



W SWAN BLVD
 NB US45
 SB US45
 W SWAN BLVD ONR 40 OFRD

W WATERBURY PLANK RD

100

45

45

10157

10540

10190

10200

10210

1025

1055

1000

1035

10200

W 100TH ST

REEK

Milwaukee County Steam

Kittson, Terry D - DOT to: Greg.High@milwcnty.com

08/17/2012 09:28 AM

Cc: "Peterson, Claudia - DOT", "Andersen, Craig - DOT"

Gregg: I assume you have the two studies that were done on the steam lines serving the Milwaukee County facilities east of Hwy 100 and west of US 45. If not please let me know and I can give you copies. Per Claudia Peterson and the meeting yesterday we need to have you start on the engineer solicitation, design and construction of the boiler replacements as soon as possible. We need this work completed by September of 2013. WisDOT agrees to pay Milwaukee County for the design and construction of this work as a cost to cure real estate transaction.

Terry Kittson, PE

DTSD SE

SE Region Utility Supervisor

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Steam and Chilled Water Utility Services --- Project Review and Cost Summary

May 16, 2013

This report presents a detailed review of those buildings west of Hwy 41/45 currently being serviced by the We Energies utility plant for both steam and chilled water to determine the cost of implementing independent heating and cooling systems to support their ongoing operations.

Prepared for Wisconsin Department of Transportation
WisDOT Project ID: 1060-33-07

by Rick Schuster, MRS Enterprises (Wauwatosa, WI)

Executive Summary

A complete review of five existing buildings currently being serviced by the We Energies central utility plant has been completed to determine the technical requirements and costs to implement independent heating and cooling systems at each building. The central utility plant provides steam for all heating needs and chilled water for cooling at the Children's Court building only. The following table describes the systems designed for installation and the related implementation price.

<u>Building and System</u>	<u>Price</u>
Children's Court Cooling	\$1,294,098
Children's Court Heating (including domestic hot water)	\$ 398,983
Fleet Garage/Sheriff's Bldg Heating	\$ 460,223
Technology Innovation Center Heating (including domestic hot water)	\$ 355,678
Fire Station Heating	\$ 183,166
M-10 Building Heating	<u>\$ 52,723</u>
TOTAL	\$2,744,871

The development team that reviewed each building to determine system design included representatives from Johnson Controls, Ring & DuChateau Engineering and MRS Enterprises. Detailed descriptions of the new independent systems proposed for each building are described in the balance of this report. In addition, the team determined an estimated annual energy cost savings to be over \$410,000 using current steam, chilled water, electrical and natural gas rates associated with these five buildings.



collaborate / formulate / innovate

Feasibility Analysis Report

**USH 45 - UNDERGROUND STEAM/CHILLED WATER
TRENCHBOX
MILWAUKEE COUNTY FACILITIES WEST OF USH 45
MILWAUKEE COUNTY
PROJECT ID: 1060-33-07**

Prepared For:

**SE Region – Wisconsin Department of Transportation
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June 11, 2012

Part I. Executive Summary

Project Objectives

The purpose of this analysis is to provide an outline of requirements necessary to remove the Milwaukee County buildings, located West of USH 45 off of Watertown Plank Road, from the grounds Central Energy Plant, located East of USH 45 off of Watertown Plank Road, and to provide an opinion of cost necessary to accomplish the work. This action will allow the existing concrete Trenchbox and piping running below USH 45 to be abandoned in place or demolished to assist in the re-construction of the USH 45/Watertown Plank Road interchange.

Mechanical Summary

As part of our site investigation we located an existing space within each building that we believe is a viable space to use as a boiler/equipment room. Final locations of all equipment spaces must be confirmed with building operation staff.

Part IV. Opinions of Cost

The following opinions of cost are based on estimates of preliminary sizing of equipment, piping and accessories required for a complete and operating individual heating and cooling systems, including mechanical, electrical, control, plumbing, and minor architectural, where applicable, work.

Boiler and equipment sizing estimates are based on a combination of factors including historical energy usage for the past four years obtained from WEnergies, using square foot energy usage factors typically seen for the type of buildings present and summing of existing equipment (heat exchangers, pumps, pipe sizes and original equipment schedules) obtained from original plans or at the site. We then compared the totals of these results and used our best judgment to determine the initial size of equipment required for each building.

Our estimates do not include abatement of or demolition of underground piping and trenchbox's, project design fees, AHJ submittal fees, permit fees or construction administration fees.

Fleet Maintenance (1)	\$ 533,000.00
Sherriff's Office (2)	\$ 128,000.00
Children's Court – Boiler (3)	\$ 432,000.00
Children's Court – Water Chiller (3)	\$ 580,000.00
Pump House (WE) (4)	\$ 67,000.00
Fire Station (Wauwatosa) (5)	\$ 95,000.00
Muirdale (Research Park) (6)	<u>\$ 388,000.00</u>
Total	\$2,223,000.00