

WEDNESDAY – MAY 30, 2012



Jefferson County
Jefferson, Wisconsin



Highway Department Facility Study

Highway Department Facility Study

Phase 1 | Needs Assessment

Existing Facility Analysis

1. General Comment
 - a. Piecemeal layout and outdated facilities lack functional efficiency
2. Department Administration
 - a. Office area inefficiently dispersed among different buildings and levels
 - b. Evolved building layout with inadequate way finding / signage
3. Vehicle Maintenance:
 - a. Building shell poorly insulated and past its normal life expectancy.
 - b. Inefficient layout and inadequate height for vehicle lifts
4. Vehicle Storage
 - a. Building shell poorly insulated and past its normal life expectancy.
 - b. Inefficient shop and sign space

Summary: Within the 75 year old facility safety, maintenance and programmatic challenges are currently experienced in all areas



Highway Department Facility Study

Community Growth



Joint County Committee Review



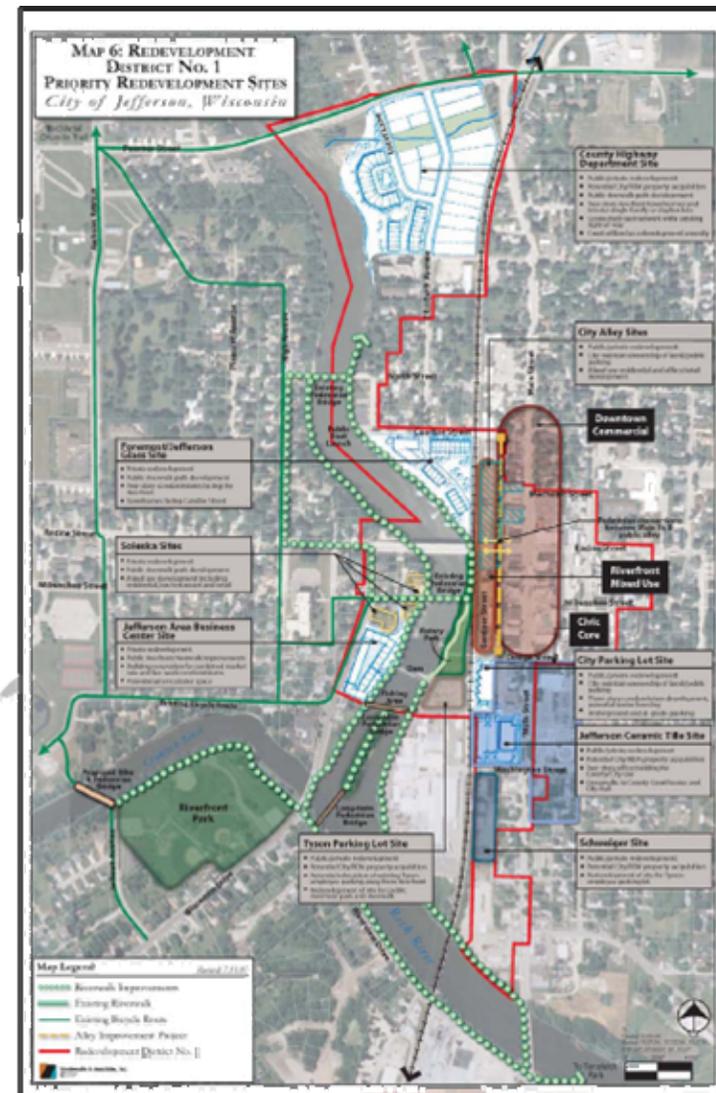
Highway Department Facility Study

Phase 2 | Site Assessment

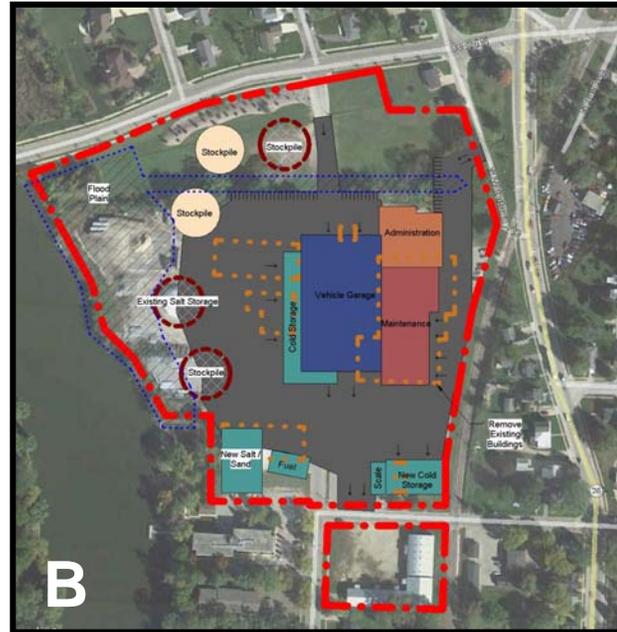
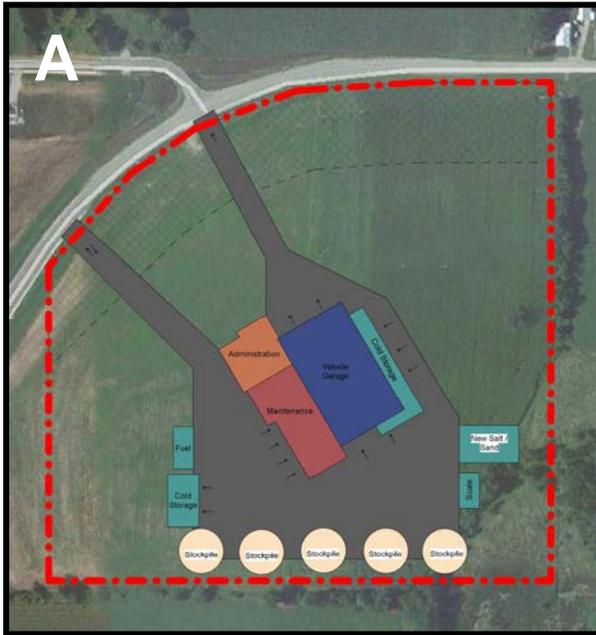
Existing Site Analysis

1. Total of 15 acres with 3 acres of residential screening and unusable wetland drainage
2. Site originally located on the outskirts of the City directly adjacent to Highway 26
 - a. City has grown to surround the existing site
 - b. New bypass added several miles through the City to each trip
3. No room for expansion – building or yard
4. Highway Department site identified as “blight” in City’s redevelopment plan
5. Highway Department use does not fit with City’s redevelopment plan

Summary: The current highway department does not fit into the City of Jefferson’s redevelopment plan.



Highway Department Facility Study



Site Summary:

Site Option	Building Cost	Site Cost	<u>Total Estimate</u>
Site A – Junction Road	\$12,048,900	\$3,654,200	\$15,703,100
Site B – Puerner Street	\$12,048,900	\$5,563,000	\$17,739,400
Site C – County Farm	\$12,048,900	\$1,527,700	\$13,576,600

Joint County Committee Review



Highway Department Facility Study

Recommendations

Proceed with acquisition of one of two new sites under consideration

- A. Junction Road
- C. County Farm

Considerations / Rationale

1. Detailed conversation related to utility extension cost needs to occur for sites A and C
2. Discussion with Site A land owner to determine interest in sale
3. Further evaluation of Site C master plan to determine suitability of Highway Department use and final location of 40 acre parcel
4. Commitment to further exploration of two new sites allows County to proceed with more detailed analysis



