

**APPLICATION FOR
URBAN DESIGN COMMISSION
REVIEW AND APPROVAL**

AGENDA ITEM#
Project # 10-59-09

16323

DATE SUBMITTED: <u>October 14, 2009</u>	<input checked="" type="checkbox"/> Informational Presentation
UDC MEETING DATE: <u>October 21, 2009</u>	<input type="checkbox"/> Initial Approval and/or Recommendation
	<input type="checkbox"/> Final Approval and/or Recommendation

PROJECT ADDRESS: 117 N. Charter Street (UW Charter Street Heating Plan Upgrades)

ALDERMANIC DISTRICT: 8 (Alder Eagon)

OWNER/DEVELOPER (Partners and/or Principles):
State of Wisconsin, UW System Board of Regents
1220 Linden Drive, Madison, WI 53706

ARCHITECT/DESIGNER/OR AGENT:
Robert Mangas, Potter Lawson Architects
15 Ellis Potter Ct, Madison, WI 53711

CONTACT PERSON: Gary A. Brown, FASLA, Director, Campus Planning & Landscape Architecture
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TYPE OF PROJECT:

(See Section A for:)

- Planned Unit Development (PUD)
 - General Development Plan (GDP)
 - Specific Implementation Plan (SIP)
 - Planned Community Development (PCD)
 - General Development Plan (GDP)
 - Specific Implementation Plan (SIP)
 - Planned Residential Development (PRD)
 - New Construction or Exterior Remodeling in an Urban Design District * (A public hearing is required as well as a fee)
 - School, Public Building of Space (Fee may be required)
 - New Construction or Addition to or Remodeling of a Retail, Hotel or Motel Building Exceeding 40,000 S.F.
 - Planned Commercial Site

(See Section B for:)

- New Construction or Exterior Remodeling in C4 District (Fee required)

(See Section C for:)

- R.P.S.M. Parking Variance (Fee required)

(See Section D for:)

- Comprehensive Design Review* (Fee Required)
- Street Graphics Variance* (Fee Required)
- Other _____

* Public Hearing Required (Submission Deadline 3 Weeks in Advance of Meeting Date)

Where fees are required (as noted above) they apply with the first submittal for either initial or final approval of a project.

CSHP PROJECT DESCRIPTION
For
URBAN DESIGN COMMISSION INFORMATIONAL PRESENTATION

PROJECT OVERVIEW

Project Summary

The scope of the Charter Street heating Plant (CSHP) Project is to rebuild the CSHP facility by constructing a new 350,000 lbs/hour biomass boiler facility. The new boiler will be housed separately from the existing boilers requiring the construction of a building to house the boiler and the necessary distribution systems. The existing coal fired boilers will either be removed or retired, and their capacity replaced by new natural gas boilers. New steam turbine driven electrical generation will be installed in a new turbine building. The Project will also upgrade the rail delivery system at the site and provide a fuel handling system for biomass fuels with an on-site storage capacity for three to four days of use. The proposed rail delivery system includes modifications to the WSOR rail line extending from Charter Street to West Washington Ave., including widening of the Park St. bridge for a new main rail line, two sidings for rail car handling between Park Street and West Washington Ave., and an adjustment in the location of the Southwest Bike Path located in the railroad right-of-way.

Project Background

The State of Wisconsin conducted a planning study for the main heating plants servicing the UW-Madison campus and other state office buildings. The study was a result of an agreement between Departments of Administration, the Department of Natural Resources, the University of Wisconsin and the Sierra Club to analyze the feasibility of alternatives to bring the CSHP into compliance with the Clean Air Act and for making necessary upgrades to other state owned heating plants in Madison, Wisconsin.

Independent of the study, the state decided to phase out the use of coal at the CSHP and to increase fuel diversity, primarily by the inclusion of significant renewable biomass resources in the plant's fuel mix. Preliminary design of the Project has tentatively defined the rebuilding of the facility as construction of a new 350,000 lbs/hour biomass boiler at the CSHP.

PROJECT DESCRIPTION

Project Description Overview

The Charter Street heating Plant (CSHP) Project includes rebuilding the CSHP facility by constructing a new 350,000 lbs/hour biomass boiler facility. The new boiler will be housed separately from the existing boilers requiring the construction of a building to house the boiler and the necessary distribution systems. There are additional options for replacing or covering the existing steam generators at the Charter Street heating plant. The existing coal fired boilers will be retired.

New steam turbine driven electrical generator capacity will be installed in a new turbine building. Also within this building will be two additional package boilers to replace the capacity of the retired coal fired boilers.

The Project will also upgrade the rail delivery system at the site and provide a fuel handling system for biomass fuels with an on-site storage capacity for three to four days of use.

New Boiler Unit(s) of Capacity at 350,000 #/hr

The Project will include the installation of a New Water-Cooled Vibragrate Boiler Units #6 at 350,000 #/hr, fuel by biomass fuel and/or natural gas with fuel oil back-up; with air pollution control equipment for SO_x, NO_x, and Particulates including a single new double flue stack; and planning to allow for a future Boiler Unit #7 of similar capacity

New Steam Turbine Generator(s)

The Project includes the addition of a new nominal 22 MW controlled extraction back pressure steam turbine generator.

Fuel System Conversion

The Project includes the conversion of the coal fuel handling system to a biomass fuel system. This work will include the:

- Demolition of the existing coal handling and storage system
- Demolition of the adjacent property at 115 Mills Street for a new biomass fuel receiving and handling system
- Construction of new biomass fuel receiving, unloading, storage, handling and conveying systems and equipment including a rotary car unloader.

The Project also includes adjacent off-site rail and bike path construction and related Project work. It is anticipated that mainline rail expansion and industrial track storage spurs work will be on rail road right-away and will be under the direction of the local railroad.

