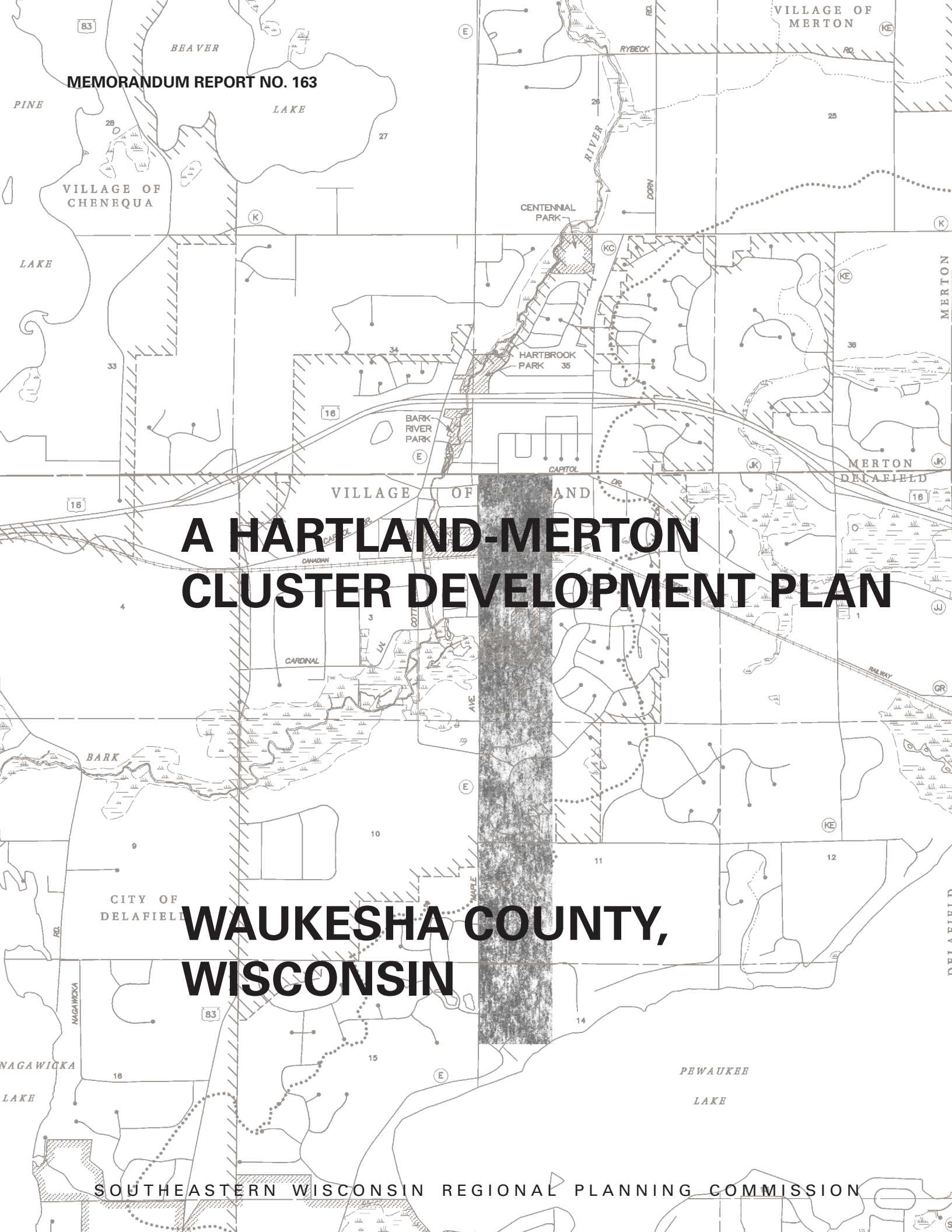


MEMORANDUM REPORT NO. 163

# A HARTLAND-MERTON CLUSTER DEVELOPMENT PLAN

# WAUKESHA COUNTY, WISCONSIN

SOUTHEASTERN WISCONSIN REGIONAL PLANNING COMMISSION

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William J. Stauber, AICP . . . . . Chief Land Use Planner

Special acknowledgment is due SEWRPC Principal Planner Richard R. Kania, RLA, AICP, for his efforts in the conduct of this study and in the preparation of this report.

