



To: Planning Commission
From: Urban Design Committee
Date: October 21, 2019
RE: **Conceptual location, character, and extent review of a biosolids Storage Cover at the Wastewater Treatment Plant, 1400 Brander Street; UDC 2019-27**

I. APPLICANT

Matthew Pugh, City of Richmond, Department of Public Utilities

II. LOCATION

1400 Brander Street

Property Owner:

City of Richmond

III. PURPOSE

The application is for conceptual approval of a new roof canopy over the existing biosolids Storage pad at the City of Richmond Wastewater Treatment Plant to minimize the re-wetting of the dewatered bio solids by rain and snow.

IV. SUMMARY & RECOMMENDATION

The City of Richmond's Wastewater Treatment plant produces Class B biosolids, nutrient-rich organic materials resulting from treatment of wastewater. This organic material is separated from the wastewater and stored on a concrete pad surrounded by a four foot concrete retaining wall where it can be dehydrated and then transported to be used as fertilizer on regional farms. The existing pad allows for a total storage capacity of approximately 81,000 cubic feet, and is not covered, exposing the biosolids to rain and snow. This project proposes to construct a new concrete pad surrounded by an eight foot concrete retaining wall consisting of modular, concrete pieces that can be removed for maintenance. The pad will be covered by a canopy to allow for the proper dehydration of the biosolids, reducing the material's water weight and thus cost of transport. The new facility will have a storage capacity of 200,000 cubic feet, 160,000 cubic feet which will be covered.

The new concrete pad and cover system fit into the existing infrastructure of the site, and does not impact parking or pedestrian routes, and will have minimal impact on landscaping. The new structure is minimally visible and is in keeping with the industrial nature of the site.

Therefore the Urban Design Committee recommends that the Planning Commission approve the conceptual design with the following conditions:

- Applicant provide a cost analysis which demonstrates the return on investment in processing biosolids with or without a roof canopy.
- Applicant submit updated cut sheets to include roof materials.
- Applicant consider using a light colored roof material.
- The proposed canopy's columns be oriented so that the widest span between columns is placed on the side of the biosolids pad where trucks enter and exit.

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V. FINDINGS OF FACT**a. Site Description and Surrounding Context**

The site is located at 1400 Brander Street and lies within the M-2 (Heavy Industrial) zoning district. The property is over one hundred fifty (150) acres in size and is surrounded by other industrial sites, bordered by Brander Street to the North and East, and Interstate 95 to the West.

There are around 40-50 employees working on site, with very limited public access, the exception being occasional staff-facilitated tours of the WWTP.

b. Scope of Review

The improvements associated with this project are subject to location, character, and extent review as a “public building or structure” in accordance with Section 17.07 of the Richmond City Charter.

c. UDC Review History

At the regular May 2019 meeting of the UDC, the final location, character, and extent review of new Grit and Screening Facilities was heard, and the UDC recommended that the Planning Commission grant final approval.

At the regular March 2016 meeting of the UDC, the final location, character, and extent review of the CSO Control Program – Special Order 15A, Division 47 – Screenings and Grit Removal Facilities (UDC 2016-07) was recommended for approval and subsequently approved at the regular March 21, 2016 meeting of the Planning Commission.

At the regular December 2016 meeting of the UDC, the project was recommended for conceptual approval by the UDC.

The project was canceled in November 2018 due to lack of funding.

In addition:

To be in accordance with State Law that called for reducing the concentration of nitrogen and phosphorous that is discharged into the James River, a project was proposed that would be implemented through several contracts. The UDC reviewed several submittals under the project number UDC 07-37 (2,3,4,5,6,7) between 2007-2010 for the construction of new buildings and infrastructure on site that would bring the plant into compliance.

Final location, character, and extent review of the installation of a double-wide modular unit at 1400 Brander Street was approved as submitted at the February 2006 regular meeting of the UDC.

d. Project Description

Brown and Caldwell (BC) is under contract to the City of Richmond Department of Public Utilities to design a cover system for the existing biosolids storage pad to minimize rain and snow from re-wetting the dewatered biosolids.

The City of Richmond Wastewater Treatment Plant (WWTP) produces a Class B biosolids product by dewatering anaerobically digested sludge. The dewatered biosolids cake is transported by a third-party contractor in dump trucks to the southern end of the WWTP to the existing biosolids storage pad where they are dumped. The biosolids cake is stored on the pad until it is hauled off-site to be land applied.

The existing pad is not covered, which results in an increased moisture content of the dewatered biosolids cake due to exposure to rain and snow. The City is charged for hauling the biosolids cake by the third-party contractor on a per weight basis, so it is of interest to the City to prevent the stored biosolids from being exposed to rain and snow to limit the amount of water that is being hauled. The proposed cover system will assist in the aversion of accumulated moisture.

The proposed cover system will cover an area of approximately 264 feet by 95 feet wide. A 100 feet by 50 feet section will remain uncovered to avoid conflict with underground utilities. The cover system will include structural steel primary and secondary members, metal roof system, column base plates, and anchor bolts.

The cover system fits into the existing infrastructure, so pedestrian routes and parking will not change. Landscape alterations are minimal, causing few changes to existing canopies and/or screening.

The preliminary estimated construction cost for the Biosolids Storage Pad Cover is approximately \$2,000,000. A detailed cost estimate is provided in this document.

The preliminary construction schedule is provided below. It is estimated that the project will take approximately 10 months to complete from Notice to Proceed. Prior to construction biosolids stored on the pad will need to be relocated to the "Overflow Biosolids Pad" to the west. The overflow biosolids pad will need to be used throughout the duration of construction.

e. Master Plan

This property is within the Old South Planning District. The current Master Plan calls for industrial uses at this location. It is appropriate for a wastewater treatment facility to be located at this site.

f. Urban Design Guidelines

In matters of public facilities the Urban Design Guidelines encourage consistency with the existing architectural massing, character, and materials. Building colors should be coordinated and compatible with adjacent buildings. Staff finds that the new construction component of this project aligns with these criteria.

The Urban Design Guidelines state that, "Facilities required for the ongoing operation of the building, such as loading docks, maintenance sheds, or HVAC equipment" should be screened from view or located in the rear. For this project, these facilities will be screened, and any machinery or loading docks that are visible have been thoughtfully incorporated into the design of the new construction in a way that creates a dynamic, modern structure.

- VII. ATTACHMENTS**
- a. Vicinity Map**
 - b. Application**
 - c. Plans**