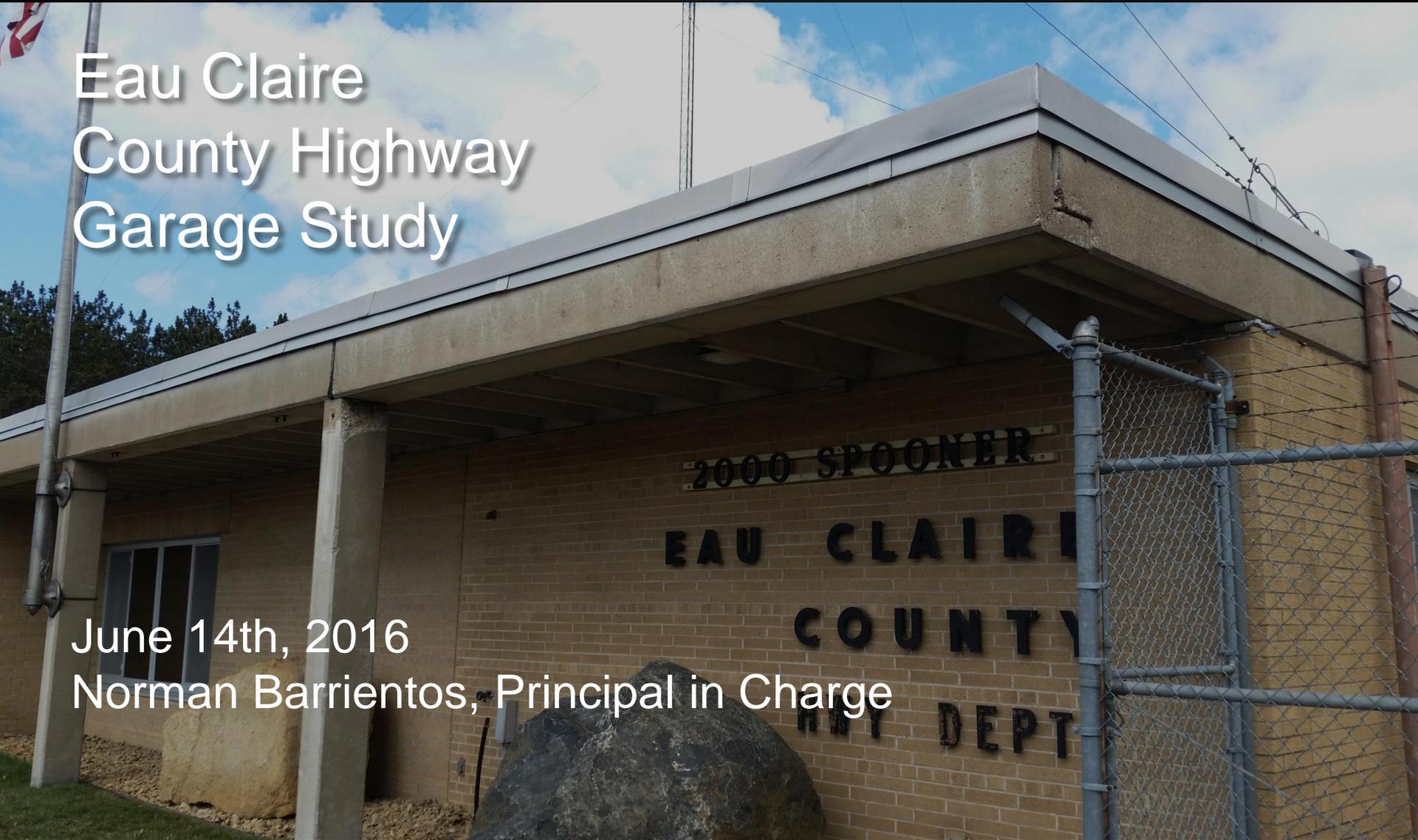


# Eau Claire County Highway Garage Study

June 14th, 2016

Norman Barrientos, Principal in Charge



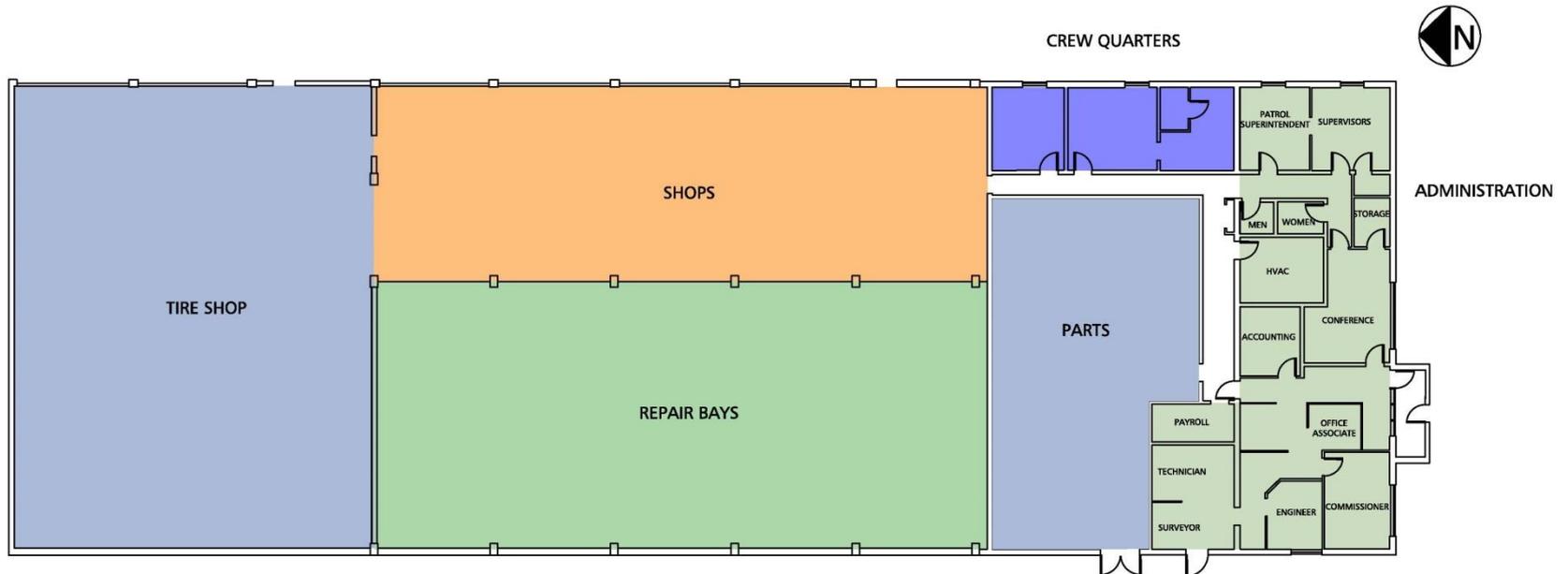
## STUDY FOCUS

- Assess the capital costs required to maintain the Altoona Highway facility over 10 years
- Document the spatial deficiencies
- Identify the optimal spatial needs versus current capacity
- Explore options to expand and rebuild at Altoona
- Identify what a new site's criteria would be