MEMORANDUM REPORT
NUMBER 163

# A HARTLAND-MERTON CLUSTER DEVELOPMENT PLAN WAUKESHA COUNTY, WISCONSIN

Prepared by the

Southeastern Wisconsin Regional Planning Commission
W239 N1812 Rockwood Drive
P. O. Box 1607
Waukesha, Wisconsin 53187-1607
www.sewrpc.org

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# A HARTLAND-MERTON CLUSTER DEVELOPMENT PLAN

## Part I—INTRODUCTION

An interagency meeting was held on May 29, 2001, between the staff of the Southeastern Wisconsin Regional Planning Commission (SEWRPC) and representatives from and consultants for the Village of Hartland, Village of Merton, and Town of Merton to discuss conducting a joint community effort to prepare a "neighborhood" plan for two planning areas located north of STH 16, as identified on Map 1. The main intent of the plan, called the Hartland-Merton Cluster Development Plan, is to retain as much as possible the "country" character of the defined planning areas by applying open space and conservation design concepts to the plan design. Developments utilizing these types of design concepts are sometimes called cluster developments or conservation subdivisions. The cluster development plan shows recommended street and lot layouts with interconnecting open space, bikeways, and pedestrian/recreation paths. The plan also recommends areas to be served by onsite sewage-disposal systems and areas to be served by public sanitary sewer services, in order to properly plan for and efficiently serve future developments with public facilities. As the area continues to develop, the plan will help prevent the concerned communities from becoming indistinguishable from each other by providing a country "belt" or appearance between the denser, concentrated urban areas of the Villages of Hartland and Merton. The plan is intended to serve as a basis to help arrive at boundary agreements between the Town of Merton and the Villages of Hartland and Merton.

### The General Study Area and Specific Planning Areas

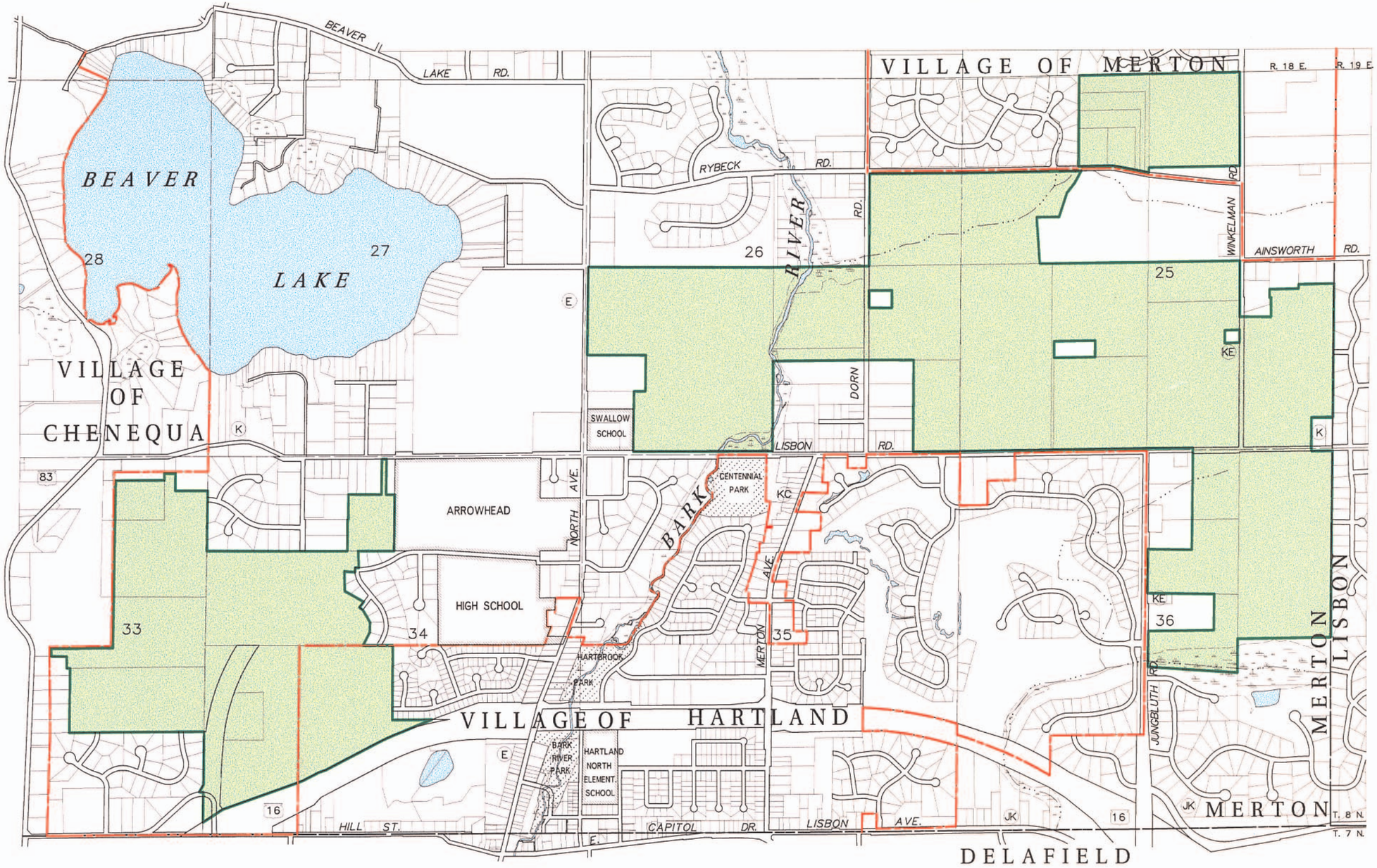
Map 1 shows the general Hartland-Merton study area, located in the north central part of Waukesha County, and the two specific planning areas. The study area includes lands surrounding the two planning areas which may be affected by plan recommendations. The study and planning areas encompass portions of land located in Township 8 North, Range 18 East. The planning areas consist of lands within the Town of Merton and Villages of Hartland and Merton. The study area encompasses an area of about 7.6 square miles, and the defined planning areas encompass about 1.8 square miles, or about 23 percent of the Hartland-Merton study area. A detailed street and lot layout design with interconnecting open space, bikeways, and pedestrian/recreation paths is recommended for the aforementioned planning areas and affected environs.

