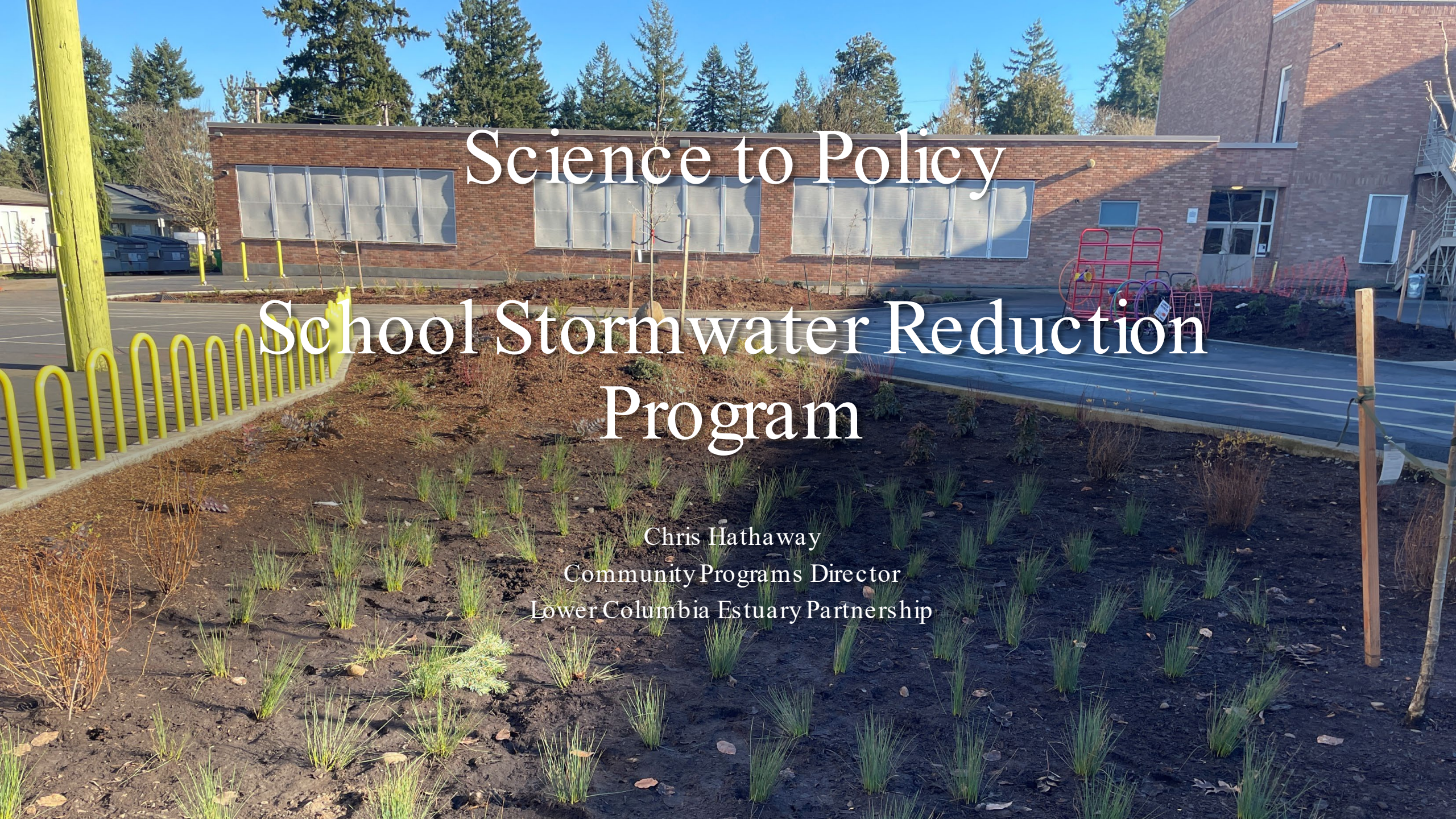




Science to Policy School Stormwater Reduction Program

Chris Hathaway
Community Programs Director
Lower Columbia Estuary Partnership

Estuary Partnership Stormwater - Prelude

- Stormwater No. 1 water quality problem
- Estuary Partnership - EPA National Estuary Program – wq focus
- Action 8 in CCMP Lower Columbia Management Plan
 - “Reduce and improve the water quality of stormwater runoff and other non-point sources of pollution.”
- Stormwater a focal area since Estuary Partnership’s (EP) inception



Estuary Partnership Stormwater - Prelude

- Land use education
- Stormwater retrofit projects
 - On-the-ground improvements – small but real wq benefits



What's a stormwater retrofit?