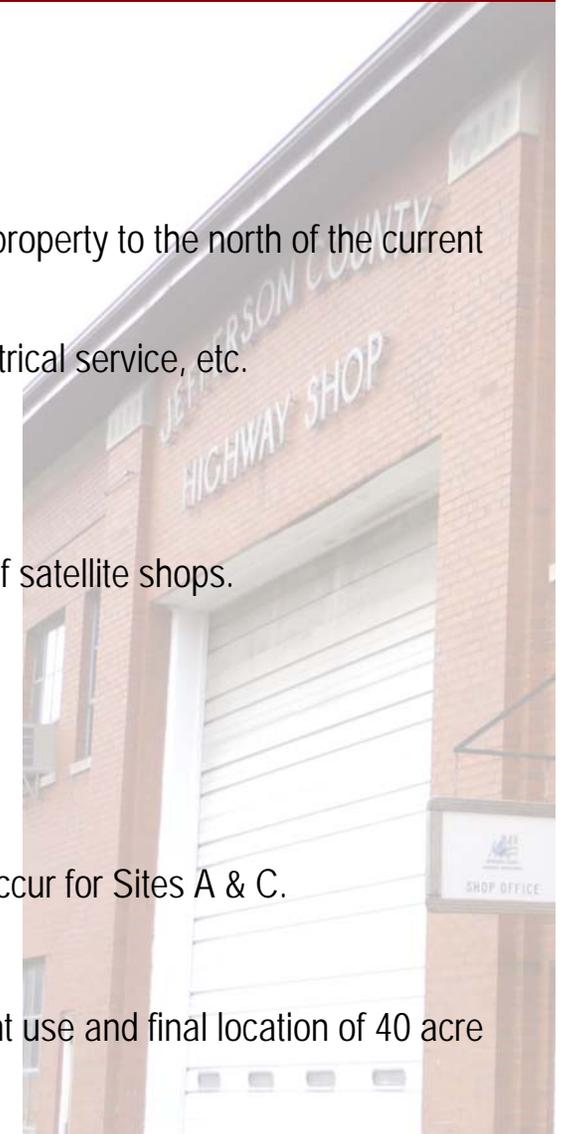
Highway Department Facility Study

Resolution No. 2011-84

1. Techniques for efficient use of outdoor space.
2. Use of county property south of Woolcock Street, and the potential use of the county property to the north of the current highway shop.
3. Cost of repairing the roof and bring the property up to code with regard to HVAC, electrical service, etc.
4. Remodeling options presented in the SEH study in 2008.
5. Removing fuel storage from site by contracting through Farmco or others.
6. Decrease square footage more in line with the SEH study, considering the potential of satellite shops.
7. Potential multi-story area for offices.
8. Any other possible solutions.

Resolution No. 2011-80

1. Detailed conversation (with city of Jefferson) related to utility extension cost need to occur for Sites A & C.
2. Discussion with Site A landowner to determine interest in land sale.
3. Further evaluation of Site C master plan to determine suitability of highway department use and final location of 40 acre parcel.



Highway Department Facility Study

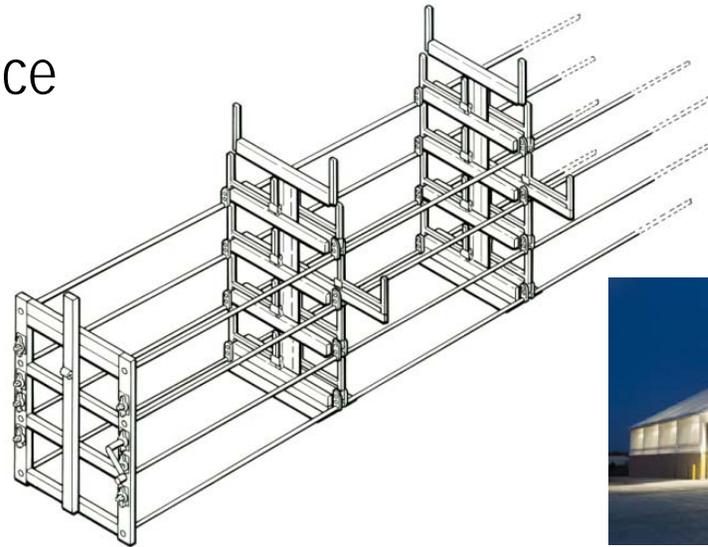
#1 Efficient Use of Outdoor Space

Positives

1. Limited reduction in outdoor requirements

Challenges

1. Primary storage requirements (salt, sand, gravel, and road patch) do not stack easily
2. Guardrails, culvers, and timbers require expensive specialized racking system
3. Storage systems require additional maintenance and/or protection from weather
4. Difficult to justify additional expense to store inexpensive materials



Resolution No. 2011-84

1. Techniques for efficient use of outdoor space.

Highway Department Facility Study

#2 Underutilized Property

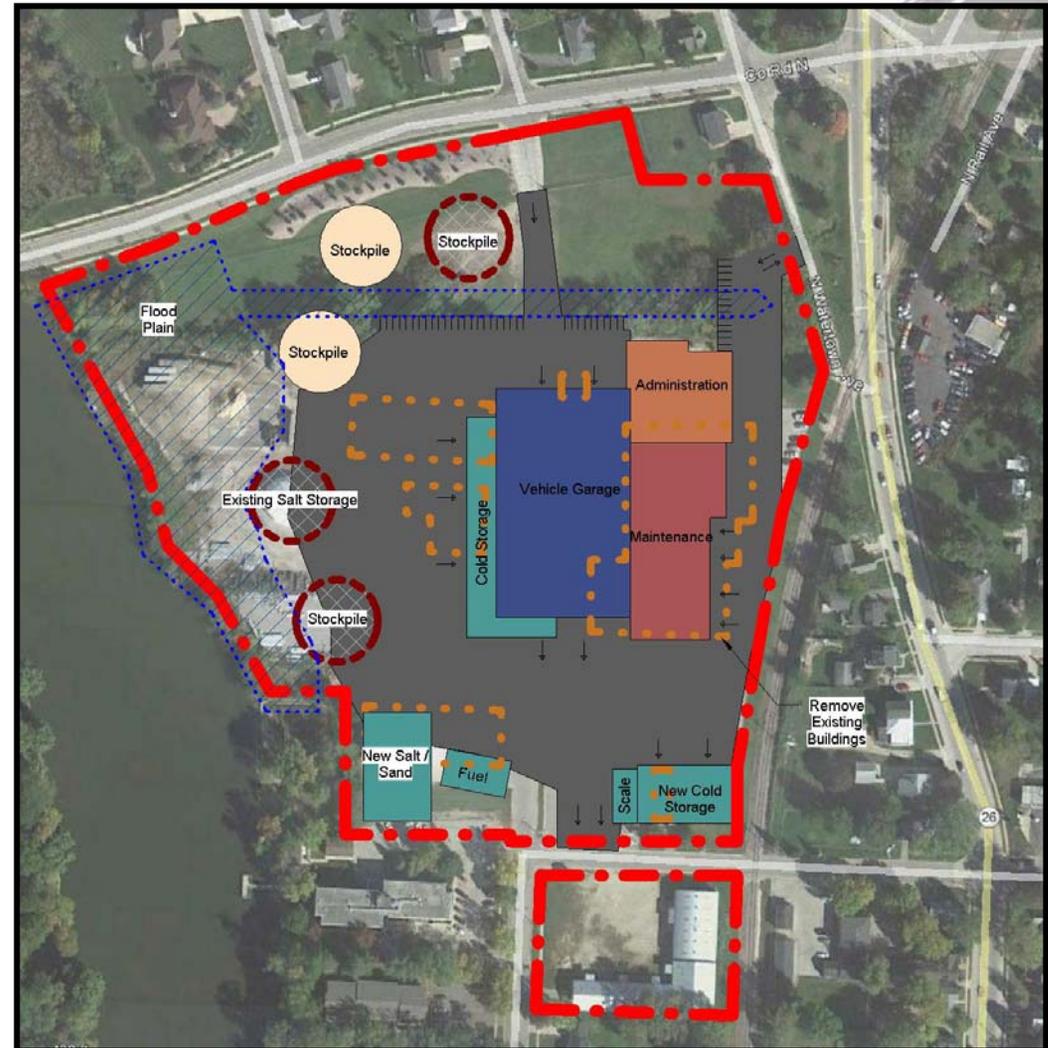
Site B-1: Puerner Street New

Positives

1. Site is already under County control with no purchase concerns.

Challenges

1. Uncertain soils and water table for new construction.
2. Expensive relocation of major underground utilities.
3. Larger distance from highway and heavy truck traffic through the City of Jefferson.
4. Site cannot accommodate proper yard functions and there is no possibility of future expansion.
5. Temporary facilities are needed during construction.
6. Site cannot accommodate 40 acre target size.
7. Highway Department does not fit with city's redevelopment plan.
8. Floodplain reduces useful site area by an additional 3 acres.
9. Construction near river brings DNR permitting concerns.
10. Adjacency to residential neighborhoods.



