

# Natural Drainage System Partnering Program

CDWAC 9-9-2015



## What is the problem?



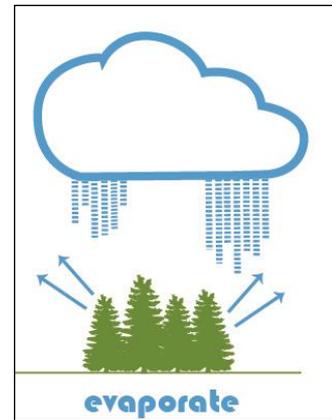
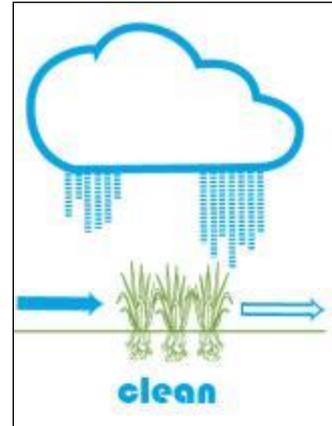
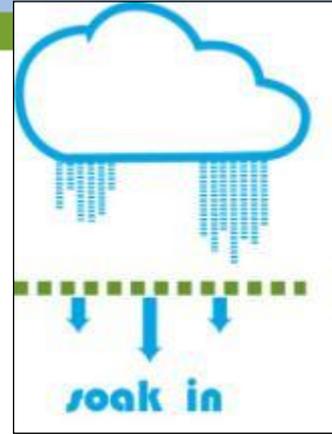
In about 1/3 of Seattle, polluted stormwater runoff from the right-of-way discharges directly into creeks untreated and is eventually released into larger water bodies like Puget Sound, Lake Washington, and the Duwamish River.

Polluted stormwater runoff is the greatest threat to water quality in our city and region, so addressing this issue is a high priority.

## What are we doing about it?

- Protecting and restoring forests and buffers near creeks
- Removing pollutants from roadways via street sweeping
- Enforcing environmental regulations
- Building new and/or improved drainage infrastructure