- Adding stormwater management facilities to existing development that lacks modern stormwater management controls
- Squeezing green infrastructure into an already built landscape
- Enormous opportunities for stormwater retrofit projects – everywhere!



EP Stormwater Retrofit Projects 2006-2023

- Completed more than 10 small-ish projects at schools, a boat ramp, a business, a community center.
- Each project a story
 - Low budget, student and staff labor, lots of learning!



EPA Columbia River Basin Restoration Toxic Reduction Lead

- 2023 Grant Application
- School Stormwater Reduction Program
- Six-year award (2023-2029)
- EPA award = \$4,815,797
- Recipient Match Contribution – minimum of \$1,483,768
- Focus: On the Ground Results



CRBRP Funding!

- Establish a “Program”
- Hire a staff person (Adam Goodwin)
- Get busy!



CRBRP Funding!

- Design and build green infrastructure at 13 school sites
 - Reduce stormwater
 - Improve water quality
 - Reduce toxic contamination
 - Increase school resiliency to extreme weather (heat, rainfall, etc.)



Why Schools?

- Captive educational audience
- Captive engagement audience
- Community hubs – great demonstration projects
- Large potential for partnerships



Why Schools?

- Retrofit projects are often multi-benefit
- Many schools are “asphalt bombs” – huge stormwater generators
- School projects align with EP educational programming
- School projects align with EP staff expertise, connections
- Most school districts lack expertise, \$, gumption to do this without partners
- Schools need help!



How's It Going?

- Completed projects: 6
- Near complete (summer 2026 construction): 3
- In various design stages: 7
- In development: 4 (with more to be added)



Project Summary:

Projects	Anticipated Construction					Funding			
	2026	2027	2028	2029	2030	EPA	PDX-BES	Ecology	Other
Active									
Chief Joseph Elementary School	X					X	X		
Creston Annex School	X					X	X		
Daniels Memorial Church			X						
Duniway Elementary School		X				X	X		
Evergreen High School			X			X		X	
Fort Vancouver High School					X	X		X	
Glencoe Elementary School	X					X	X		
Irvington Elementary School			X			X			
St. Ignatius Church and School		X				X	X		
Rooster Rock State Park				X		X			X
Rose City Park Elementary School		X				X	X		
Washougal High School and Streets			X			X		X	
Exploring/In-Development									
Hudson's Bay									
Llewellyn Elementary School									
Marquam Elementary School									
Vernon School (Phase 3)									
Completed Projects									
Baker Bay Stormwater Project								X	X
Laurelhurst School						X			
Mittleman Jewish Community Center						X	X		
Rigler Elementary School						X	X		X
Sunnyside Elementary School						X			X
Terra Nova Science & Sustainability School						X			X

Rigler Elementary (K-5) School

- NE Portland's Cully Neighborhood
- Summer SUN School
- 500 + students
- Two-way Spanish Immersion program
- Schoolyard Vision Plan developed by LA(Juncus Studio) with extensive input from students, staff, community etc.
- Ripe for EP engagement



Rigler Elementary

- Estuary Partnership:
 - Hired landscape architect
 - Coordinated design updates focused on green infrastructure
 - Added parking lot stormwater treatment
 - Added additional planting areas
 - Switch new asphalt to pervious asphalt



Rigler Elementary

- Estuary Partnership: Secured project funding
 - \$348,000 – City of Portland BES Percent for Green Program
 - \$60,000 – Rose Foundation Columbia River Fund
 - \$23,500 – Rigler PTA via East Multnomah Soil and Water Cons. District
 - \$85,430 – EPA Columbia River Basin Restoration Award