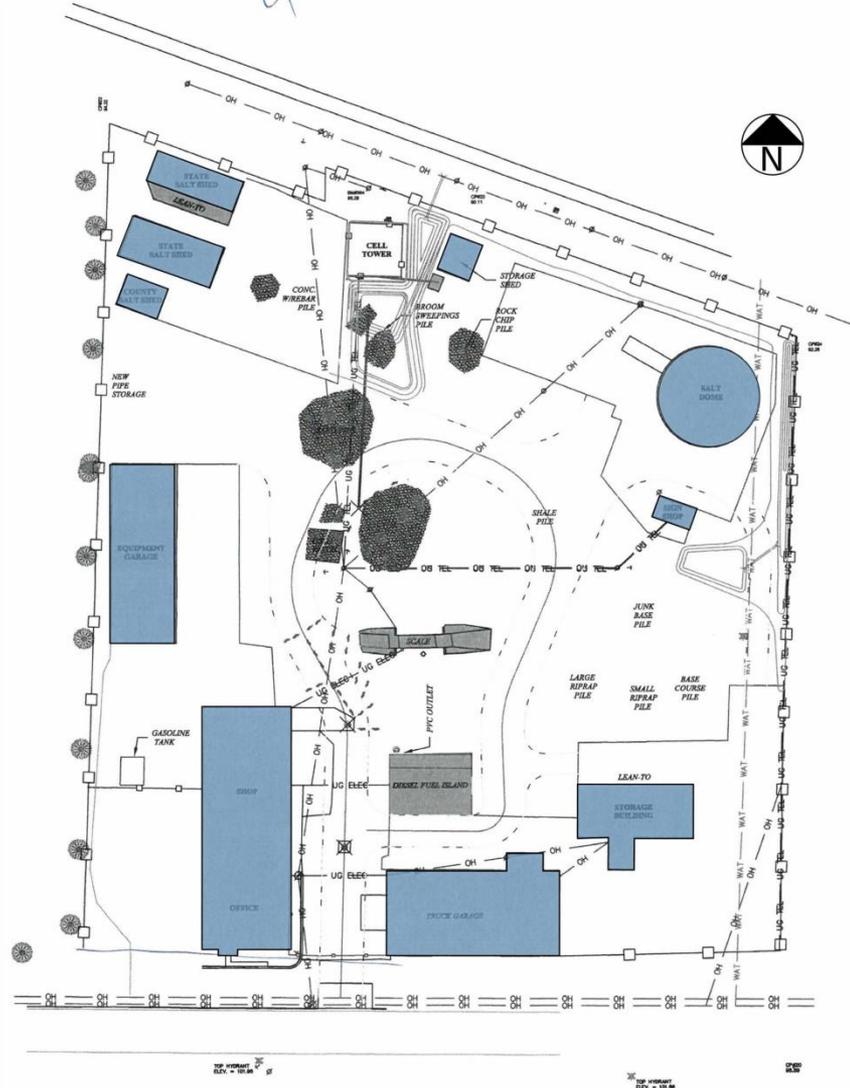
# EXISTING SITE BUILDINGS

STRUCTURE	Existing SF	Year Built
Administration #1	6,400	1964
Repair #1	11,987	1964
Parking Garage #2	13,361	1913
Warm Storage #3	7,460	1913
Sign Shop #4	2,592	1910
Cold Storage 1 #5	1,100	1960
Salt Storage - State #6	2,520	1980
Salt Storage - State #7	3,520	1980
Salt Storage - County #8	1,200	1980
Cold Storage 2 #9	10,140	1980
Salt Dome #10	6,360	1980
<b>Grand Totals</b>	<b>66,640</b>	





ADMINISTRATION	2,305 SQ FT
SHOPS	4,680 SQ FT
REPAIR GARAGE	3,345 SQ FT
PARTS STORAGE	1,820 SQ FT
CREW QUARTERS	566 SQ FT
STORAGE	4,670 SQ FT
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TOTAL	17,386 SQ FT



Existing Utilities Plan

## 5-YEAR CAPITAL COSTS TO MAINTAIN

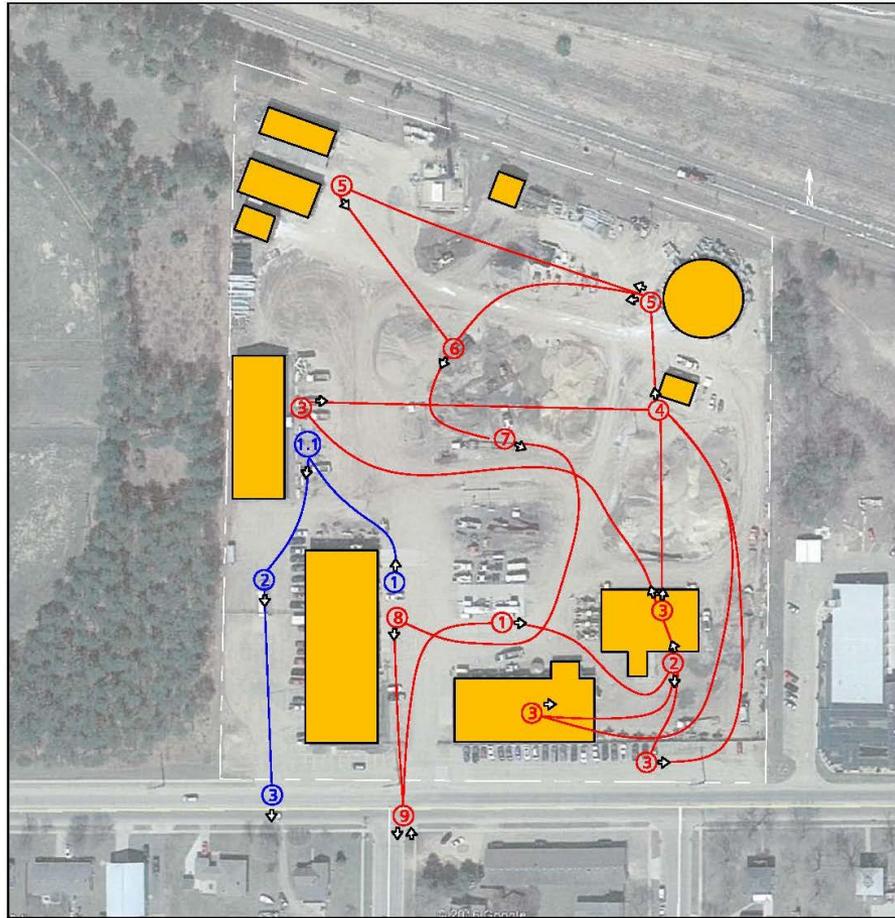
- Capital costs would be \$3,292,067
- Differs from county-led study due to code compliance, life-safety issues, and repair of many structural and wall systems
- Also encompassed paving, stormwater, zoning compliance, access drives, lighting, and parking lots

# CAPITAL OUTLAY BASED ON FCI

STRUCTURE	Existing SF	FC Index	Repair Costs	Recommended Potential
Administration #1	6,400	43.7	\$ 531,295	Repair & Reuse
Repair #1	11,987	42.7	\$ 716,734	Repair & Reuse
Parking Garage #2	13,361	56.6	\$ 831,121	Demolish
Warm Storage #3	7,460	73.5	\$ 603,141	Demolish
Sign Shop #4	2,592	17.1	\$ 64,193	Demolish
Cold Storage 1 #5	1,100	50.9	\$ 44,792	Demolish
Salt Storage - State #6	2,520	50.9	\$ 89,788	Demolish
Salt Storage - State #7	3,520	50.9	\$ 125,418	Demolish
Salt Storage - County #8	1,200	50.9	\$ 46,864	Demolish
Cold Storage 2 #9	10,140	24.3	\$ 197,122	Repair & Maintain
Salt Dome #10	6,360	16.5	\$ 39,600	Repair & Maintain
<b>Grand Totals</b>	<b>66,640</b>		<b>\$ 3,292,067</b>	

