

Growing Vine Street Watershed Repairs and Public Art Landscape Upgrade

The Growing Vine Street plan calls for defining and enhancing Vine Street as a watershed, with a runnel flowing along a heavily vegetated watercourse for the entire length of Vine Street. Along the eastern portion of the street, its passage will be a slow, stately meander. That changes, however, at First Avenue, where Vine Street takes a sudden, two-block dive towards Elliott Bay. The Cistern Steps is designed to take dramatic advantage of this slope.

The Growing Vine Street plan calls for the street to zig-zag on the slope between First and Elliott Avenues. From First, the street will slant northerly toward the mid-block alley and then southerly back toward Western. The pattern will be repeated in the block between Western Avenue and Elliott, where the Cistern Steps is located.

PROJECT TYPE

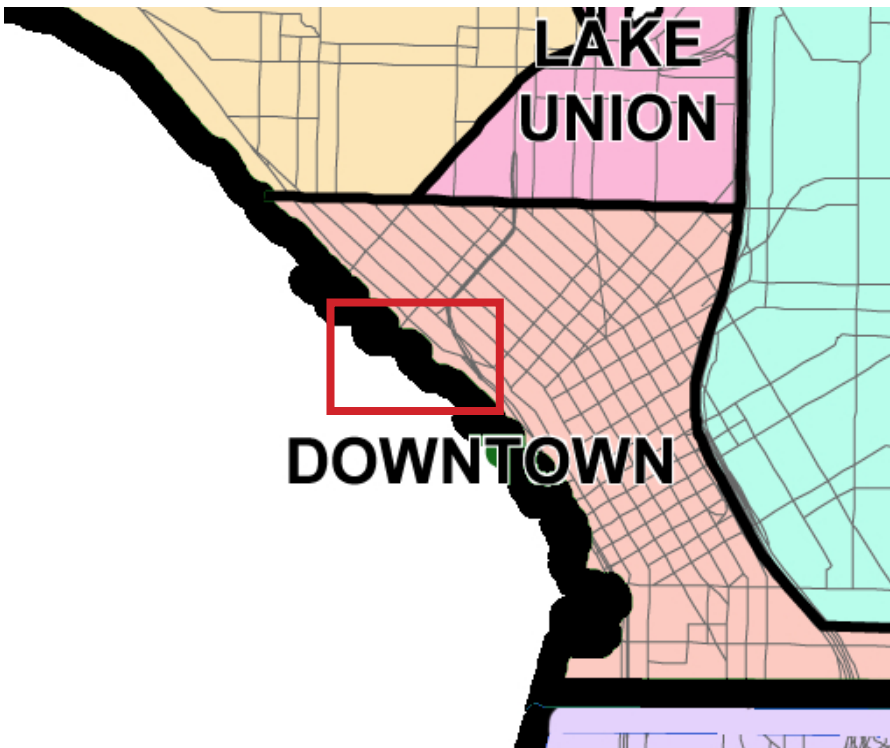
Drainage & Pedestrian Crossing Improvement

LENGTH

320 LF

COST ESTIMATE

\$400,000



The Cistern Steps consists of a series of three terraced concrete planters tapering from a wide plaza at the alley to the narrow sidewalk right-of-way at the intersection of Vine Street and Elliott Avenue. The runnel will flow from planter to planter, ending in a pool formed from a large, rough-hewn piece of Northwest jade at the foot of the slope. In this segment of Vine Street, there is no adjacent building to feed the runnel, so water will be received from the newly constructed Vine Building across the street, which was designed with a special collection system for roof runoff just to supply the runnel.

Like the Beckoning Cistern, the Cistern Steps has been designed to delight pedestrians as well as to process and use roof runoff in an ecological manner. The water gardens of the planters will echo the lush greenery of the adjacent Belltown P-Patch.

Applicant Problem

The Cistern Steps was designed to capture and reuse water for its downstream planter cells and siphoned to irrigate the adjacent P-patch. It was intended to receive water into its cistern from 3 sources:

- 1) Surface runoff via the beehive grate (from the alley to the south)
- 2) Piped outflows from the stormwater detention tank in the Vine Building (from the north across Vine Street)
- 3) Piped overflows from the Walton Lofts' bioretention (from the east, directly up-hill and across the alley)

Unfortunately, none of these methods appears to be functioning as intended, leaving the cistern overwhelmingly empty and unable to provide water for its intended uses.

A PDF is forwarded with this application, "Cistern Steps Existing Conditions", is a synthesis of each projects' design drawings and photographs taken onsite. It attempts to show the functional issues preventing each method of providing water to the cistern. Briefly, these issues are:

- 1) Poor grading allows a significant amount of alley runoff to bypass the existing structure and instead drain into the Vine Street gutter
- 2) The Vine Building's connecting pipe is crushed and backing up flows
- 3) The Walton Lofts' connecting pipe was never in fact connected
- 4) The siphon line intended to provide for P-Patch irrigation has crumbled at the manhole wall, causing the cistern to leak into the ground before it can spill down the Steps.

Applicant Solution

The water flow repair work will be forwarded in a separate PDF—Cistern Steps Existing Condition—e-mail that also includes issues with suggested repairs. In addition to the water pipe repairs, landscaping and lighting should be added to the public art on Alaskan Way portal of Vine Street to Elliott to complete that project.