Rigler Elementary

- Estuary Partnership
 - Coordinated with Rigler School and Portland Public Schools
 - Hosted a pre-project site visit from EPA Region 10 Administrator Casey Sixkiller and other partners

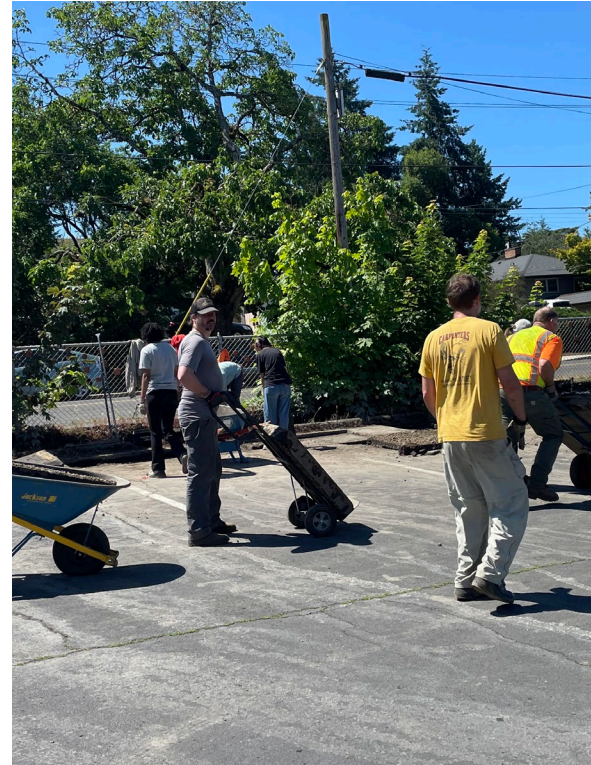


Rigler Elementary

- Estuary Partnership:
 - Coordinated with project partner — Depave — to host a community Depave Day that engaged more than 100 people in asphalt removal.



Depave Photos



Rigler Elementary

- Estuary Partnership:
 - Coordinated with project partner – City of Portland Urban Forestry Learning Landscapes Program – to plant 24 project trees (and engage 3rd grade students in tree planting)
 - EP Environmental Educators provided 4 classrooms (two 4th and two 5th) with three classroom lessons related to the project



Rigler Elementary

- Estuary Partnership:
 - Secured all City of Portland permits
 - Conducted a public RFB that included a site visit for potential contractors
 - Hired a contractor (Grasstains) and managed all contracts, invoicing, reporting, site coordination, etc.
 - Managed on-site construction in summer/fall 2025



Rigler Elementary

- Estuary Partnership
 - Worked with students to plant grasses and shrubs in fall 2025
 - Hosted a grand opening ceremony that included student speakers and remarks from Portland Public Schools Superintendent Dr. Kimberly Armstrong



Rigler Elementary

- Hosted EPA CRBRP Work Group for a site visit



Rigler Elementary

- Green Infrastructure Stats:
 - Removed 8,659 sq. feet of asphalt
 - Built 1,534 sq. ft of new stormwater infiltration facilities in the schoolyard and parking lot
 - New stormwater facilities capture and treat runoff from 31,450 sq. ft of impervious surface



Rigler Elementary

- Green Infrastructure Stats:
 - Built more than 3,000 sq. ft. of new planting areas
 - Installed more than 3,000 sq. ft. of pervious asphalt
 - Planted more than 1,400 new plants
 - Coordinated the planting of 24 new trees
 - Installed more than 15 boulders into the schoolyard (all harvested on site during project construction)



Creston Annex Early Childhood Learning

- Estuary Partnership
 - Similar list of tasks!
 - Civil Engineer: KPFF
 - Landscape Architect: Learning Landscapes Design
 - Many design iterations – each improved project outcome



Creston Annex Early Childhood Learning

- High Level Highlights
 - Project Funding:
 - Percent for Green: \$275,103
 - EPACRBRP: more than \$300,000
 - Construction Contract:
 - Paul Brothers
 - Construction costs – more than \$600,000