Highway Department Facility Study

Building to Yard Ratio

Building Features

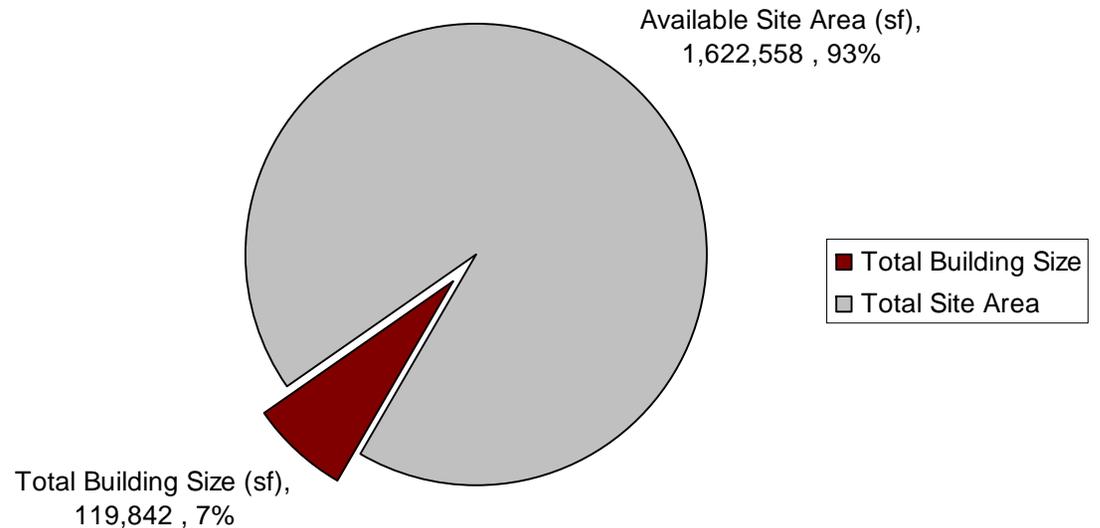
1. 104,000 square foot conditioned building
2. 20,000 square feet of attached cold storage
3. Efficient plan with limited circulation space
4. Maximizes efficient vehicle storage and maintenance

Site Features

1. 40 Acres = 1,742,400 Square feet
2. Storage for salt, sand, fuel, and road supplies
3. Allows clearances for vehicle movement and material delivery

Site Analysis

1. Building is primary driver of project costs
2. Yard requirements drive site size and selection



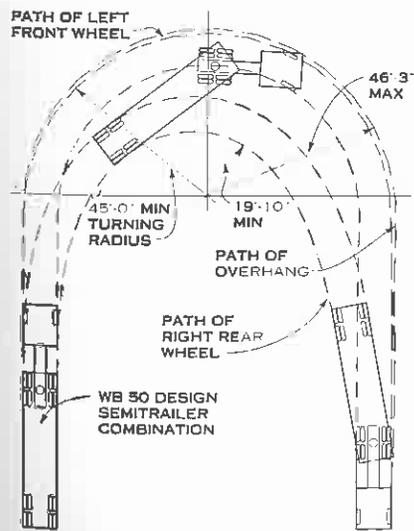
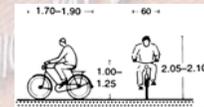
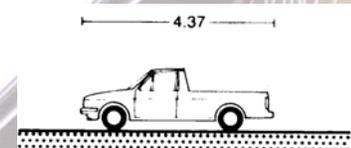
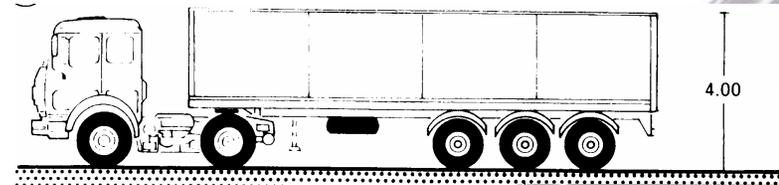
Highway Dept. Site to Building Ratio

Highway Department Facility Study

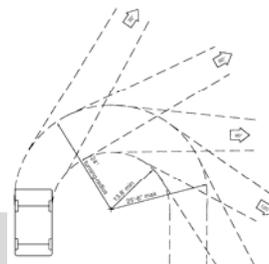
Conceptual Yard Operation

Yard Features

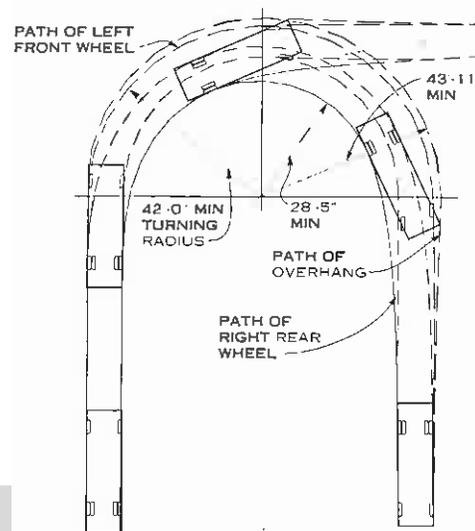
1. Vehicles delivering salt and other materials can range in size between 40' and 60' long.
2. These large vehicles require extra yard space in order to both move around the yard and to maneuver to efficiently load and unload materials



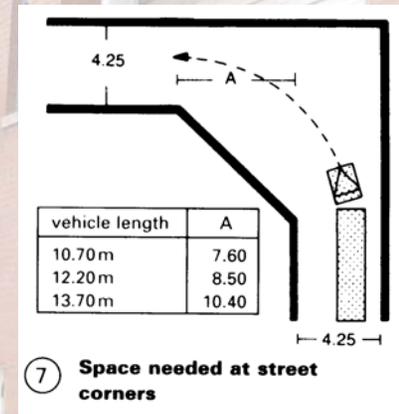
Truck Turning Radius



Car Turning Radius



Truck Turning Radius



Highway Department Facility Study

#2 Underutilized Property

Site B-2: Puerner Street New

Positives

1. Maximizes Yard Area
2. Minimizes wetland disturbance
3. Minimizes utility relocation
4. Utilizes area north of wetlands

Challenges

1. Inefficient separation of admin from work areas
2. Yard area requires complex vehicle maneuvering
3. Restrictions to garage access causes inefficient vehicle movement
4. Yard area still insufficient to meet storage needs

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2. Use of county property south of Woolcock Street, and the potential use of the county property to the north of the current highway shop.



Joint County Committee Review



Highway Department Facility Study

#2 Underutilized Property

Site B-3: Puerner Street New

Positives

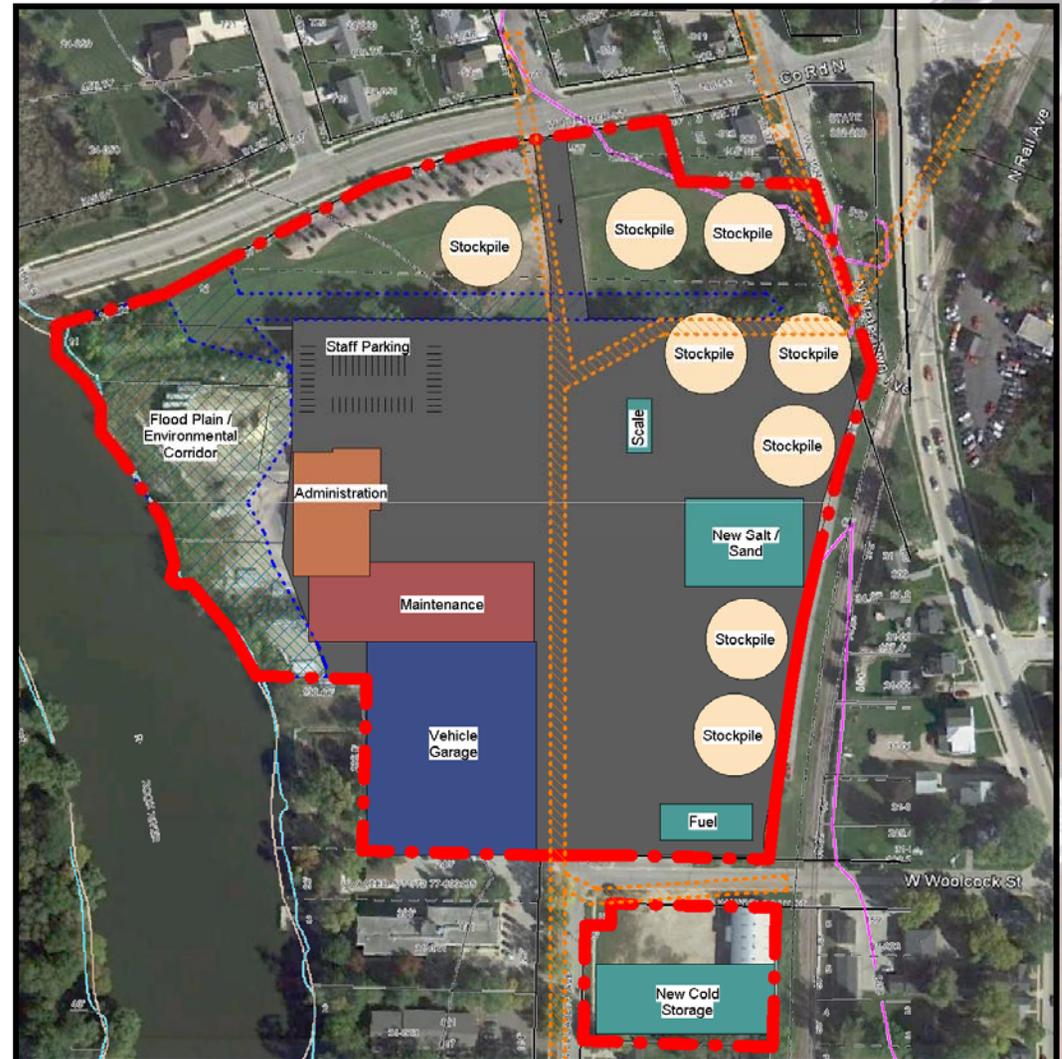
1. Maximizes Yard Area
2. Minimizes wetland disturbance
3. Minimizes utility relocation
4. Utilizes area north of wetlands

Challenges

1. Places material stockpile near residential areas
2. Yard area requires complex vehicle maneuvering
3. Restrictions to garage access causes inefficient vehicle movement
4. Size and scale of building present concerns being located near an environmental corridor

Resolution No. 2011-84

2. Use of county property south of Woolcock Street, and the potential use of the county property to the north of the current highway shop.