Biomass Fuel Utilization

The Project includes the effective and efficient utilization of biomass fuels. This includes finalizing the determination of biomass fuel specifications and fuel quality analyses ranges and maximums. These parameters will be defined and refined as the project proceeds.

Coordination and Interface with Existing Operations

This Project needs to be completed and coordinated with the existing plant operations and capacity for steam and cooling supplies being maintained and in service. The new plant Project tie-ins and conversions will be required to tie-into the existing plant systems and U W Systems are part of this Project.

Electric Distribution System Enhancements

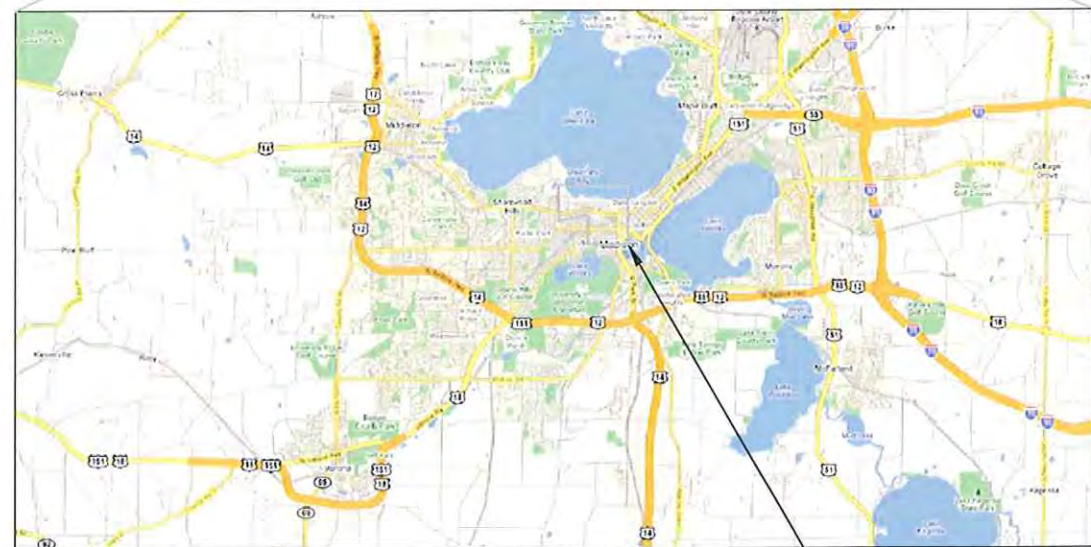
The Project also includes plant electric distribution systems enhancements and modifications.

