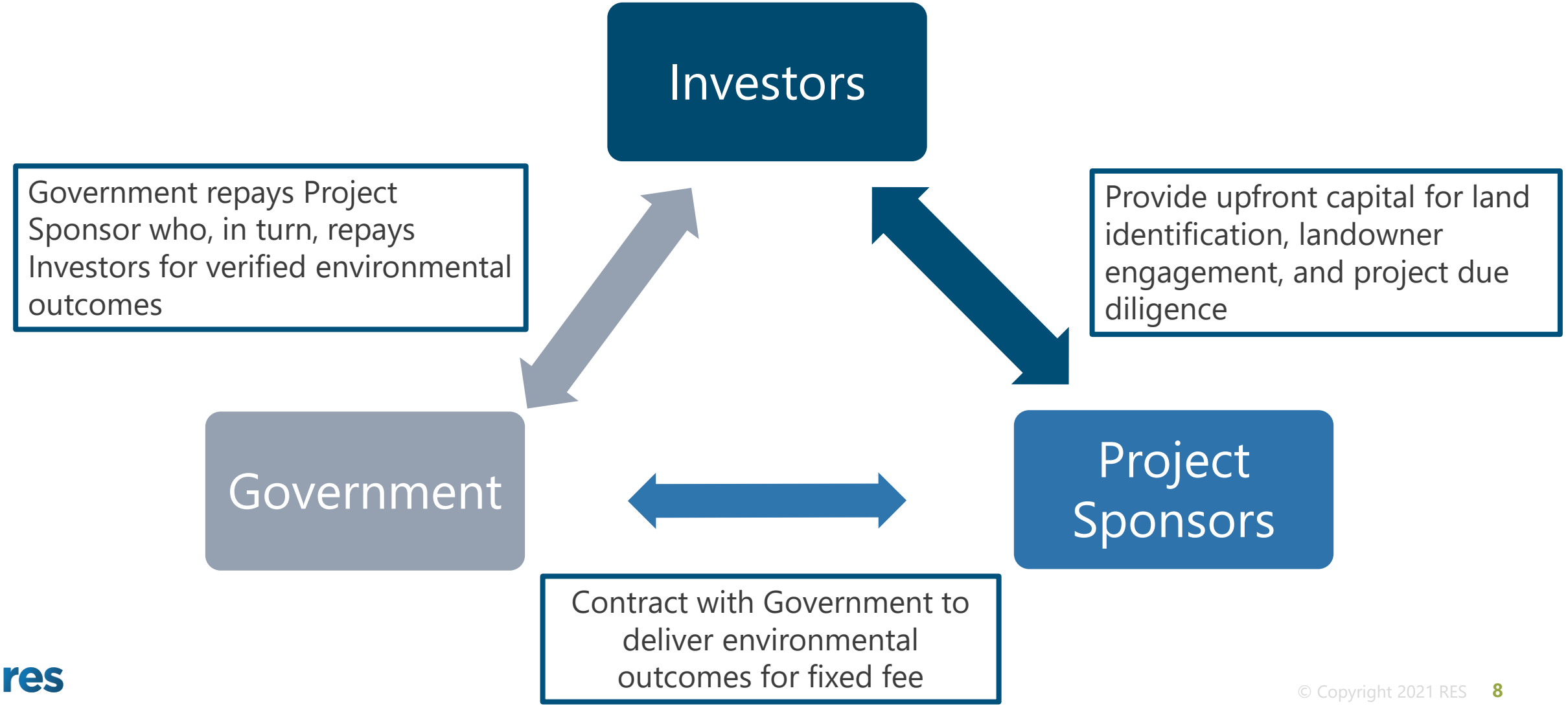
- Urban development (i.e., an increase in impervious areas) long before stormwater regulations existed created elevated risk of urban flooding
- Changing precipitation trends across the Midwest, including higher intensity and a higher volume of storms, have highlighted this risk on a more frequent basis
- There are often limited locations for large-scale stormwater infrastructure
- Water quality issues- many MS4s have or will have limits for Phosphorus, TSS and Nitrogen at some point due to TMDLs
- Many communities have invested in studying this issue: just how big is the gap between current stormwater management capacity and the 100-year storm? Or maybe even the 10-year storm?