Highway Department Facility Study

#2 Underutilized Property

Site B-4: Puerner Street New

Positives

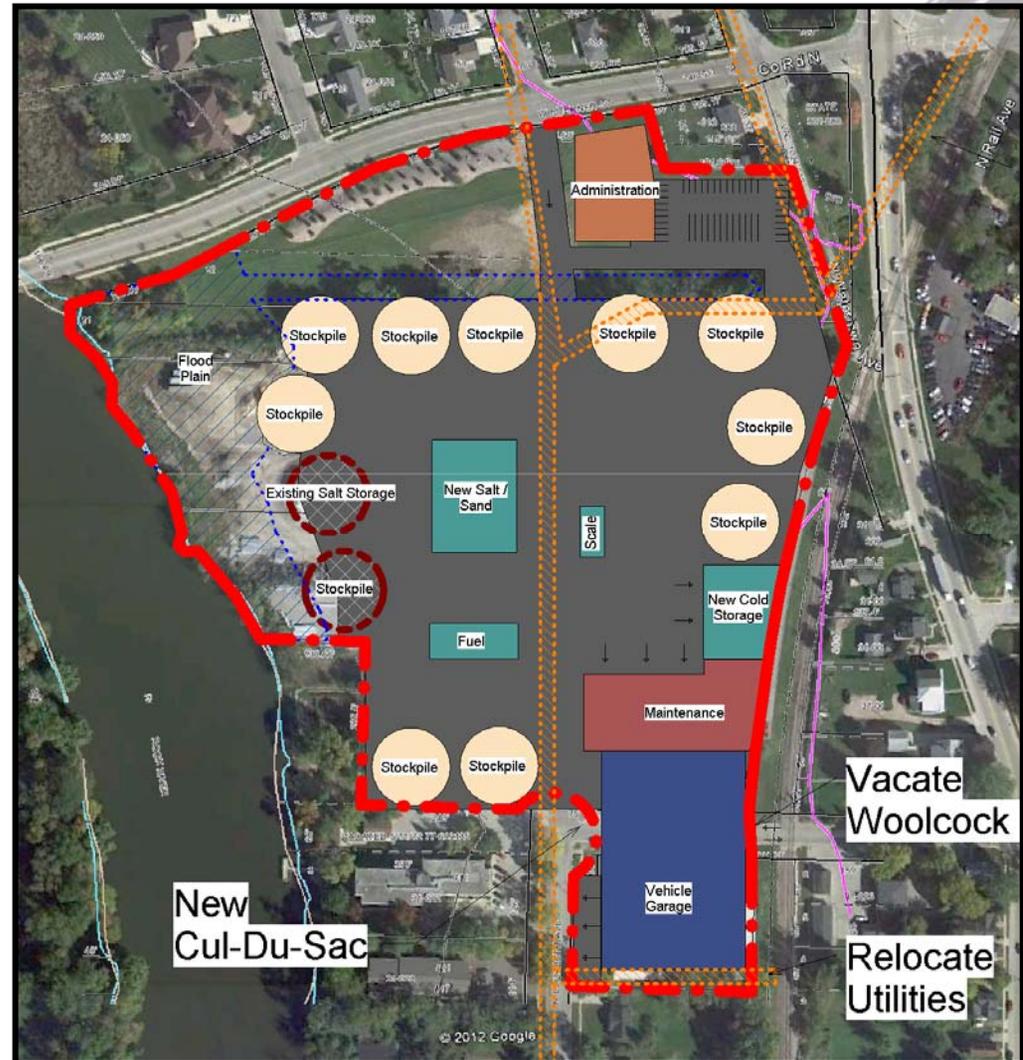
1. Maximizes Yard Area
2. Minimizes wetland disturbance
3. Minimizes utility relocation
4. Utilizes area north of wetlands & south of Woolcock

Challenges

1. Inefficient separation of admin from work areas
2. Yard area requires complex vehicle maneuvering
3. Restrictions to garage access causes inefficient vehicle movement
4. Requires city permission to vacate Woolcock St

Resolution No. 2011-84

2. Use of county property south of Woolcock Street, and the potential use of the county property to the north of the current highway shop.



Highway Department Facility Study

#3 Existing Building Assessment

Structural

1. Original building has multiple leaks and possible dry rot of roof joists
2. Standing seam additions suffer from roof leaks and rust through of roof panels
3. Roof leaks have damaged fiberglass roof insulation which further exacerbates roof problems

HVAC

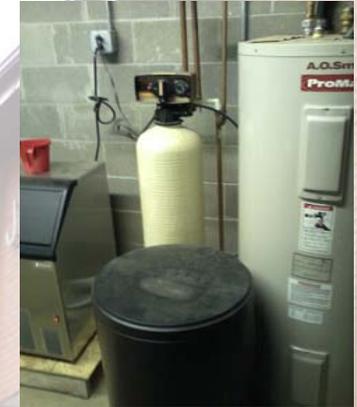
1. Garage heaters have exceed their life expectancy
2. Existing controls do no allow for acceptable levels of user comfort
3. Garage exhaust fans should be replaced

Electrical

1. Replace aging generator
2. Aging switchgear is not compliant and should be replaced
3. Several circuits are overloaded and should be reconfigured

Plumbing

1. Existing fixtures should be replaced with ADA compliant fixtures
2. Aging galvanized pipe should be replaced with copper pipe and fittings