STATE OF WISCONSIN DEPARTMENT OF ADMINISTRATION DIVISION OF STATE FACILITIES

CHARTER STREET REBUILD UNIVERSITY OF WISCONSIN - MADISON MADISON, WISCONSIN DIVISION PROJECT NO. 09A2L

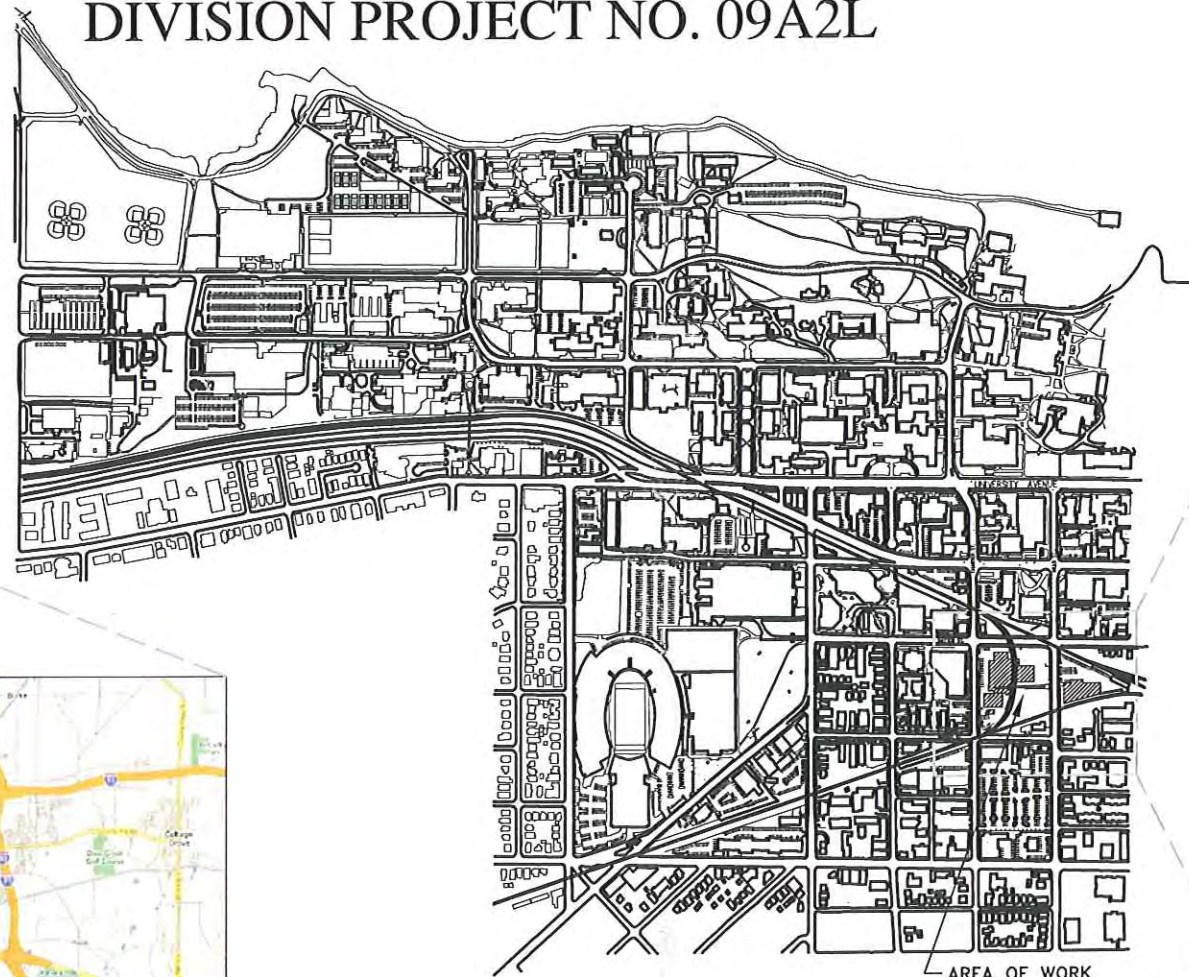


STATE LOCATION PLAN
WISCONSIN



CITY LOCATION PLAN
MADISON

AREA OF WORK
CHARTER STREET REBUILD



KEY PLAN
UW-MADISON CAMPUS



AREA OF WORK
CHARTER STREET REBUILD

SITE LOCATION PLAN
CHARTER ST.

PROJECT LOCATION NOTE:

THE CHARTER STREET HEATING PLANT IS LOCATED IN A RESIDENTIAL AREA WEST OF DOWNTOWN MADISON, WISCONSIN. THE PLANT IS BOUNDED BY CHARTER STREET TO THE WEST, DAYTON ST. TO THE NORTH, MILLS STREET TO THE EAST AND SPRING STREET TO THE SOUTH. THE CHARTER STREET REBUILD PROJECT WILL UTILIZE ADDITIONAL SPACE ON THE EAST SIDE OF MILLS STREET FOR THE EXPANSION OF THE PLANT.

PEC



State of Wisconsin
Department of Administration
Division of State Facilities



Agency / Institution:
UNIVERSITY OF WISCONSIN, MADISON

Project Title:
CHARTER STREET REBUILD

Project Location:
MADISON, WI.






Sheet Title:
PROJECT LOCATION MAP

Revisions:			
No.	Date:	By:	Description:
1	10-01-09	PEC	PRELIMINARY

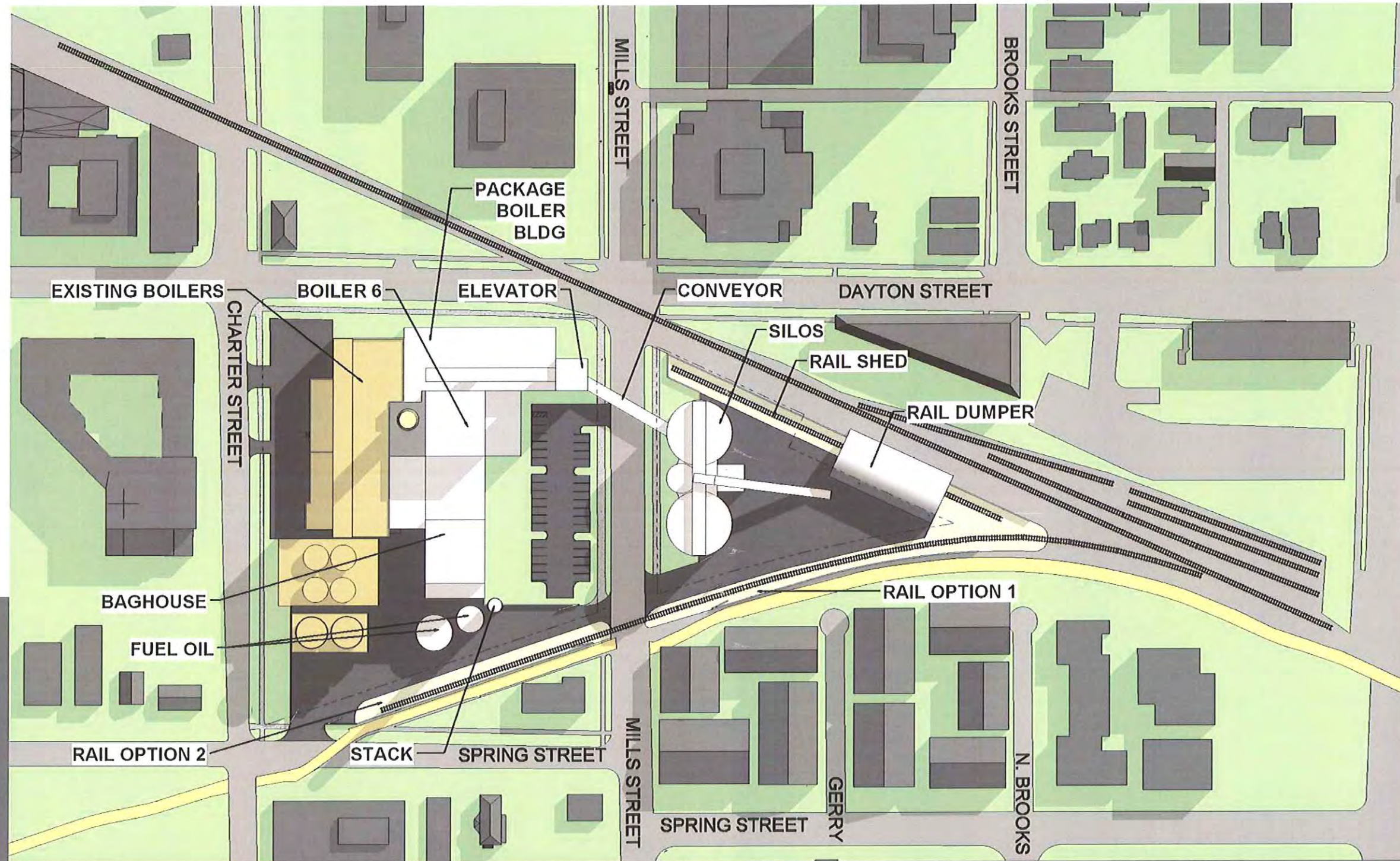
Graphic Scale	
DSF Number	09A2L
Set Type	PR
Date Issued	10-01-09
Sheet Number	T100

