

Facilities & Infrastructure Work Group Report

Work Group Members:

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1. Introduction

1.1. Narrative

A strong, functional and continuously updated infrastructure is needed in order for the Division of Forestry to maintain proper fire readiness to help provide protection for human life, property and natural resources from wildfire. This infrastructure should be properly located to reduce response times and provide a balance for fire control, forest management and other Departmental activities. It should do this while still being cost effective and efficient.

1.2. Bulleted list of your items to assess

- Weather Stations
- Ranger Stations
- Airports/Hangars
- Replacement of towers
- SEAT bases
- Heated garages/storage

2. Charge

- Provide alternatives and make a recommendation to how the Division can best locate fire control infrastructure and facilities. Explain how this can be provided given changes in what we can invest and at different levels of stratification.

3. Summary of recommendations

Statewide Recommendations

Work Group	Recommendation	Requires Policy/Proc Change (Y/N)	Requires Change in Statute (Y/N)	Technology Improvement (Y/N)	Associated Cost/Savings (\$)
Infrastructure and Facilities	Continue construction of warm storage buildings and replacing cold storage buildings. All buildings should be built with 14-foot high and 12-foot wide overhead doors.	N	N	N	\$400,000 - 500,000 However costs are bonded
Infrastructure and Facilities	Continue replacement of ranger stations to upgraded facilities.	N	N	N	\$1,300,000 However costs are bonded
Infrastructure and Facilities	Utilize DNR Construction Representatives to conduct energy audits for facilities to find areas that can be improved to reduce utility costs.	N	N	N	Use of DNR employees provides audit at no cost to the Division of Forestry.
Infrastructure and Facilities	Maintain the use of the current weather stations in combination with other weather stations at airports, etc.	N	N	Y	\$34,288 per year for all DNR owned weather stations.
Infrastructure and Facilities	It is recommended that fire towers should be left on the landscape and maintained, even if not staffed, unless they are deemed structurally unsafe.	N	N	N	\$17,600 per year

Infrastructure and Facilities	When a fire tower is dismantled, structural integrity tests should be conducted to help establish usable life expectancy of these structures. This testing should then be used to establish a replacement schedule for fire towers.	Y	N	N	Costs for integrity tests were unavailable at time of report.
Infrastructure and Facilities	Maintain current SEAT bases as is, activating them as needed based on SEAT contracts implemented.	N	N	N	\$0 unless activated
Infrastructure and Facilities	Keep the pilot offices co-located at the hangers.	N	N	N	\$0 in Capital dollars expenditure. Provides cost efficiency.
Infrastructure and Facilities	Review ranger station, warm storage and airplane hanger lease requirements as they come due to verify if they are still pertinent and cost effective to the Division of Forestry needs.	N	N	N	See lease tables on pages 18 & 31
Infrastructure and Facilities	Create a standard template for layout and construction of ranger stations and warm storage buildings utilizing the most energy efficient construction materials and design to help counter balance maintenance and operational costs of ranger stations and warm storage buildings.	N	N	N	No Capital dollar savings. Has time efficiency savings.
Infrastructure and Facilities	When a new ranger station is built, vacate the old building to reduce the fiscal impact of utilities. Other divisions may still utilize the building as long as they take over the costs.	N	N	N	\$0
Infrastructure and Facilities	Utilize the most cost effective method when comparing contracting maintenance versus utilizing Forestry employees to complete the work.	N	N	N	Dependant on local contracting costs.
Infrastructure and Facilities	As ranger stations come up for replacement, look into the feasibility of combining ranger stations with other ranger stations or other functions as appropriate.	N	N	N	Cost analysis would need to be conducted to determine savings as opportunities

					present themselves.
Infrastructure and Facilities	Consider construction design of warm storage buildings to allow for winterizing during non-fire periods.	Y	N	Y	See graph on page 28.
Infrastructure and Facilities	Investigate the costs of converting ladders on fire towers to stairs to provide safer access by the tower personnel.	N	N	N	Additional \$10,000 – 20,000 on new. Approx. \$20,000 – 30,000 to retrofit.

Changes in Investment

Recommendations for Increased Investment

Work Group	Priority Ranking	Recommendation	Associated Cost/Savings (\$)
Infrastructure and Facilities	1	Increase construction rate for warm storage buildings (2 per year) and ranger stations (1 per year).	\$1,800,000 However costs are bonded
Infrastructure and Facilities	2	Utilize Fire Landscape map to locate additional fire towers in areas of need.	\$110,000 - \$130,000 per tower
Infrastructure and Facilities	3	Purchase more Remote Weather Stations to fill gaps in coverage.	\$16,000 – 18,000 per RAWS
Infrastructure and Facilities	4	Explore potential future needs for additional SEAT bases utilizing the Fire Landscape map.	\$5,000 – 8,000 depending on existing facility.
Infrastructure and Facilities	5	Purchase additional aircraft and re-evaluate hanger needs with the additional aircraft.	Cessna 180 series \$90-100,000 used, and \$250,000 new.

Alternatives for Reduced Investment

Work Group	Priority Ranking	Recommendation	Associated Cost/Savings (\$)
Infrastructure and Facilities	1	Extend the construction schedule of 1 warm storage building per year to 1 every other year.	\$400,000 - 500,000 However costs are bonded
Infrastructure and Facilities	2	Extend the construction schedule of 1 ranger station every 2 years to 1 ranger station every 3 to 4 years.	\$1,300,000 However costs are bonded
Infrastructure and Facilities	3	Move ranger stations, warm storage and hanger leases to Department owned or shared buildings when feasible and cost effective.	See tables on pages 14 & 23
Infrastructure and Facilities	4	Removal of utilities such as phone lines located at fire towers.	Variable due to differing utility costs around state.
Infrastructure and Facilities	5	Removal of phone and electric utilities from weather stations.	Variable due to differing utility costs around state.
Infrastructure and Facilities	6	Replace phone service at weather stations with cell phone service.	\$20/month/RAWS (\$4,320/year statewide)
Infrastructure and Facilities	7	Move aircraft from Oshkosh to various other locations to eliminate lease costs at Oshkosh.	See tables on pages 14 & 15
Infrastructure and Facilities	8	Purchase 1 or 2 work site trailers to be used at SEAT bases and other large Forestry projects (e.g. marking camps), eliminating rental needs at SEAT bases.	\$0 initial savings for the first year but no recurring rental costs in subsequent years.

4. Descriptions of your objectives

4.1. Objective introduction

- Create an inventory of facilities, including maintenance needs, locations, relationship to each other, functions, public expectations, facility and infrastructure costs and response time.

4.2. List objectives

- Maintenance needs (e.g. age and type of construction, replacement and maintenance cost of towers, upgrades in progress or recently approved)
- Locations of infrastructure and facilities (make note of the area communities at risk, WUI, housing density, seasonal and year-round populations)
- Relationship of facilities to each other, especially ones close by
- Functions (# of programs housed at this location, LOP area served)
- Public/customer service expectations (e.g. fire control, license sales, public contact station)
- Response time (size of area of responsibility, equipment pre-positioning locations)
- Determine the costs of the various items to assess

5. Analysis by objective

**Note: Although Florence is located in the Northern Region, it falls in the Peshtigo Dispatch Group for fire duties. Because of this, it was counted as being in the Northeast Region for all statistics.*

Data gathered for this report are from WISMART budgeting figures and a questionnaire sent to all ranger stations. Results of the questionnaire can be found at

\\Central\fire\2010_Fire_Program_Assessment\Work_Groups\Infrastructure_and_Facilities_Work_Group

5.1. Weather Stations

5.1.1. Current Conditions

5.1.1.1. There are currently 18 DNR owned permanent Remote Weather Stations and 4 portable Remote Weather Stations. The DNR has access to information from 9 Remote Weather Stations that are owned and maintained by other agencies (US Forest Service, US Fish & Wildlife Service and Bureau of Indian Affairs). The DNR also owns 2 additional weather station that is used for loan while the 18 are in the process of being calibrated.

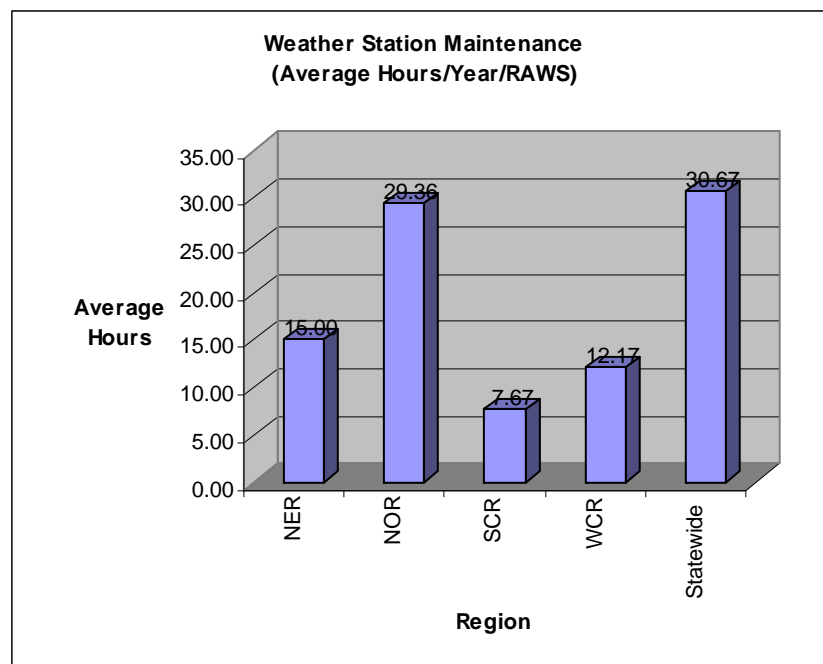
5.1.1.2. Maintenance needs: All weather stations are calibrated annually with parts being replaced as needed. Maintenance costs are approximately \$800 annually per unit through a contract with FTS. Annual, average maintenance hours per weather station is

30.67 hours. This correlates to 552 maintenance hours annually (equivalent to 0.3 FTE at 1800 hours per year per FTE). Replacement cost of a single weather station is \$16,000 to \$18,000.

5.1.1.3. Locations of infrastructure and facilities: The weather stations are scattered across current DNR protection areas (see map 1 in Appendix).

5.1.1.4. Relationship of facilities to each other: The weather stations are located in areas that have a need and provide coverage for a larger area. These weather stations are assigned to specific ranger stations for maintenance needs.