Stormwater Gap: Now What?

- Are there enough places to manage stormwater cost-effectively within the MS4 boundary on public land? Are they the right “places” to manage stormwater?
- What role can privately owned properties play in managing stormwater?
- Are there strategies to accelerate the implementation of green infrastructure or does it all fall to city staff to site, design, bid out, and oversee construction and maintenance?
- Are there ways to address water quality and quantity with the same project?

Benefits of Alternative Project Delivery

What is Alternative Project Delivery?



What is Alternative Project Delivery?

- **Traditional Project Delivery Methods:**
  - Design-Bid-Build
  - Design-Build
  - Construction Management-at-Risk (CMAR) (sometimes viewed as “Alternative Delivery”)
- **Alternate Project Delivery Methods:**
  - Pay-for-Performance
  - Pay-for-Success
  - Outcomes-Based Contracting

  (all one and the same!)
- Streamlining the total project timeline and cost by integrating the design, construction, and maintenance team from the beginning to the end of a project.
  - Begin value-engineering from Day 1
  - Fixed fee for defined outcome

Why Utilize Alternative Delivery?

- Faster Implementation
- Less Risk
- Greater Scale
- Cost-effectiveness
- Guaranteed Outcomes
- Long-term Success

Why Utilize Alternative Delivery?

- **Faster Implementation**
  - Our out-of-date stormwater management systems pose risk every year they continue in their status quo
  - Alternative delivery incentivizes landowners and entities to proactively identify projects, propose solutions, get funded, and complete implementation
  - Total project timeline is much shorter without red tape of traditional procurement
  - Take advantage of time-limited funding opportunities (ARPA, IRA, IIJA)
  - **In short: Accelerating green infrastructure today means reduced flood risk tomorrow.**

Why Utilize Alternative Delivery?

- **Less Risk**
  - Current models of design-bid-build for all stormwater infrastructure places financial risk solely on the municipality
  - Landowner backs out after concept development? Project design hits a fatal flaw? Construction costs more than expected due to unidentified utility line in the design?
    - Municipalities bear 100% of that risk of cost and delay.
  - Instead, municipalities can buy environmental outcomes as a tangible commodity (i.e., a "good")
  - **In an alternative delivery model, communities only pay once the outcomes have been verified and delivered (e.g., gallons of stormwater storage constructed).**

Why Utilize Alternative Delivery?

- **Greater Scale**
  - Traditional Procurement
    - Larger projects tend to be broken into multiple phases to reduce cost overruns and overcommitting to single entity
    - Reaching scale with small projects takes a lot of time and can result in higher costs per unit during construction or can be too small for vendors to pursue
  - Alternative Delivery
    - Less government staff time per project so achieving scale happens much faster
    - Enables larger projects with less municipal risk, where communities only pay upon delivery of environmental outcomes
    - Use of private land rather than limiting projects to public parks and right-of-way areas
  - **Projects can be implemented faster with many entities proactively investing and moving solutions forward**

Why Utilize Alternative Delivery?

- **Cost-effectiveness**
  - Alternative delivery typically results in similar costs or cost savings when compared to the typical project development process
  - Communities pay for project outcomes, not for staff overhead
  - Projects may utilize private land (which might have a land use cost associated with it) but doing so enables achievement of necessary targets that would not be possible on public land alone or enables use of a more efficient property
  - Contracting around environmental outcomes provides price certainty for the project
  - **Turnkey Project Approach = fixed fee for total outcome that can be paid for on a per unit basis of success (e.g., cost per gallon or cost per pound of nitrogen reduced)**

Why Utilize Alternative Delivery?