Four small photographs arranged in a row, showing different perspectives of the industrial site and surrounding streets. From left to right: 1. A view down a paved path or road leading towards the industrial building. 2. A view of a street with a railroad crossing sign and utility poles. 3. A view of a street with a red brick building and the industrial site in the background. 4. A view of a street intersection with a crosswalk and utility poles.

Urban Design Informational Meeting October 21, 2009

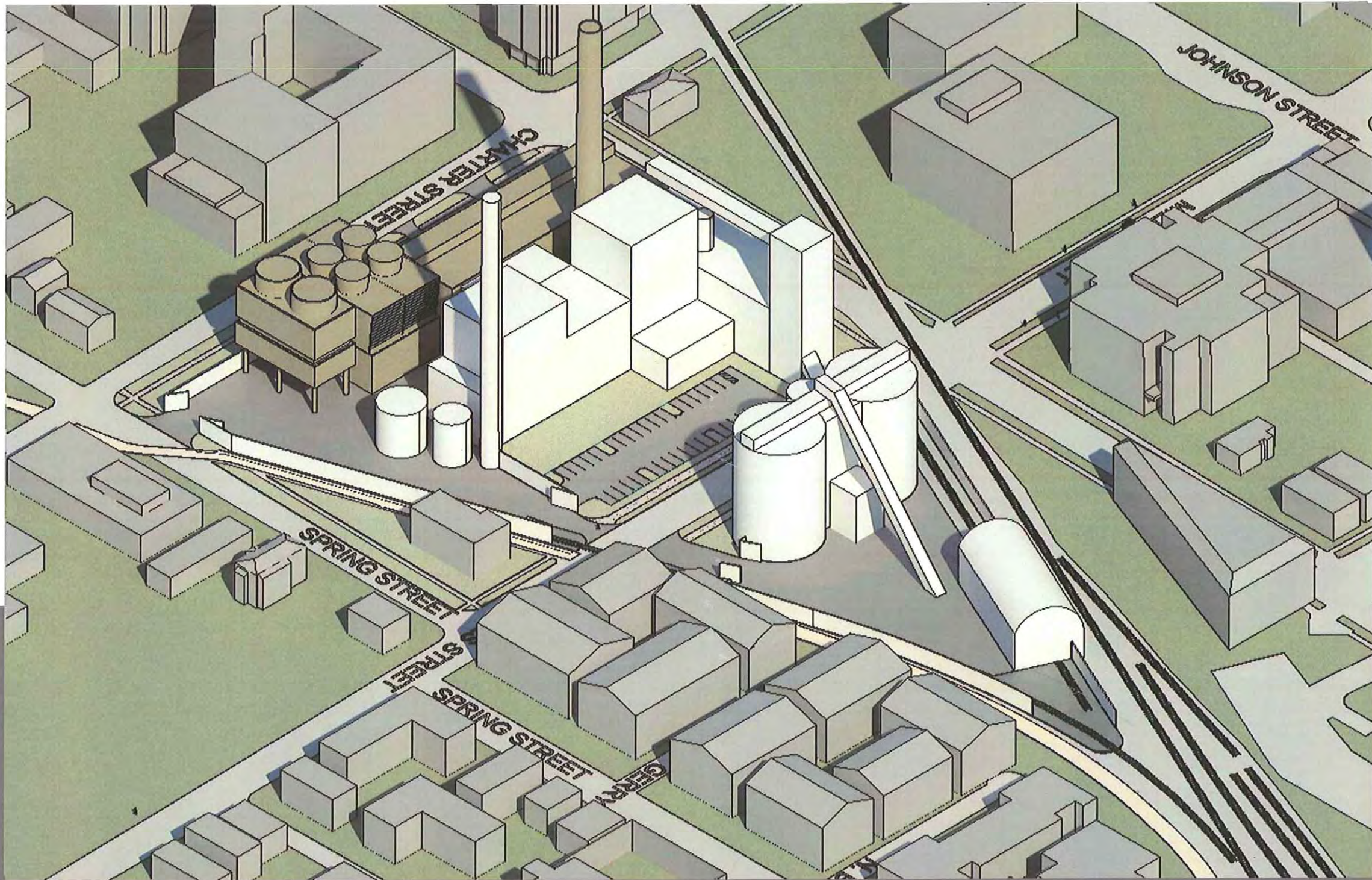