5.1.1.5. Costs: Using \$30.61/hour as the average Forestry Technician wage and benefits, the annual man-hour costs for maintenance is \$940 per weather station at an average of 30.67 man-hours per RAWS. Telephone lines and electric services cost an average of \$525 per weather station per year. The total maintenance for the weather stations is \$2,220 per station (\$41,500 total per year statewide for all weather stations including the 2 portable stations as well as the annual FTS calibration maintenance). Costs associated to sites away from DNR facilities increase the annual costs due to the cost of minimum utility fees.



5.1.2. Components considered

5.1.2.1. Eliminate DNR owned weather stations and use other weather data gathering services (i.e. airport weather stations). Great Lakes Forest Fire Compact is currently working on a project to utilize these other services to generate CFFDRS forecasts across Minnesota, Wisconsin and Michigan. Use of these weather services does not include 10-hour fuel stick moistures, and wind measurements are taken at 10-meters instead of 20-feet. NFDRS would not be able to be calculated using the data from these stations. There is no cost to the DNR for use of data from these other weather stations.

5.1.2.2. Relocate weather stations from remote sites to state owned facilities to reduce utility costs.

5.1.2.3. Remove phone and electric services from the weather stations. Current weather stations upload weather data automatically every hour and run off of battery power. The electric utility is primarily to operate the heated rain gauges for measuring snow and ice fall. Removal of phone services would not allow gathering of current conditions. Hourly weather data would need to be utilized. There are also currently other options (e.g. internet) for gathering some of this information.

5.1.2.4. Centralizing the annual maintenance costs would relieve local budgets from these costs. This would not change the costs to the Department, but would allow the money currently taken from the ranger station operating budgets to be used for other operational needs.

5.1.3. Statewide Recommendations

Work Group	Recommendation	Requires Policy/Proc Change (Y/N)	Requires Change in Statute (Y/N)	Technology Improvement (Y/N)	Associated Cost/Savings (\$)
Infrastructure and Facilities	Maintain the use of the current weather stations in combination with other weather stations at airports, etc. These stations are needed for the use of NFDRS. The other weather stations are able to supplement our current ones and provide information for CFFDRS in the gaps of coverage from our current RAWS network.	N	N	Y	\$34,288 per year for all DNR owned weather stations

5.1.4. Changes in Investment

Recommendations for Increased Investment

Work Group	Priority Ranking	Recommendation	Associated Cost/Savings (\$)
Infrastructure and Facilities	1	Purchase more Remote Weather Stations to fill gaps in coverage.	\$16,000 - \$18,000 per RAWS

Alternatives for Reduced Investment

Work Group	Priority Ranking	Recommendation	Associated Cost/Savings (\$)
Infrastructure and Facilities	1	Removal of phone and electric utilities from weather stations.	Variable due to differing utility costs around state.
Infrastructure and Facilities	2	Replace phone service at weather stations with cell phone service.	\$20/month/RAWS (\$4,320/year statewide)

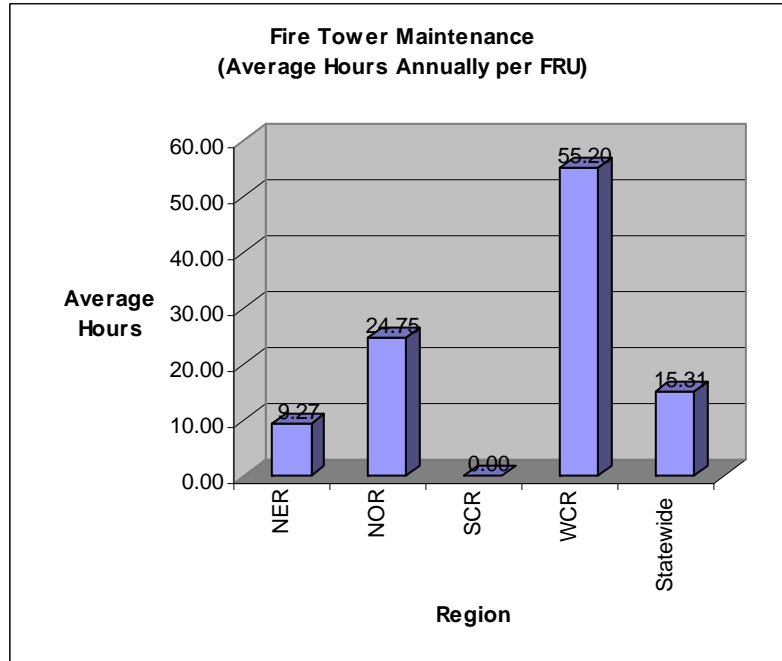
5.2. Fire Towers

5.2.1. Current Conditions

- 5.2.1.1. The Division of Forestry currently owns 88 fire detection towers with 1 tower in the process of being dismantled. (See map 2 in Appendix)
- 5.2.1.2. Due to budgetary restrictions in recent years, a number of fire towers in the hardwood areas are no longer being staffed but are still on the landscape.
- 5.2.1.3. Federal partners, such as the US Forest Service and Menominee Indian Tribe of Wisconsin, own 12 fire towers (9 USFS, 3 MITW). The USFS owns towers at Mountain, Laona, Fifield, Perkinstown, Jump River, Longmile (Grand View), Clam Lake, Iron River. The DNR staffs the USFS tower at Perkinstown. All others are not staffed. MITW owns and staffs the Sand Lake, Kinepoway and La Belle fire towers.
- 5.2.1.4. Current, on-going fire tower inspections show that none of the towers inspected require major maintenance or repairs. There is currently no good data available showing the useful life of this style of fire tower.

5.2.2. Components Considered

- 5.2.2.1. Replacement costs of a fire tower is approximately \$110,000-\$130,000 depending on additional costs such as road and foundation work.
- 5.2.2.2. S-line maintenance costs average \$200 per tower per year with approximately 15.31 man-hours per tower per year for maintenance (0.75 FTE equivalents). Using \$30.61/hour as the average Forestry Technician wage and benefits, the annual man-hour costs for maintenance is \$41,230 per year (\$470 per tower per year).



5.2.2.3. The costs associated with maintaining a fire tower are fairly minimum on a per tower basis.

5.2.2.4. Fire towers add preventative measures as they are viewed by the public as being staffed year round.

5.2.3. Statewide Recommendations

Work Group	Recommendation	Requires Policy/Proc Change (Y/N)	Requires Change in Statute (Y/N)	Technology Improvement (Y/N)	Associated Cost/Savings (\$)
Infrastructure and Facilities	It is recommended that fire towers should be left on the landscape and maintained, even if not staffed, unless they are deemed structurally unsafe. During times of extended drought and extreme fire danger, normally unstaffed towers may be re-staffed as needed.	N	N	N	\$17,600 per year
Infrastructure and Facilities	When a fire tower is dismantled, structural integrity tests should be conducted to help establish usable life expectancy of these structures. This testing should then be used to establish a replacement schedule for fire towers.	Y	N	N	Costs for integrity tests were unavailable at time of report.
Infrastructure and Facilities	Investigate the costs of converting ladders on fire towers to stairs to provide safer access by the tower personnel.	N	N	N	Additional \$10,000 – 20,000 on new. Approx. \$20,000 – 30,000 to retrofit.

5.2.4. Changes in Investment

Recommendations for Increased Investment

Work Group	Priority Ranking	Recommendation	Associated Cost/Savings (\$)
Infrastructure and Facilities	1	Utilize Fire Landscape map to locate additional fire towers in areas of need.	\$110,000 - \$130,000 per tower

Alternatives for Reduced Investment

Work Group	Priority Ranking	Recommendation	Associated Cost/Savings (\$)
Infrastructure and Facilities	1	Removal of utilities such as phone lines located at fire towers.	Variable due to differing utility costs around state.

5.3. SEAT Bases

5.3.1. Current Conditions

5.3.1.1. There are currently 4 primary SEAT bases and 5 secondary SEAT bases located around the state (see Map 3 in Appendix).

5.3.1.2. There is very little infrastructure involved in relation to SEAT bases. What infrastructure is there is tied to existing Division of Forestry owned or leased facilities (e.g. Necedah ranger station, Siren airport hanger). The Division of Forestry currently owns 5 mobile, mixing trailers for the fire suppressant. These trailers are currently located at the secondary SEAT bases. All other buildings and materials are used by the Division of Forestry through agreements and rentals while SEATs are located in the State.

5.3.2. Components Considered

5.3.2.1. The number of SEAT bases activated in any given year varies depending on fire severity and number of SEATs utilized.

5.3.2.2. The location of SEAT bases are correlated to the areas in the state that had been identified as having the greatest potential for having project fires when the SEAT bases were established (see Map 3 in Appendix).

5.3.2.3. The Division of Forestry does not own any of the landing strips that these bases are/will be located at. This limits what the Division of Forestry is able to do in relation to SEAT bases.

5.3.2.4. Costs associated with the SEAT bases are minimal when they activated. There is no cost associated with a SEAT base if it is not activated.

5.3.2.5. Rental of work site trailers for the SEAT base operators equates to \$2,000 to \$3,000 a year. Currently the only SEAT bases that are renting these trailers are Black River Falls and Solon Springs.

5.3.3. Statewide Recommendations

Work Group	Recommendation	Requires Policy/Proc Change (Y/N)	Requires Change in Statute (Y/N)	Technology Improvement (Y/N)	Associated Cost/Savings (\$)
Infrastructure and Facilities	Maintain current SEAT bases as is, activating them as needed based on SEAT contracts implemented.	N	N	N	\$0 unless activated

5.3.4. Changes in Investment

Recommendations for Increased Investment

Work Group	Priority Ranking	Recommendation	Associated Cost/Savings (\$)
Infrastructure and Facilities	1	Explore potential future needs for additional SEAT bases utilizing the Fire Landscape map. (Map 3 in Appendix).	\$5,000 – 8,000 depending on existing facility.

Alternatives for Reduced Investment

Work Group	Priority Ranking	Recommendation	Associated Cost/Savings (\$)
Infrastructure and Facilities	1	No closure of SEAT bases recommended. The use of the airports for SEAT bases is currently on an as needed basis already.	\$0

<p>Infrastructure and Facilities</p>	<p>2</p>	<p>Purchasing a work site trailer or two may create cost savings in the long run as there will no longer be a need to rent trailers. These trailers may be used for other Division of Forestry and DNR work sites during the remainder of the year (e.g. marking camps, etc.).</p>	<p>\$0 initial savings for the first year, but no recurring rental costs in subsequent years.</p>
<p>Infrastructure and Facilities</p>	<p>3</p>	<p>Due to future plans at the Solon Springs airport, a rented work site trailer may not be needed as the airport has agreed to allow Division of Forestry to use a new building being considered.</p>	<p>\$2,000 – 3,000</p>

5.4. Airport Hangers

5.4.1. Current conditions

5.4.1.1. The Division of Forestry utilizes 10 airplanes that are primarily assigned to the Division of Forestry and are currently owned by the Department of Administration. There are opportunities available to utilize planes assigned to the Wisconsin State Patrol as needed and available. The Division of Forestry uses these planes to fly 10 pre-determined, fire detection routes as well as intelligence/safety lookout and coordinate air resources on forest fires.