Resolution No. 2011-84

3. Cost of repairing the roof and bring the property up to code with regard to HVAC, electrical service, etc.

Highway Department Facility Study

#4 Existing Building Remodeling

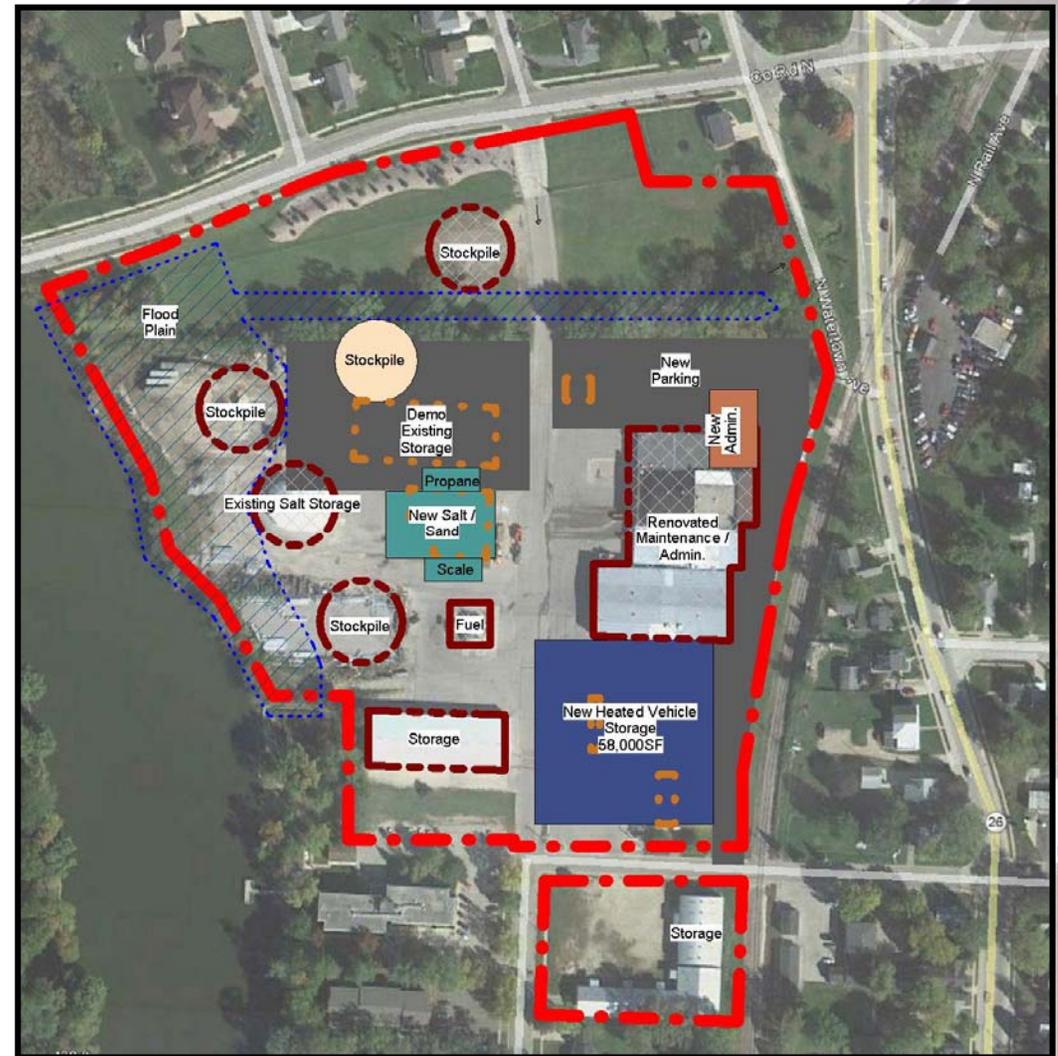
New Construction

Office / Administration	4,500 sf = \$670,100
Vehicle Storage	59,270 sf = \$4,815,700
Vehicle Maintenance	28,800 sf = \$2,224,800
Storage & Misc. Equip.	\$495,000
General Cond. / Conting. / Soft Costs	\$1,239,400

Site Construction

Earthwork	12 acres @ \$117,700
Site Improvements	12 acres @ \$272,500
Specialties	12 acres @ \$589,000
Purchase & Improvements	12 acres @ \$791,600
Contingency	\$49,000

Total Option Cost Estimate \$11,264,800



Resolution No. 2011-84
4. Remodeling options presented in the SEH study in 2008.

Highway Department Facility Study

#4 Existing Building Remodeling

Deviations from Prior Plan

1. Both studies are programmatically similar
2. Garage space in 2012 study sized for current vehicle and equipment needs
3. Minimal office / restroom remodeling

Bray | 2012

Office / Administration	4,500 sf	\$670,100
Vehicle Storage	59,270 sf	\$4,815,700
Vehicle Maintenance	28,800, sf	\$2,224,800
Storage & Misc. Equip.	-	\$495,000
General Cond. / Soft Costs	-	\$1,239,400
Totals	92,570 sf	\$9,445,000

SEH | 2010

Office / Administration	4,000 sf	\$600,000
Vehicle Storage	56,000 sf	\$5,600,000
Vehicle Maintenance	28,800 sf	\$2,592,000
Storage & Misc. Equip.	-	-
General Cond. / Soft Costs	-	\$1,336,200
Totals	88,800 sf	\$10,128,200

Resolution No. 2011-84

4. Remodeling options presented in the SEH study in 2008.

Joint County Committee Review



Highway Department Facility Study

#5 Off Site Fueling

Positives

1. Removes .5 acres from yard program

Challenges

1. Fuel price increase due to overhead and profit
2. Reduced supervision of fuel distribution
3. Concerns about fuel access while business is closed or in emergency situations



Resolution No. 2011-84

5. Removing fuel storage from site by contracting through Farmco or others.

Highway Department Facility Study

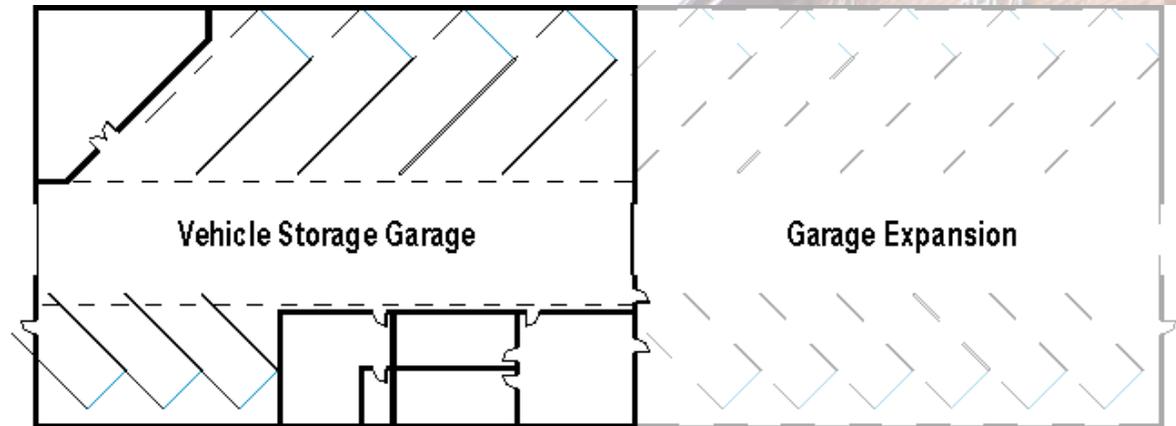
#6 Reduce Square Footage

Positives

1. Reduction in building square footage

Challenges

1. Satellite sites are not large enough to accommodate vehicle circulation and an expanded building footprint
2. Satellite shop system is designed to accommodate the routes served near the shop. Locating additional vehicles and equipment decreases staff efficiency.
3. Does not effect yard requirements



Resolution No. 2011-84

6. Decrease square footage more in line with the SEH study, considering the potential of satellite shops.

Highway Department Facility Study

#6 Reduce Square Footage

Deviations from Prior Plan

1. Both studies are programmatically similar
2. Garage space in 2012 study sized for current vehicle and equipment needs
3. Added room in the office for a staff training area
4. Added Committee Meeting room
5. Reconfigured EOC to provide flexible collaboration space to function as EOC

Resolution No. 2011-84

6. Decrease square footage more in line with the SEH study, considering the potential of satellite shops.

Bray | 2012

Office / Administration	16,382 sf	\$2,133,800
Vehicle Storage	59,270 sf	\$4,815,700
Vehicle Maintenance	28,634, sf	\$2,412,300
Storage & Misc. Equip.	20,000 sf	\$1,475,000
General Cond. / Soft Costs	-	\$1,502,600
Totals	124,232 sf	\$12,339,400

SEH | 2010

Office / Administration	4,180 sf	\$627,000
Vehicle Storage	55,700 sf	\$5,380,000
Vehicle Maintenance	24,420 sf	\$2,686,200
Storage & Misc. Equip.	20,500 sf	\$922,500
General Cond. / Soft Costs	-	\$1,613,300
Totals	104,800 sf	\$11,419,000

Highway Department Facility Study

#7 Building Plan Options

Building Features

1. 104,000 square foot conditioned building
2. 20,000 square feet of attached cold storage
3. Efficient plan with limited circulation space
4. Maximizes efficient vehicle storage and maintenance
5. Does not include Sheriff's Department maintenance bay
6. Maintains ability for future addition of vehicle storage, maintenance or administration space

Deviations from Prior Plan

1. Cold storage attached to building for structural and operational efficiency
2. Office area utilizes open work areas with increased flexibility in lieu of traditional offices
3. Eliminated dedicated EOC and provides flexible collaboration space to function as EOC