Potter Lawson
Success by Design



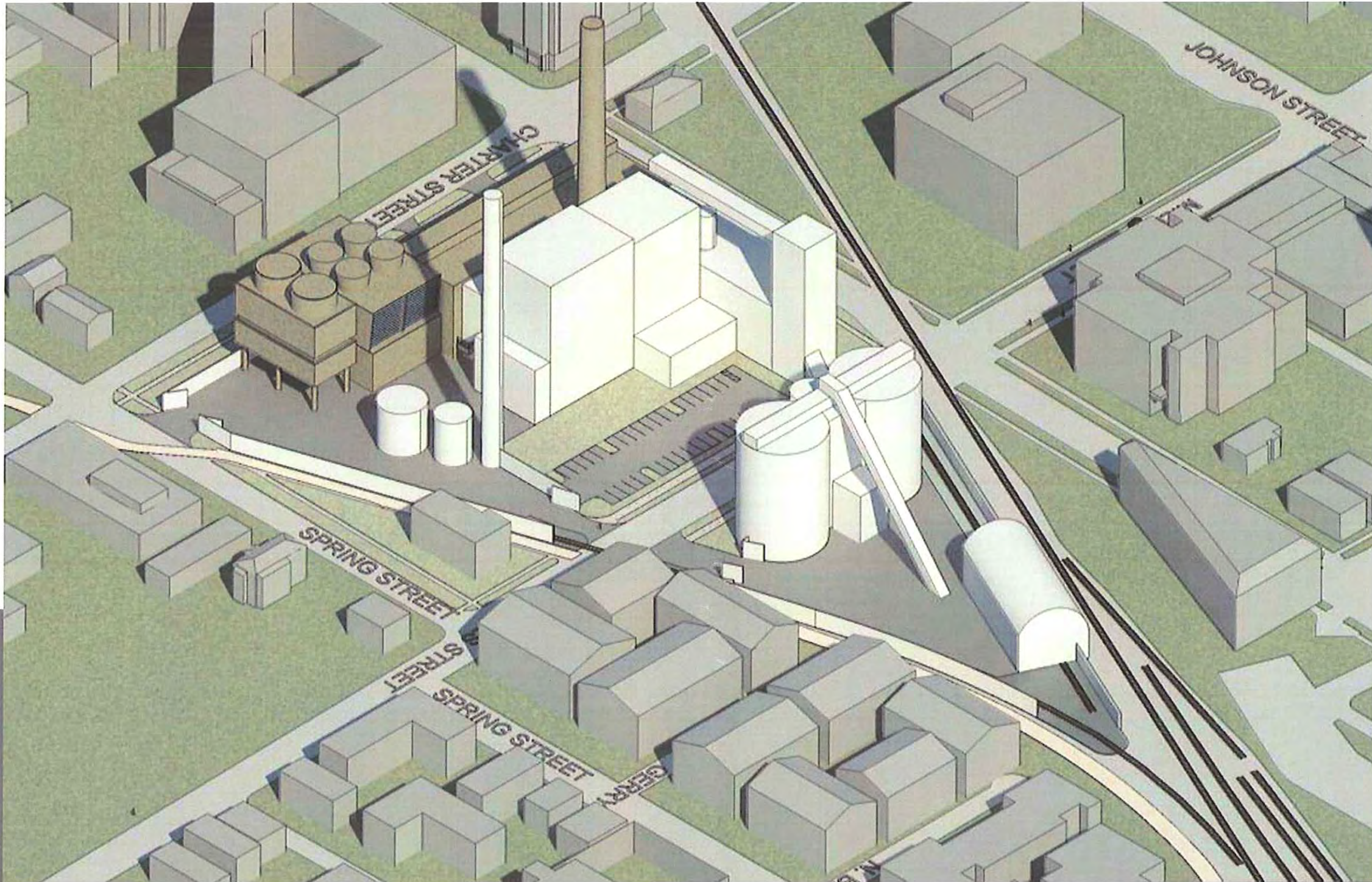
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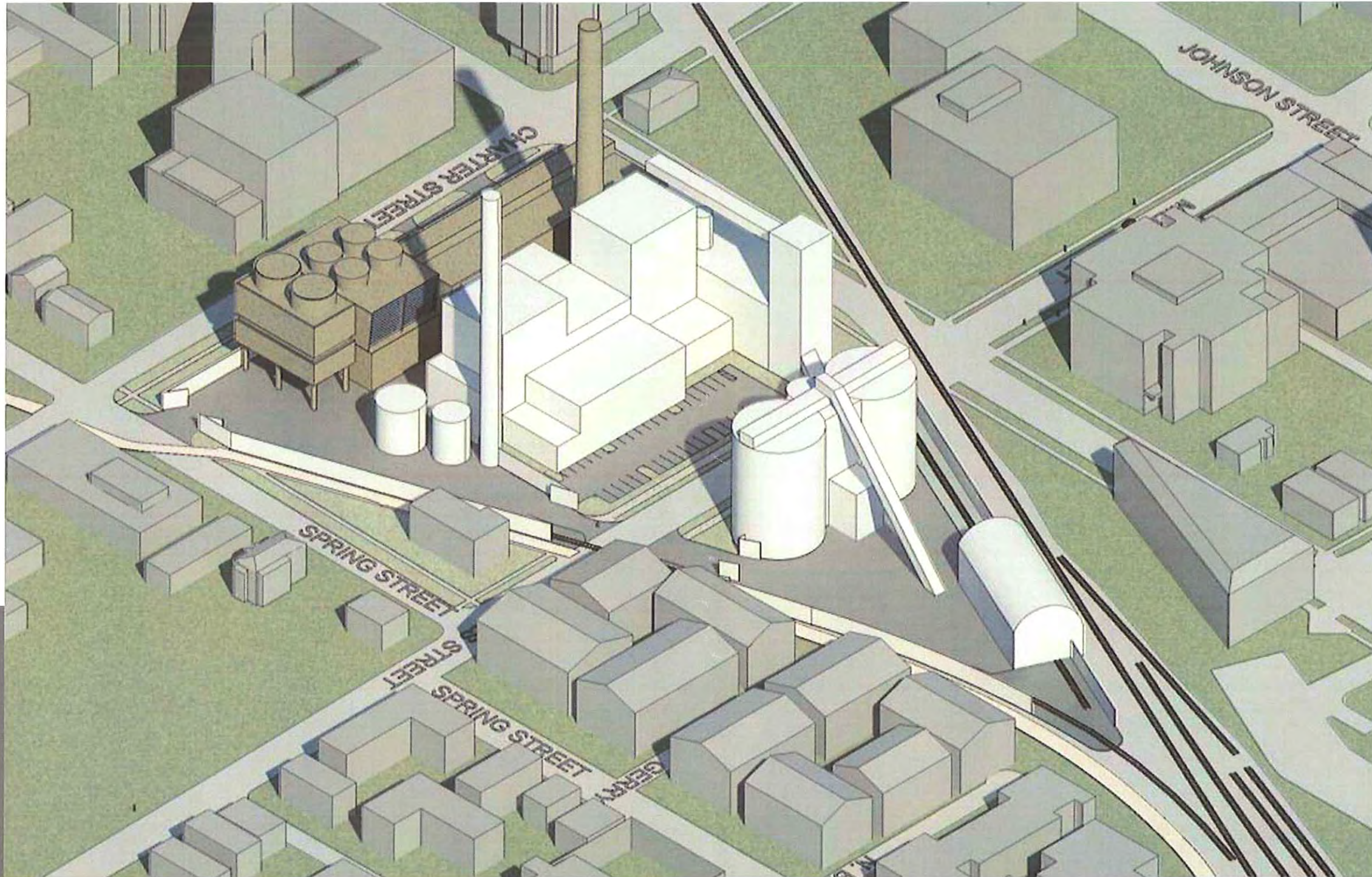
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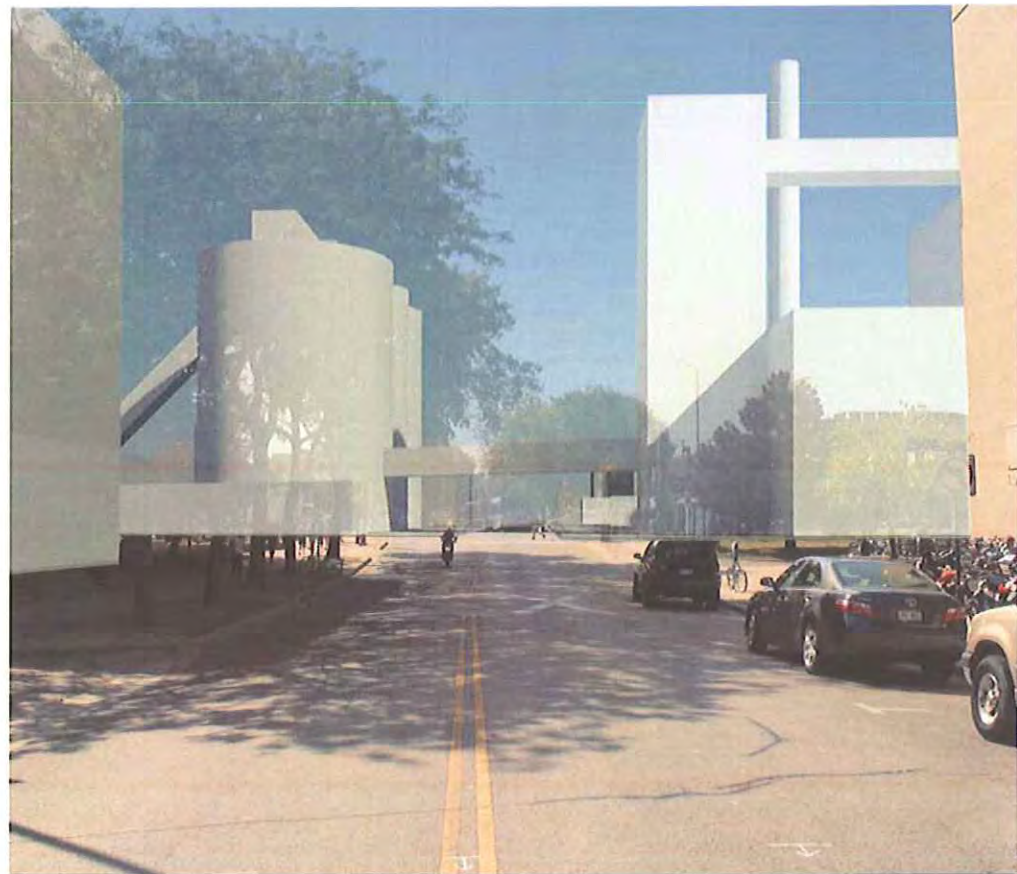


