SOUTH THORNTON NATURAL DRAINAGE SYSTEM (NDS) PROJECT

IMPROVING OUR COMMUNITIES
with Natural Drainage Systems (NDS)

What are Natural Drainage Systems?

When it rains in Northeast Seattle, pollution from our streets runs directly into Thornton Creek untreated. Untreated runoff is not healthy for Thornton Creek, the Salish Sea, or people. **The good news is: there is something we can do.**

Natural Drainage Systems consist of shallow depressions built in the roadway shoulder (the space between the street edge and the property line) and are filled with deep-rooted plants and spongy soils that temporarily hold and clean polluted stormwater from streets. These features capture and clean pollutants before they can reach Thornton Creek.

Seattle Public Utilities (SPU) is planning to build natural drainage systems in your neighborhood in 2022.

Community benefits

Natural Drainage Systems offer multiple benefits to local neighborhoods and ecosystems, including:

- Lower risk of flooding
- Creation of habitat along our streets
- Healthier creek ecosystems
- Traffic calming
- Increased landscaping
- More street trees

What is the NDS Program?

The 2016-2024 Natural Drainage Systems Program is a SPU multi-year capital improvement program focused on Longfellow, Piper's, and Thornton Creek watersheds.

The program's goal is to construct street-side natural drainage systems that filter and manage stormwater and improve neighborhoods with street trees and traffic calming patterns. All projects include plants that help the natural drainage systems do their jobs: infiltrate and clean stormwater.

This project is being led by SPU and includes funding from the King County Flood Control District.

Learn more online at: www.seattle.gov/utilities/SouthThorntonNDS

Seattle Public Utilities

KING COUNTY FLOOD CONTROL DISTRICT

AUGUST 2020

30% DESIGN PHASE

PROJECT TIMELINE

Where we are now and where we are going

The South Thornton Natural Drainage System (NDS) Project has completed preliminary planning and field investigations.

At the 30% Design Phase we present potential street and drainage improvements to the community, answer questions, and gather community concerns as we work toward finalizing the project scope based on regulatory requirements and project funding.

30% INPUTS

- Neighborhood priorities
- Current drainage conditions
- Location of utilities
- Local topography + mature trees
- Rainfall runoff patterns along the street
- Soil testing + analysis
- Location of homes + paths
- Location of driveways
- On-street parking patterns
- City right-of-way impacts
- Zoning code
- Projected construction costs
- Maintenance of NDS
- Permitting
- Community concerns

60% INPUTS

- Neighborhood priorities
- Local ecosystem needs
- Detailed utility locations + impacts
- Planting palettes & new street trees
- NDS sizing adjustments
- Refinements to design dimensions + details
- City right-of-way impacts
- Balance of costs with budget
- Maintenance of NDS
- Permitting
- Community concerns

FINAL INPUTS

- Accessibility impacts
- Contruction costs + impacts
- Ongoing maintenance costs + responsibility
- Permitting requirements
- Construction questions

A Healthier & Safer Thornton Creek!

