

Addendum to the
Natural Resources Management Plan for the
Forestview Middle School Forest
prepared by the
Forestview Middle School Forest Management Committee
March, 2006

This addendum is prepared to provide details for activities to be implemented as outlined in the Natural Resources Management Plan for the Forestview Middle School Forest. Specific management recommendations are given for vegetative cover types within each management unit. Specific instructions are also given for development of facilities for the School Forest.

Conifer Management Unit – 16 acres

The management objective of the Conifer Management Unit is to establish and maintain predominantly coniferous cover types, such as red pine, jack pine, eastern white pine, white spruce, balsam fir, red cedar, and tamarack.

Cutover Jack Pine (COJP) – 11.3 acres: The mature jack pine was harvested from this area in 2000 – 2001. Widely scattered, small diameter oak, jack pine, aspen, maple, and birch were left standing during the harvest. Much of this area was opened up to full sunlight following the harvest allowing a heavy density of hazel and other shrubs to take over the site. The shrubs are competing heavily with any tree regeneration for sunlight.

Treatment: In the next ten years, reforest the heavy shrub areas of this unit with desirable conifer tree species. Approximately 2 acres per year will be treated.

Each year, the following work will need to be completed:

- In the spring before leaf out, identify the exact area to be prepared for planting the next year. Measure the area to determine acreage. Decide which conifer tree species will be planted in the area.
- During the summer, fall, or winter, eliminate the undesirable shrubs by mechanical cutting, chemical application, or prescribed fire. The site preparation will be done by students with hand tools, or by hired contractors as funding is available. During the site preparation operations, do not destroy any desirable, natural tree regeneration on the site. These reserve trees will need to be identified and marked.
- In the late fall, order the conifer tree seedlings to be planted the next spring. The seedlings will need to be purchased, or obtained through other means.
- In early spring, 6th grade teachers and students should plan and organize for planting of the seedlings. Layout and spacing of the trees should be decided. Marking of the planting sites may be needed. Delivery of the seedlings must be arranged for.

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- In the spring, teacher and student planting crews will plant the tree seedlings. Demonstrations of tree planting techniques should be provided by a natural resource expert, such as a forester. Care of the seedlings during planting should also be explained.
- If possible, watering of the seedlings could be done until the school year is over. Once per week, students could water the seedlings using gallon containers. If normal rainfall is received (1 inch per week during May), watering will not be needed.
- Maintenance: In the following years until students leave Forestview, the same class that planted the seedlings will annually complete seedling maintenance activities. Maintenance will include:
 - Protecting the seedlings from damage by deer browsing. This could involve several different techniques, such as installing paper bud caps or tree shelters, or applying a repellent.
 - Releasing the seedlings from competing vegetation. This will involve mechanically cutting the undesirable woody vegetation from around each of the planted seedlings.

Maintenance needs should be evaluated in late summer every year. Maintenance should be completed until the seedlings are well established and are considered “free to grow”.

Tree Planting 2005 (TP05) – 0.4 acre: This area was previously jack pine cutover. Mrs. Jackson’s 6th grade students completed mechanical cutting of undesirable shrubs using hand tools in April, 2005. Brush piles were burned by students and burning was completed by the DNR’s MCC crew. The students hand planted 200 white pine seedlings in the north half of the site and 200 tamarack in the south half on April 29, 2005. Students watered the seedlings two times in early May, 2005. Normal rain occurred later in May, so further watering was not needed.

Protective nets were installed on half of the white pine in the spring of 2005. In the fall of 2006, Mr. Hanson’s 7th grade students installed paper bud caps on approximately 75 additional white pine, leaving 25 white pine without protection to serve as “control” seedlings to help compare protection techniques.

Treatment: In the late winter of 2006, the 7th grade students will complete mechanical release of the white pine and tamarack seedlings. Hand tools will be used to cut back the undesirable shrubs from around the conifer seedlings. The cut stems will be scattered on the ground away from the seedlings.

In the late summer of each year, this planting site will be evaluated to determine seedling survival and maintenance needs for deer browse protection and release. If maintenance is needed, the same class that planted the seedlings will

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complete the work until they leave Forestview. After that, maintenance will be completed by other students until the seedlings are well established and considered “free to grow”.

Oak Regeneration (ORGN) – 0.3 acre: This is an area of jack pine cutover that has naturally regenerated with predominantly red oak saplings. There are approximately 3000 oak saplings per acre averaging 5 feet in height. About 250 jack pine saplings per acre are found mixed with the oak. The jack pine average 8 feet in height. This area has an adequate density of natural regeneration.