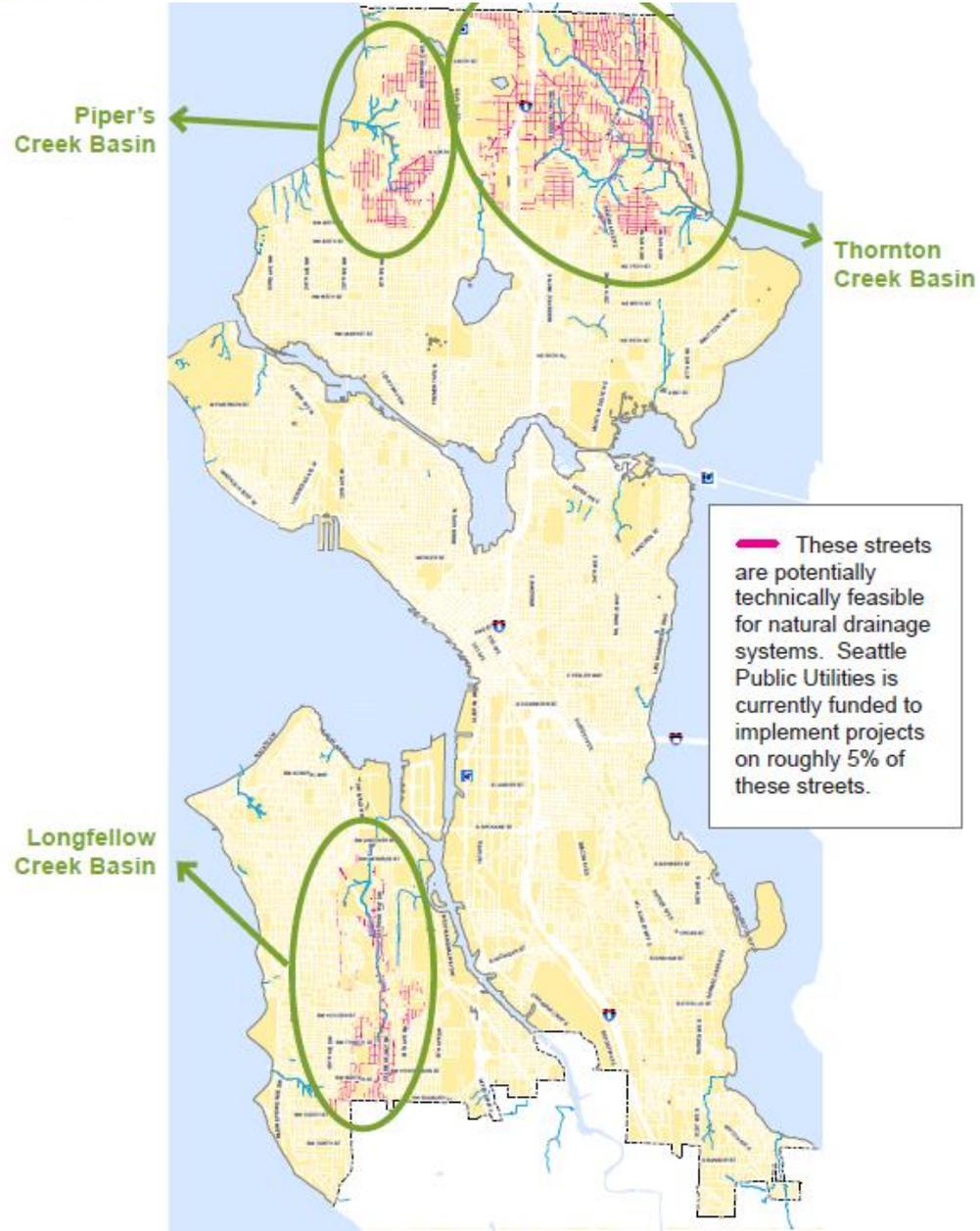




# Natural Drainage Systems



# Potentially Feasible Streets



# NDS Project Technical Feasibility (a few factors)



Lacking Sidewalk



Informal Drainage



## Is There an Opportunity to Improve the Street?



Flat (<5% Slope)



Steep (>5% Slope)