Urban Design Informational Meeting October 21, 2009



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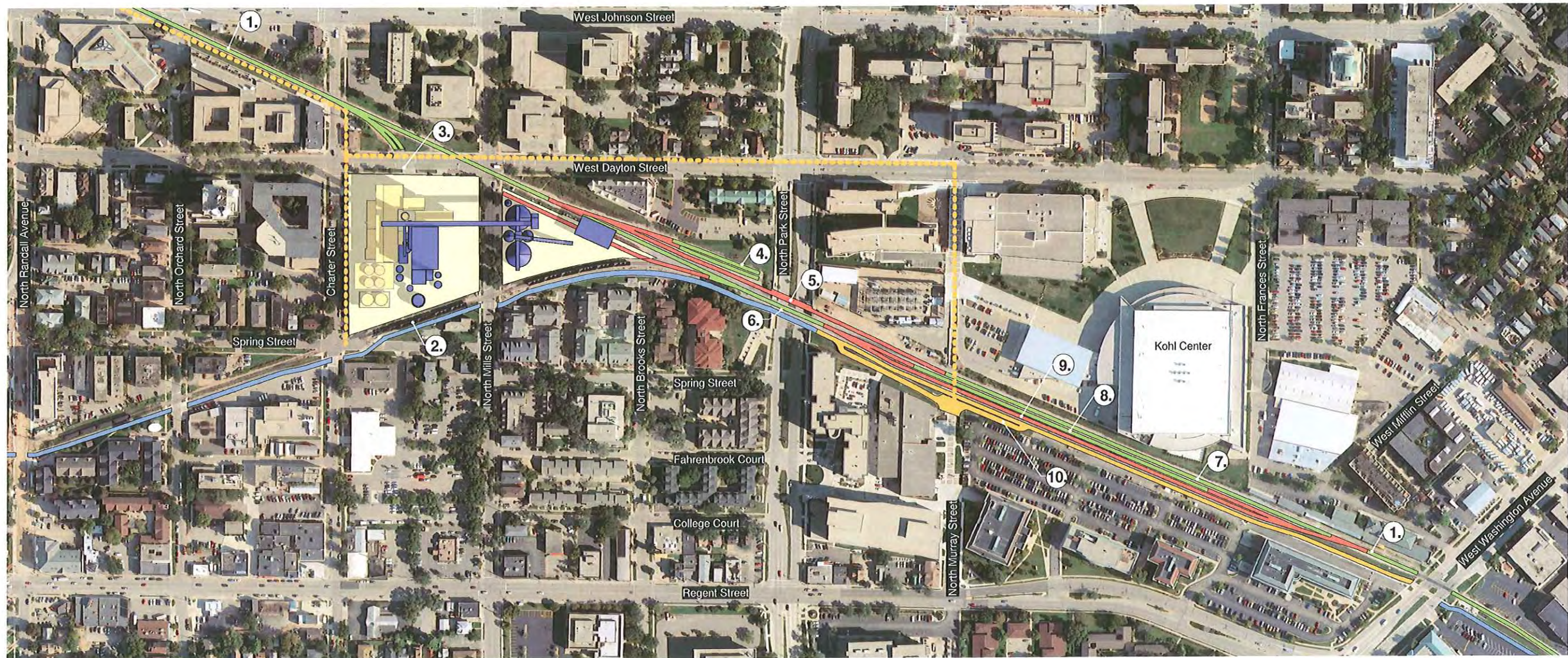
Charter Street Heating Plant UW MADISON

Four small architectural renderings arranged in a row. From left to right: 1. A close-up view of a white cylindrical structure. 2. A perspective view of the heating plant and surrounding buildings. 3. A perspective view of the heating plant and surrounding buildings from a different angle. 4. A perspective view of the heating plant and surrounding buildings from a different angle.

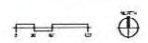
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Potter Lawson
Success by Design