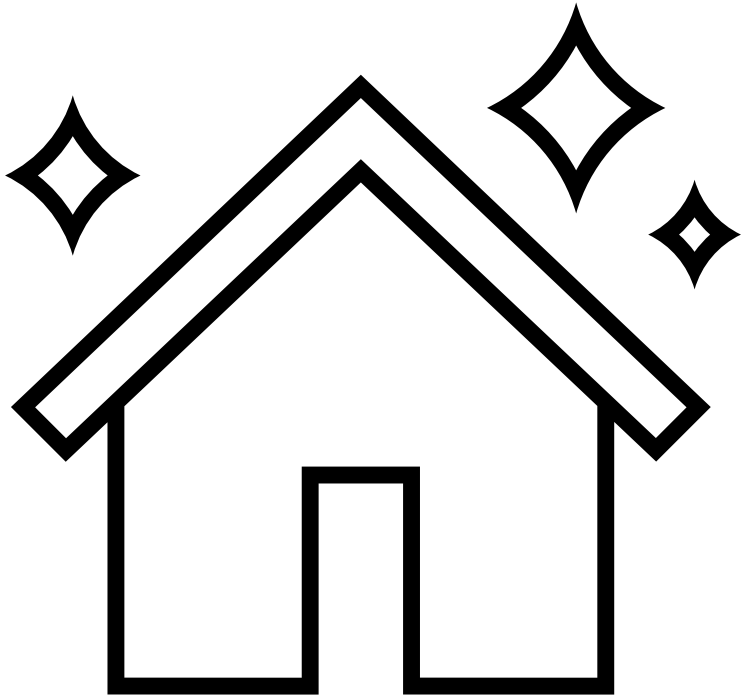
- **Guaranteed Outcomes**
  - Third-party project sponsors bear the responsibility to achieve defined goals or compensation is adjusted accordingly
  - Outsourcing some project identification will ramp up progress and can help communities meet programmatic goals on time
  - **Municipalities only pay for successful outcomes (e.g., gallons of stormwater managed)**

Why Utilize Alternative Delivery?

- **Long-term Success**
  - Municipalities need to be able to access green infrastructure and need to identify funding for that work upfront to make the projects a long-term success
  - Alternative delivery models enable the long-term maintenance costs to be bundled in the upfront cost per gallon
  - If desired, the “environmental outcomes” can include responsibility for establishment maintenance, reducing risk of failure and orphaned maintenance obligations
    - This will drive up the cost per unit, but overall will lead to lower costs associated with failure and more successful projects

Why Utilize Alternative Delivery?

- **Traditional Delivery: Home renovation**
  - Hire your designer (hourly bills, design costs vary depending on tweaks you make in the design)
  - Hire your GC (% markup on all the subs)
  - Unexpected mold behind the walls= Change order
  - Designer mis-measured the space for the bookshelf = Change order
  - More cash out the door without additional benefit
- **Alternative Delivery: Buying a home on the market**
  - Fixed cost: Known sale price, financed through a mortgage with a fixed monthly payment
  - Guaranteed outcome: A fully constructed house with the exact number of bedrooms and bathrooms and amenities you signed up for
  - If the house doesn't get built or part of it burns down before the sale, you don't pay for it. The risk is on the home seller.



Alternative Project Delivery Case Studies

Innovative Alternative Delivery Programs

- **St. Louis MSD**
  - Largescale Rainscaping Grants Program
  - Development Review
- **Philadelphia Water Department**
  - Stormwater Grants Program
  - Stormwater Incentive Program
- **Milwaukee MSD**
  - Programmatic Implementation Partner
  - New Development Opportunities
- **Chicago MWRD**
  - Stormwater Volume Trading “StormStore”
  - Open Call for Projects

Green Infrastructure Efficiency Comparison

	St. Louis MSD	Philadelphia Stormwater Grants	Milwaukee MSD Phase I / Phase II	Chicago StormStore Trading Program
Efficiency Metric	$180,000 per drained acre	$200,000 per greened acre	$2.40/gallon / $1.95/Gallon	Price set by the market on a per-acre foot basis
Program Goal	$120M by 2039	2,148 greened acres over next 5 years	Phase I: 8.5M gallons of stormwater capture capacity Phase 2: $20M	No programmatic goal

St. Louis MSD

Project Clear: Rainscaping Grants & Development Review

St. Louis MSD: Project Clear

- **As part of Metropolitan St. Louis Sewer District (MSD) Project Clear initiative, MSD is committed to providing $120 million in grant funding for green infrastructure projects through 2039.**
- The initiative's goal is to improve the water quality released into the Mississippi River by reducing combined sewer overflows.
- Maintenance Obligation falls on Private Landowners: Landowners sign a maintenance agreement with MSD to maintain the improvements in perpetuity but pay no capital costs for the improvements.
- Private landowners partner with MSD through the Rainscaping Large Scale Grants Program to identify, design, and construct projects with a guarantee of delivery.
- Project sponsors fund and take responsibility for the project's installation. MSD reimburses the sponsor once the project is completed.