5.4.1.2. The Division of Forestry currently owns hangers at Siren, Rhinelander and Eau Claire, while the land is leased, this is typically the standard at airports. Hangers and land are leased at Madison (from DOA) and Oshkosh (from Winnebago County).

5.4.1.3. Annual Costs

Hanger	Lease Amount per Year	Number of Pilots	Annual Utility & Maintenance Costs	Total Annual Hanger Expenses
Oshkosh	\$16,000 ¹	3	\$5,208	\$21,208
Madison	\$37,700	1	Included	\$37,700
Siren	\$1,550 ²	3	\$3,960	\$5,510
Rhinelander	\$660 ²	2	\$5,316	\$5,976
Eau Claire	\$260 ²	1	\$2,700	\$2,960

¹Lease expires December 31, 2010.

²Lease is for land only. DNR owned hanger building.

Building a DNR owed hanger on leased land should greatly reduce these costs.

5.4.1.4. According to a survey of the pilots, the hangers are adequate for their needs. Eau Claire is looking to build on to the current hanger, expanding office space and allowing room for another plane in the hanger.

5.4.1.5. Current location of facilities have been deemed adequate for the purposes that the aircraft are used (see Map 3 in Appendix). From a forest fire program standpoint, the location of some of the hangers is not ideal. These aircraft are utilized for other purposes besides the forest fire program, however. During high (and above) fire

danger, these planes often are prepositioned at airports more centrally located for the dispatch group that they are serving on that day.

5.4.2. Components considered

5.4.2.1. Lease costs of hanger facilities versus lease costs of just the land.

5.4.2.2. Services offered by the airports and needed by the Division of Forestry.

5.4.2.3. Co-locating pilot offices with the hangers.

5.4.2.4. Vacating the Oshkosh hanger and splitting the aircraft between Rhinelander, Eau Claire and Madison.

Flight (Hanger to Dispatch Group)	Closest Point on Detection Route	Approximate Air Miles	Round Trip Flight Cost¹	Difference
Oshkosh to Waupaca	Berlin	18.5	\$38	+ \$64
Madison to Waupaca	Grand River Marsh	48.8	\$102	
Oshkosh to Peshtigo	Stiles	68.3	\$142	- \$34
Rhinelander to Peshtigo	Goodman	52.2	\$108	
Oshkosh to Wisconsin Rapids	Friendship	63.4	\$132	+ \$54
Eau Claire to Wisconsin Rapids	Wisconsin Rapids	89.4	\$186	

¹Rate used is \$125/hour, taken from the 2009 Fire Report Handbook single engine aircraft and an average flight speed of 2 miles/minute (120mph)

5.4.3. Statewide Recommendations

Work Group	Recommendation	Requires Policy/Proc Change (Y/N)	Requires Change in Statute (Y/N)	Technology Improvement (Y/N)	Associated Cost/Savings (\$)
Infrastructure and Facilities	Keep the pilot offices co-located at the hangars. This provides for quick response by the pilots for forest fire needs.	N	N	N	\$0 in Capital dollars expenditure. Provides cost efficiency.
Infrastructure and Facilities	Review lease requirements as they come due to verify if they are still pertinent and cost effective to the Division of Forestry needs. This includes location of the hanger to correlate with forest fire needs as well as purchasing/constructing Division of Forestry owned hangars.	N	N	N	See lease table on page 18

5.4.4. Changes in Investment

Recommendations for Increased Investment

Work Group	Priority Ranking	Recommendation	Associated Cost/Savings (\$)
Infrastructure and Facilities	1	Purchase additional aircraft and re-evaluate hanger needs with the additional aircraft.	Cessna 180 series \$90,000 - 100,000 used, and \$250,000 new.

There is currently space for additional aircraft as follows:

Hanger	Current Aircraft	Space for Additional Aircraft
Oshkosh	3 ¹	1
Madison	1	3
Siren	3	0
Rhineland	2	1
Eau Claire	1	1 ²

¹This includes the airplane that was destroyed but is scheduled to be replaced.

²Dependant on hanger remodeling that has been approved.

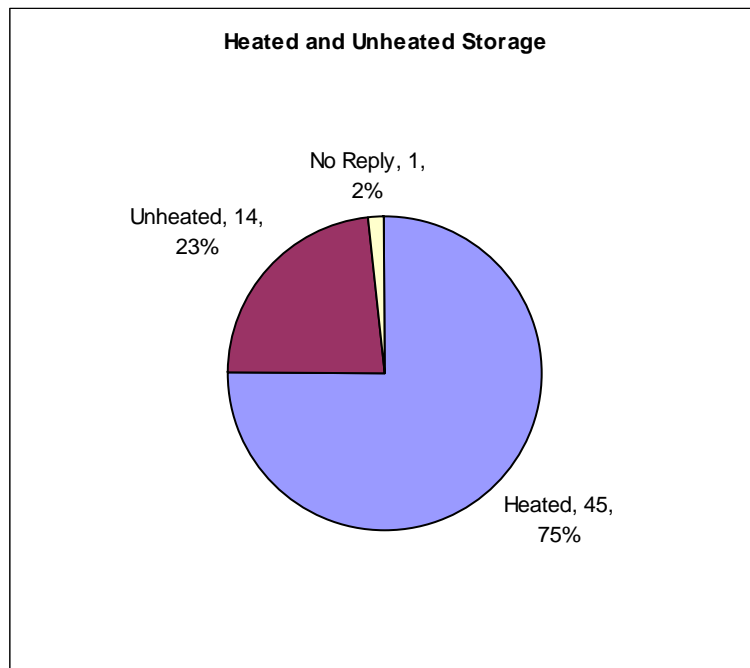
Alternatives for Reduced Investment

Work Group	Priority Ranking	Recommendation	Associated Cost/Savings (\$)
Infrastructure and Facilities	1	Renegotiate the lease for the Madison and Oshkosh hangars for lower rates.	See lease table on page 18
Infrastructure and Facilities	2	Move aircraft from Oshkosh to various other locations to eliminate lease costs. Additional flight time to the Oshkosh area for non-forest fire work would be charged to the Division that requests the flights.	See table on page 19

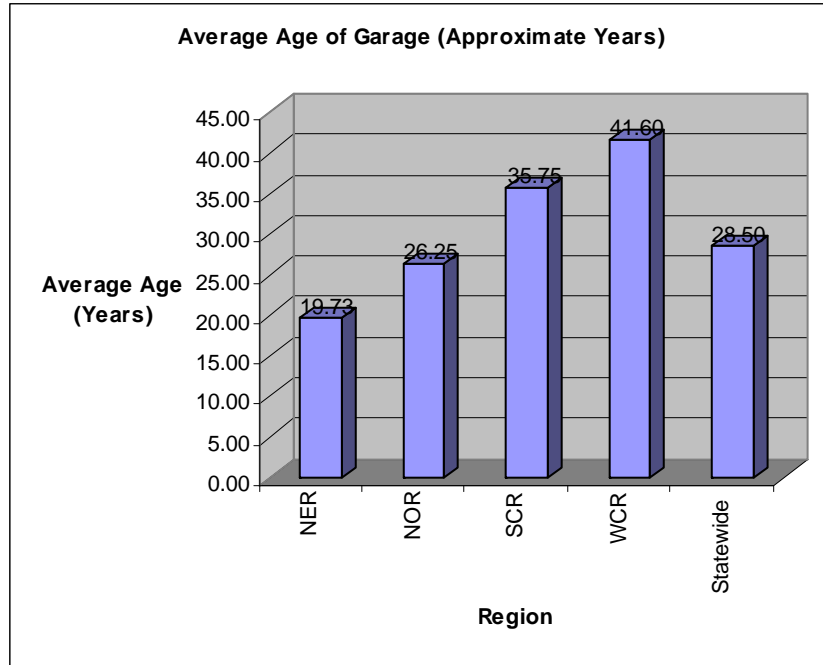
5.5. Heated Garages/Storage

5.5.1. Current Conditions

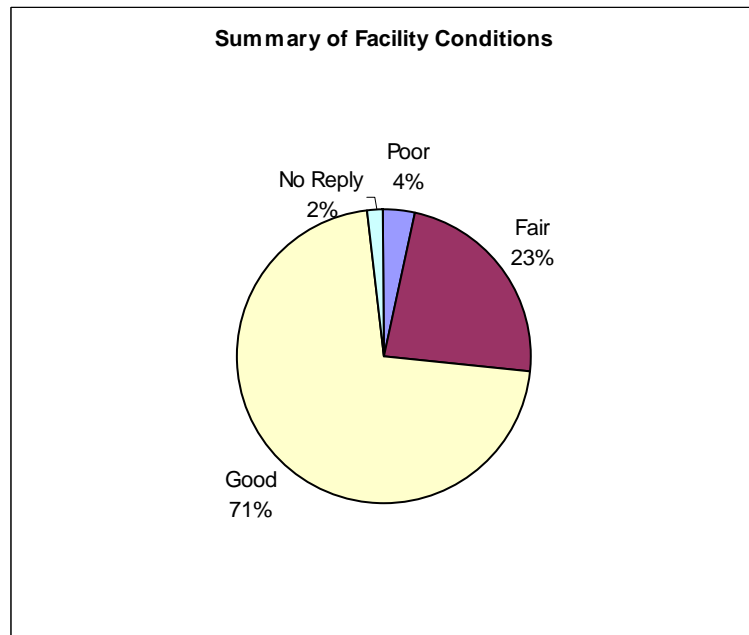
5.5.1.1. Data from a survey shows that currently there are 60 garages/fire equipment storage buildings for the fire control engines and tractor-plovs. Of those, 45 are heated (75%), and 14 are unheated (23%) with 1 unknown. Some ranger stations have both a heated and cold storage building so the number of storage buildings will not directly correlate to the number of ranger stations.