Resolution No. 2011-84

7. Potential multi-story area for offices.



Highway Department Facility Study

#7 Building Plan Options

Two Story Option

Positives

1. Removes 14,000 SF (.26 acres) from building footprint

Challenges

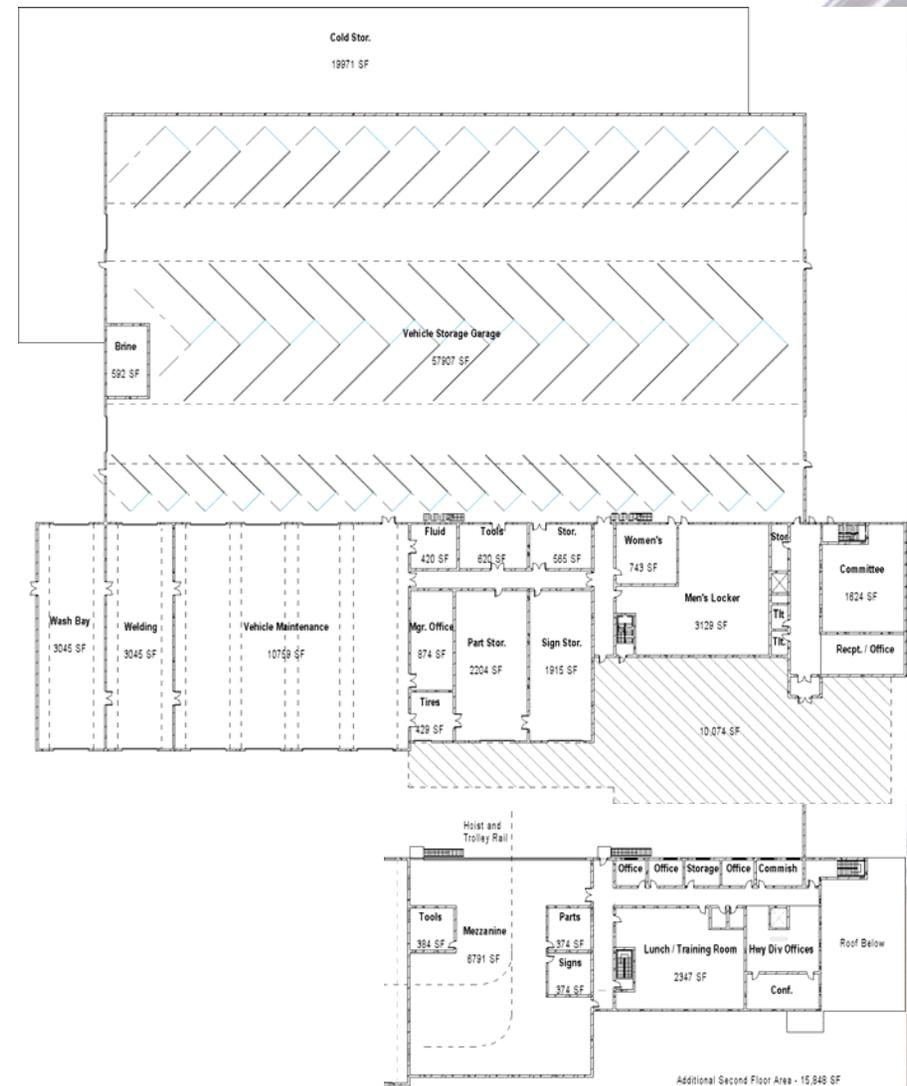
1. Adds 2,000 SF to total building area
2. Adds expensive precast construction requirements
3. Separates administration from everyday staff operations
4. Mezzanine storage not as useful or efficient as ground based storage
5. Adds expensive circulation systems

Option Analysis

1. Building is primary driver of project costs
2. Yard requirements drive site size and selection

Resolution No. 2011-84

7. Potential multi-story area for offices.



Highway Department Facility Study

Energy Cost Analysis

Existing Facilities

Energy Factors

1. Existing thermal envelope is aging and inefficient
2. Mix of existing lighting types complicates maintenance and is energy inefficient

New Facility

Energy Factors

1. New building envelop will meet energy code requirements
2. Lighting and mechanical systems will meet code requirements
3. Primary savings will be from lighting upgrades
4. Further savings possible using daylighting, geothermal heating, energy recovery units, occupancy sensors, etc.

Sources: 2011 Highway Department Energy Bills & 2011 Madison Gas and Electric Energy Use Analysis

Existing Facilities

Office / Administration	8,000 sf = \$9,136
Vehicle Storage	20,000 sf = \$17,226
Vehicle Maintenance	40,000 sf = \$34,452
Cold Storage	35,000 sf = \$5,950

Total Yearly Energy Costs **\$66,764**
\$0.65/ sf

New Facility

Office / Administration	16,382 sf = \$17,919
Vehicle Storage	28,634 sf = \$12,141
Vehicle Maintenance	59,270 sf = \$25,111
Cold Storage	20,000 sf = \$1,800

Total Yearly Energy Estimate **\$56,971**
\$0.46/ sf

Joint County Committee Review



Highway Department Facility Study

Resolution No. 2011-80

1. Detailed conversation (with city of Jefferson) related to utility extension cost need to occur for Sites A & C.
2. Discussion with Site A landowner to determine interest in land sale.
3. Further evaluation of Site C master plan to determine suitability of highway department use and final location of 40 acre parcel.