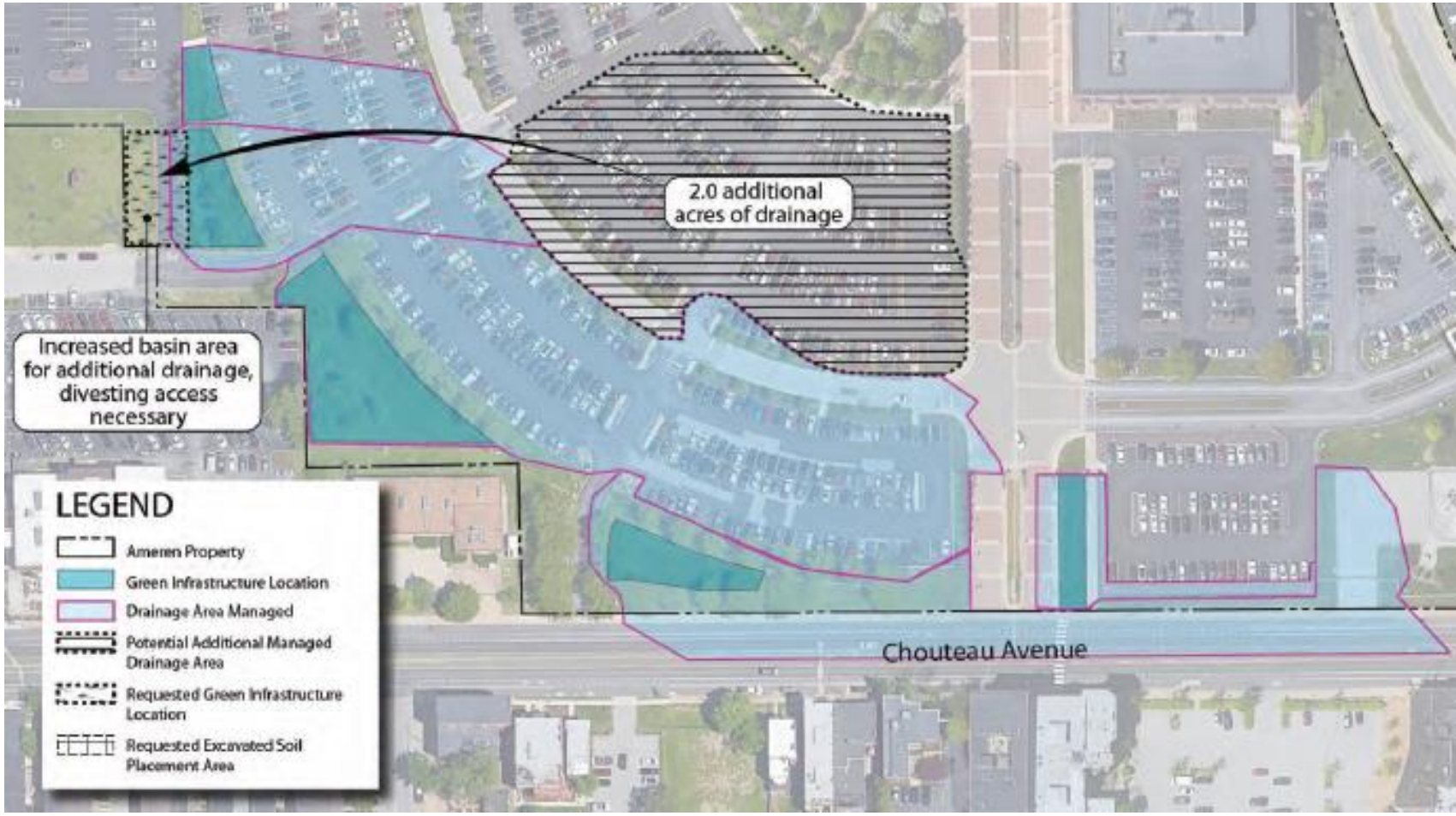
St. Louis MSD: Largescale Rainscaping Grants