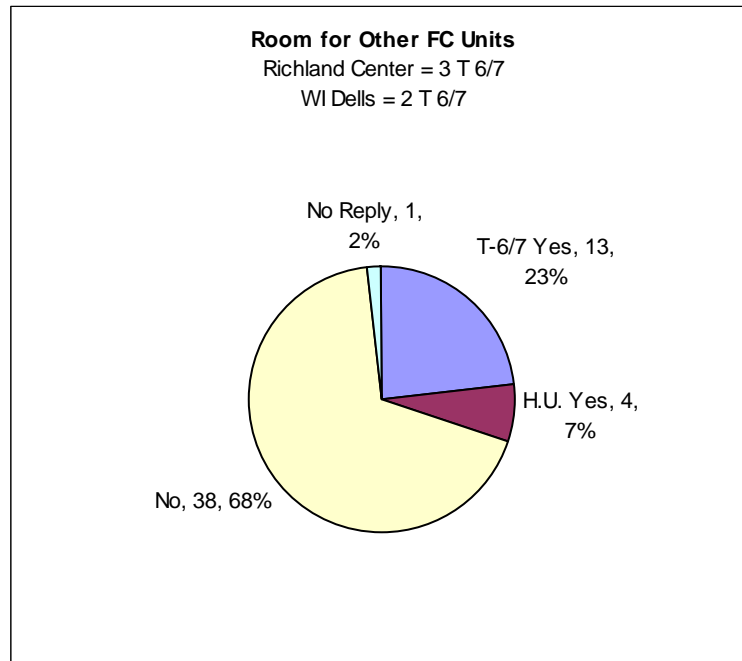
5.5.1.2. The average age of the garages and storage buildings is approximately 28.5 years old.



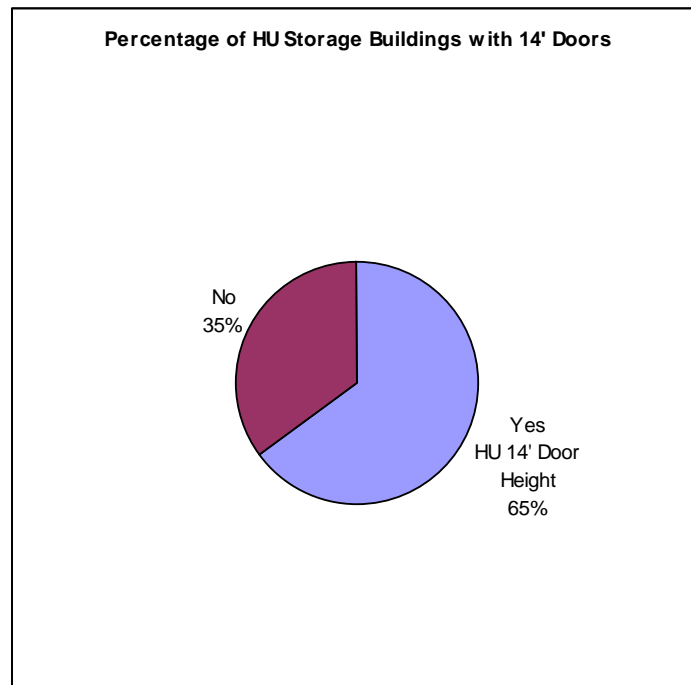
5.5.1.3. Survey results show that 94% of buildings are in fair to good condition with 4% are in poor condition (Oconto Falls and Tomahawk). Oconto Falls is scheduled to have a full ranger station built in the 2011-2013 biennium.



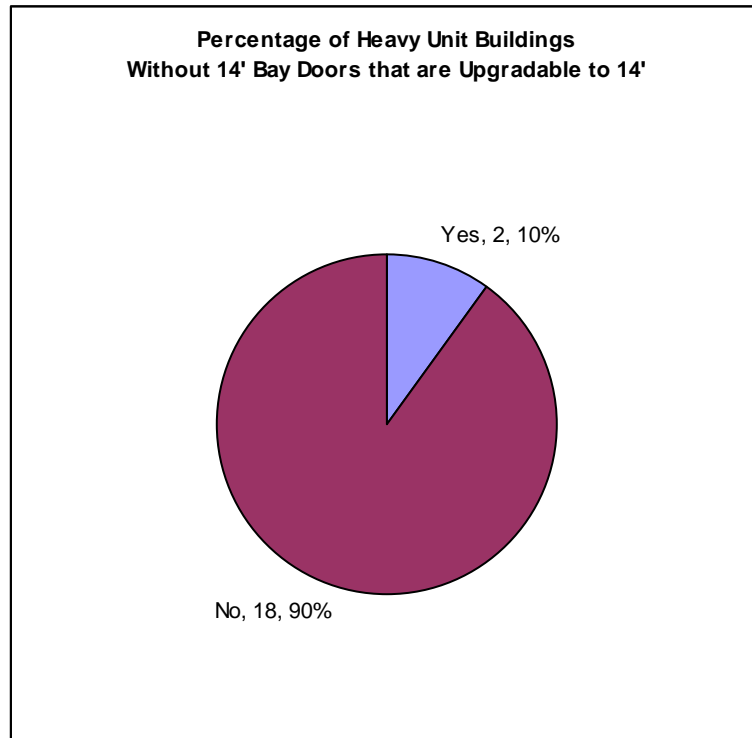
5.5.1.4. Thirteen (23%) of the buildings reportedly have room for at least one Type 6 or 7 engine. Four (7%) have room for one additional heavy unit.



5.5.1.5. Sixty-five percent (65%) of buildings reportedly have 14-foot high bay doors. It is felt that this is adequate to meet the height needs of heavy units in future years.



5.5.1.6. Of the 20 Heavy Unit buildings that do not have 14-foot doors, 90% are not able to upgrade to 14-foot bay doors due to ceiling heights of the buildings.



5.5.1.7. The current replacement schedule for warm storage buildings is one building per fiscal year. Planned capital development projects:

Station	Project	Biennium
Cornell ¹	Replace Warm Storage	2009-2011
Barnes	Replace Warm Storage	2009-2011
Necedah	Build Warm Storage ²	2011-2013
Waupaca	Replace Warm Storage ³	2011-2013
Black River Falls	Replace Warm Storage	2011-2013

¹Ready to go to bidding. Put on hold.

²Currently cold storage buildings.

³Current warm storage is in a Parks building.

5.5.2. Components Considered

5.5.2.1. The replacement schedule of tractor-plows is replacement after 20 years of service.

This may require alterations to current facilities to be able to handle the new equipment.

5.5.2.2. Requirements for construction of any new storage building overhead doors is 14-foot high and 12-foot wide to allow a loaded heavy unit to enter and exit the facility.

5.5.2.3. Local budgets are seeing an increase in operational costs (utilities) when replacing cold storage buildings with warm storage buildings with no increase in their operational budgets.

5.5.2.4. Current capital development processes require a design of individual buildings rather than utilizing a standard template.

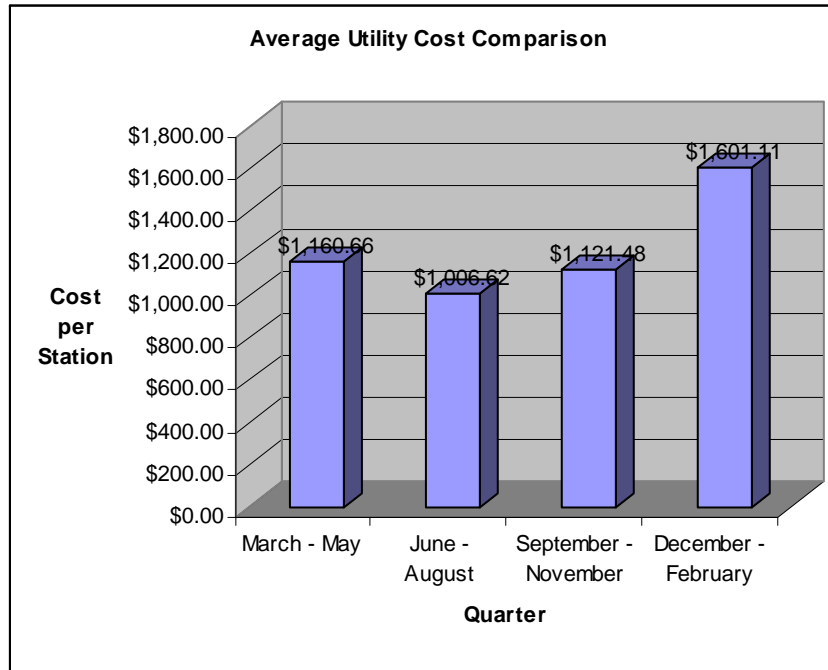
5.5.2.5. Currently the average replacement costs of warm storage buildings is approximately \$400-500,000.

Statewide Recommendations

Work Group	Recommendation	Requires Policy/Proc Change (Y/N)	Requires Change in Statute (Y/N)	Technology Improvement (Y/N)	Associated Cost/Savings (\$)
Infrastructure and Facilities	Continue construction of warm storage buildings and replacing cold storage buildings with warm storage. All storage buildings should be constructed with 14-foot high and 12-foot wide doors to allow for loaded heavy unit ingress and egress.	N	N	N	\$400,000 – 500,000 However costs are bonded.
Infrastructure and Facilities	Conduct energy audits for the facilities to find areas that can be improved to reduce utility costs.	N	N	N	Use of DNR employees provides audit at no cost to the Division of Forestry.
Infrastructure and Facilities	Create a standard template for the layout and construction of warm storage facilities utilizing the most energy efficient construction materials and design to help counter balance maintenance and operational costs of the facility.	N	N	N	No capital dollar savings. Has time efficiency savings.
Infrastructure and Facilities	Consider construction design that would allow for winterizing the facility during non-fire periods. *	Y	N	Y	See table below

* Manufacturers of new, efficiency furnaces are recommending not to lower the heat below 55⁰ for proper function.

Average utility costs are \$500-600 higher per station per quarter during the winter months of December through February.



Changes in Investment

Recommendations for Increased Investment

Work Group	Priority Ranking	Recommendation	Associated Cost/Savings (\$)
Infrastructure and Facilities	1	Increase the replacement rate of cold storage facilities with warm storage facilities to 2 per year.	\$400,000 – 500,000 However costs are bonded.

Alternatives for Reduced Investment

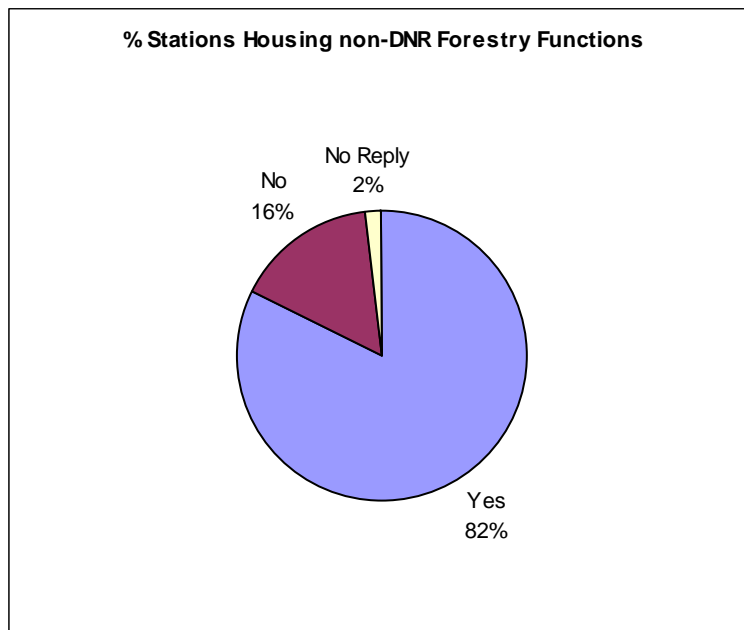
Work Group	Priority Ranking	Recommendation	Associated Cost/Savings (\$)
Infrastructure and Facilities	1	Extend the schedule of construction of 1 warm storage facility per year to potentially 1 every other year.	\$400,000 – 500,000 However costs are bonded.