## EXISTING SPACE COMPOSITION

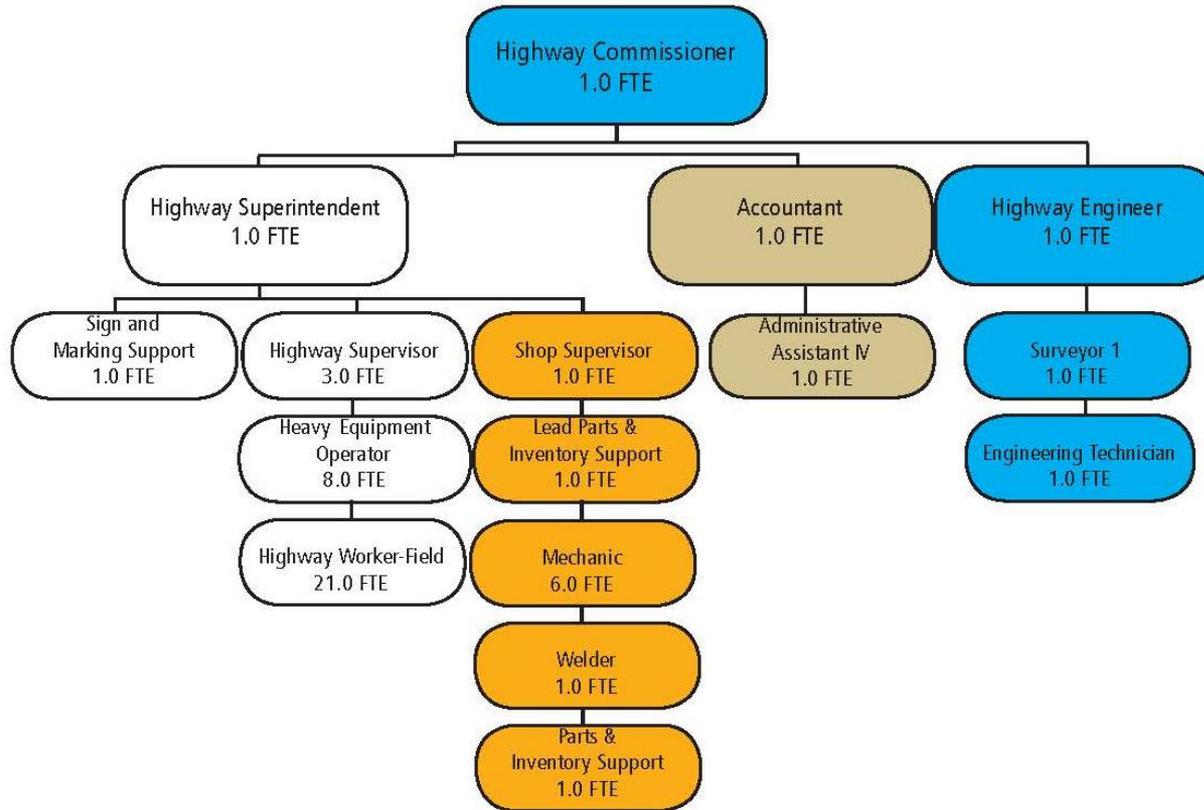
- 66,640 SF of heated and cold buildings
- 67 major pieces of equipment that require a mix of heated and cold storage
  - Of these, 58 need heated storage so they can be started up in sub-freezing weather
- Currently, some patrol trucks are parked outside year-round
- Insufficient sized Repair Shops



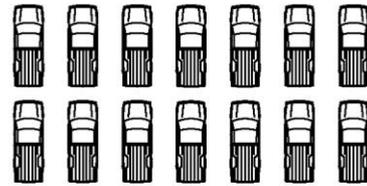
- PETROL TRUCK**
- 1. FUEL
  - 2. WASH
  - 3. PARK
  - 4. LOADING-SIGN
  - 5. LOADING-SALT
  - 6. LOADING-STOCKPILE
  - 7. SCALE
  - 8. FIELD EQUIPMENT
  - 9. EXIT

- REPAIR**
- 1. REPAIR SHOP
  - 1.1. PARK
  - 2. FUEL
  - 3. EXIT

Staffing Organization

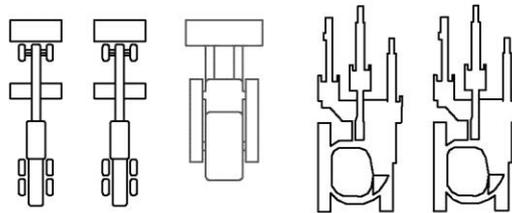
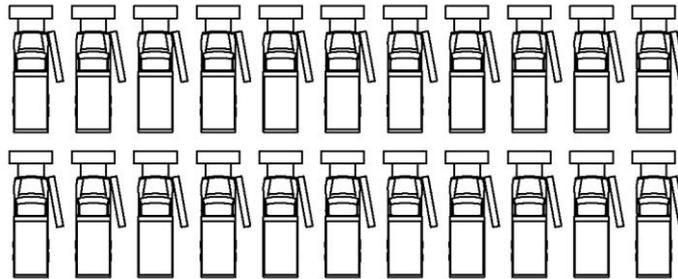
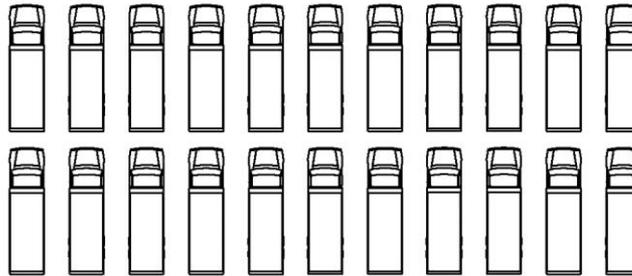