Creston Annex Early Childhood Learning

- Project Elements:
 - Stormwater planter treating parking lot stormwater
 - Permeable pavers
 - ADA and student access improvements
 - New fencing to enhance student safety
 - New trike play area for little kids
 - New trash enclosure
 - More than 20 trees to be planted
 - Hundreds of plants to be planted



WA Design Projects

- Campen Creek Stormwater Improvement Project
 - In partnership with the City of Washougal, Washougal School District
 - Designing stormwater retrofits for Washougal High School parking lot and surrounding streets (about 13-acres in total)
 - Funding:
 - WAEcology Stormwater Financial Assistance Program (SFAP): \$390,502
 - EPACRBRP Award: \$20,552
 - Engineering by Robertson Fick and LAby Juncus Studio
 - Construction grant application Sept 2026
 - Pending funding – project construction spring-fall 2028.



WA Design Projects

- Campen Creek Stormwater Improvement Project
 - Builds on two EP Science Team projects:
 - Campen Creek Reconnection Project in Mable Kerr Park in Washougal
 - \$34 million Steigerwald Lake National Wildlife Refuge Project Floodplain reconnection project
 - Washougal High School parking lot the largest area of impervious surface in the Campen Creek watershed
 - Currently almost all stormwater flows untreated to pipes and directly to Campen Creek
 - Great synergy between projects within a small but important watershed



WA Design Projects

- Evergreen High School Stormwater Improvement Project
 - Partnership with City of Vancouver and Evergreen Public Schools
 - Funding:
 - WA Ecology Stormwater Financial Assistance Program (SFAP): \$379,306
 - EPA CRBRP Award: \$66,936
 - Design of stormwater retrofits for large High School campus



WA Design Projects

- Fort Vancouver High School Stormwater Improvement Project
 - Partnership with City of Vancouver and Vancouver Public Schools
 - Funding:
 - WA Ecology Stormwater Financial Assistance Program (SFAP): \$256,956
 - EPACRBRP Award: \$45,345
 - Design of stormwater retrofits for large High School campus



School Stormwater Program - Match

- Required Match: \$1,483,768
- Match Secured to Date: \$3,015,596
- \$1,836,396 – City of Portland, Bureau of Environmental Services Percent for Green Program
- \$1,026,764 – WA Dept of Ecology – Stormwater Financial Assistance Program (through partners)
- Others
 - Rose Foundation Columbia River Fund
 - East Multnomah Soil and Water Conservation District
 - Clackamas County Water Environment Services



School Stormwater Program – Education

- Estuary Partnership Educators working with students at six schools (so far)
 - Classroom lessons
 - Schoolyard lessons
 - Student engagement in Depave events
 - Students helping to plant trees and plants in their schoolyard



School Stormwater Program – Education

- Education connects students to on-the-ground improvements to their schoolyard
- Students understand the connection between land use and water quality, student can articulate project's benefits
- Students are engaged in project – more respectful of green enhancements
- Trying to emphasize “infrastructure” with teachers and principals versus play features/elements



School Stormwater Program – Other Benefits

- Community Engagement
 - Presentations
 - Depaving events
 - Classroom education
 - Planting projects
 - Maintenance projects



School Stormwater Program – Other Benefits

- Shade!
- Reduce urban heat island affects
- Trees a major element of each project
- Planting 12-30 trees at a school will provide significant shade cover over time
- Most school yards and parking lots lack shade.



School Stormwater Program – Other Benefits

- Students' proximity to nature
- Projects add habitat that support pollinators, birds, and other species
- Asphalt schoolyard – not inspiring



School Stormwater Program – Other Benefits

- Access Improvements
- ADA Access to school
- ADA Access to benches
- ADA access to new play elements
- New sidewalks/walkways/pathways that align with Safe Routes to Schools



School Stormwater Program – Other Benefits

- Play improvements
 - Swing sets
 - Other play structures
- Partner with PTA's for play equipment
- New striping (running tracks, 4-square, etc)
- Picnic tables, benches, and boulders for seating, leaving clothes on, etc.