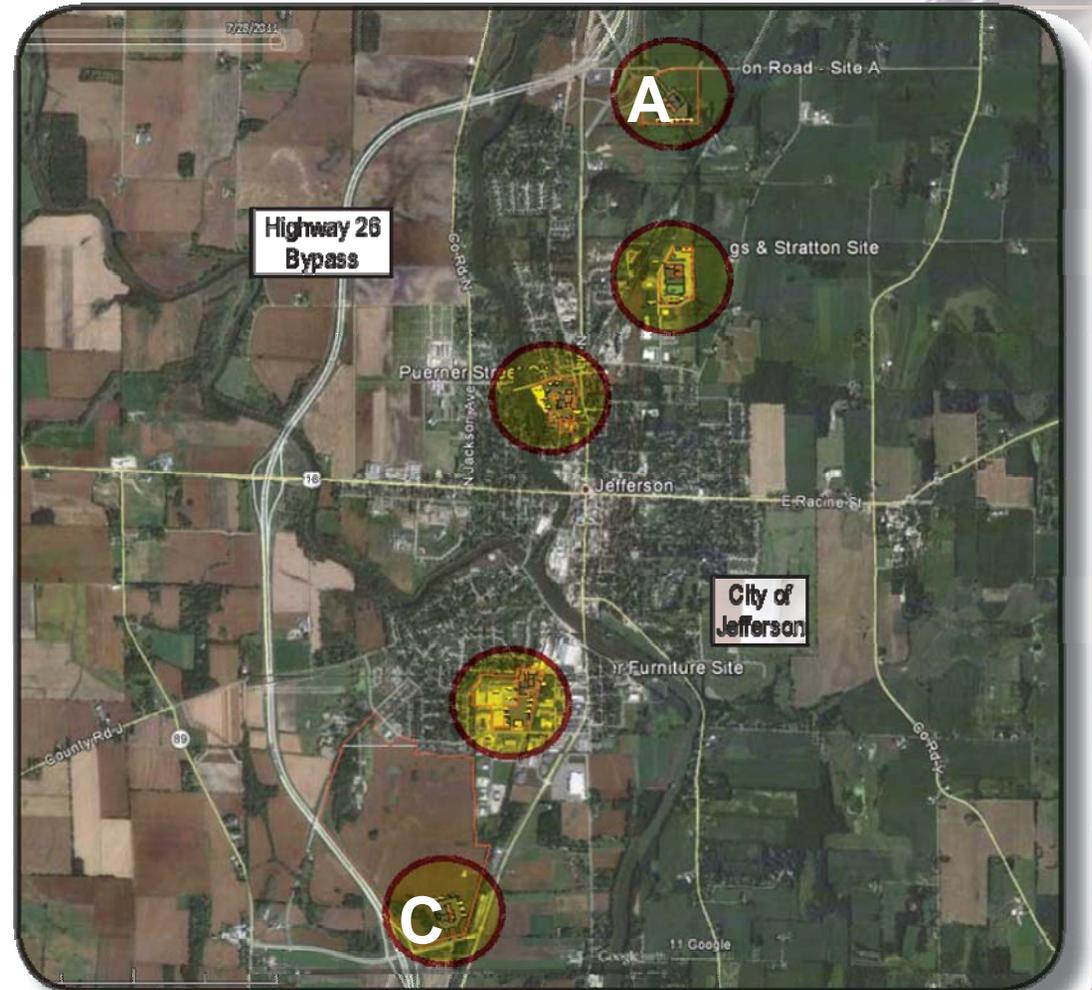


Highway Department Facility Study

Phase 3 | Design Scenarios

Site A | Junction Road

Site C | County Farm



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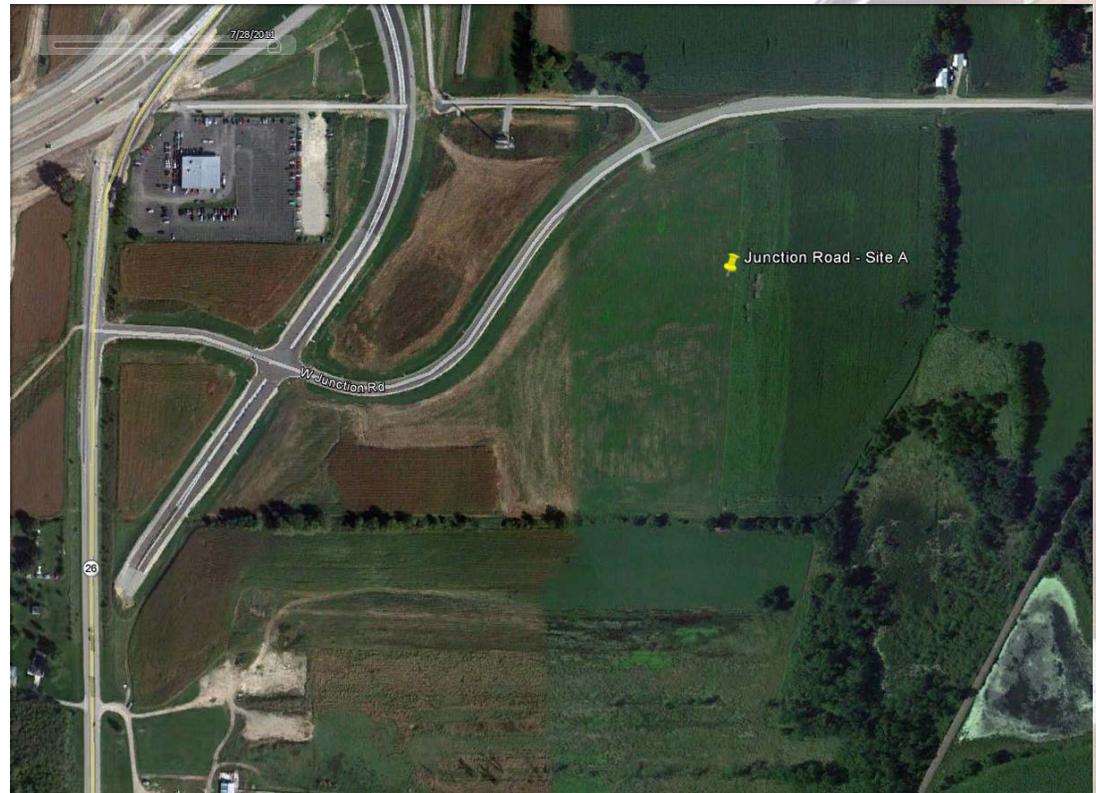
Highway Department Facility Study

Phase 3 | Design Scenarios

Site A | Junction Road

Site C | County Farm

The Highway Department proposes constructing a new building to house the administrative, maintenance, storage, and site operational needs of the Highway Department at Junction Road near Hwy 26. This site is located close to the highway 26 bypass and provides easy access to the highway. The site provides all the necessary building and yard space with the possibility of expansion if needed in the future.



Joint County Committee Review



bray
architects
solid foundation. forward thinking.

Highway Department Facility Study

Phase 3 | Design Scenarios

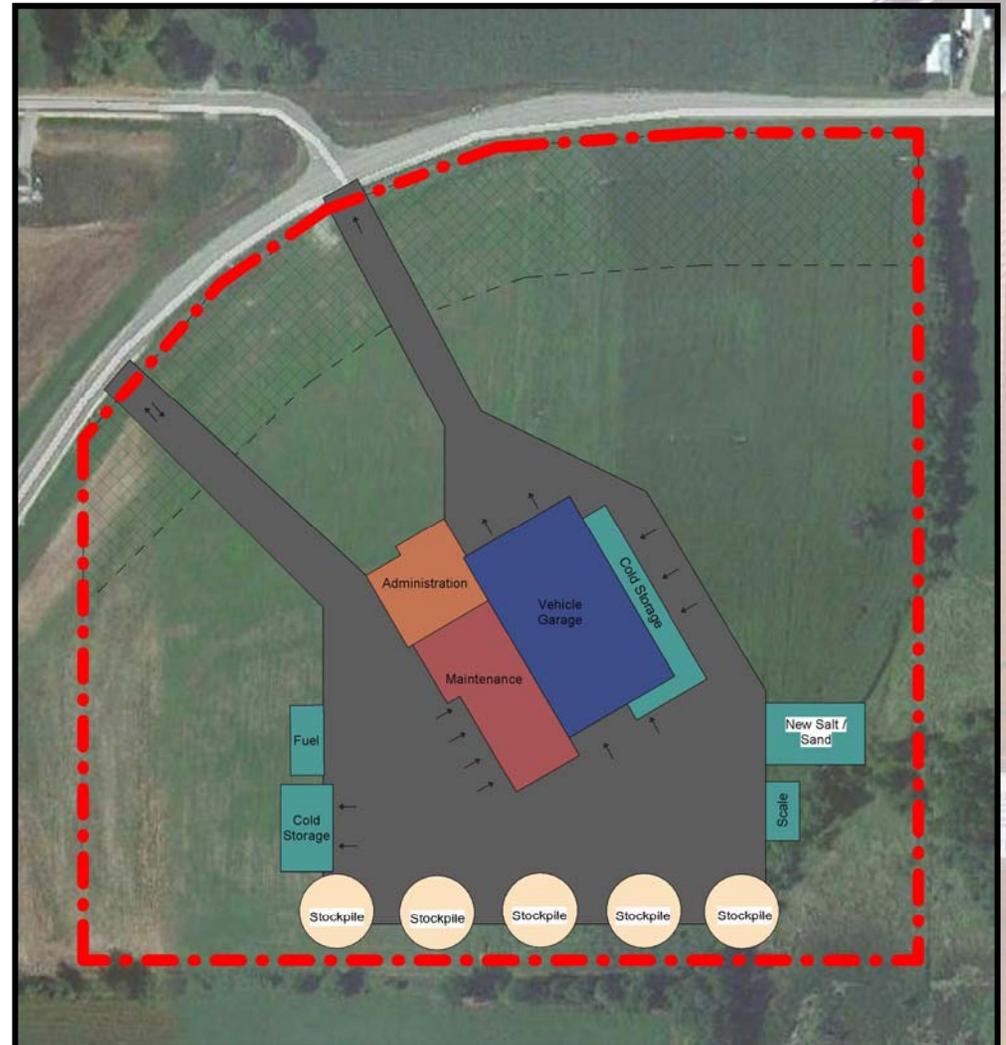
Site A: Junction Road

Positives

1. Close proximity and easy access to highway 26
2. Greenfield development - no contamination concerns.
3. Possible commercial frontage development.
4. Room for future expansion if needed.
5. Removes the majority of truck traffic from city limits.
6. Site meets 40 acre target.

Challenges

1. Negotiating utility extension costs with City of Jefferson.
2. Land purchase and willingness of current owner to sell property.
3. Utilizes 40 acres of agriculture land.



Highway Department Facility Study

Phase 3 | Design Scenarios

Site A: Junction Road

Budget Estimate (high range)

Building Construction Costs	\$12,339,400
Site Costs	\$3,654,200
Sewer Extension Costs	\$1,820,280
Water Extension Costs	\$1,428,438
Electrical Extension Costs	\$133,438
Total	\$19,375,756

A portion of the utility extension costs may be recoupable when additional land is developed along Junction Rd.

Site A: Junction Road

The Highway Department proposes constructing a new building to house the administrative, maintenance, storage, and site operational needs of the Highway Department at Junction Road near Hwy 26.



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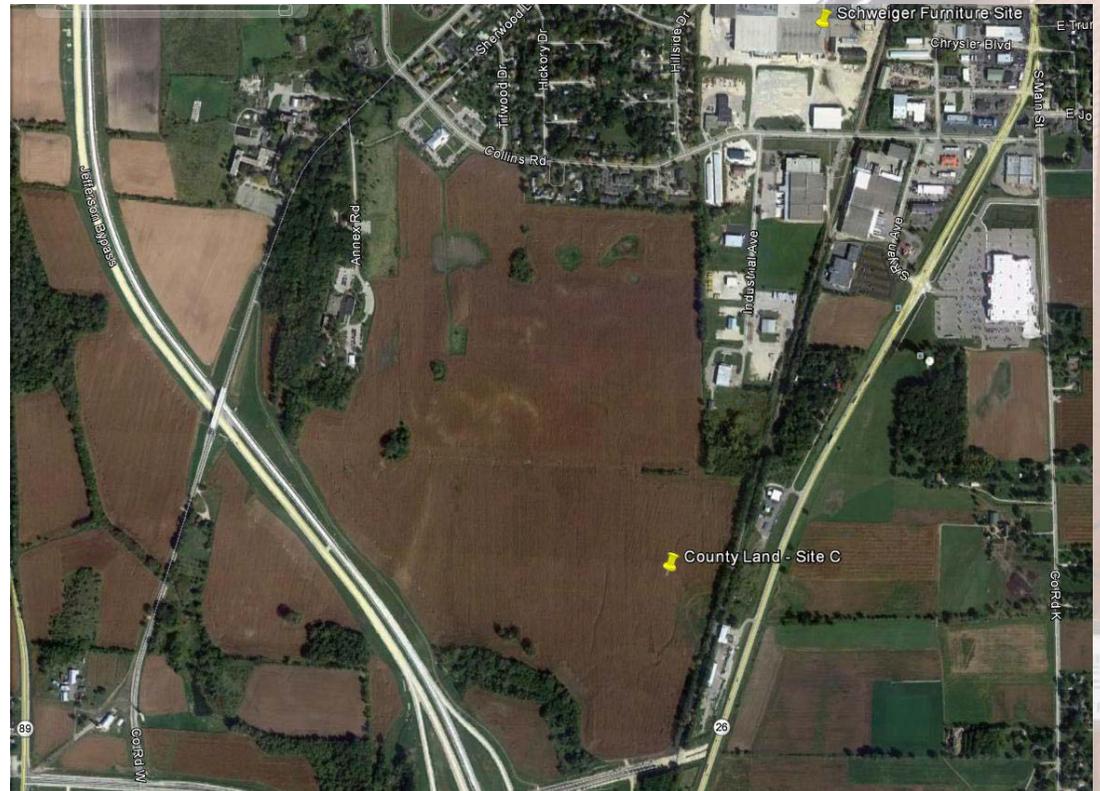
Highway Department Facility Study

Phase 3 | Design Scenarios

Site A | Junction Road

Site C | County Farm

The Highway Department proposes constructing a new building to house the administrative, maintenance, storage, and site operational needs of the Highway Department on the County Farm land near the Hwy 26 bypass.