5.6. Ranger Stations

5.6.1. Current Conditions

5.6.1.1. There are currently 50 ranger station facilities located throughout the state. Of these, 6 have 2 FRUs located in one office building (See map 4 in appendix).

5.6.1.2. There are currently a total of 406 DNR employees located in Ranger Stations. Of these, 319 are Division of Forestry employees. Approximately 180 of these employees are in the fire control program. This number excludes foresters that may have type-8 engines to assist during fire season. Eighty-two (82%) of the facilities have functions other than Forestry, including non-DNR personnel.



5.6.1.3. The resources for the Washburn FRU are split into 2 locations. The ranger and type 6 engine are located in a state owned building in Washburn, while the technician and heavy unit is located in a leased facility in Ashland.

5.6.1.4. Five (5) ranger stations located outside of service centers also are considered validation stations for boat, ATV, etc. registrations. These ranger stations are: Whiting, Winter, Barnes, Florence and Prentice. This data was taken from the DNR public website.

5.6.1.5. Leased Facilities: Six (6) ranger station facilities and three (3) storage facilities are leased.

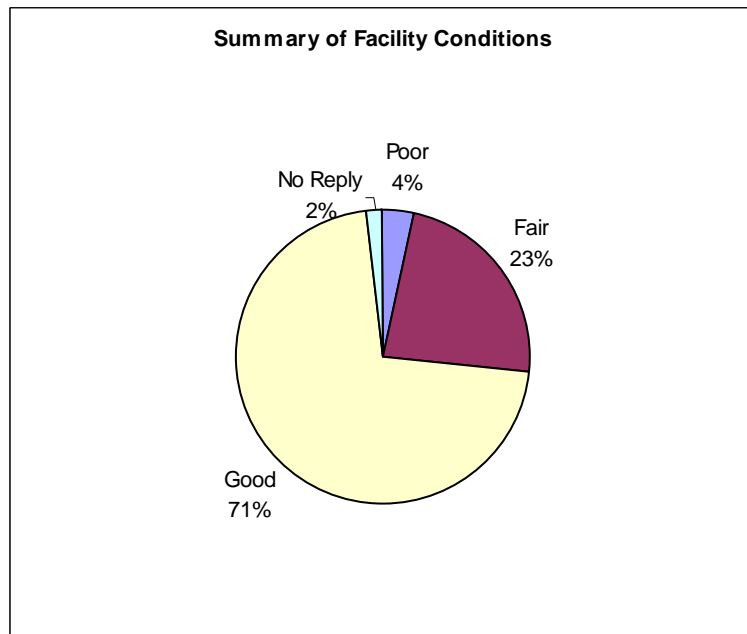
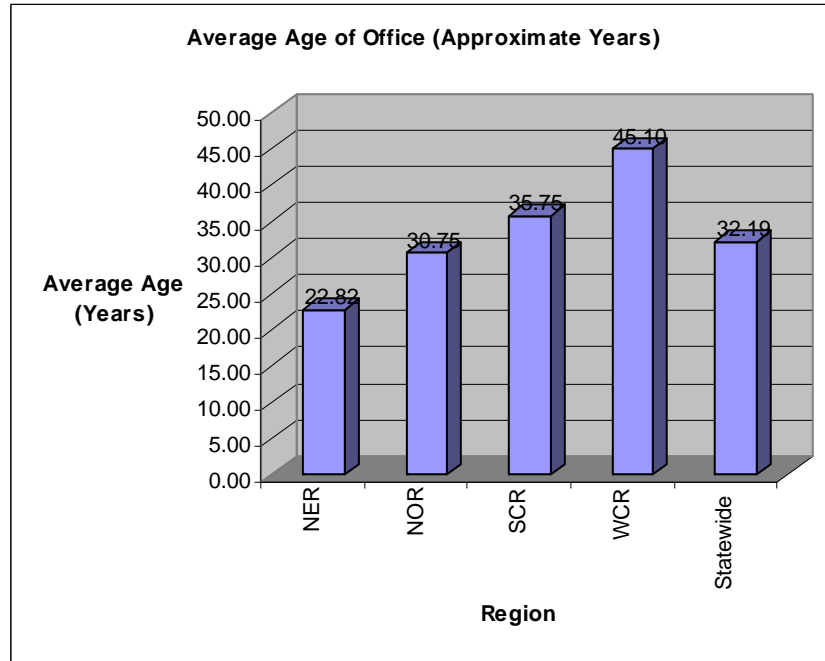
Location	Type of Facility	# of Forestry Personnel	# of Total Personnel	Total Lease Amount	Forestry %	Forestry's Lease Amount	Average Cost per Person per Year
Ashland	S.C.	2	19	\$107,151.00	13.5%	\$14,465.39	\$15,506.98*
Ashland	Storage			\$122,581.92	13.5%	\$16,548.56	N/A
Ladysmith	S.C.	7	16	\$126,213.00	13.5%	\$17,038.76	\$2,434.11
Mellen	R.S.	5	5	\$82,117.92	100%	\$82,117.92	\$16,423.58
Peshtigo	S.C.	7	33	\$249,297.00	13.5%	\$33,655.10	\$4,807.87
Richland Center	R.S.	4	4	\$14,123.88	100%	\$14,123.88	\$3,530.97
Spooner	Storage			\$12,364.92	13.5%	\$1,669.26	
Wautoma	S.C.	6	37	\$104,650.44	13.5%	\$14,127.81	\$4,368.47*
Wautoma	Storage			\$89,503.68	13.5%	\$12,083.00	
				Total Cost =		\$205,829.66	
				Average Cost =		\$22,869.96	
				Average Cost per Forestry Employee =		\$6,639.67	

**This average cost per person per year includes the lease cost of the storage facility.*

The average cost per person per year for the Ashland and Mellen facilities do not appear to be very cost efficient.

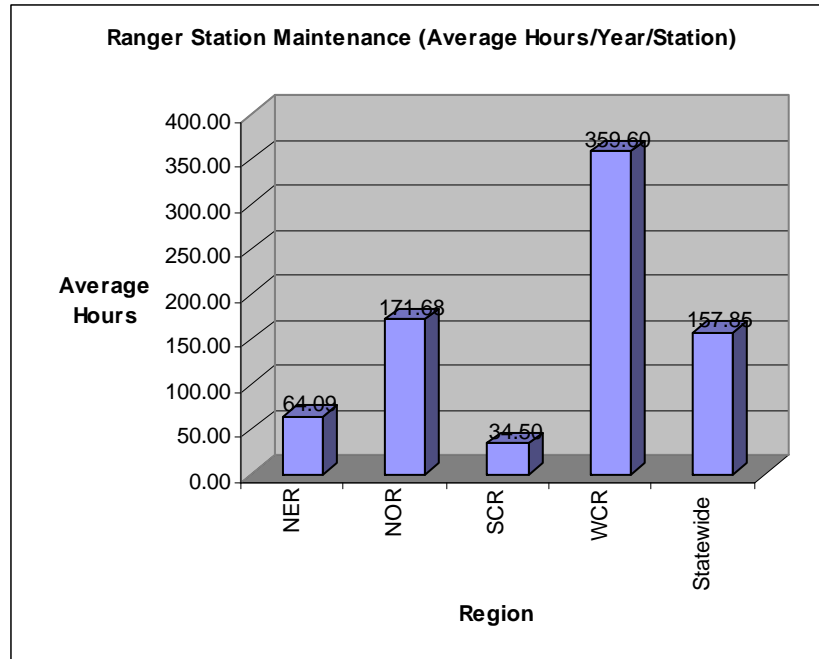
The lease information was provided by Julie Amakobe, Bureau of Facilities and Lands.

5.6.1.6. Average age of the ranger station facility is 32 years old with 94% of the facilities reportedly in fair to good condition.



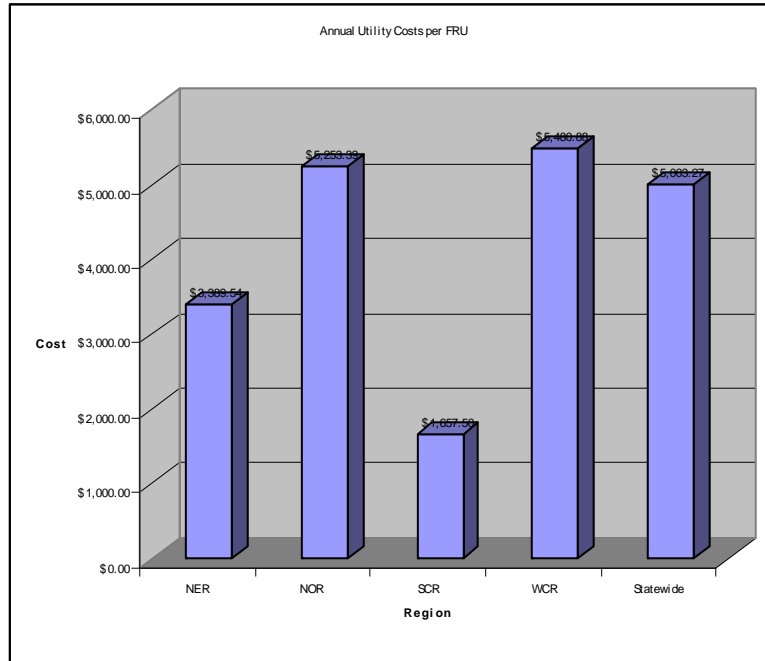
Ranger stations listed as poor on survey results were Oconto Falls and Tomahawk.

5.6.1.7. Based on responses from the survey, the average time spent on facility and ground maintenance by Forestry employees is approximately 158 hours per year (4.4 FTE equivalents). Using \$30.61/hour as the average Forestry Technician wage and benefits, the annual man-hour costs for maintenance is \$4,837 per ranger station per year (\$241,850 per year statewide). This maintenance cost includes maintenance for both the ranger station office building and the storage building(s).