YEAR	2011	2012	2013	2014	2015
FTE	62.00	63.00	62.00	63.00	62.00



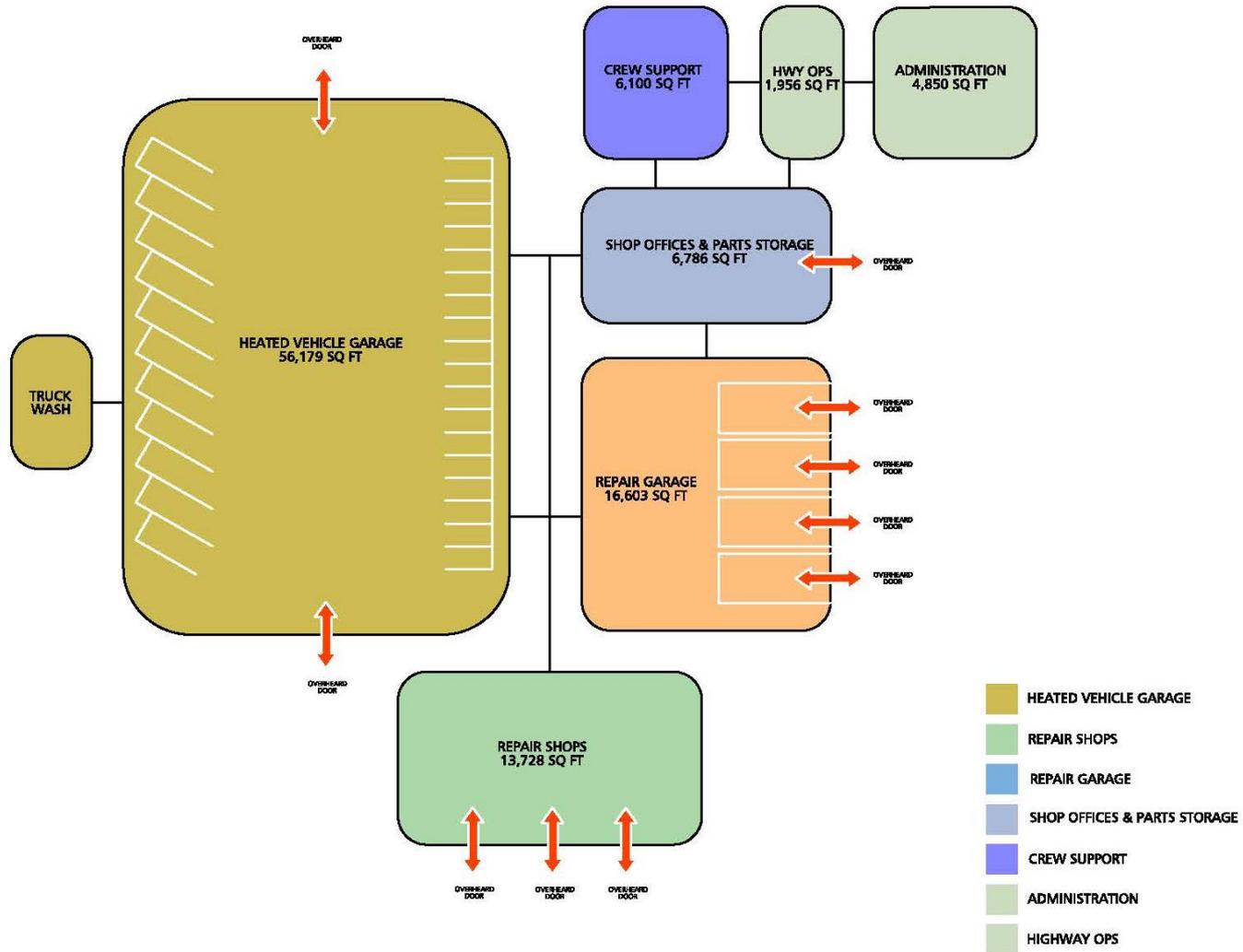
## HEATED STORAGE VEHICLES

LIGHT: 14  
MEDIUM: 22  
HEAVY: 22  
  
SUBTOTAL: 58  
GRADERS: 2  
DOZERS: 1  
EXCAVATORS: 2  
TOTAL: 63



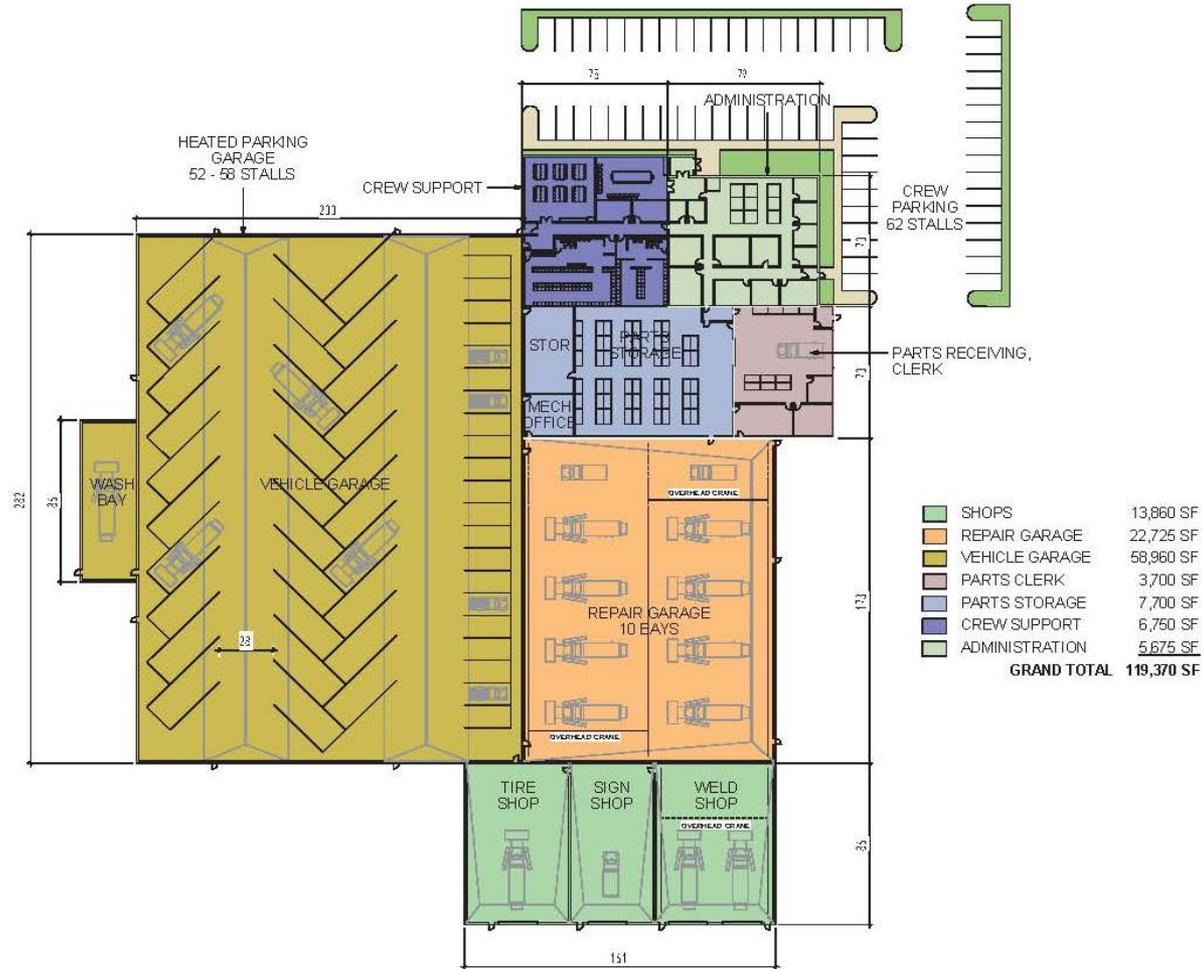
## OPTIMAL FLOOR PLAN

- Main shop of 119,370 SF
  - Shops (welding, tire, sign)-13,830 SF
  - Repair garage (10 bays, pull-through)-22,725 SF
  - Vehicle garage (52 stalls)-58,960 SF
  - Parts clerk/receiving-3,700 SF
  - Parts storage-7,700 SF
  - Crew support-6,750 SF
  - Administration-5,675 SF