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Highway Department Facility Study

Phase 3 | Design Scenarios

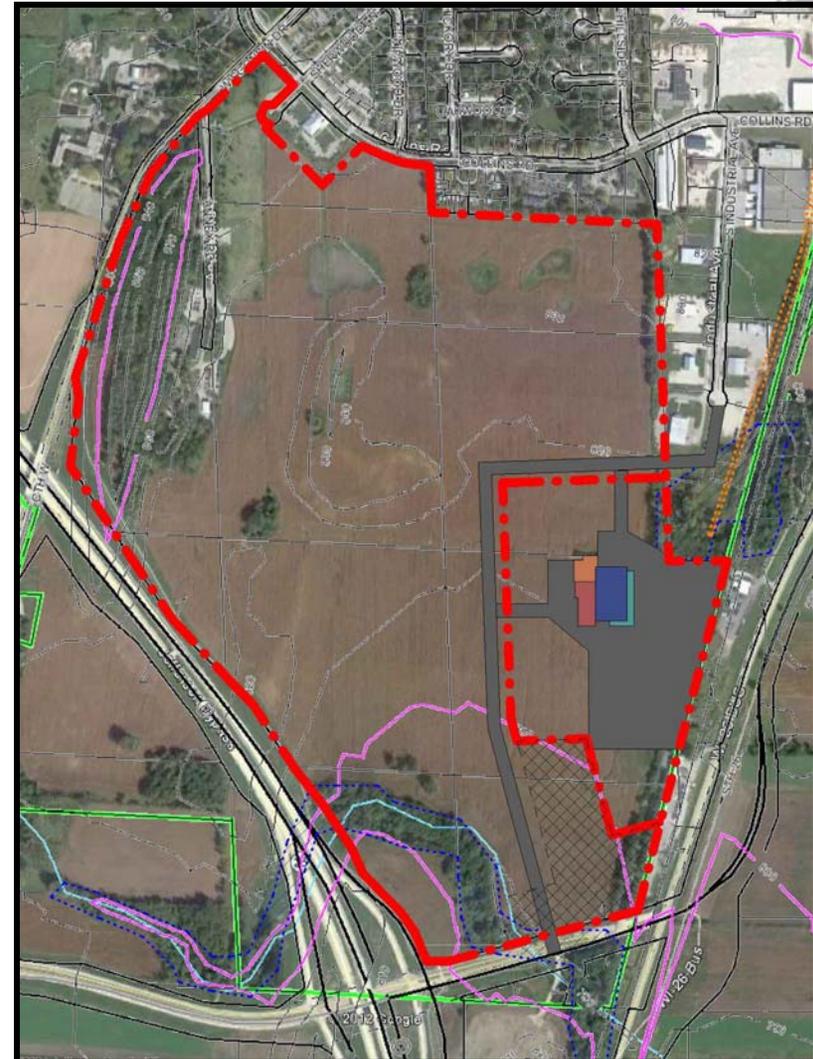
Site C: County Farm

Positives

1. Close proximity and easy access to highway 26.
2. Greenfield development - no contamination concerns.
3. Possible commercial frontage development.
4. Room for future expansion if needed.
5. Removes the majority of truck traffic from city limits.
6. Site is already under county control with no purchase concerns.
7. Site meets 40 acre target size.
8. Potential for shared county resources due to proximity to other County Departments

Challenges

1. Master planning other uses of the County Farm.
2. Negotiating utility extension costs with City of Jefferson.
3. Utilizes 40 acres of agricultural land



Joint County Committee Review



Highway Department Facility Study

Phase 3 | Design Scenarios

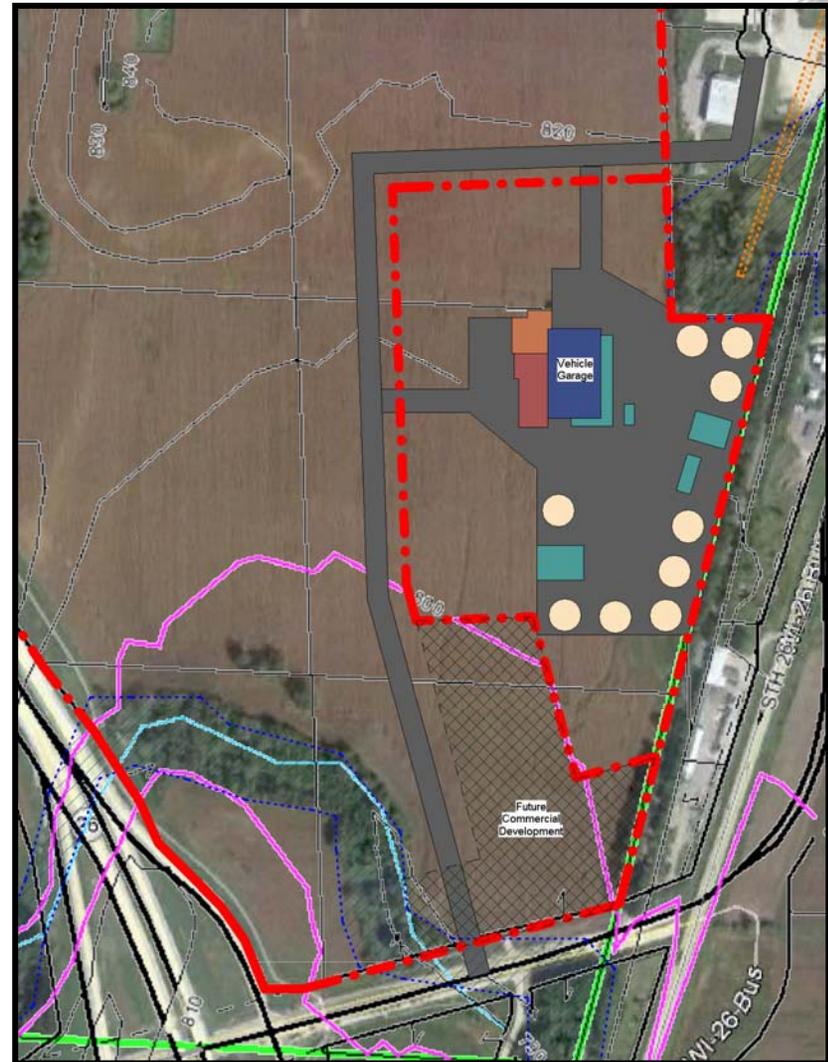
Site C: County Farm

Site Considerations

1. Site plan revised to minimize extensions to existing city utilities
2. Allows for more commercial development near Hwy 26
3. Allocates least desirable land for material storage
4. Allows greater flexibility for future development

Site C: County Farm

The Highway Department proposes constructing a new building to house the administrative, maintenance, storage, and site operational needs of the Highway Department on the County Farm land near the Hwy 26 bypass.



Joint County Committee Review



Highway Department Facility Study

Phase 3 | Design Scenarios

Site C: County Farm

Budget Estimate (high range)

Building Construction Costs	\$12,339,400
Site Costs	\$1,927,700
Sewer Extension Costs	\$145,464
Water Extension Costs	\$173,280
Electrical Extension Costs	N/A
Total	\$14,485,844

These costs do not include utility infrastructure for future county farm development

Site C: County Farm

The Highway Department proposes constructing a new building to house the administrative, maintenance, storage, and site operational needs of the Highway Department on the County Farm land near the Hwy 26 bypass.



Joint County Committee Review



Highway Department Facility Study

Recommendations

Proceed with acquisition of one of two new sites under consideration

- A. Junction Road
- C. County Farm

Considerations / Rationale

1. Both sites A & C equally meet the operational needs of the Highway Department
2. The final decision should be based on which of the sites most cost effectively support a new highway department facility