Deer browsing was observed on some of the saplings, but many of the saplings are growing out of the reach of the deer.

Treatment: Due to the good density of saplings present, no deer browse protection is recommended here.

Evaluate this area each winter, when the oak leaves are still on the trees, to determine survival and average height. When approximately 1000, well-spaced oak and jack pine are 8 feet or taller, eliminate the other saplings which are competing with the desirable saplings. This thinning can be accomplished by mechanical cutting with hand tools by Forestview students. A forester can help the students identify the best saplings to save, based on spacing and form, and which saplings to eliminate.

Once these “crop trees” have been established, pruning of branches could be completed to help give the trees better form. Again, a forester can provide assistance on how to prune the trees.

Aspen Regeneration (ARGN) – 2.6 acres: The mature aspen was harvested from these areas in 2000 – 2001. The areas have naturally regenerated with a high density of aspen saplings with small amounts of red and bur oak saplings. Approximately 3500 stems per acre are growing here averaging 1 – 3 inches in diameter and 15 – 20 feet in height. These areas have an adequate density of natural regeneration.

These areas provide good habitat for wildlife using a young forest, such as white-tailed deer and ruffed grouse. The saplings found around Wetland 1 are providing a good buffer around this low ground and will help to prevent degradation of the wetland.

Treatment: This aspen regeneration is growing well and requires no treatment. Allow these areas to grow and mature in another 35 years. In the meantime, the

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areas will continue to provide the benefits of wildlife habitat, wetland protection, and add species diversity to this management unit.

Jack Pine & Aspen Mixture (JP/A) – 0.6 acre: These areas are small pockets of mature jack pine, aspen, and red oak which were left standing during the timber harvesting of 2000 – 2001. The trees average 9 inches in diameter and are approximately 45 – 55 years old. A small amount of mortality of the jack pine is starting to occur here.

A few red oak, jack pine, and aspen seedlings and saplings are growing in the understory of these pockets. Approximately 800 stems per acre were observed, consisting mostly of red oak.

Treatment: No treatment is recommended for these areas. They will provide an “old-age forest” component to this management unit. As the jack pine, aspen, and oak trees die, they will be replaced by the natural regeneration now found in the understory. These areas will succeed to oak stands over a period of many years.

Public Access and Parking – 0.8 acre: This is an area which has been cleared of trees and shrubs. Vegetation is mostly grasses and forbs.

Treatment: This area should be developed to provide access and vehicle parking for the community to use. Coordination by the School District with the City of Baxter is needed to develop this facility.

Trails – White Pine Way: The corridor for this segment of trail was cleared in the fall of 2005. During the winter of 2005 – 2006, the trail has been groomed and used for cross-country skiing by students, faculty, and community members.

Treatment: The segment of trail leading to Highland Scenic Drive should be closed and planted with trees to eliminate this point of access to the School Forest. Tree seedlings from the 2006 planting project could be used for this trail closure.

Maintenance of the White Pine Way trail corridor is needed on an **annual** basis. Maintenance needs will include:

- Inspection for hazardous trees along the trail edges. Removal of hazardous trees should be immediate. Dead snags along trail edges should be removed if determined to be hazardous.

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- Inspection of the trail surface to identify any soil erosion problems. Actions to correct the erosion should be immediate, such as vegetative seeding.
- Mowing at least once per year to keep woody vegetation from encroaching into and over the trail bed.
- Pruning of tree branches which pose a safety hazard for users of the trail, or may inhibit maintenance equipment use. Pruning can be completed by students, faculty, athletic team members, and community members.

Aspen Management Unit – 8.1 acres

The management objective of the Aspen Management Unit is to retain an aspen cover type and display various age classes and silvicultural treatments.

Aspen Regeneration (ARGN) – 6.7 acres: The mature aspen was harvested from these areas in 2000 – 2001. The areas have naturally regenerated with a high density of aspen saplings with small amounts of red and bur oak saplings. Approximately 3500 stems per acre are growing here averaging 1 – 3 inches in diameter and 15 – 20 feet in height. These areas have an adequate density of natural regeneration.

These areas provide good habitat for wildlife using a young forest. Wetlands 3 and 4 are found within this aspen cover type and are being provided good protection by the aspen saplings.

Treatment: The aspen regeneration is growing well and requires no treatment at this time. The aspen will mature in another 35 years and could be considered for a final harvest at that time.