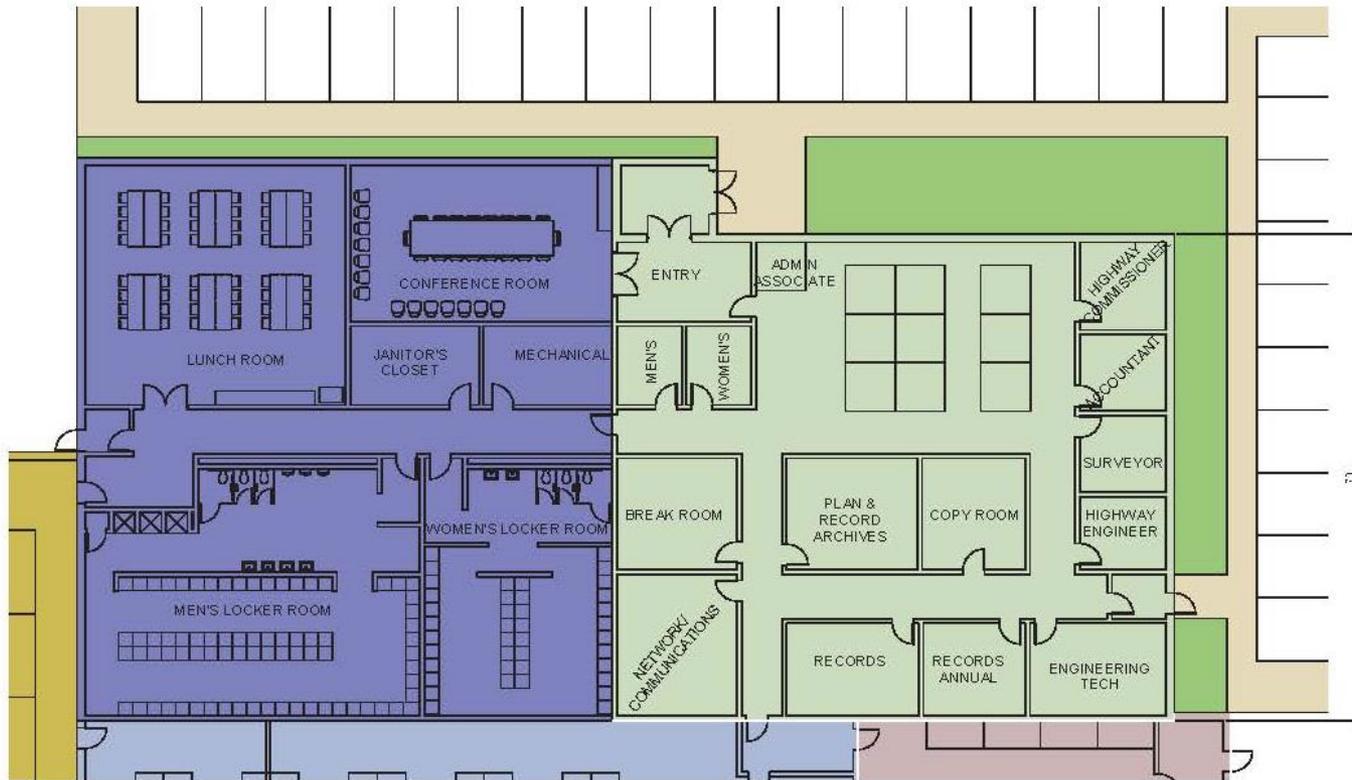
Relationship Diagram

## Optimal Shop Floor Plan





Optimal Shop Floor Plan-Crew Support & Administration



# EXISTING SF vs. OPTIMAL SF

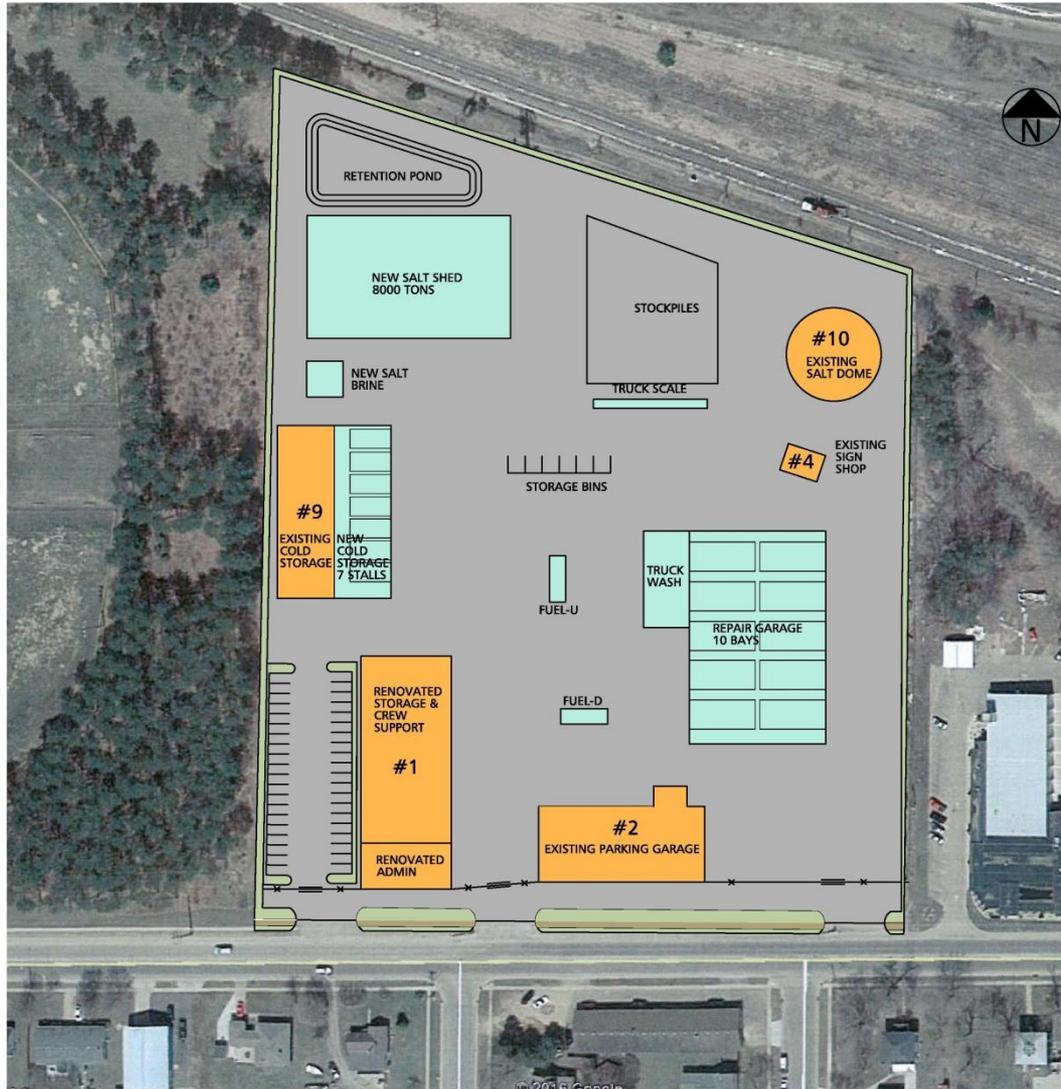
FUNCTIONAL AREA	Existing SF	Optimal SF	% of Change
Heated Vehicle Storage	17,515	56,179	220.75%
Repair Garage*	11,987	16,063	34.00%
Specialty Shops**	2,592	13,728	429.63%
Shops Offices & Parts Storage***	2,921	6,786	132.32%
Crew Quarters	385	6,100	1484.42%
Admin & Highway Ops	6,400	6,446	0.72%
Cold Storage	11,240	35,000	211.39%
County Salt Sheds	1,200	16,000	1233.33%
State Salt Sheds	12,400	16,000	29.03%
<b>Grand Totals †</b>	<b>66,640</b>	<b>172,302</b>	<b>158.56%</b>

# ALLOWANCE FOR FUTURE GROWTH

- Eau Claire County will see a population increase of 21% over twenty years, based on WI DOA projections
- Number of lane miles and level of service will not change significantly but more rural to County miles.
- No new 4-lane conversions planned
- 5% increase in staff over the next 20 years.
- Lean staffing is leveraged with more equipment to achieve a greater variety of tasks

# IMPROVEMENT OPTIONS

- Option 1: Minor additions and new repair garage
- Option 2: Add to repair garage, new parking garage
- Option 3: Maximum allowable new build
- Option 4: Optimal square footage shop
- Option 5: Hypothetical 40-acre site, pull-in repair garage
- Option 6: Hypothetical 40-acre site, pull-in repair garage



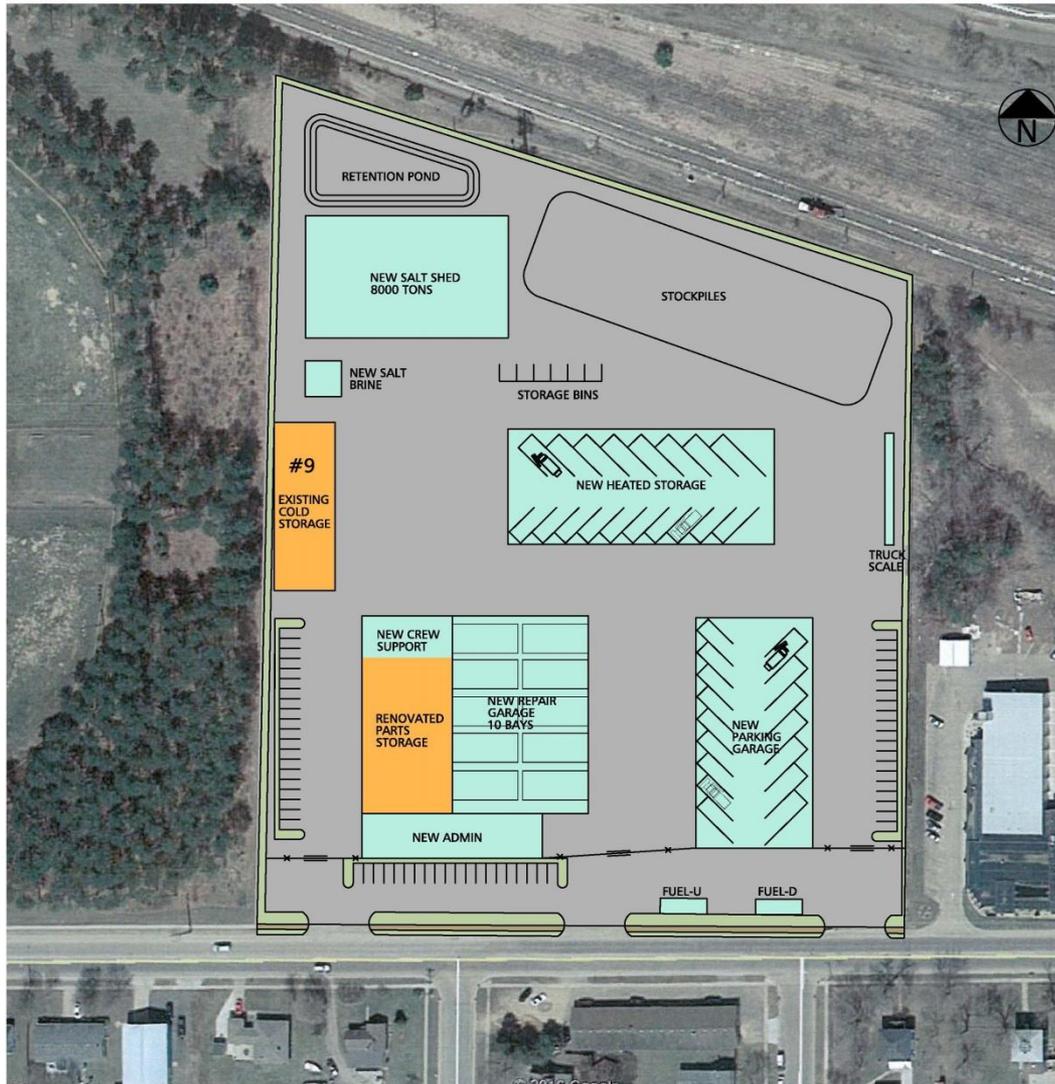
OPTIMAL COLD STORAGE	35,000 SF
TOTAL COLD STORAGE	8,000 SF
DEFICIT	27,000 SF
OPTIMAL SALT TONNAGE	16,000 TONS
TOTAL SALT TONNAGE	8,000 TONS
DEFICIT	8,000 TONS
OPTIMAL SQUARE FOOTAGE	190,538 SF
TOTAL SQUARE FOOTAGE	81,609 SF
DEFICIT	108,929 SF
OPTIMAL PARKING STALLS	58
TOTAL HEATED PARKING	31
DEFICIT	27