DRAFT POTENTIAL DESIGN

30% DESIGN

We Are Here

REFINE PROJECT SCOPE AND DEVELOP DESIGN

60% DESIGN

FINALIZE + OBTAIN PERMITS

FINAL DESIGN

CONSTRUCTION

BEGIN CONSTRUCTION

SITING, FIELD INVESTIGATIONS SURVEY + CONCEPT DEVELOPMENT

2018 to 2019

OUTREACH FOR 30% DESIGN

MID 2020

OUTREACH FOR 60% DESIGN

LATE 2020

PRE-CONSTRUCTION OUTREACH

2022

2020 → 2021 → 2022

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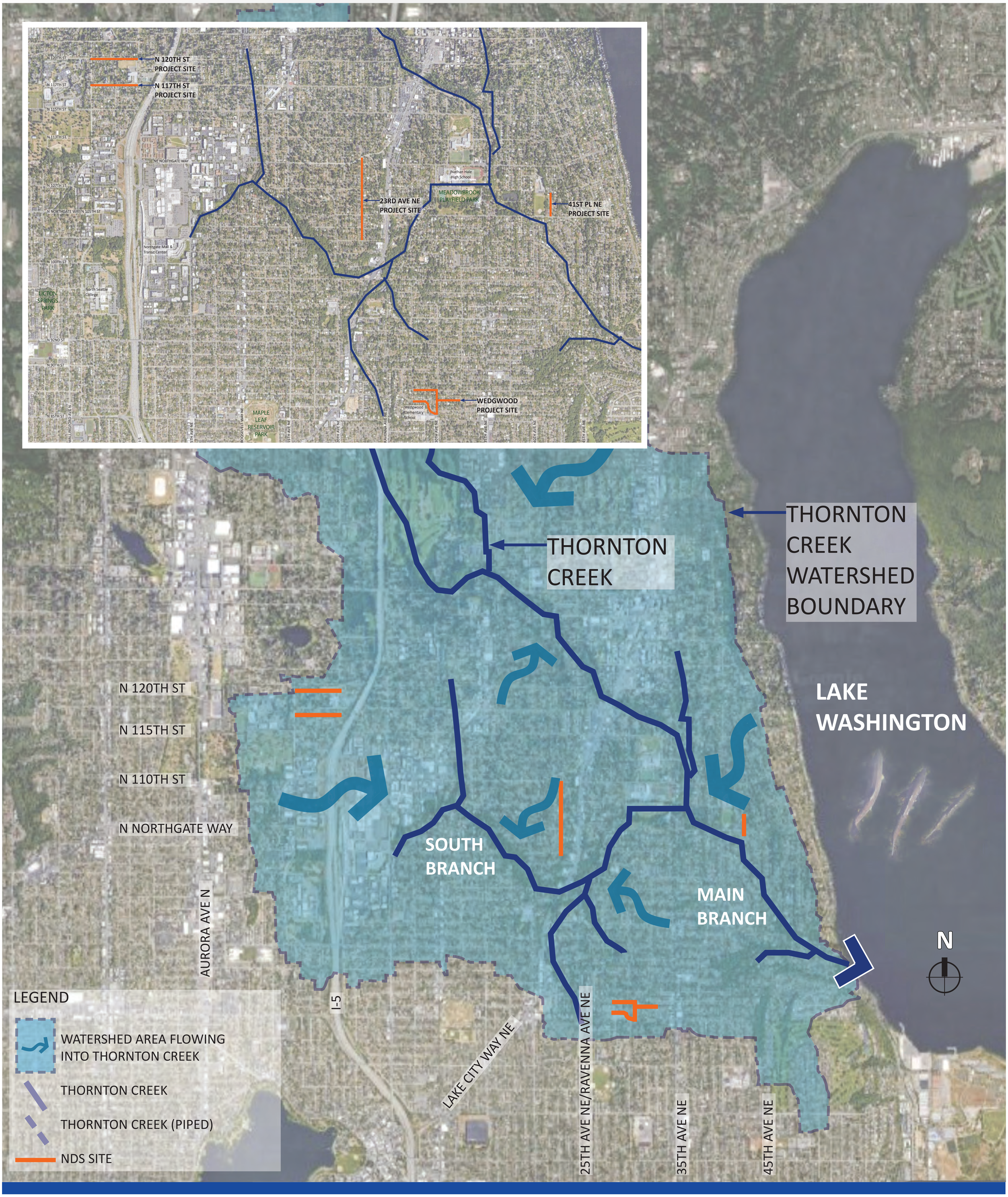
SOUTH THORNTON NATURAL DRAINAGE SYSTEMS (NDS)

Project Area Map



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The Site Selection Process: How we got here

SPU completed the initial analysis and selected locations for NDS in the Thornton Creek Basin based on a variety of factors, including community input, recurring drainage and flooding issues, and existing soil conditions. SPU selected sites that are technically feasible for the project that are optimal for flood mitigation and drainage issues.

Identified blocks that could include natural drainage systems.

Asked a large pool of residents about interest in these projects.

Selected project sites based on ability to optimize drainage benefits, clean water, and support from the community.

What we've heard:

The Thornton Creek community is interested in...