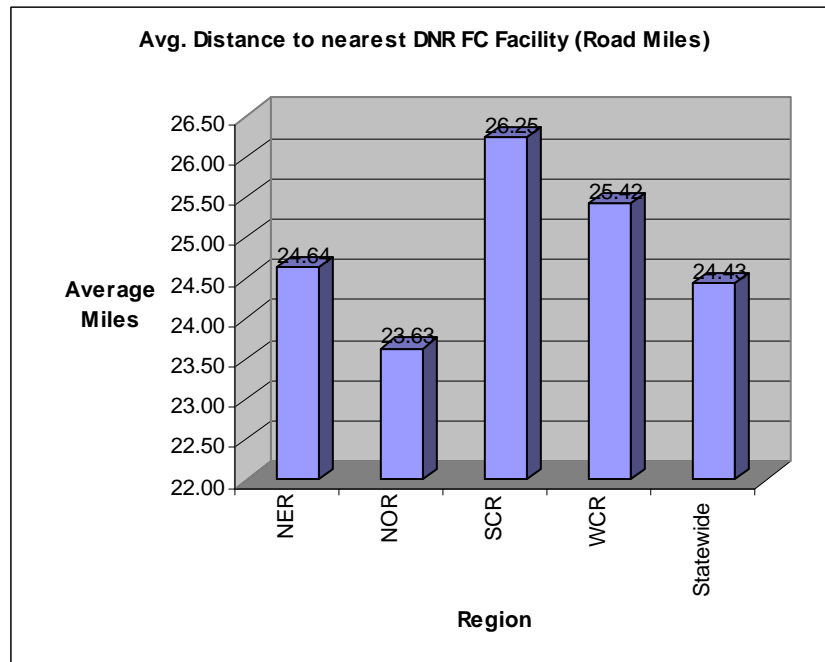


There may be some correlation with the larger number of hours spent on facility and ground maintenance in the West Central Region with their buildings reportedly being on average 10 years older than the statewide average.

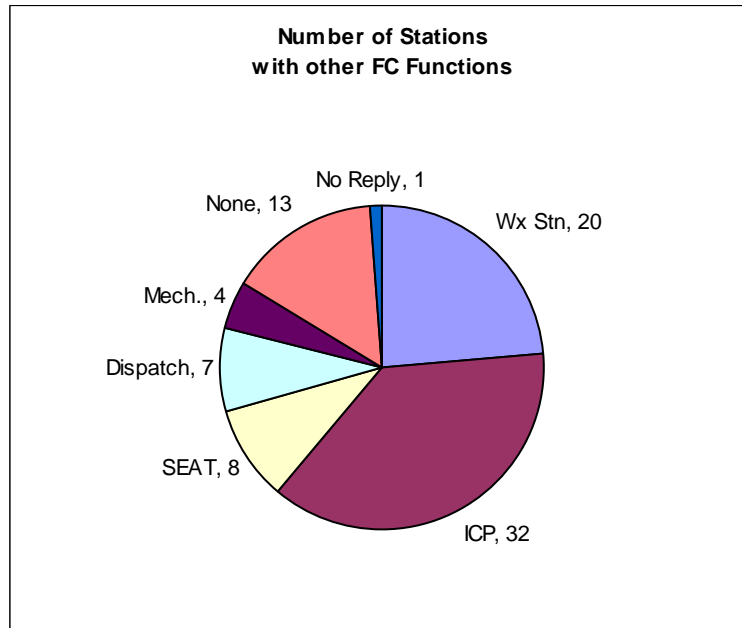
5.6.1.8. Based on the responses from the survey, current utility cost per facility per year is approximately \$5,000.



5.6.1.9. Average distance between ranger stations is approximately 25 miles.



5.6.1.10. Thirty-two (32) of these facilities are also designated as Incident Command Posts. Seven (7) ranger stations have dispatch collocated in the facility.



5.6.2. Components Considered

5.6.2.1. Costs of leased versus state owned facilities.

5.6.2.2. Costs of maintenance of facilities and landscape.

5.6.2.3. According to the most recent cost estimates, the replacement of a ranger station would cost approximately \$1,300,000.

5.6.2.4. The current schedule for ranger station construction is one ranger station every other fiscal year. Planned capital development projects:

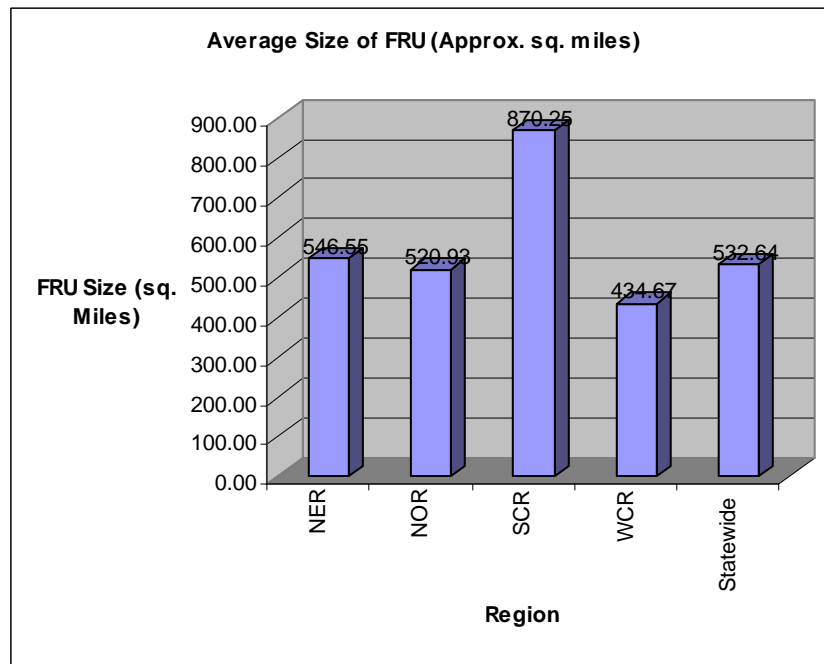
Station	Project	Biennium
Prentice ¹	Replace Ranger Station	2009-2011
Whiting ¹	Replace Ranger Station	2009-2011
Tomah ¹	Replace Ranger Station	2009-2011
Oconto Falls	Replace Ranger Station	2011-2013
Medford	Replace Ranger Station	2011-2013
Minong	Replace Ranger Station	2011-2013

¹Ready to go to bidding. Put on hold.

5.6.2.5. There are 23 ranger stations that are currently 30 years old or older. The current replacement schedule may exceed the typical usefulness of the facility.

5.6.2.6. Location of ranger stations may not alter response times during critical fire weather as heavy units are typically pre-positioned away from the ranger station to fire prone areas to reduce response time. (See map 5 in Appendix)

5.6.2.7. The average FRU size is approximately 530 square miles.



5.6.3. Statewide Recommendations

Work Group	Recommendation	Requires Policy/Proc Change (Y/N)	Requires Change in Statute (Y/N)	Technology Improvement (Y/N)	Associated Cost/Savings (\$)
Infrastructure and Facilities	Continue replacement of ranger stations to upgraded facilities.	N	N	N	\$1,300,000 However costs are bonded.
Infrastructure and Facilities	Conduct energy audits for the facilities to find areas that can be improved to reduce utility costs.	N	N	N	Use of DNR employees provides audit at no cost to the Division of Forestry.
Infrastructure and Facilities	Look into state owned buildings versus leased buildings as leases expires.	N	N	N	See lease table on page 31.
Infrastructure and Facilities	Create a standard template for the layout and construction of ranger station facilities to reduce all capital development costs associated with projects utilizing the most energy efficient construction materials and design to help counter balance maintenance and operational costs of the facility.	N	N	N	No capital dollar savings. Has time efficiency savings
Infrastructure and Facilities	Utilize the most cost effective method when comparing contracting maintenance versus utilizing Forestry employees to complete the work.	N	N	N	Dependant on local contracting costs.
Infrastructure and Facilities	As facilities come up for replacement, look into the feasibility of combining ranger stations with other ranger stations or other functions as appropriate. This may require utilizing more prepositioning of fire units during critical fire weather.	N	N	N	Approximately \$650,000 However costs are bonded.
Infrastructure and Facilities	When a new ranger station is built, vacate the old building to reduce the fiscal impact of utilities. Other divisions may still utilize the building as long as they take over the costs. *	N	N	N	Approx. \$600 per year

* Grantsburg still utilizes the old ranger station along with a new warm storage and a purchased home converted to offices. Winter still utilizes the old ranger station for cold storage (furnace was pulled). Washburn personnel and equipment is in 2 locations (the old ranger station in Washburn and new service center in Ashland).

5.6.4. Changes in Investment

Recommendations for Increased Investment

Work Group	Priority Ranking	Recommendation	Associated Cost/Savings (\$)
Infrastructure and Facilities	1	Increase the replacement rate of ranger stations to 1 every year.	\$1,300,000 However costs are bonded.

Alternatives for Reduced Investment

Work Group	Priority Ranking	Recommendation	Associated Cost/Savings (\$)
Infrastructure and Facilities	1	Extend the schedule of construction of 1 ranger station every 2 years to 1 ranger station every 3 to 4 years. Increasing this rotation schedule may extend the building beyond it's effective usefulness.	\$1,300,000 However costs are bonded.