School Stormwater Program - Challenges

- Don't know what's underground
 - drainage pipes, old wiring, foundations
- Hard surfaces not smooth
 - water doesn't always flow like you think
 - Very small elevation changes matter
- Poor existing conditions
 - Asphalt
- City permitting
 - Dumpsters, tree protection, other stuff



School Stormwater Program - Challenges

- Trees take a long time to grow
 - Urban Forestry to water and maintain trees for 3-5 years
 - Trees being planted – often small
- Short- and long-term maintenance
 - We are figuring that out
- City and Ecology Contracting timelines



School Stormwater Program - Highlights

- Demonstrates need and opportunity
- School green infrastructure retrofits
 - A model for other schoolyard projects
 - Many projects in the works
 - Ecological benefits will grow over time



School Stormwater Program - Highlights

- Match \$ - funding available
 - EPA funding key
- Surpassing goals - # of schools, plants, wq treatment, etc.
- Long-term on-the-ground WQ benefits
 - Stormwater treatment – every year – for 40-50 years



Thanks!







Creston Annex Early Childhood Learning

- Substantial completion – on-time
- Planting in October!



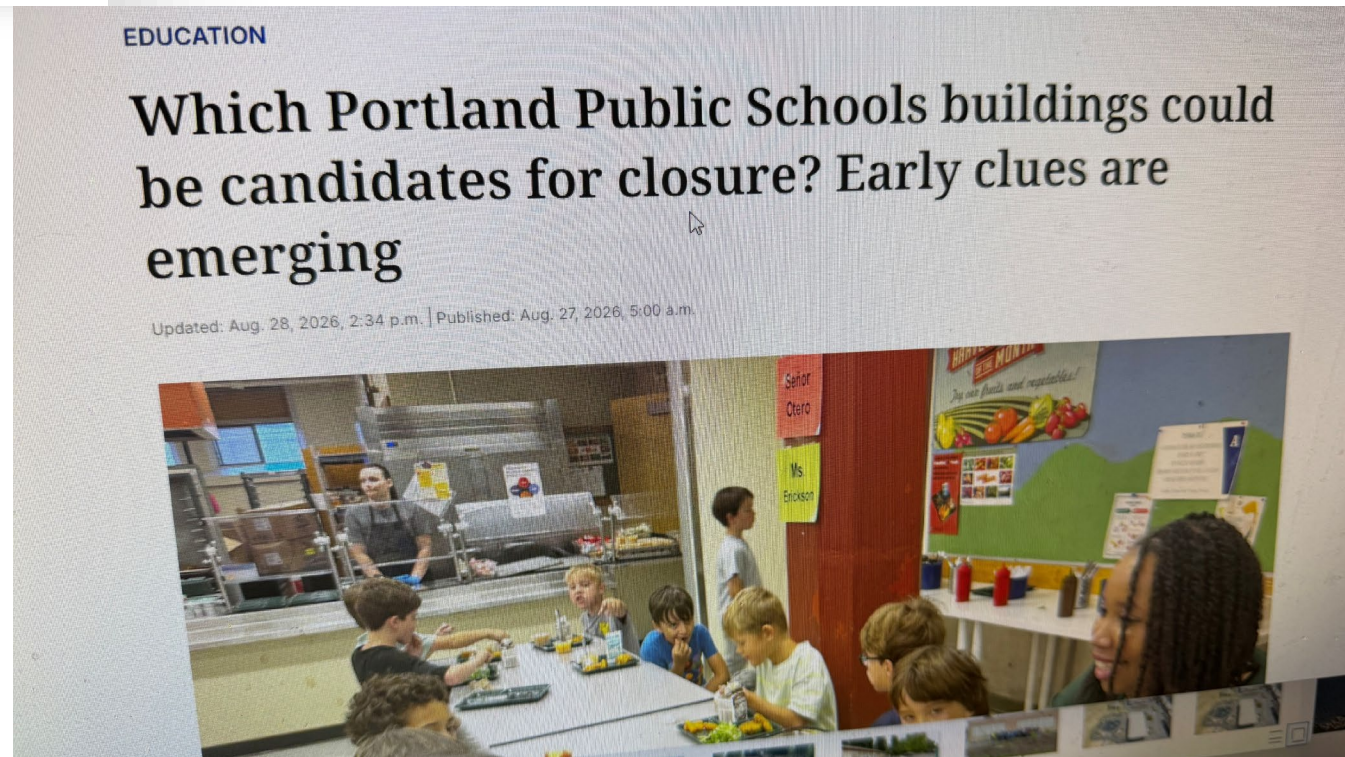
School Stormwater Program – Other Benefits