Improving water quality in the neighborhood

Roadway parking changes

Pedestrian safety

Reinforcing the public right-of-way in the project area

Addressing drainage and flooding issues in Northeast Seattle

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WHAT TO EXPECT

How a typical NDS planting installation changes over time

BEFORE

NEWLY PLANTED

~1 year

GROWING

~5 years

MATURE

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SOUTH THORNTON NATURAL DRAINAGE SYSTEMS (NDS)

23rd Ave NE

NATURAL DRAINAGE SYSTEMS
23RD AVE NE: NE NORTHGATE WAY TO NE 103RD ST
(30% DESIGN PHASE - ADJUSTMENTS MAY BE MADE AS DESIGN IS FINALIZED)
STREET RIGHT OF WAY UTILIZATION KEY

NORTH

KEY

- INFORMAL PEDESTRIAN ZONE
- INFORMAL PARKING/PEDESTRIAN ZONE
- ON-STREET PARKING ZONE
- NO PARKING
- NATURAL DRAINAGE SYSTEM & PLANTING ZONE

NOTE: IMPROVEMENTS AND ON STREET PARKING WILL NOT BLOCK RESIDENTIAL DRIVEWAYS OR WALKWAYS

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SOUTH THORNTON NATURAL DRAINAGE SYSTEMS (NDS)

23rd Ave NE

NATURAL DRAINAGE SYSTEMS
23RD AVE NE: NE NORTHGATE WAY TO NE 107TH ST
(30% DESIGN PHASE - ADJUSTMENTS MAY BE MADE AS DESIGN IS FINALIZED)

N 30' 0' 15' 30' 60'
SCALE: 1" = 30'

KEY

- MULCH
- NATURAL DRAINAGE SYSTEM (NDS)
- 10' WIDE REPLACEMENT DRIVEWAY (CITY STANDARD WIDTH)
- PLANTING AREA
- NEW STORM DRAINAGE PIPES
- ILLUSTRATION MARKER
- NEW STREET TREE
- INFORMAL PEDESTRIAN ZONE
- ROCKERY
- REPLACED PAVEMENT EDGE WITH CURBING. THE FULL EXTENTS OF EXISTING PAVEMENT REPAIR AND RESTORATION ARE NOT SHOWN FOR CLARITY.

RIGHT-OF-WAY PARKING

CURRENT PARKING CAPACITY*: 33
PEAK WEEKDAY USAGE**: 11
PARKING CAPACITY PER IMPROVEMENT PLANS: 19

*CURRENT PARKING CAPACITY IS THE ESTIMATED NUMBER OF SPACES AVAILABLE, BASED ON 20' PARKING SPACE LENGTH AND LEGAL SETBACKS FROM DRIVEWAYS, HYDRANTS, STOP SIGNS, ETC., ACCORDING TO THE OBSERVED PARKING PATTERNS OF RESIDENTS ON THIS STREET.