## Are the Slopes too Steep?



Wide Planter



Wide Shoulder



Few Driveways



## Is There Room?



Steep Slopes  
and Landslides



Contaminated  
Sites



Shallow Groundwater, Seeps  
and Poorly Drained Soils



## Can you Infiltrate?



On-Street  
Parking



Few Trees



Utilities



## What Else Can Affect Feasibility?

# Multiple Community Benefits



Sidewalks



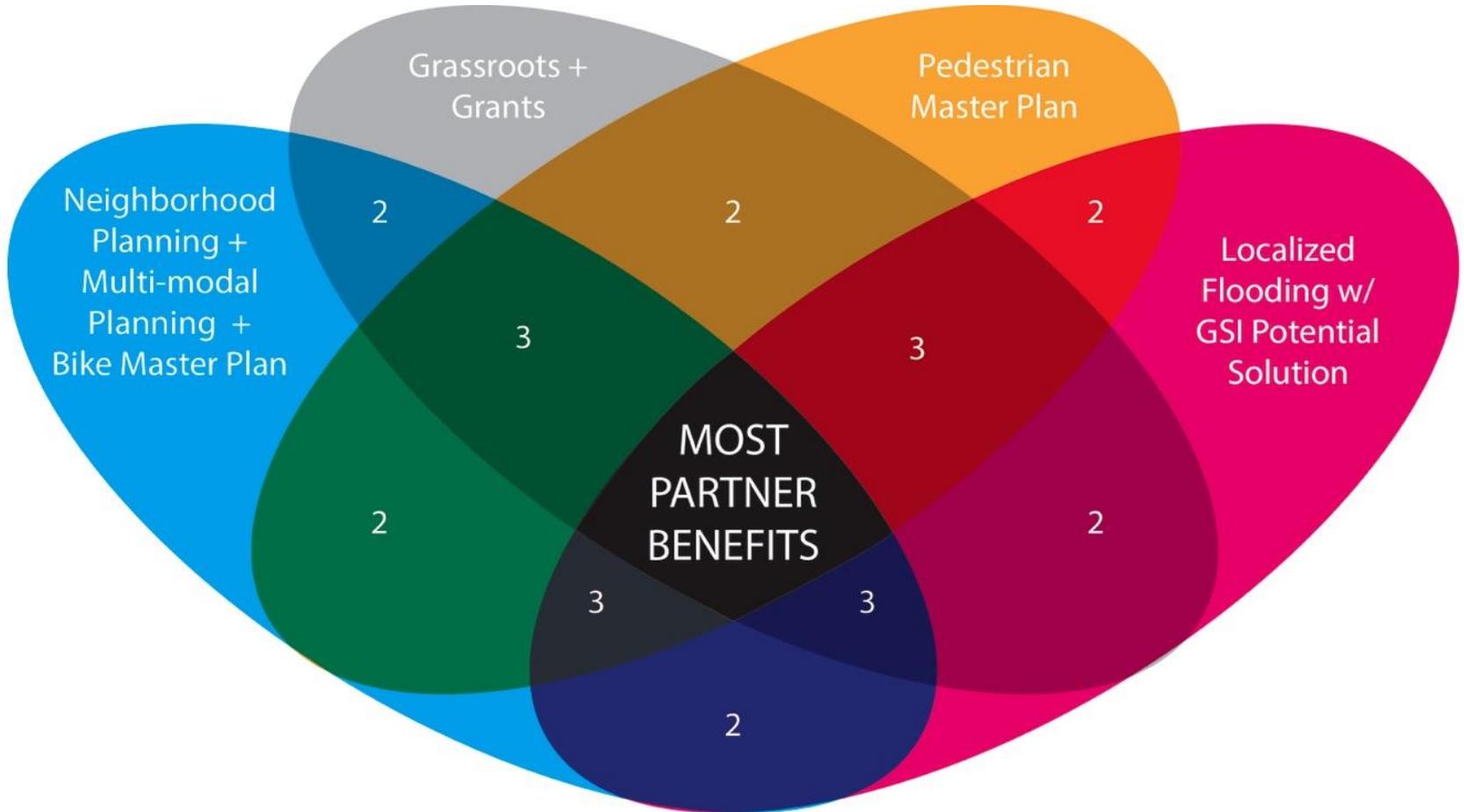
Bike/Pedestrian



Community  
Amenity



Traffic Calming



# What are we looking for to select locations (beyond technical feasibility) ?

Goal: About 66 blocks total (330')

- Amount of polluted runoff that can be treated
- Ability to reduce volume of runoff (infiltration potential)
- Low cost for stormwater performance (ie Cost-sharing Opportunity)
- Providing equity
- Synergies with providing SPU D/WW level of service (Where infrastructure is needed)
- Multiple community benefits
- Resident support on blocks where it is built

|                                      | Partner-Led<br>(Path 1)  | Co-Siting Opportunities<br>(Path 2)  | Grassroots<br>(Path 3)  |
|--------------------------------------|--|--|---|
| <b>Description</b>                   | Expansion of projects led by non-SPU departments or large private developments to include roadside bioretention and deliver a more complete overall project at the lowest unit cost for the targeted water quality gains. Funding provided likely for a set \$/stormwater value. | Collaborative siting, development and delivery of a transportation or park project with an integrated, roadside bioretention component. The partner may make capital improvements in the right-of-way.   | SPU-delivered project identified and championed by community members or organizations via an application process. These projects will partner with community residents. Outreach will first be focused on co-siting opportunity areas and underserved community blocks. |
| <b>Project Lead</b>                  | <ul style="list-style-type: none"> <li>• Non-SPU City Department</li> <li>• Large private developer</li> </ul>   | Anticipated to be SPU, but open to SDOT.   | SPU   |
| <b>Application</b>                   | Any of the 3 creek basins, any time. Possible exception if assistance is needed from SPU for design and/or geotech.  | Once a year for one basin at a time.   | Applications submitted once a year for one basin at a time.   |
| <b>Potential Partnering Programs</b> | For SDOT programs, most coming through the Complete Streets process. <ul style="list-style-type: none"> <li>• Safe Routes to School</li> <li>• Sidewalk Development Program</li> <li>• Paving</li> <li>• Right Place, Right Project</li> </ul>                                   | <ul style="list-style-type: none"> <li>• SPU Localized Flooding</li> <li>• SDOT Bicycle Master Plan</li> <li>• SDOT Pedestrian Master Plan</li> <li>• SDOT Multi-Modal Corridor</li> <li>• Parks</li> <li>• DPD Neighborhood Planning</li> </ul> | <ul style="list-style-type: none"> <li>• On-block residents apply</li> <li>• Neighborhood Matching Fund grants to support planning effort</li> </ul>  |