APPENDICES

Map 1 = Weather Station Locations

Map 2 = Fire Tower Locations

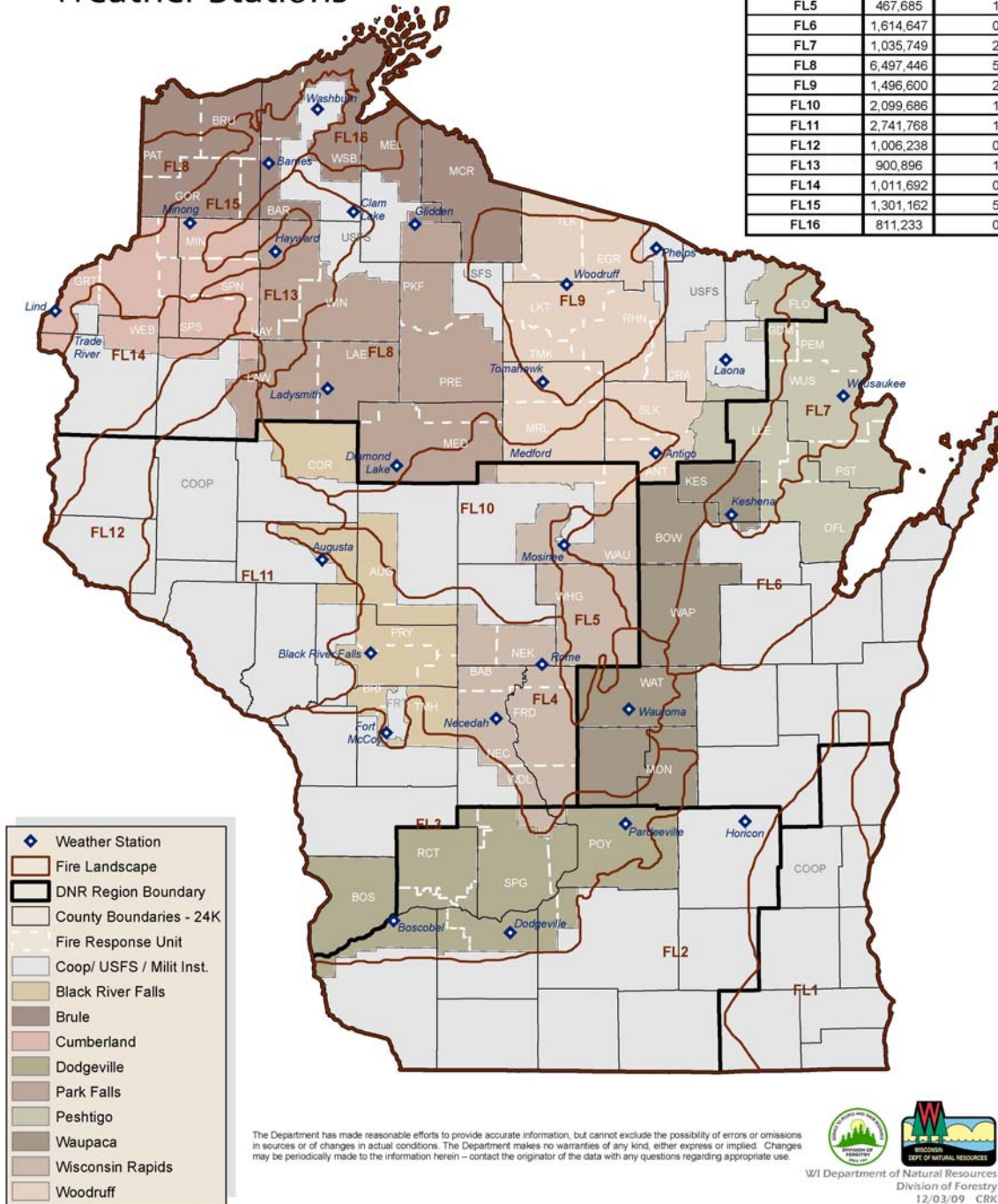
Map 3 = SEAT Bases and Hanger Locations

Map 4 = Ranger Station Locations

Map 5 = Heavy Unit Preposition Locations

DNR Fire Protection: Weather Stations

Fire Landscape	Acreage	Weather Stations
FL1	2,071,530	0
FL2	6,294,084	1
FL3	3,750,241	3
FL4	2,789,397	5
FL5	467,685	1
FL6	1,614,647	0
FL7	1,035,749	2
FL8	6,497,446	5
FL9	1,496,600	2
FL10	2,099,686	1
FL11	2,741,768	1
FL12	1,006,238	0
FL13	900,896	1
FL14	1,011,692	0
FL15	1,301,162	5
FL16	811,233	0

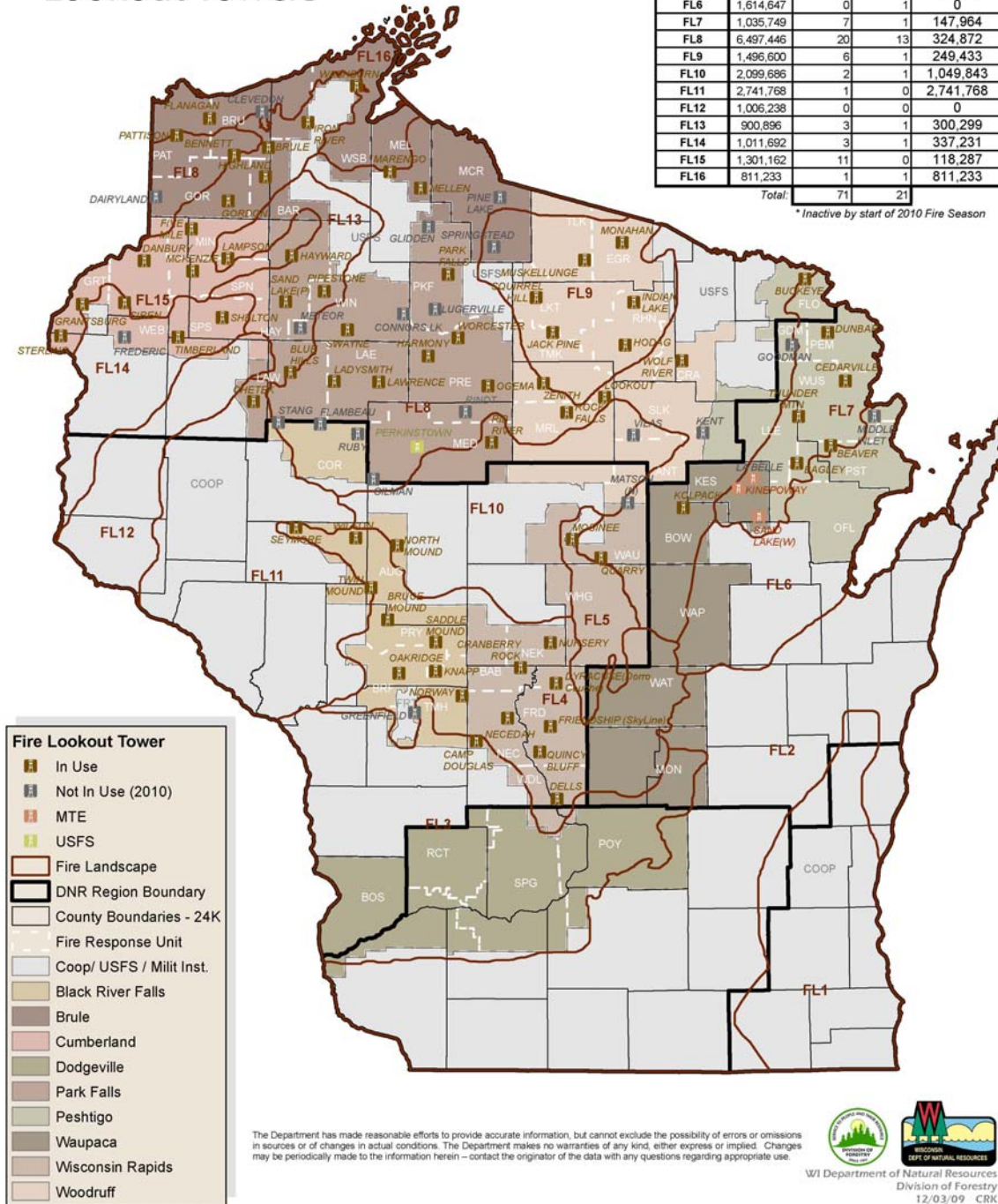


Map 1

DNR Fire Protection: Lookout Towers

Fire Landscape	Acreage	Active Towers	Inactive Towers*	Acres / Active Tower
FL1	2,071,530	0	0	0
FL2	6,294,084	0	0	0
FL3	3,750,241	1	0	3,750,241
FL4	2,789,397	15	1	185,960
FL5	467,685	1	0	467,685
FL6	1,614,647	0	1	0
FL7	1,035,749	7	1	147,964
FL8	6,497,446	20	13	324,872
FL9	1,496,600	6	1	249,433
FL10	2,099,686	2	1	1,049,843
FL11	2,741,768	1	0	2,741,768
FL12	1,006,238	0	0	0
FL13	900,896	3	1	300,299
FL14	1,011,692	3	1	337,231
FL15	1,301,162	11	0	118,287
FL16	811,233	1	1	811,233
Total		71	21	

* Inactive by start of 2010 Fire Season



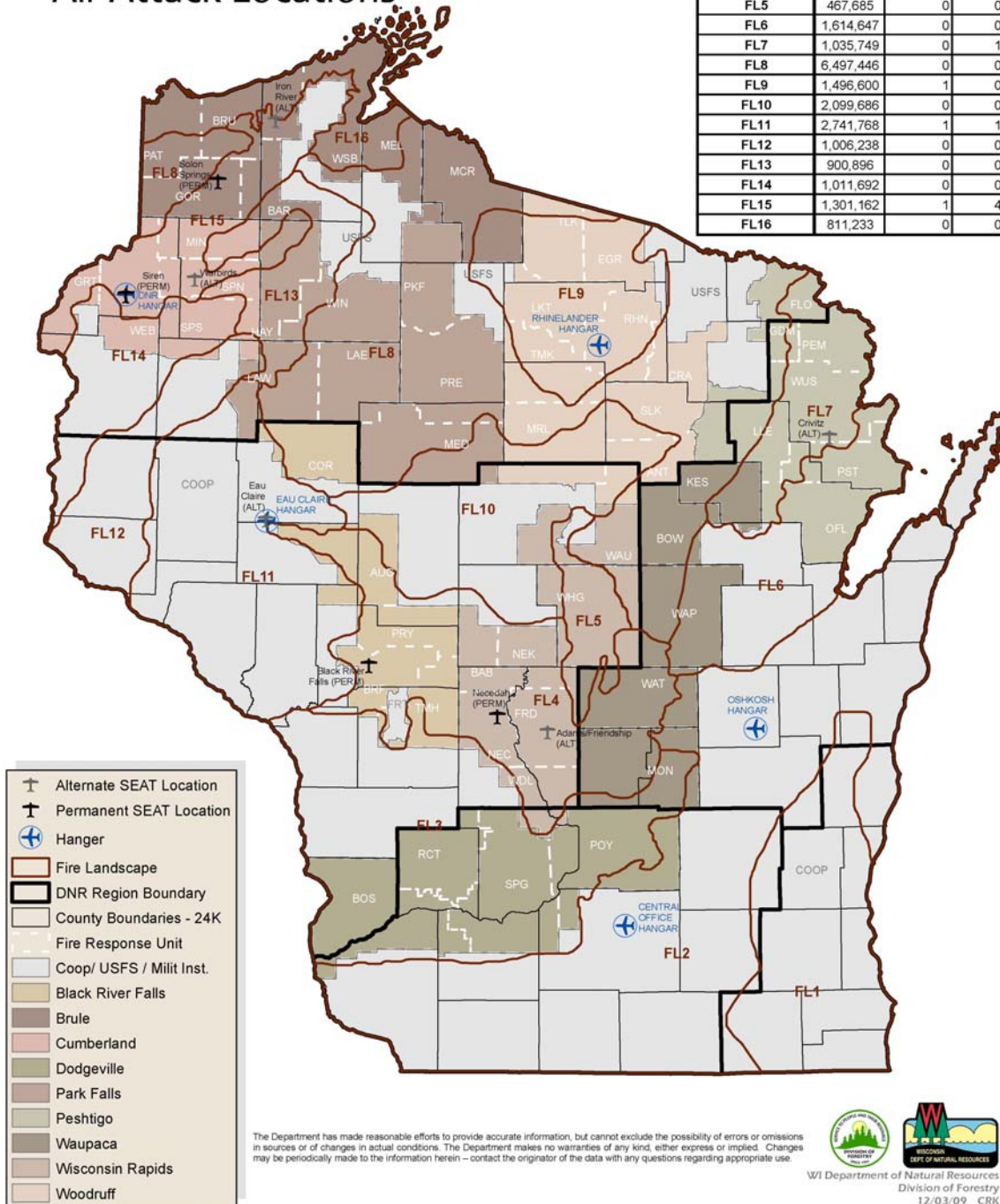
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Map 2