** BASED ON PARKING COUNTS CONDUCTED AT 5:00 AM, 12:00 PM, 6:00 PM & 11:00 PM.

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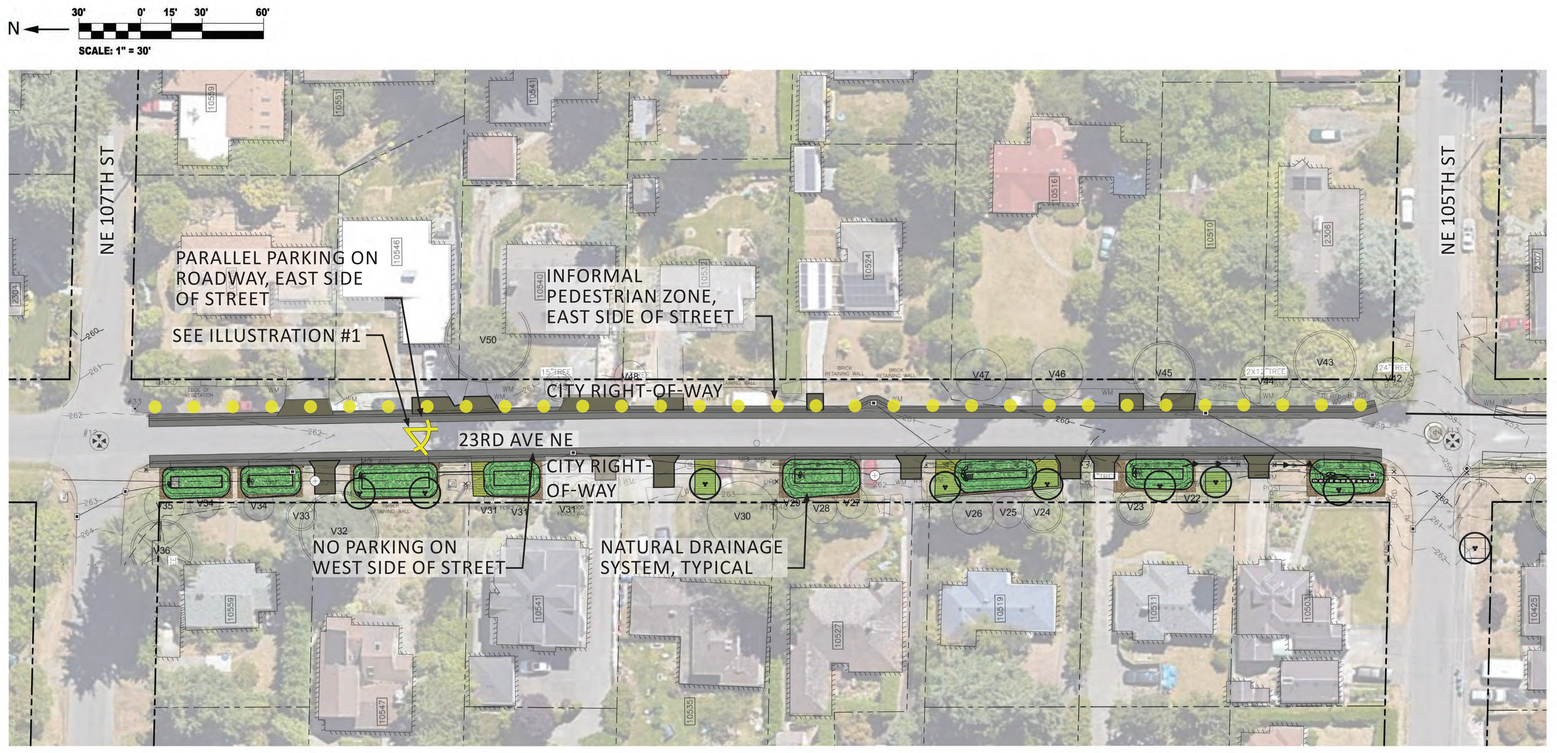
KING COUNTY FLOOD CONTROL DISTRICT

AUGUST 2020
30% DESIGN PHASE

SOUTH THORNTON NATURAL DRAINAGE SYSTEMS (NDS)

23rd Ave NE

NATURAL DRAINAGE SYSTEMS
23RD AVE NE: NE 107TH ST TO NE 105TH ST
(30% DESIGN PHASE - ADJUSTMENTS MAY BE MADE AS DESIGN IS FINALIZED)



KEY

- MULCH
- NATURAL DRAINAGE SYSTEM (NDS)
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- PLANTING AREA
- NEW STORM DRAINAGE PIPES
- ILLUSTRATION MARKER
- NEW STREET TREE
- INFORMAL PEDESTRIAN ZONE
- ROCKERY

RIGHT-OF-WAY PARKING

CURRENT PARKING CAPACITY*: 21
PEAK WEEKDAY USAGE**: 8
PARKING CAPACITY PER IMPROVEMENT PLANS: 17

*CURRENT PARKING CAPACITY IS THE ESTIMATED NUMBER OF SPACES AVAILABLE, BASED ON 20’ PARKING SPACE LENGTH AND LEGAL SETBACKS FROM DRIVEWAYS, HYDRANTS, STOP SIGNS, ETC., ACCORDING TO THE OBSERVED PARKING PATTERNS OF RESIDENTS ON THIS STREET.