# Site Selection Criteria and Weighting

| Project Criteria for NDS Partnering Site Selection |                               |   |        |  |  |  |   |  |   |
|--|-------------------------------|---|--------|--|--|--|---|--|---|
| #  | Criterion                     | Definition or Intent  | Weight | Score  |  |  |   |  | Source                                    |
|  |                               |   |        | 0 (None)   | 1 (Low)  | 2 (Medium)   | 3 (Medium High)   | 4 (High)   |   |
| 1  | WQ/Flow performance           | Considers if minimum block performance met to justify project funds and total contributing area | 25.6   | See minimum requirements. N/A  | Block manages adjacent street's runoff   | Block manages all of its own flow to meet water quality goal                                   | Block manages its own flow to meet water quality goal and flow reduction goal of at least x           | Block manages both its own flow to meet water quality goal as well as some flow from an adjacent street or intersection                      | Application - Concept Plan                |
| 2  | Infiltration Potential        | Considers potential of volume reduction and how easily safely infiltrate                        | 18.8   | If project is within Area Unsuited for Infiltration (AUI), then project not a candidate. See minimum requirements. | ~ > 2 houses below road grade<br>~ No springs nearby (within x feet)           | ~ 1-2 houses below road grade<br>~ No springs nearby (within y feet)                           | ~ Great soil infiltration<br>~ No houses below road grade<br>~ No springs nearby (within y feet)      | ~ Great soil infiltration<br>~ No houses below road grade<br>~ Project street >x feet from slopes > y<br>~ No springs nearby (within y feet) | ~ AUI GIS layer<br>~ GIS field assessment |
| 3  | Cost-Sharing Opportunity      | Considers actions being taken by other entities, including other SPU projects                   | 17.6   | No opportunity to partner/phase/share costs  | Vegetation O+M costs covered by partner  | Project can be co-sited with another project to mitigate some major soft cost project expenses | Project can be co-sited with another project to mitigate some major soft + hard cost project expenses | \$\$ for bioretention beyond COS Code (SPU not leading)  | Application                               |
| 4  | RSJ Equity and Social Justice | Considers lack of improvements in underserved communities                                       | 7.8    | The project is on a block that does not have any of the x indicators of an underserved community                   | The project is on a block that has 1 indicator of an underserved community     | The project is on a block that has 2 indicators of an underserved community                    | The project is on a block that has 3 indicators of an underserved community                           | The project is on a block that has 4 or more indicators of an underserved community  | GIS layers + data from DPD                |
| 5  | Existing infrastructure       | Considers need for infrastructure improvements  | 10.6   | Has no conveyance, spot drainage or SSO issues   | Has intermittent conveyance  | Conveyance does not meet 25-year LOS   | Conveyance not anticipate to meet 25-year LOS   | Has known conveyance problems as spot drainage or SSOs   | GIS layers                                |
| 6  | Co-benefits                   | Considers additional community and City benefits beyond WQ                                      | 9.0    | No additional co-benefits beyond those typically provided with an NDS project                                      | Overlaps with 1 other City program or neighborhood plan's prioritized block(s) | Overlaps with 2 other City programs or neighborhood plan's prioritized block(s)                | Overlaps with 3 other City programs or neighborhood plan's prioritized block(s)                       | Overlaps with >3 other City programs or neighborhood plan's prioritized block(s)   | GIS layers + Application                  |
| 7  | On-Block Support              | Considers on-block support residents adjacent to project  | 10.6   | NA. See minimum requirements   | Block champion   | Block champion + at least 60% support  | Block champion + at least 70% support   | >70% block support   | Application                               |
|  |                               |   | 100.0  |  |  |  |   |  |   |

# Questions?