- **Largescale Rainscaping Grants Program (competitive)**
  - No set maximum reimbursement rate for this option
  - Projects are reviewed for cost effectiveness
  - MSD will reimburse for rainscaping features that are voluntarily incorporated for rainscaping features incorporated to meet MSD's stormwater management requirements.
- **Development Review Grant (non-competitive)**
  - New development sites can apply for funding to upsize their stormwater management
  - Capped at $180,000 per drained acre (non-competitive)
- Grantees must have adequate funding available to cover all aspects of rainscaping project from design and permitting, through MSD construction approval

Ameren Corporate Campus

- **Landowner**: Private Corporate
- **Scale**: Manages 4.95 drainage acres
- **Impact**: Reducing stormwater volume by 2M gallons/year.
- **Total Cost Paid by St. Louis MSD**: $890,490
- **Project Timeline**:
  - Landowner engagement: Spring 2021
  - Executed landowner agreement: Fall 2021
  - Design and permitting completed: Summer 2022
  - Construction: Fall 2022
  - 18 months start to finish
- **Cost Per Drainage Acre**: $179K

Ameren Corporate Campus



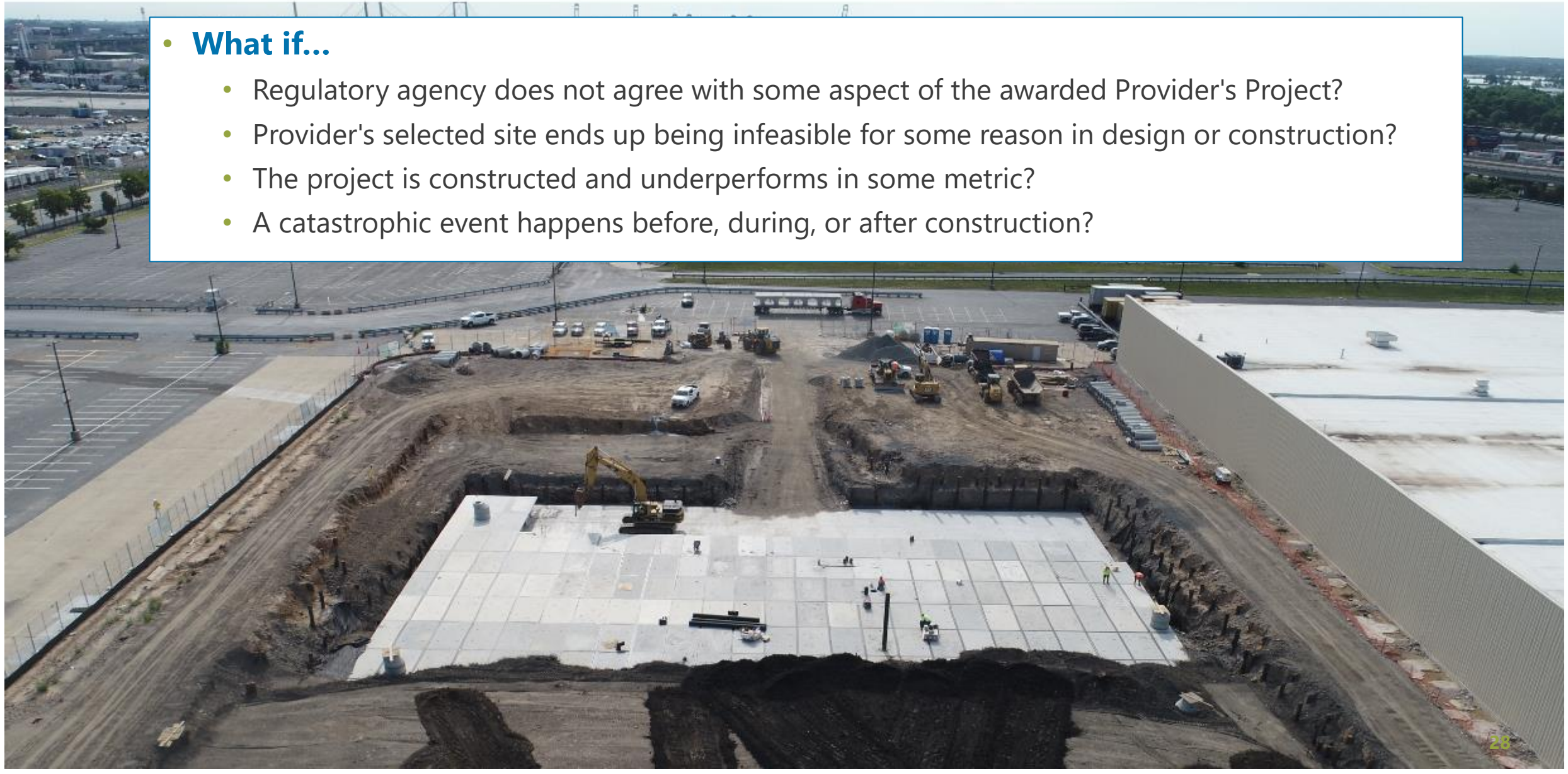
Philadelphia Water Department

Largescale Stormwater Grants

Philadelphia Water Department Stormwater Grants

- Annual Largescale Stormwater Grants program
- Goals: Reduce Combined Sewer Overflow measured in “Greened Acres”
- The Program also covers 100% of the cost of design and construction
- After a project is complete, the property owner qualifies for lower stormwater charges on their monthly bill through the Stormwater Credits Program
- Limited to non-residential projects in the City of Philadelphia
- Grant Program awards funding on basis of cost per Greened Acre, with $200,000 per greened acre as the target cost metric