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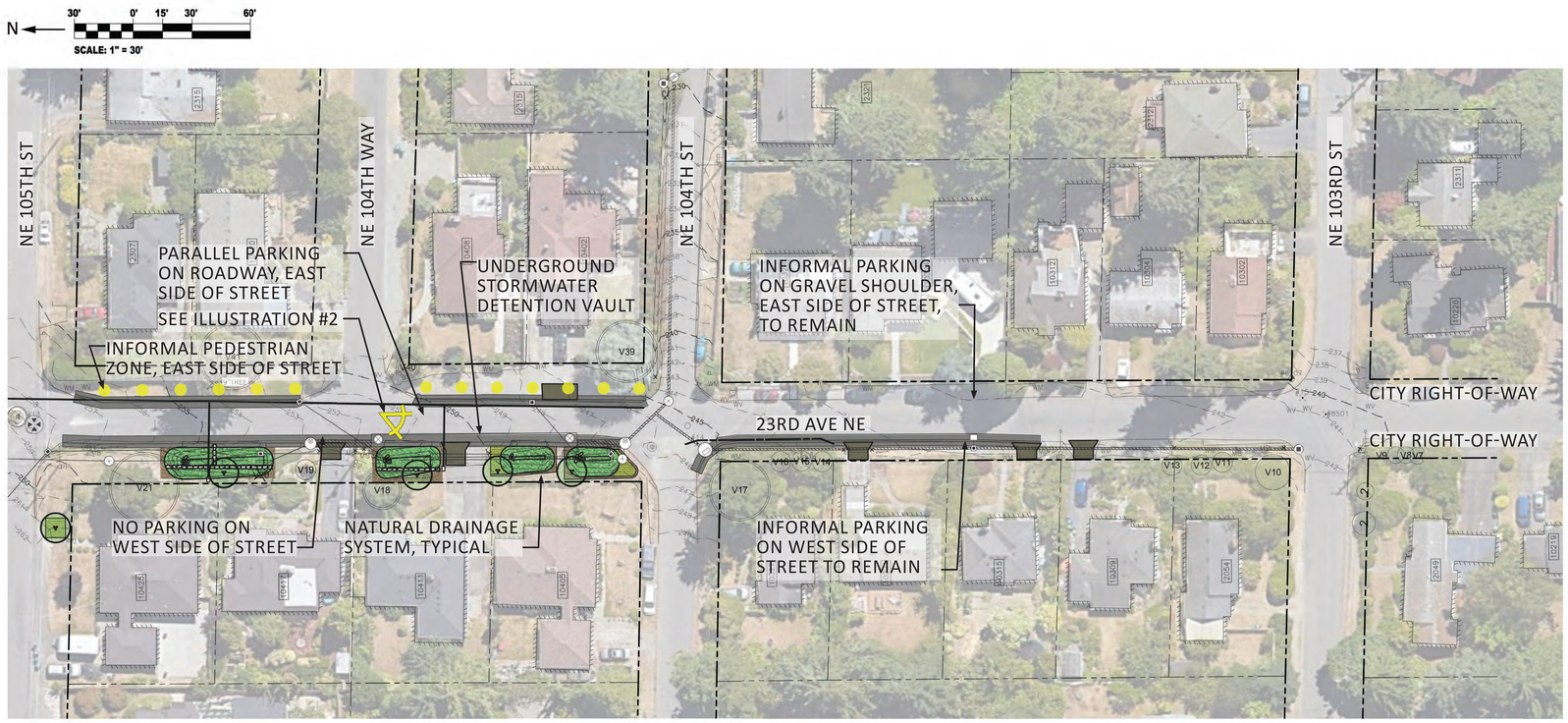
SOUTH THORNTON NATURAL DRAINAGE SYSTEMS (NDS)

23rd Ave NE

NATURAL DRAINAGE SYSTEMS
23RD AVE NE: NE 105TH ST TO NE 103RD ST
(30% DESIGN PHASE - ADJUSTMENTS MAY BE MADE AS DESIGN IS FINALIZED)



KEY

- MULCH
- 10’ WIDE REPLACEMENT DRIVEWAY (CITY STANDARD WIDTH)
- NEW STORM DRAINAGE PIPES
- NEW STREET TREE
- NATURAL DRAINAGE SYSTEM (NDS)
- PLANTING AREA
- ILLUSTRATION MARKER
- INFORMAL PEDESTRIAN ZONE
- ROCKERY
- REPLACED PAVEMENT EDGE WITH CURBING. THE FULL EXTENTS OF EXISTING PAVEMENT REPAIR AND RESTORATION ARE NOT SHOWN FOR CLARITY.

RIGHT-OF-WAY PARKING

CURRENT PARKING CAPACITY*: 38
PEAK WEEKDAY USAGE**: 2-3
PARKING CAPACITY PER IMPROVEMENT PLANS: 35

*CURRENT PARKING CAPACITY IS THE ESTIMATED NUMBER OF SPACES AVAILABLE, BASED ON 20’ PARKING SPACE LENGTH AND LEGAL SETBACKS FROM DRIVEWAYS, HYDRANTS, STOP SIGNS, ETC., ACCORDING TO THE OBSERVED PARKING PATTERNS OF RESIDENTS ON THIS STREET.

