

# Stormwater Narrative

## Bright Street Cooperative

August 28, 2014

### Project Description

Please find enclosed site plan and stormwater details for the Bright Street Cooperative project. The applicant is seeking approval for a PUD involving five properties on Bright and Archibald Streets. Champlain Housing Trust, partnered with Housing Vermont, intends to combine four parcels with 14 existing residential units; redevelop the site with construction of four new buildings providing 44 residential units, 42 of them new, while retaining one duplex (27 Bright Street). Proposed for demolition are 114 Archibald St. (9 units), 35 Bright St. (1 unit) and 47 Bright St. (1 unit). New development will include construction of 2 duplex townhouses, one triplex, and one three story, 35 unit structure. The development will provide a net gain of 31 new residential units.

### Existing Conditions

The site is involving five properties on Bright and Archibald Streets. The site includes four existing buildings and associated impervious to be removed. The area around the buildings is very flat. The grades are gently sloping away from the buildings to the north and east. All the soils are Adams & Windsor sands with a hydrologic soil group A classification. Soil test pits have been dug and permeability testing has been performed. The soil was found to have a deep sandy profile. High seasonal water table was not observed in test holes. A falling head permeability test was performed in the locations of the three proposed infiltration stormwater treatment systems. The slowest infiltration rate was found to be 25 in/hr.

### Existing Stormwater System

There is currently no formal stormwater collection system on the site. Stormwater currently sheds off site by overland flow to the north, and west directions.

### Proposed Stormwater Treatment

The project will rely on infiltration for treatment of all existing, new, and redevelopment impervious surfaces. The proposed site is divided into eight watersheds. Drainage from six of the watersheds will be directed by overland flow or directly to catch basins and piped to underground infiltration chambers. The runoff from the paved areas of the site will be pre-treated by through isolation chambers.

Watershed P-1 is located west of Duplex 2 on Archibald Street. This small area (2,090 sf) could not be picked up into the infiltration systems. Watershed P2A was able to be picked up by installing a catch basin half way down the drive to the underground parking structure. This catch basin was not proposed in the initial site plan presented to Megan Moir and the Conservation Board. We were able to devise a way to penetrate the sheet piling with the storm piping to access the infiltration systems. Watershed P2A discharges to the infiltration chambers under the raised garden beds and north of the Duplex 2. P-3 will be collected by a pump station and discharged to the combined system in Bright Street. Watershed P-4 and P-8 discharge to the infiltration gallery located west of the Trinity building. Watershed P-5 is essentially entirely pervious. Watershed P-6 has capacity to pick up off site impervious and also infiltrate the 1 year, 24 hour rainstorm. Watershed P-7 collects a portion of the Bright Street Duplex 1 and Bright Street Courtyard and discharges to the infiltration gallery east of the Trinity.

The chamber details are shown on sheet CD-5, and calculations are attached. We are very excited to be working on this great project and to be able to provide such a comprehensive stormwater system.

13220:stormwater narrative