In the year 2010, create a young age class of aspen by mechanically cutting the stems. The cut stems could be piled or left scattered on the ground. Choose an area of about 5 acres to treat. This treatment will provide a new age class of aspen to this unit.

In the years 2020 and 2030, similar treatments of cutting stems to create a young age class of aspen should be pursued. In these years, the stems will be of merchantable size, so the cutting could take place as a timber sale generating income. After the 2030 treatment, approximately one-fourth of this unit's acreage will be in four different age classes (0 – 10 years, 11 – 20, 21 – 30, and 31 – 40).

Ruffed grouse drumming logs should be created in this unit. Technical expertise should be sought to help identify specific sites and methods for constructing the

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drumming structures. Complete the construction by the end of 2006. Blinds for observing the grouse should also be installed when it is determined that a drumming log is active.

Mature Aspen (AMAT) – 0.5 acre: These areas consist predominantly of mature aspen. One pocket lies along the south edge of Wetland 3 and the other pocket lies along the Aspen Avenue trail. The trees here average 11 inches in diameter. The aspen is approximately 45 years old. These mature aspen areas are what the aspen regeneration (ARGN) areas looked like before they were harvested.

Treatment: Maintain these mature aspen areas to provide an “old age-class” of aspen. Allow them to grow as they are. No treatment will be needed.

Evaluate these pockets in the year 2010 to determine their condition. Reconsider the management of these pockets when determining which areas to cut the stems that year as described above.

Jack Pine & Aspen Mixture (JP/A) – 0.3 acre: This area is a small pocket of mature jack pine and aspen which were left standing during the timber harvesting of 2000 – 2001. The trees average 9 inches in diameter and are approximately 45 – 55 years old.

Treatment: Not treatment is recommended for this area. It will provide an “old-age forest” component to this management unit. Evaluate this pocket in the year 2010 to determine its condition and if other management is needed.

Cutover Jack Pine (COJP) – 0.6 acre: The mature jack pine was harvested from these areas in 2000 – 2001. The areas were opened up to full sunlight following the harvest allowing a heavy density of hazel shrubs to take over the site. Several oak saplings are growing with the hazel, but the shrubs are competing heavily with any tree regeneration.

Treatment: Allow these areas to regenerate naturally until all of the COJP areas of the Conifer Management Unit have been reforested. At that time, evaluate these COJP areas of the Aspen Management Unit to determine if adequate tree regeneration has been established. If not, site preparation and tree planting, as recommended for the Conifer Unit, will need to be completed here.

Optional Treatment: The area next to Aspen Avenue may be considered for development of a public access parking area. Coordination by the School District and the City of Baxter will be needed.

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Trails – Aspen Avenue: The corridor for this segment of trail was cleared in the fall of 2005. During the winter of 2005 – 2006, the trail has been groomed and used for cross-country skiing by students, faculty, and community members.

Treatment: If the segment of Aspen Avenue coming from Mountain Ash Drive is not used as a public parking access point, this segment should be closed and planted with trees to eliminate this point of access to the School Forest. Tree seedlings from the 2006 planting project could be used for this trail closure.

Maintenance of the Aspen Avenue trail corridor is needed on an **annual** basis. Maintenance needs include the following, as described earlier for the Conifer Management Unit:

- inspection for hazardous trees,
- inspection of the trail surface for erosion problems,
- mowing of the trail surface, and
- pruning of tree branches encroaching the trail corridor.

Oak Management Unit – 10.2 acres

The management objective of the Oak Management Unit is to maintain and enhance the populations of northern red oak and bur oak.

Cutover Jack Pine (COJP) – 2.8 acres: The mature jack pine was harvested from these areas in 2000 – 2001. The areas were opened up to full sunlight following the harvest allowing a heavy density of hazel shrubs to take over the site. Some red and bur oak saplings are growing with the hazel, but the shrubs are competing heavily with any tree regeneration.

Treatment: These areas need to be planted with tree seedlings to establish a higher density of trees. Site preparation and tree planting, as recommended for the Conifer Management Unit, will need to be completed here. The difference is that hardwood tree seedlings will be planted here instead of conifers. Suggested species are northern red oak, bur oak, green ash, red maple, and sugar maple.

These areas could be prepared and planted at any time. Perhaps, first priority should be given to planting of the Conifer Unit. Once that unit is completed, then these Oak Unit areas could be planted.