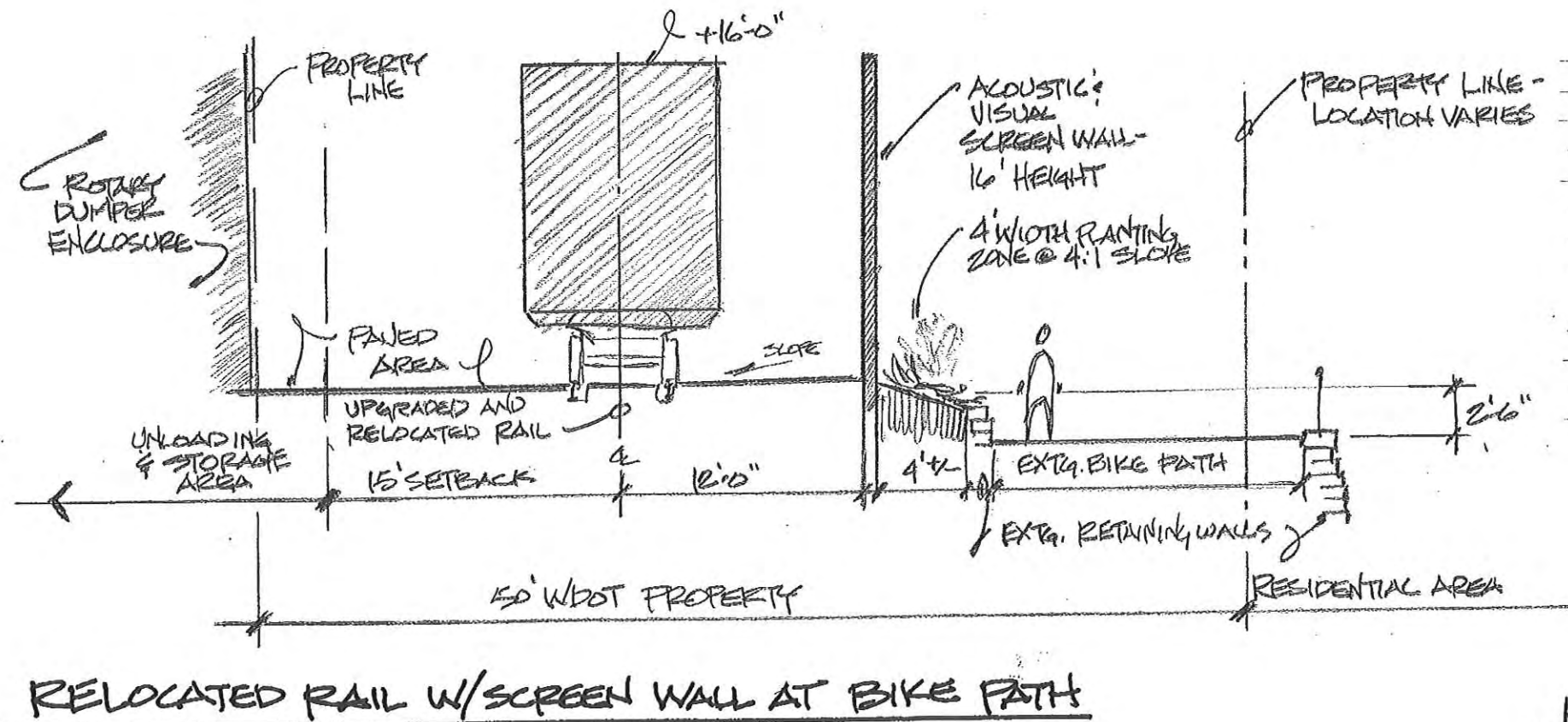
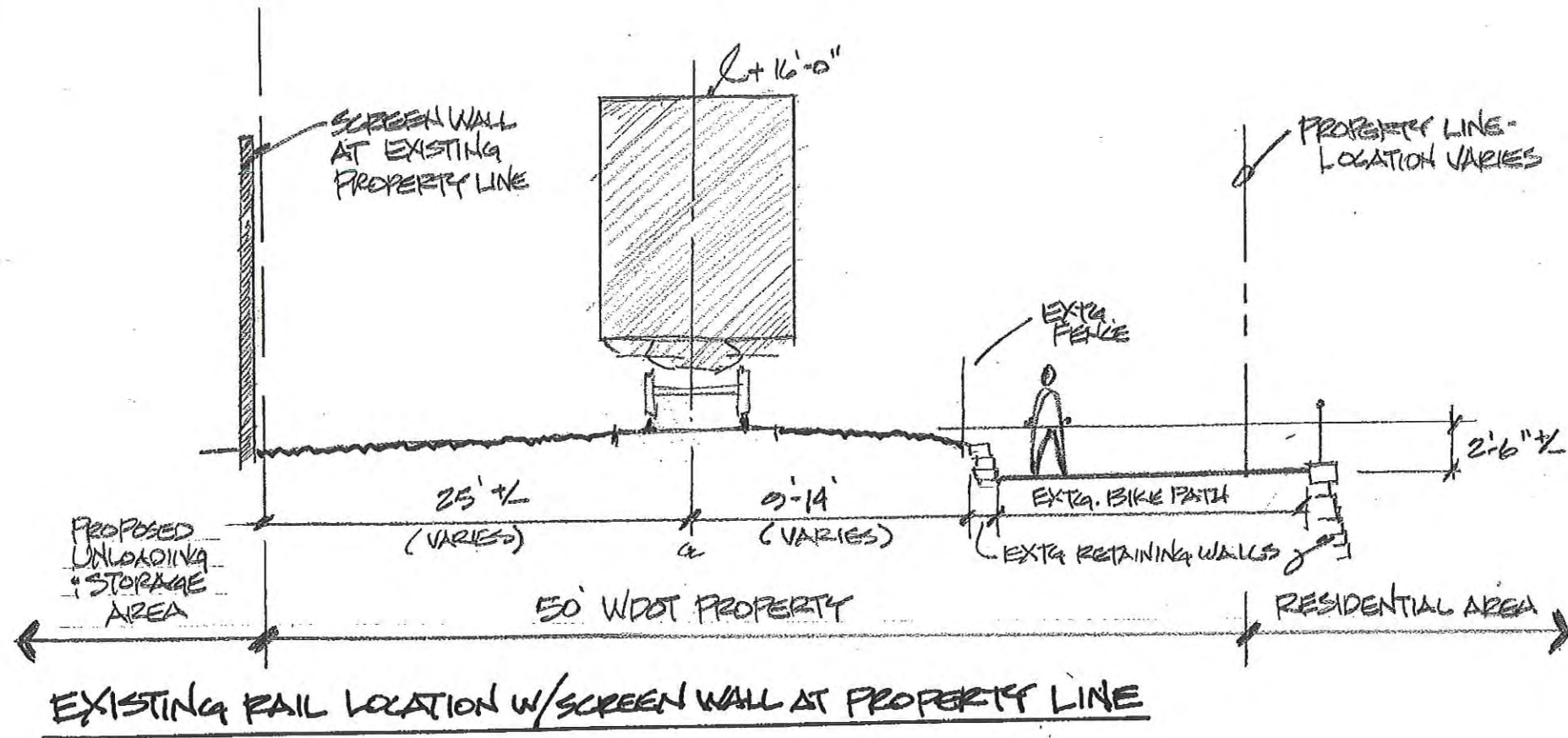


University of Wisconsin - Charter Street Heating Plant
Option 2



Legend			
	Existing Buildings		Existing Railroad
	New Buildings		New Railroad
	Existing Bike Path		New Bike Path
	Heating Plant Site		Future Bike Path

- Notes**
- Existing main rail of Wisconsin & Southern Railroad
 - Remove existing rail siding
 - Existing rail spur/grade crossing (to be abandoned)
 - Existing rail spurs remain as is
 - Widen bridge over Park Street (for new main line)
 - Existing railroad and bike path bridge remain (as is)
 - Existing main line for Wisconsin & Southern Railroad
 - Railroad siding (16 full cars, 72' long)
 - Railroad siding (16 empty cars, 72' long)
 - Relocated / reconstructed bike path



- MOVING SCREEN WALL BETWEEN PATH AND RAIL PROVIDES ACOUSTIC AND VISUAL SCREENING OF MILLS STREET SITE RELATED RAIL OPERATIONS
- ADDRESSES REAL URBAN DESIGN ELEMENTS - IMPROVED AESTHETICS, VEGETATION, POTENTIAL FOR LIGHTING ALONG PATHWAY
- FAVED AREA ADJACENT TO RAIL PROVIDES MORE USABLE SITE AREA FOR TRUCK TURNING MOVEMENTS AND FIRE LANE

M.L. 9.22.09
 SECTIONS AT
 MILLS STREET SITE -
 CHARTER STREET
 HEATING PLANT REBUILD
 PROJECT 09A2L