RENOVATED STORAGE & CREW SUPPORT (1)	11,987 SQ FT
RENOVATED ADMIN	6,400 SQ FT
EXISTING PARKING GARAGE (2)	13,361 SQ FT
EXISTING COLD STORAGE (9)	10,140 SQ FT
NEW COLD STORAGE	7,680 SQ FT
NEW SALT SHED	19,510 SQ FT
NEW SALT BRINE	1,024 SQ FT
NEW REPAIR GARAGE	16,305 SQ FT
NEW TRUCK WASH	3,440 SQ FT
EXISTING SALT DOME (10)	1,200 SQ FT
EXISTING SIGN SHOP (4)	2,592 SQ FT

TOTAL DEMO: 15,800 SQ FT  
 TOTAL RENO: 33,650 SQ FT  
 TOTAL NEW: 47,959 SQ FT

TOTAL: 81,609 SQ FT

Option 1-Minor additions and new repair garage



OPTIMAL COLD STORAGE	35,000 SF
TOTAL COLD STORAGE	10,140 SF
DEFICIT	24,860 SF

OPTIMAL SALT TONNAGE	16,000 TONS
TOTAL SALT TONNAGE	8,000 TONS
DEFICIT	8,000 TONS

OPTIMAL SQUARE FOOTAGE	190,538 SF
TOTAL SQUARE FOOTAGE	105,705 SF
DEFICIT	84,833 SF

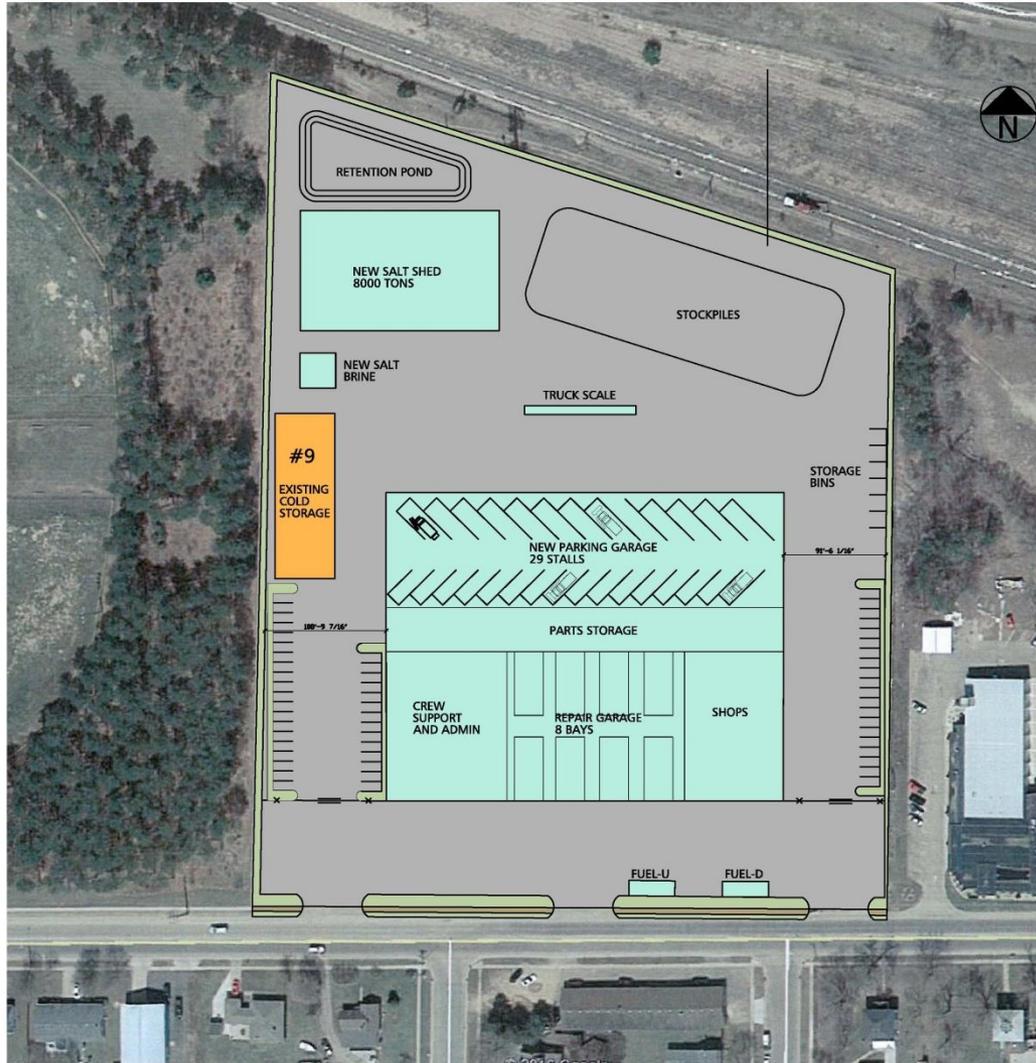
OPTIMAL PARKING STALLS	58
TOTAL HEATED PARKING	34
DEFICIT	24

RENOVATED PARTS STORAGE (1)	11,987 SQ FT
NEW CREW SUPPORT	2,936 SQ FT
NEW ADMIN	6,360 SQ FT
EXISTING COLD STORAGE (9)	10,140 SQ FT
NEW REPAIR GARAGE	14,000 SQ FT
NEW PARKING	19,256 SQ FT
NEW SALT SHED	19,510 SQ FT
NEW SALT BRINE	1,024 SQ FT
NEW COLD STORAGE	24,140 SQ FT