Seattle Department of Transportation (SDOT) Review

Project Description

Vine St is a non-arterial street that varies in width. Parking is allowed on Vine St, however, it varies from parallel parking to back-in parking. The Belltown P-Patch is located on the southeast corner of the Vine St and Elliott Ave intersection. Green stormwater infrastructure was recently installed on the south part of Vine St between Western Ave and the alleyway between Elliott Ave and Western Ave. This includes curbs with inlets feeding a weir system. A catch basin at the bottom of the weir system collects any overflow. This catch basin also contains an overflow pipe connecting the main storm drain system under Vine Street. The storm water is intended to be fed to a second catch basin located in the alleyway. This storm water is ultimately intended to provide the P-Patch with irrigation.

Additionally, a second pipe collects stormwater from the building on the north side of Vine St and provides irrigation to the Belltown P-Patch. This pipe crosses under Vine St and runs north-south. It connects to the catch basin in the alleyway

Based on a review of the provided materials and data collection efforts, we believe that the following is the case:

- The existing catch basin in the alleyway has not been connected to the weir system. We believe this pipe opening is grouted over and needs to be removed. Based on photos, the pipe appears to exist from the catch basin at the base of the weir system.
- The storm pipe running north-south appears to be blocked or is crushed.

This project assumes that the items mentioned above are the cause for this lack of irrigation to the P-Patch. The cost estimate for the drainage items include:

- Removal restoration of pavement and repair of the existing pipe crossing Vine St.
- Removal of the grout in the catch basin and reconnection of the pipe.
- Landscaping restoration and one year landscape establishment for damaged plants.
- Funding for a more formal drainage study and potential repairs recommended through the study

In addition to the drainage repairs discussed in the applicant's description, further communication has indicated that the community also desires to add crossings along Vine St at both Elliott Ave and Western Ave to better connect to the waterfront with the downtown core. SDOT will be installing a rectangular rapid-flashing beacon (RRFB) at the intersection of Vine St and Western Ave in autumn 2016 so this crossing was not included in the project review.

The team reviewed the intersection of Vine St and Elliott Ave for an enhanced pedestrian crossing. Elliott Ave is a one-way southbound street with two general purpose lanes, a left side bike lane, and parking on both sides of the roadway. Elliott Ave is controlled by a pedestrian signal. The crosswalk is located on the north leg of the intersection. Addition of a crosswalk across the south leg of the intersection would require the addition of pedestrian push buttons and signals on the south side, including a new strain pole for relocated roadway signal heads, and a new ADA ramp on the southwest corner. A joint use pole agreement with Seattle City Light (SCL) will be required to use of the existing timber pole on the southeast corner. The existing signal controller is expected to be able to accommodate the new crosswalk with no additional modifications.

Constructability

- Due to the roadway width, construction may require complete closure of the roadway for pipe repair.
- Existing signal can be maintained and operated during construction.

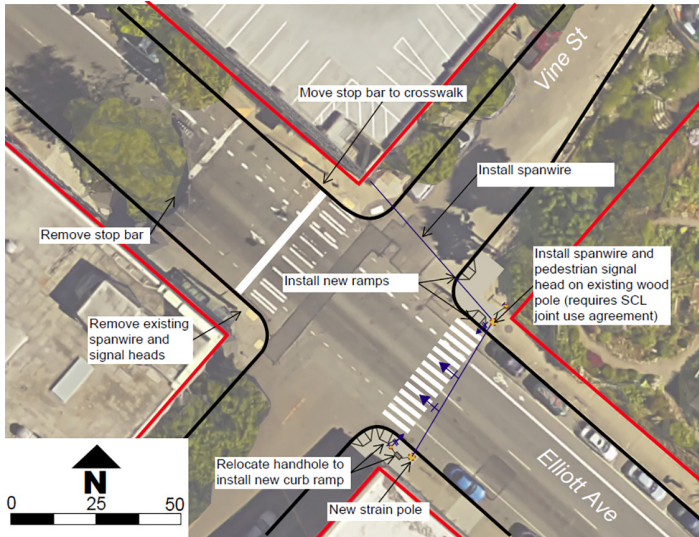
Impacts

- Roadway will likely be closed during construction.

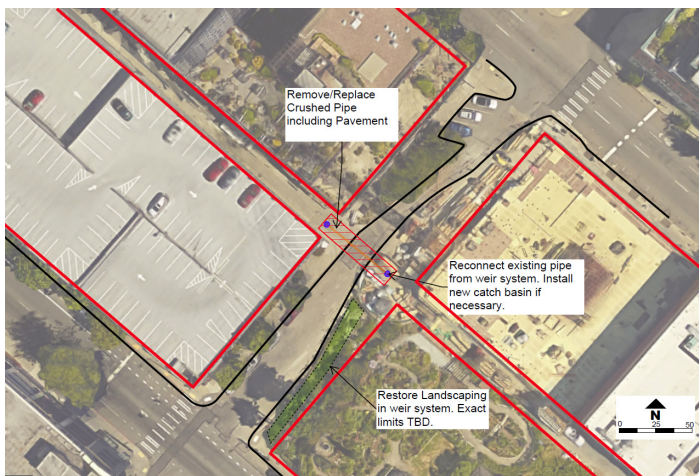
Benefits

- Repair of the Cistern Steps drainage system.
- Increased safety and convenience for people crossing Elliott Ave by adding a second crosswalk and by relocation of stop bar for motor vehicles.

Seattle Department of Transportation (SDOT) Review



Pedestrian Crossing Improvements at Elliott Ave & Vine St



Drainage Improvements along Vine St