- Infrastructure improvements
- Upgrades to parking lots
- Upgrades to stormwater infrastructure (catch basins, piping, drainage)



School Stormwater Program - Challenges

- School closings (?)
 - Ecological benefits still there
 - Neighborhood use still there
 - Would still be sad



Rigler Elementary

- Made minor fixes to ensure proper functioning



Creston Annex Early Childhood Learning

- Challenges
 - Big project with lots of components
 - Existing infrastructure in poor condition (asphalt, sidewalk)
 - City permit mandated a new trash enclosure
 - Tight timeline (mid June – mid August)









Chief Joseph

- Partners:
 - BES Percent for Green Grant
 - EPA CRBRP Stormwater
 - Engineering Contractor - Parametrix
 - Depave
 - Contractor - Brown Contracting
 - PTA, PPS, School

Chief Joseph

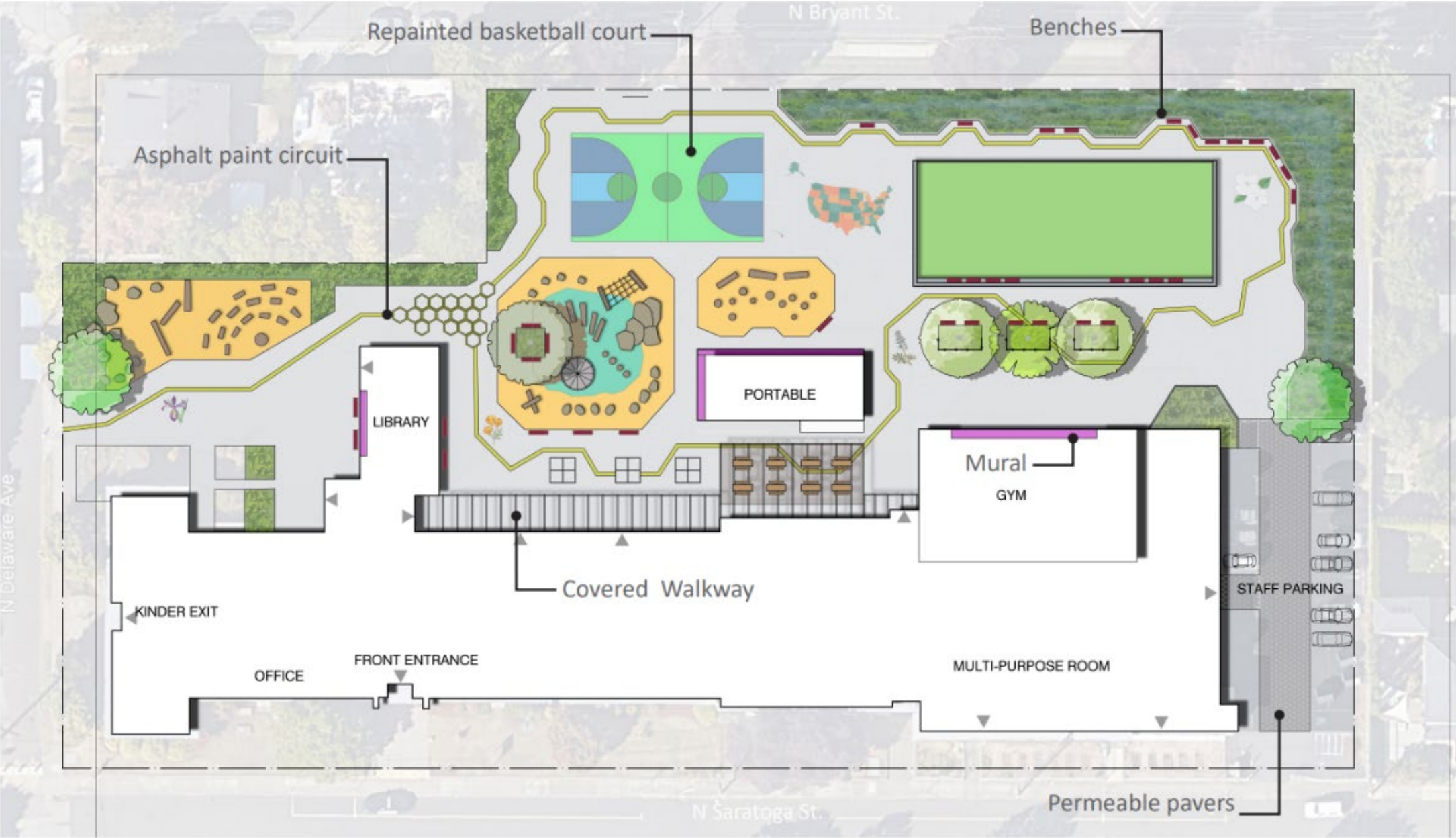
- Depave Day! Saturday, May 30, 2026
- Construction: June 1 – August 28
- Education:
 - Spring 2026: 3 classrooms, 3 lessons each
 - Fall 2026: 3 classroom, 3 lessons each
- Planting
 - All Estuary Partnership (no contractor planting)
 - Smallish area. More EP control. Learning opp. More \$ and work for staff.
- Grand Opening – October