DNR Fire Protection: Air Attack Locations

Fire Landscape	Acreage	Hangers	SEAT Bases
FL1	2,071,530	0	0
FL2	6,294,084	2	0
FL3	3,750,241	0	0
FL4	2,789,397	0	3
FL5	467,685	0	0
FL6	1,614,647	0	0
FL7	1,035,749	0	1
FL8	6,497,446	0	0
FL9	1,496,600	1	0
FL10	2,099,686	0	0
FL11	2,741,768	1	1
FL12	1,006,238	0	0
FL13	900,896	0	0
FL14	1,011,692	0	0
FL15	1,301,162	1	4
FL16	811,233	0	0



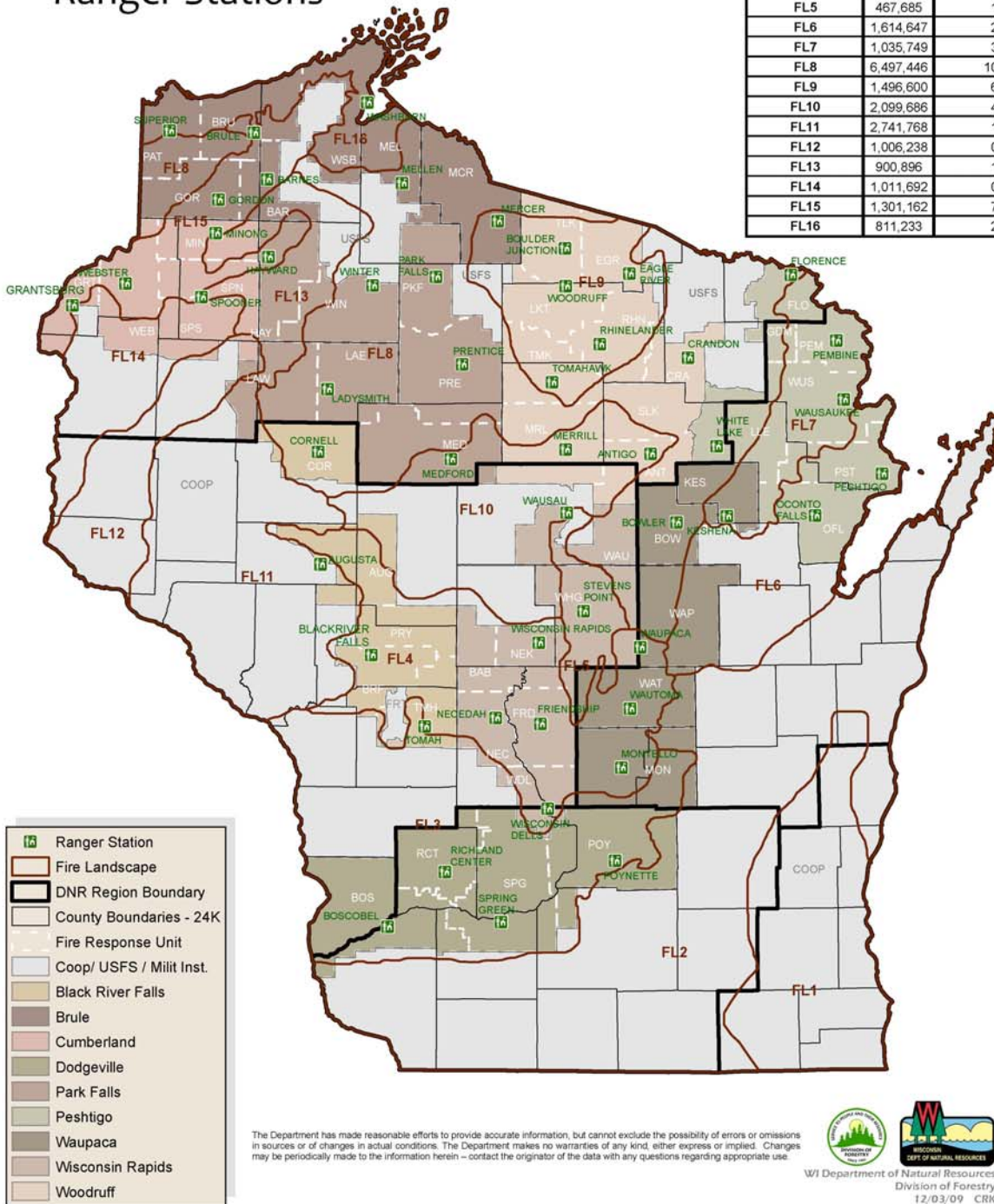
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Map 3

DNR Fire Protection: Ranger Stations

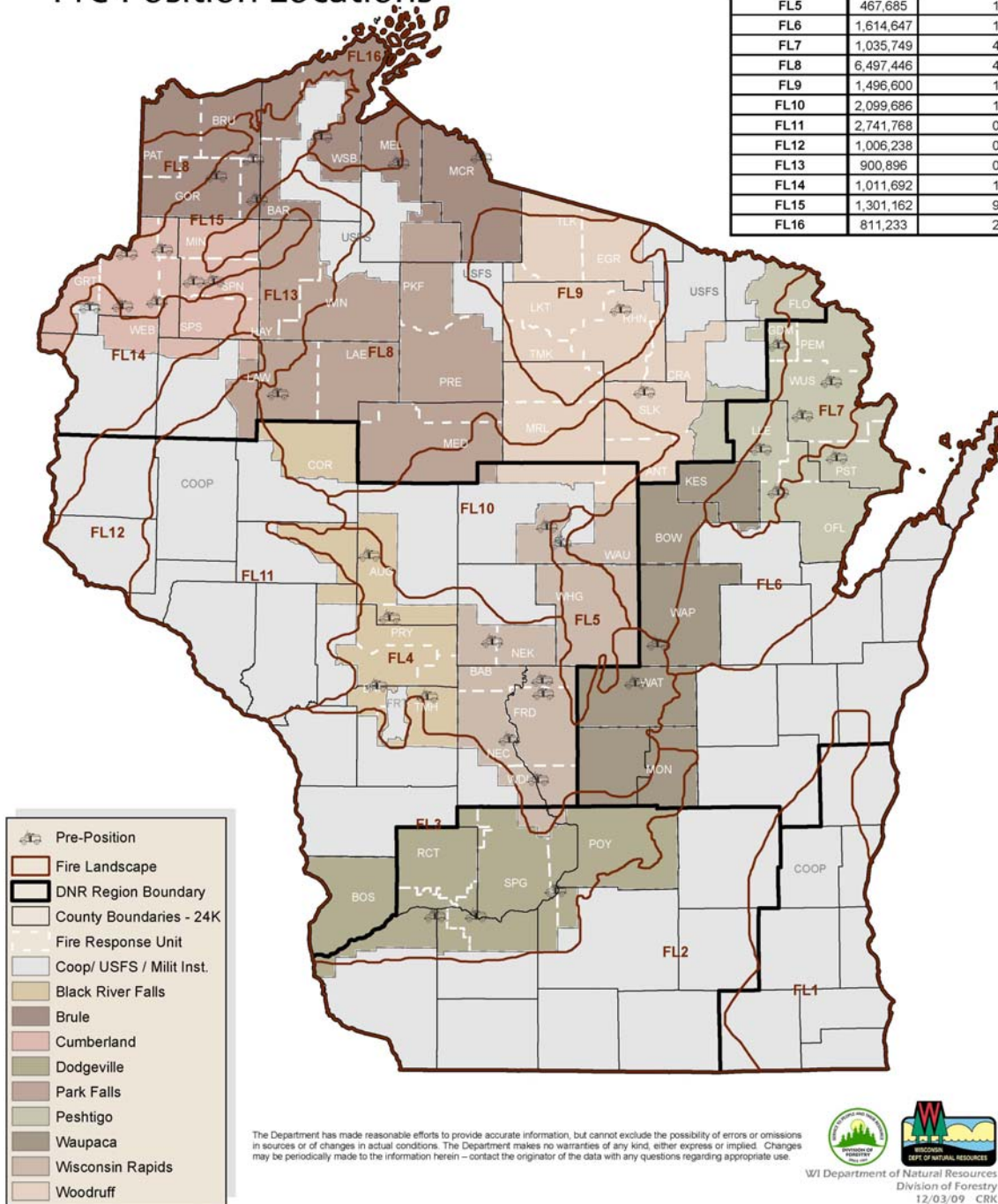
Fire Landscape	Acreage	Ranger Stations
FL1	2,071,530	0
FL2	6,294,084	0
FL3	3,750,241	4
FL4	2,789,397	9
FL5	467,685	1
FL6	1,614,647	2
FL7	1,035,749	3
FL8	6,497,446	10
FL9	1,496,600	6
FL10	2,099,686	4
FL11	2,741,768	1
FL12	1,006,238	0
FL13	900,896	1
FL14	1,011,692	0
FL15	1,301,162	7
FL16	811,233	2



Map 4

DNR Fire Protection: Pre-Position Locations

Fire Landscape	Acreage	Pre-Positions
FL1	2,071,530	0
FL2	6,294,084	0
FL3	3,750,241	3
FL4	2,789,397	11
FL5	467,685	1
FL6	1,614,647	1
FL7	1,035,749	4
FL8	6,497,446	4
FL9	1,496,600	1
FL10	2,099,686	1
FL11	2,741,768	0
FL12	1,006,238	0
FL13	900,896	0
FL14	1,011,692	1
FL15	1,301,162	9
FL16	811,233	2



Map 5