Aspen Regeneration (ARGN) – 3.2 acres: The mature aspen was harvested from this area in 2000 – 2001. The area has naturally regenerated with a high density of aspen saplings with small amounts of red and bur oak saplings. Approximately 3500 stems per acre are growing here averaging 1 – 3 inches in

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diameter and 15 – 20 feet in height. These areas have an adequate density of natural regeneration.

This area provides good habitat for wildlife using a young forest. The south edge of Wetland 2 is being protected by the aspen saplings.

Treatment: The aspen regeneration is growing well and requires no treatment at this time. The aspen will mature in another 35 years and could be considered for a final harvest at that time.

Ruffed grouse drumming logs and observation blinds could be created in this area similar to those described earlier for the Aspen Management Unit.

Mature Aspen (AMAT) – 2.2 acres: This area consists predominantly of mature aspen. The area nearly surrounds Wetland 2. The trees average 11 inches in diameter. The aspen is approximately 45 years old. This mature aspen area is what the aspen regeneration area (ARGN) looked like before it was harvested.

Treatment: In the year 2010, consider this area for a final timber harvest. Coordinate the harvest here with other areas of mature aspen in the School Forest. Seek technical assistance from a forester when preparing and marketing the timber sale.

Jack Pine & Aspen Mixture (JP/A) – 0.4 acre: These areas are small pockets of mature jack pine and aspen which were left standing during the timber harvesting of 2000 – 2001. The trees average 9 inches in diameter and are approximately 45 – 55 years old.

Treatment: No treatment is recommended for these areas. They will provide an “old-age forest” component to this management unit. Evaluate these pockets in the year 2010 to determine their condition and if other management is needed.

Older-aged Oak (OAK) – 0.4 acre: These are small areas consisting mainly of larger, red and bur oak trees ranging in size from 3 to 9 inches in diameter. The oak trees are immature with the largest ones being approximately 70 years of age. There are hardwood tree saplings and shrubs growing in the understory of these areas.

The oak found here are of fair quality due to poor form and the presence of heart rot. The oak forest is important to wildlife for the food and shelter it provides.

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Treatment: No treatment is recommended for these areas. They will provide an “old-aged forest” component to this management unit and continue to provide their benefits to wildlife.

Middle-aged Aspen (AMID) – 1.2 acres: These are several small pockets where immature aspen trees are predominant. The aspen range in size from 3 – 9 inches in diameter. These areas appear to have been left standing during the timber harvesting of 2000 – 2001.

Growing in the understory of these areas is a good density of red oak, bur oak, and aspen saplings. The saplings range in size from 1 – 5 inches in diameter.

All of the trees found here provide an adequate tree density for these areas. These dense pockets provide good habitat for wildlife to use.

Treatment: No treatment is recommended for these areas. They will provide a different age-class of timber to the School Forest and will continue to provide their benefits to wildlife.

Trails: The existing trail system could be expanded to include this management unit. A loop surrounding Wetland 2 is a possible route. The exact route should consider future tree planting and timber harvest activities, so they do not conflict. Maintenance needs for a trail constructed here will be similar to those for other portions of the existing trail system.

Summary and Schedule of Activities For Forestview Middle School Forest

2006:

- Minnesota ReLeaf tree planting project (3.5 acres = 1350 seedlings) – complete in April.
- Decide on exact location of public parking area and pursue construction.
- Develop orienteering course.
- Erect trail name signs and identification signs for tree planting projects.
- Create grouse drumming logs and observation blinds in aspen regeneration areas (ARGN) of all management units.
- Consider expanding trail system into Oak Management Unit.

Annually:

- Routine trail maintenance.
- Reforest approximately 2 acres of the Conifer Management Unit through the year 2015 (6th grade classes).
- Provide deer browse protection for subsequent years' plantings (7th & 8th grades). Evaluate areas **each fall** for this need. Complete protection by November 1.
- Complete mechanical release for subsequent years' plantings (7th & 8th grades). Evaluate areas **each fall** for this need. Complete release by May 1.
- Evaluate Oak Regeneration area (ORGN) of Conifer Management Unit for thinning and pruning needs. Evaluate in winter for this need.

2010 and Beyond:

- Treat 5 acres of aspen area to create a new age class by shearing aspen saplings (ARGN) in any management unit and/or harvesting mature aspen (AMAT) in the Oak Management Unit.
- Evaluate Cutover Jack Pine areas (COJP) of Aspen and Oak Management Units for artificial regeneration needs. Evaluate after all of the Conifer Management Unit has been reforested.