TOTAL DEMO:	31,153 SQ FT
TOTAL RENO:	18,478 SQ FT
TOTAL NEW:	87,226 SQ FT

TOTAL: 105,704 SQ FT

Option 2: Add to repair garage, new parking garage



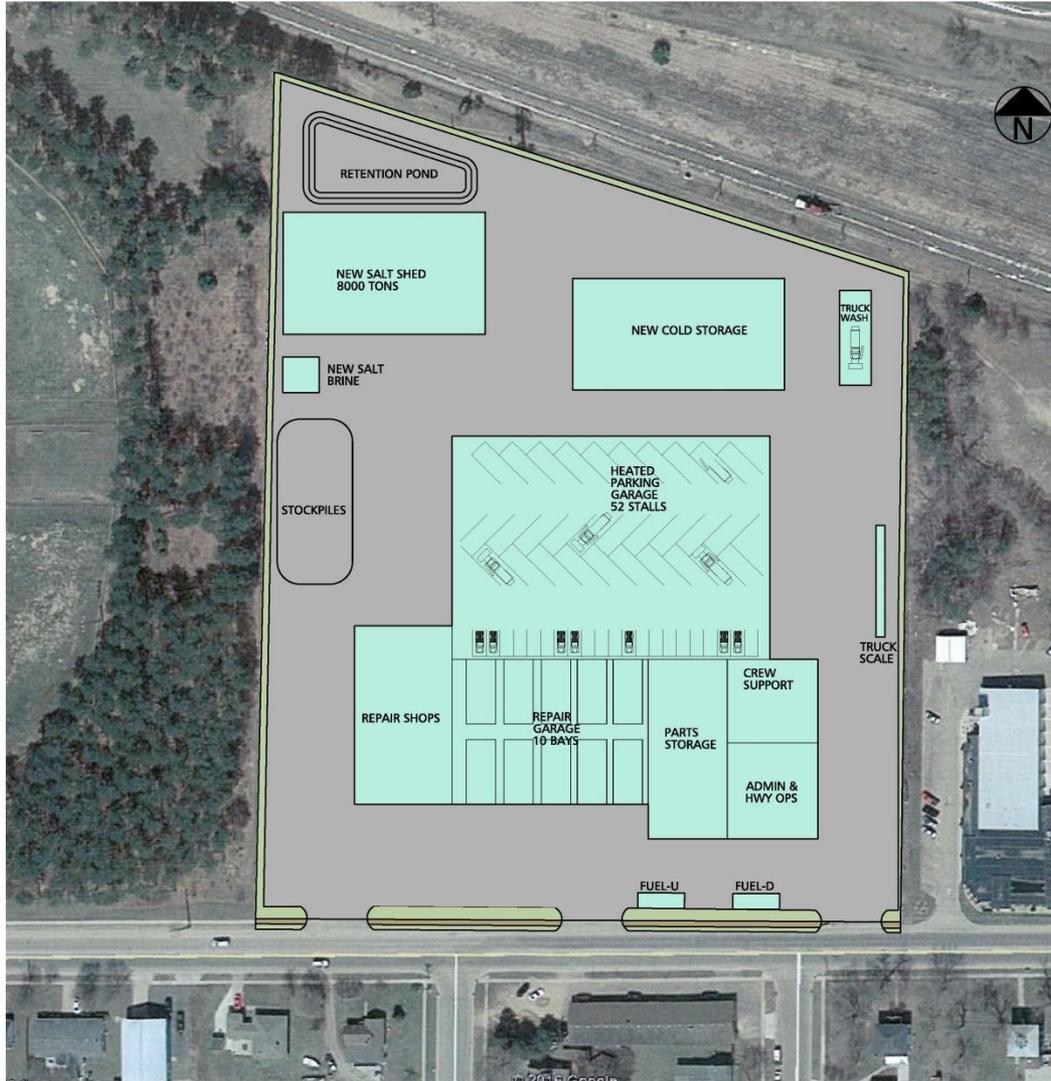
OPTIMAL COLD STORAGE	35,000 SF
TOTAL COLD STORAGE	10,140 SF
DEFICIT	24,860 SF
OPTIMAL SALT TONNAGE	16,000 TONS
TOTAL SALT TONNAGE	8,000 TONS
DEFICIT	8,000 TONS
OPTIMAL SQUARE FOOTAGE	190,538 SF
TOTAL SQUARE FOOTAGE	113,241 SF
DEFICIT	77,297 SF
OPTIMAL PARKING STALLS	58
TOTAL HEATED PARKING	29
DEFICIT	29

**NEW MAIN BUILDING  
99,399 SQ FT**

NEW ADMIN & CREW SUPPORT	14,704 SQ FT
EXISTING COLD STORAGE (9)	10,140 SQ FT
NEW REPAIR GARAGE	21,594 SQ FT
NEW PARTS STORAGE	14,395 SQ FT
NEW SHOPS	12,020 SQ FT
NEW PARKING GARAGE	36,686 SQ FT
NEW SALT SHED	19,510 SQ FT
NEW SALT BRINE	1,024 SQ FT

TOTAL DEMO: 154,203 SQ FT  
TOTAL RENO: 7,682 SQ FT  
TOTAL NEW: 127,615 SQ FT

TOTAL: 113,241 SQ FT



OPTIMAL COLD STORAGE	35,000 SF
TOTAL COLD STORAGE	18,178 SF
DEFICIT	16,822 SF

OPTIMAL SALT TONNAGE	16,000 TONS
TOTAL SALT TONNAGE	8,000 TONS
DEFICIT	8,000 TONS

OPTIMAL SQUARE FOOTAGE	190,538 SF
TOTAL SQUARE FOOTAGE	147,810 SF
DEFICIT	42,728 SF

OPTIMAL PARKING STALLS	58
TOTAL HEATED PARKING	52
DEFICIT	6

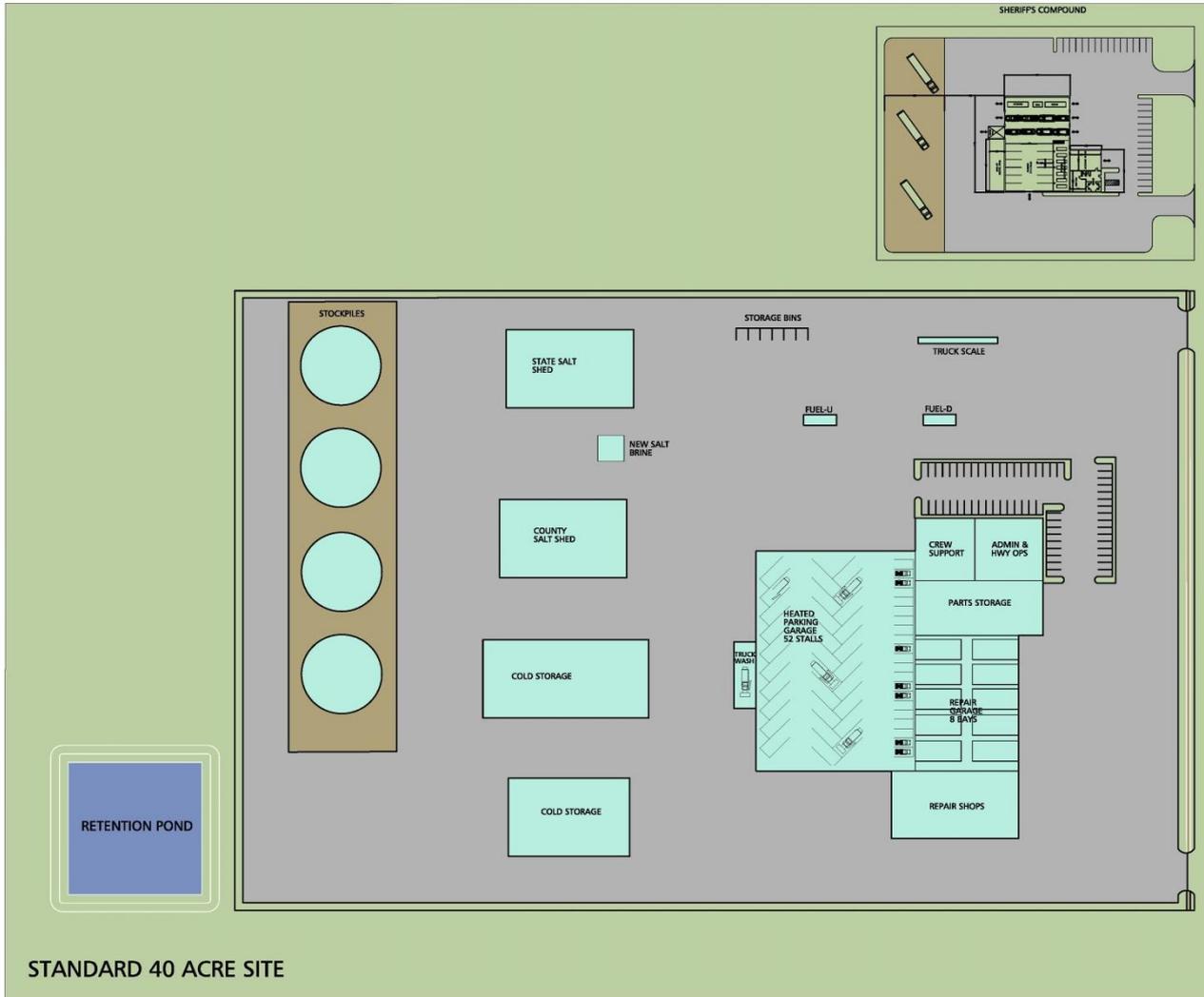
**MAIN BUILDING**  
116,634 SQ FT

NEW PARTS STORAGE	11,270 SQ FT
NEW CREW SUPPORT	6,000 SQ FT
NEW ADMIN	6,880 SQ FT
NEW REPAIR GARAGE	22,524 SQ FT
NEW REPAIR SHOPS	13,760 SQ FT
NEW HEATED PARKING GARAGE	56,200 SQ FT
NEW SALT SHED	19,510 SQ FT
NEW SALT BRINE	1,024 SQ FT
NEW COLD STORAGE	18,718 SQ FT