- Shifts project identification, landowner engagement, and concept development to private landowners and project teams

Turnkey Project Delivery: Schedules & Liability Transfer



- **What if…**
  - Regulatory agency does not agree with some aspect of the awarded Provider's Project?
  - Provider's selected site ends up being infeasible for some reason in design or construction?
  - The project is constructed and underperforms in some metric?
  - A catastrophic event happens before, during, or after construction?

Philadelphia Project Case Study: Darien Crossing

- **Landowner**: Public-private economic development corporation
- **Scale**: 57 greened acres
- **Impact**: 32.7M gallons annually managed
- **Total Cost Paid by PWD**: $13,100,000
- **Project Timeline:** ~4 years
- **Cost per Annual Gallon**: ~$0.37/gallon/per year
- **Cost per Greened Acre**: $229,824

PWD Grantee Examples

FY2022 Stormwater Grant Awardees
February 2022

Project Name	Address	Grant Amount	Right of Way Capture?	Greened Acres	Project Manager/ Consultant	SMP Type
2743 S 3rd St	2743 S 3rd St	$996,571	No	6.03	TPEC	Subsurface Basin, Depaving
3515 Amber St	3515 Amber St	$877,192	Yes	5.48	TPEC	Green Roof, Subsurface Basin, Cistern
Bregy Elementary	1700 Bigler St	$781,248	Yes	3.14	TPL	Rain Garden, Porous Paving, Subsurface Basin, Depaving
Concilio	113-47 E Hunting Park Ave	$435,318	No	1.54	Greenprint Partners	Rain Garden, Depaving
Friends Rehab	4035 Parrish St	$322,020	Yes	1.30	TNC/AKRF	Subsurface Basin, Depaving, Vegetated Pretreatment
Holy Cross	148-54 E Mount Airy Ave	$464,231	Yes	2.32	Grist	Rain Garden, Subsurface Basin
Schuylkill Center for Environmental Education	101 Spring Lane	$210,831	No	2.90	SCEE	Rain Garden
SEPTA Wyoming Complex	200 W Wyoming Ave	$4,020,000	No	20.10	SEPTA	Subsurface Basin