** BASED ON PARKING COUNTS CONDUCTED AT 5:00 AM, 12:00 PM, 6:00 PM & 11:00 PM.

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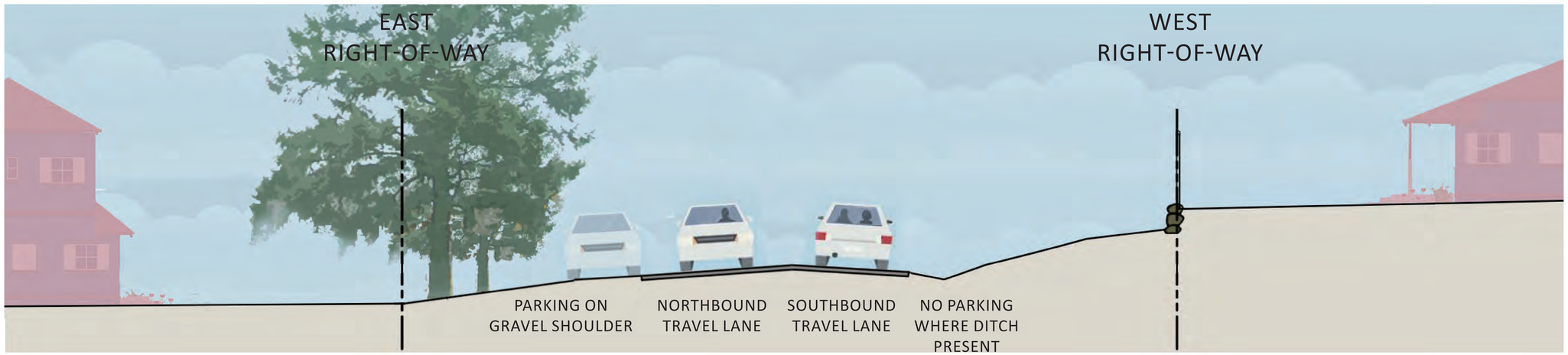
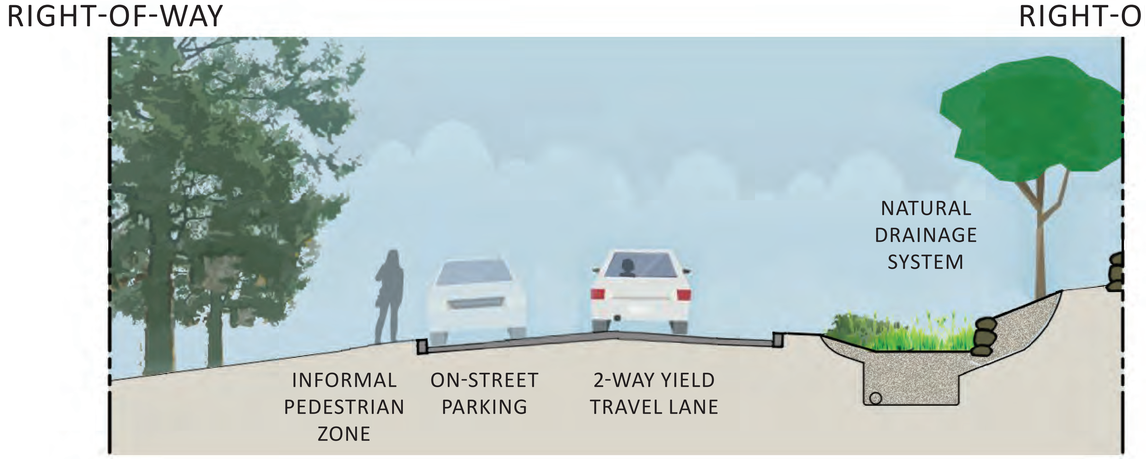
SOUTH THORNTON NATURAL DRAINAGE SYSTEMS (NDS)

23rd Ave NE



EXISTING STREET SECTION WITH DITCH AND ROCKERY

23RD AVE NE



TYPICAL STREET SECTION - VERTICAL CURBING BOTH SIDES AND NATURAL DRAINAGE SYSTEM WITH ROCKERY

23RD AVE NE

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SOUTH THORNTON NATURAL DRAINAGE SYSTEMS (NDS)

23rd Ave NE

ILLUSTRATION #1

LOOKING SOUTH BETWEEN
NE 107TH ST AND NE 105TH ST
23RD AVE NE

ILLUSTRATION #2

LOOKING SOUTH BETWEEN
NE 104TH WAY AND NE 104TH ST
23RD AVE NE

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AUGUST 2020

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