TOTAL DEMO: 64,442 SQ FT

TOTAL NEW: 155,436 SQ FT

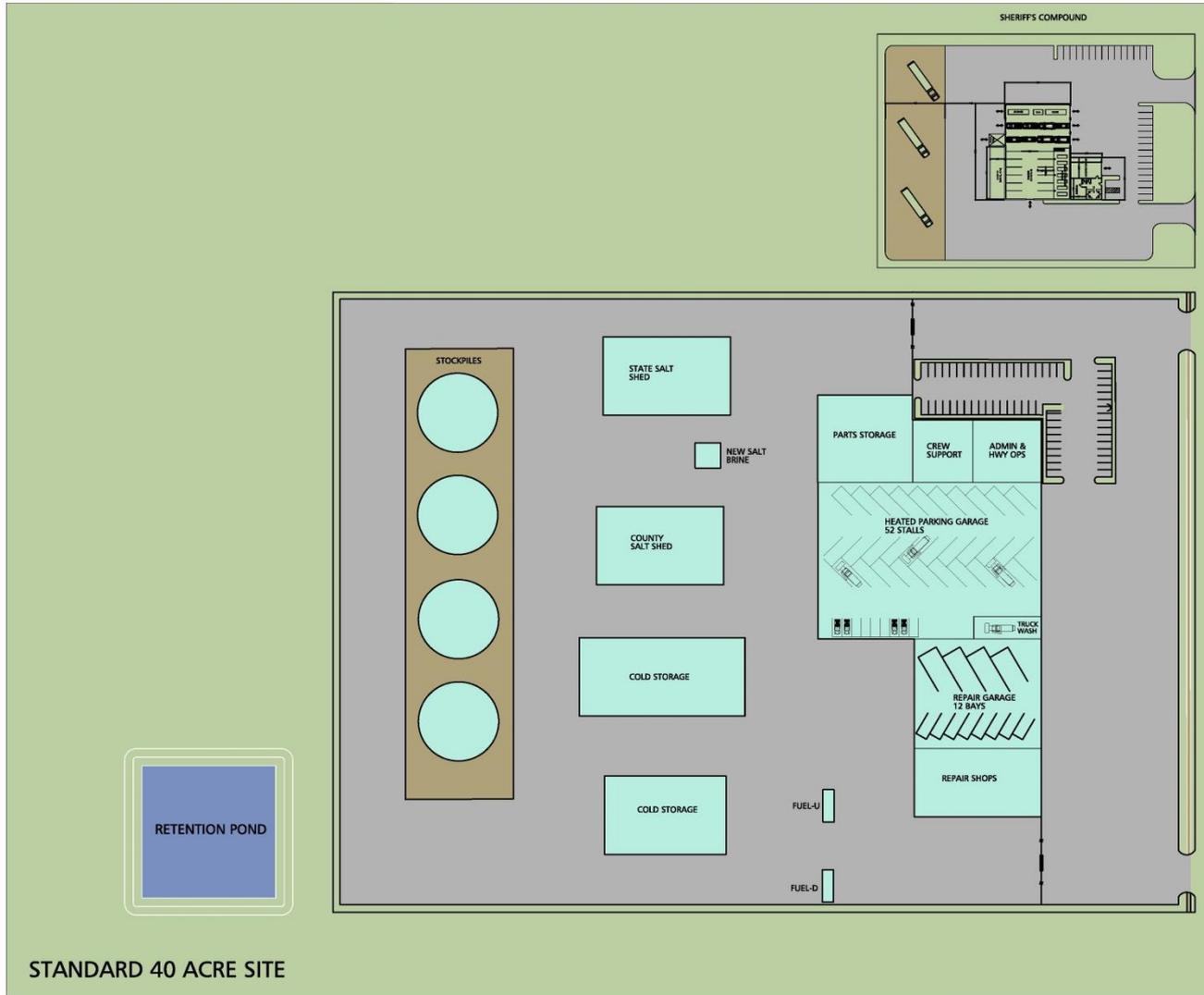
Option 4: Optimal square footage building



**MAIN BUILDING**  
119,370 SQ FT

NEW PARTS STORAGE	11,270 SQ FT
NEW CREW SUPPORT	6,000 SQ FT
NEW ADMIN	6,880 SQ FT
NEW REPAIR GARAGE	22,524 SQ FT
NEW REPAIR SHOPS	13,760 SQ FT
NEW HEATED PARKING GARAGE	58,960 SQ FT
NEW SALT SHED (COUNTY)	16,000 SQ FT
NEW SALT SHED (STATE)	16,000 SQ FT
NEW SALT BRINE	1,024 SQ FT
NEW COLD STORAGE	15,275 SQ FT
NEW TEMPERED HEATED STORAGE	20,852 SQ FT

**TOTAL NEW: 188,595 SQ FT**



**MAIN BUILDING**  
**108,567 SQ FT**

NEW PARTS STORAGE	11,270 SQ FT
NEW CREW SUPPORT	6,000 SQ FT
NEW ADMIN	6,880 SQ FT
NEW REPAIR SHOPS	18,720 SQ FT
NEW REPAIR GARAGE	22,395 SQ FT
NEW HEATED PARKING GARAGE	56,200 SQ FT
NEW SALT SHED (COUNTY)	16,000 SQ FT
NEW SALT SHED (STATE)	16,000 SQ FT
NEW SALT BRINE	1,024 SQ FT
NEW COLD STORAGE	15,275 SQ FT
NEW TEMPERED HEATED STORAGE	20,852 SQ FT

**TOTAL NEW: 190,616 SQ FT**

Option	1	2	3	4	5 & 6
Criteria	Minor Additions	Mix of Additions, New	Significant New, some Reuse	New on Existing Site	New on 40 Acres
Size	1	2	2	3	5
Configuration	1	2	2	3	5
Operational Efficiency	1.5	1.5	2	3	5
Relationships/Adjacencies	1	1.5	2.5	2	5
Heights/Widths	1	1	3	5	5
Site Circulation	1	1.5	1.5	4	5
Building Systems					
Floor Drainage	1.5	1.5	4.5	5	5
Structural Integrity	3	3	4	5	5
HVAC/Lighting	1.5	1.5	4	5	5
Health & Safety of Personnel	2	2	2.5	3	5
HVAC Air Quality	1	1	4	5	5
Zoning/Public Support	4	4	3	3	5
Neighborhood Compatibility	4	3	2	2	5
Traffic Impact	4	3	2	1	4
<b>Total Rating</b>	<b>27.5</b>	<b>28.5</b>	<b>39</b>	<b>49</b>	<b>69</b>

Estimated Added Lifespan	10 years	20 years	20-30 years	25-35 years	70 years
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## SHERIFF'S STORAGE FACILITY

- One large heated parking building with space for 21 vehicles and storage
- Three sets of doors that allow for pull-through storage of larger vehicles
- Attached office area with accident reconstruction bay, tactical briefing room, open office space, and storage
- 75' deep gravel parking area at rear of site for larger vehicles and yard storage
- Whole site is surrounded by 10' security fence with slats
- Total heated vehicle parking & office space: 11,270 SF
- Estimated costs of \$1.4 to \$1.5 million

10' SECURITY FENCE W/ SLATS