Milwaukee MSD

Fresh Coast Green Communities

Milwaukee MSD: Fresh Coast Green Communities

- **Phase I Programmatic Approach**
  - Contracted in 2019 with a single entity to identify, design, and construct 8.5M gallons of green infrastructure for a fixed fee per gallon of design capacity ($2.40/gallon)
- Intended to meet MMSD's 2050 goal of zero combined sewerage overflows, reduce localized flooding, and improve water quality
- **Phase II Programmatic Approach**
  - Focused on implementing 20M gallons of green stormwater infrastructure utilizing third-party partner
  - Option 1: Property owners can apply through Greenprint Partners to retrofit their property for GSI, which will be implemented by Greenprint Partners and subcontractor partners
  - Option 2: Developers can apply for green infrastructure as part of a new development project and be reimbursed for GSI installed at a fixed fee per gallon, up to $1.95/gallon
- Initial five years of maintenance funded by MMSD, followed by six years funded by private landowner

Northwestern Mutual Campus Constructed Wetlands*

- **Landowner**: Private corporate
- **Scale**: 18.29 drainage acres
- **Impact**: captures, treats, and stores 1.74M gallons of water
- **Total Cost Paid by MMSD**: $4,176,000
- **Project Timeline**: 18 months
- **Unique project features**: 3.67 acres of constructed wetlands
- **Cost per Gallon**: $2.40/gallon

- *Implemented under the Phase I contract

Chicago Metropolitan Water Reclamation District

StormStore Volume Trading, Open Call for Projects

MWRD StormStore Volume Trading

- Authorized by an amendment to the MWRD Watershed Management Ordinance
- Enables private or public property owners to proactively develop and install green infrastructure on their property
- Costs are 100% borne by project developer, but the project will generate “credits” which can be sold to any permittee to reduce the on-site stormwater management required
- Permittees must account for the 10-year storm event on their development site, but may purchase the delta between the 10-year and 100-year storm offsite to meet permit requirements
- Accelerates deployment of green infrastructure
- Maximizes developable land on project site for economic value
- **Challenge**: Risky investment for sponsor because market for credits is uncertain

MWRD Open Call for Municipal Projects

- Starting in 2017, MWRD has solicited applications from various governmental agencies within its jurisdiction for GI projects on an annual basis
- 60 GI projects to help alleviate flooding
- Provide over 6.6 million gallons of storage for stormwater runoff for over 3,700 benefiting structures
- Applicants must be public entities
- Applicants must have (or be able to obtain) perpetual ownership or easement over the project site
- BMPs include rain gardens, bioswales, and permeable pavement in parking lots, alleys, and residential streets
- **Challenge**: Burden to find projects and prepare design is on public entities. Those who need it the most may not have the resources to identify projects

Pekny Park Project

- **Landowner**: Public park district (Riverdale, IL)
- **Scale**:
- **Volume**: 11,000 gallons of retention of overland runoff
- **Total Project Cost**: $179,000 for construction only
- **Unique Project Features**:
  - New wildlife habitat and community space
  - First StormStore credit-generating project to take place in Little Calumet River Watershed
  - Funded by NFWF Chi-Cal grant, Cook County & The Nature Conservancy
  - Project Sponsors can recoup cost thru the sale of Volume Control Credits to other developers
- Partnership between the Center for Neighborhood Technology (CNT), Cook County, IL, and the US Army Corps of Engineers

Advancing Alternative Delivery Programs

Policy & Funding Strategies

Funding Strategies

- Stormwater Utility Fee
- IL EPA 319 Program
- Federal grant programs
- State appropriation
- State-revolving loan funds

Policy Strategies for Alternative Delivery

- Creation of a Grants Program for Outcomes on Private Land with defined implementation criteria
  - Examples: MWRD Open Call (IL), St. Louis Rainscaping Grants (MO), Philadelphia Grants (PA)
- Stormwater Utility Credit
  - Allows Landowners to Reduce Stormwater Fee in Exchange for Green Infrastructure on their property
  - Examples: Peoria (IL), Philadelphia (PA)
- Innovative Trading Framework (limited to places that have water quality or quantity requirements for permittees)
  - Example: StormStore (IL), Washington, D.C.

Policy Strategies for Alternative Delivery

- New Legislation:
  - Public-Private Partnership Law tied to Environmental Infrastructure / Outcomes
  - Specific Legislative Authorization for Pay-for-Success Projects
  - Unsolicited Proposal