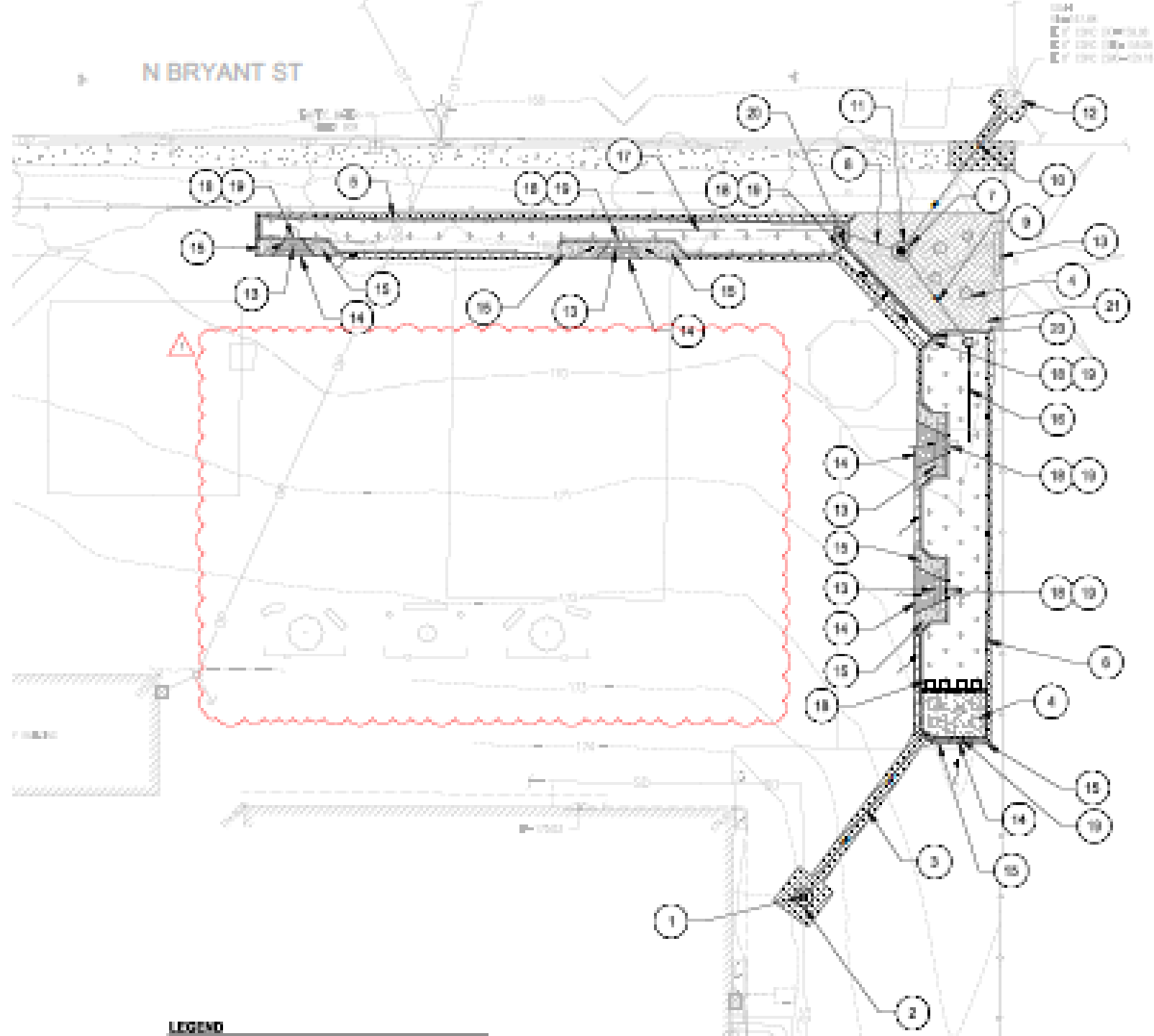


Chief Joseph

- Planting
 - All Estuary Partnership (no contractor planting)
 - Smallish area. More EP control. Learning opp. More \$ and work for staff.
- Grand Opening – October-November 2026







Creston Annex

- Bids due: March 13 @ 11:00 am
- Contractors:
 - KPFF
 - Learning Landscapes (sub to KPFF)
- Construction start date: June 15, 2026 (ish)
- BES Percent for Green Grant



Creston Annex

- Multi-dimensional project
 - Parking lot stormwater management
 - Permeable pavers
 - Pedestrian safety and circulation improvements
 - Depaving
 - Fencing
 - Pathway enhancements



Creston Annex

- Project Elements cont.
 - Green play area for young students
 - Tree planting
 - Other plantings
 - Dumpster enclosure structure (required by City permitting)



Creston Annex

- Much work in school parking lot
 - Tight summer construction window
 - No other place for teachers to park
 - Potential angst – what's under the asphalt ?? Old school building ??



Glencoe Elementary

- Releasing RFB in February 2026
- Summer 2026 construction
- Tight timeline between bid release – construction start
- Final construction doc's in development
- Still need to submit permit application



Glencoe Elementary

Funders/partners

- BES Percent for Green Grant
- EPA CRBRP Stormwater
- PTA (new play equipment)
- PPS

LA: Juncus Studio



Glencoe Elementary

- Project Elements
 - Depaving
 - Tree planting
 - French drain
 - Benches
 - Ground covers
 - Playground equipment (purchased by PTA)



2026: Glencoe Elementary

- Very involved PTA parents
 - Excessive time spent agreeing on concept design
 - Landscape Architect and PTA head butting
- Initial concerns about large retaining wall
- Key playground area
 - School won't be happy if playground not accessible once school starts



Rose City Park

Funders/Partners:

- BES Percent for Green
- Depave
- Juncus Studio
(Landscape Architect)



Rose City Park

- Project Elements:
 - Depaving event
 - Depaving
 - Tree planting
 - Benches, paths



Rose City Park

Project elements cont.

- Soil amendments
- Plantings
- Classroom education
- Geotech work to scope opportunities for future depaving and stormwater management on site
 - Site is built into a hillside
 - Large downslope retaining walls on two sides.
 - Wall structural integrity could be a concern if more water enters ground



Rose City Park

- Project area conducive for take place during school – lots of remaining play area.
- EP might serve as “general contractor” on the project depending on how the design takes shape, work to be done
- Concept design tbd – still to come
- One of the largest areas of asphalt of any PPS schoolyard





