

Capturing our Stormwater

Alternative Stormwater Management Methods

Surface Infiltration

RAIN GARDENS

Stormwater enters via curb cuts into these **shallow depressions or swales**. **Specialized plants and compost-rich soil mixes** remove stormwater pollutants and reduce stormwater runoff. Rain gardens can be found along sidewalks and in the median.



PERMEABLE SIDEWALK

Stormwater infiltrates via openings between **permeable pavers** to the **root box system underneath**. The modular root boxes hold lightly compacted soils in place, to **promote healthy root and tree growth**, while supporting the sidewalk.

▲ Installation of **root box system under the sidewalk**

Biofiltration

BIORETENTION BOXES

Stormwater flows through a special soil mixture in a landscaped container. The **soil captures and immobilizes pollutants**; those pollutants are then broken down and absorbed by the system's tree or shrub.



ECOLOGY EMBANKMENT

Stormwater flows off the roadway and across the shoulder to a **grass strip and trench containing specialized soils**. Through filtration and chemical processes, sediment and pollutants are removed from the stormwater.



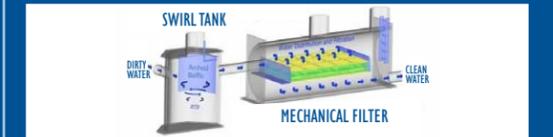
Filtration

VAULT & MANHOLE FILTER

Stormwater enters a vault or manhole and **flows through cartridges containing filter materials specifically designed to remove sediment and pollutants of concern**. Filter materials are replaced at regular intervals to provide consistently clean stormwater.



Hydrodynamic Separation



SWIRL TANK & FILTER

Stormwater enters and flows across a curved plate in the Swirl Tank. A **swirling (vortex) pattern is produced that helps floatable contaminants to migrate to the center, and heavier polluting solids to settle out to the bottom** of the chamber.

Next, the stormwater enters the Mechanical Filter to **remove fine sediment, excess nutrients, petroleum hydrocarbons, and heavy metals** before reaching sensitive receiving water bodies, such as our salmon-bearing streams.



OIL / WATER SEPARATOR

Stormwater enters a vault and is passed through a binding material that **forces oil particles to combine into larger droplets that float to the surface**. The oil can then be removed from the stormwater and disposed.



▲ **Permeable sidewalk pavers (root box system underground)** and a planting bed line the south side of Shoreline City Hall.

HOW IS STORMWATER TREATED ALONG AURORA?

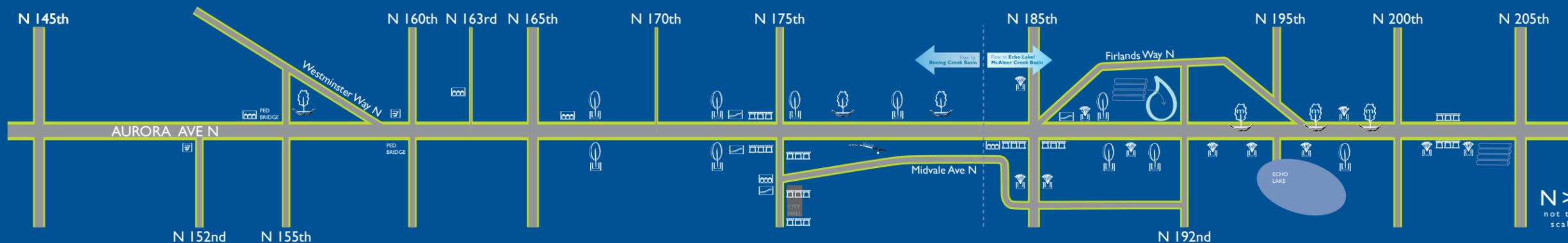
Storm events produce a **surge of water to a system**, flowing quickly over paved areas while picking up **pollutants and sediment**. This creates concerns for **erosion and the quality of water** reaching our streams, lakes, and Puget Sound.

Storm drains and catch basins are used to help direct and contain runoff, but these **conventional** methods eventually release untreated water into our natural systems.

Along Aurora Avenue, **alternative** stormwater management methods of **capturing and retaining runoff** have also been added to help **regulate the flow, filter, and clean** the water they catch.



▲ Section of **permeable sidewalk, root boxes and rain garden**



LEGEND

- Demonstration Gardens
- Pipe Farm
- Rain Garden Planter
- Rain Garden Swale
- Rain Garden Median
- Bioretention Box
- Permeable Sidewalk
- Ecology Embankment
- Vault & Manhole Filter
- Oil / Water Separator
- Swirl Tank

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not to scale