### Advisory Committee

An intergovernmental coordinating and advisory committee, named the Hartland-Merton Cluster Development Plan Advisory Committee, was established to help guide and assist the technical staff in the preparation of the requested cluster development plan. The Committee consisted of representatives from the Villages of Hartland and Merton, the Town of Merton, and the Arrowhead Union High School District. The full membership of the Committee is listed on the inside front cover of this report.

**Map 1**

**THE HARTLAND-MERTON GENERAL STUDY AREA AND SPECIFIC PLANNING AREAS**




PLANNING AREAS
SURFACE WATER
EXISTING CORPORATE LIMITS: 2000
EXISTING PROPERTY LINES: 2000
EXISTING STREET/HIGHWAY RIGHT-OF-WAY LINES: 2000

*Source: SEWRPC.*

GRAPHIC SCALE

0 1500 3000 FEET

**Report Format**
Following this introductory part, the second part of this report is devoted to the description and analysis of the natural resource base, existing land uses and public facilities, existing areawide and local plans, mapping sources, and existing land use regulations in the Hartland-Merton study area. The third part identifies the planning objectives and design guidelines used in this planning effort. The fourth part presents a recommended cluster development plan for the Hartland-Merton planning areas and attendant recommended bikeway and pedestrian/recreation pathway systems. The fifth part presents recommended plan implementation measures.

## Part II—INVENTORY AND ANALYSIS

Information regarding the natural and built environments is essential to any sound planning effort. Therefore, an important step in the planning process was assembling information on existing natural resources, land uses, areawide and community plans, mapping sources, and regulatory measures. It is important that existing conditions and past planning efforts in the study area be thoroughly considered and analyzed before recommendations are formulated that affect the future of the area. This section presents, in summary form, the inventory findings with respect to these matters within the Hartland-Merton study area.

**Natural Resources**
The location and extent of various elements of the natural resource base, including soils and topographic characteristics; water resources and associated floodplains and wetlands; woodlands; and wildlife and critical aquatic habitats, were considered during the planning process. Related elements such as scenic overlooks and park and open space sites were also taken into account. The most significant of these features lie within areas referred to as environmental corridors and isolated natural resources areas, which are shown on Map 2.

Primary environmental corridors include a wide variety of important natural resource and resource-related elements and are, by definition, at least 400 acres in size, two miles in length, and 200 feet in width. Primary environmental corridors are located mostly in the western and north central part of the study area, around Beaver Lake and the Bark River. Preserving these corridors in an essentially open, natural state will do much to maintain the overall quality of the environment and natural beauty of the study area. Since these corridors are generally poorly suited for urban development, their preservation also helps to avoid the creation of new environmental and developmental problems such as flood damage, poor drainage, wet basements, failing foundations of roads and buildings, and water pollution. In 1998, about 560 acres, or 12 percent of the study area, were within primary environmental corridors.

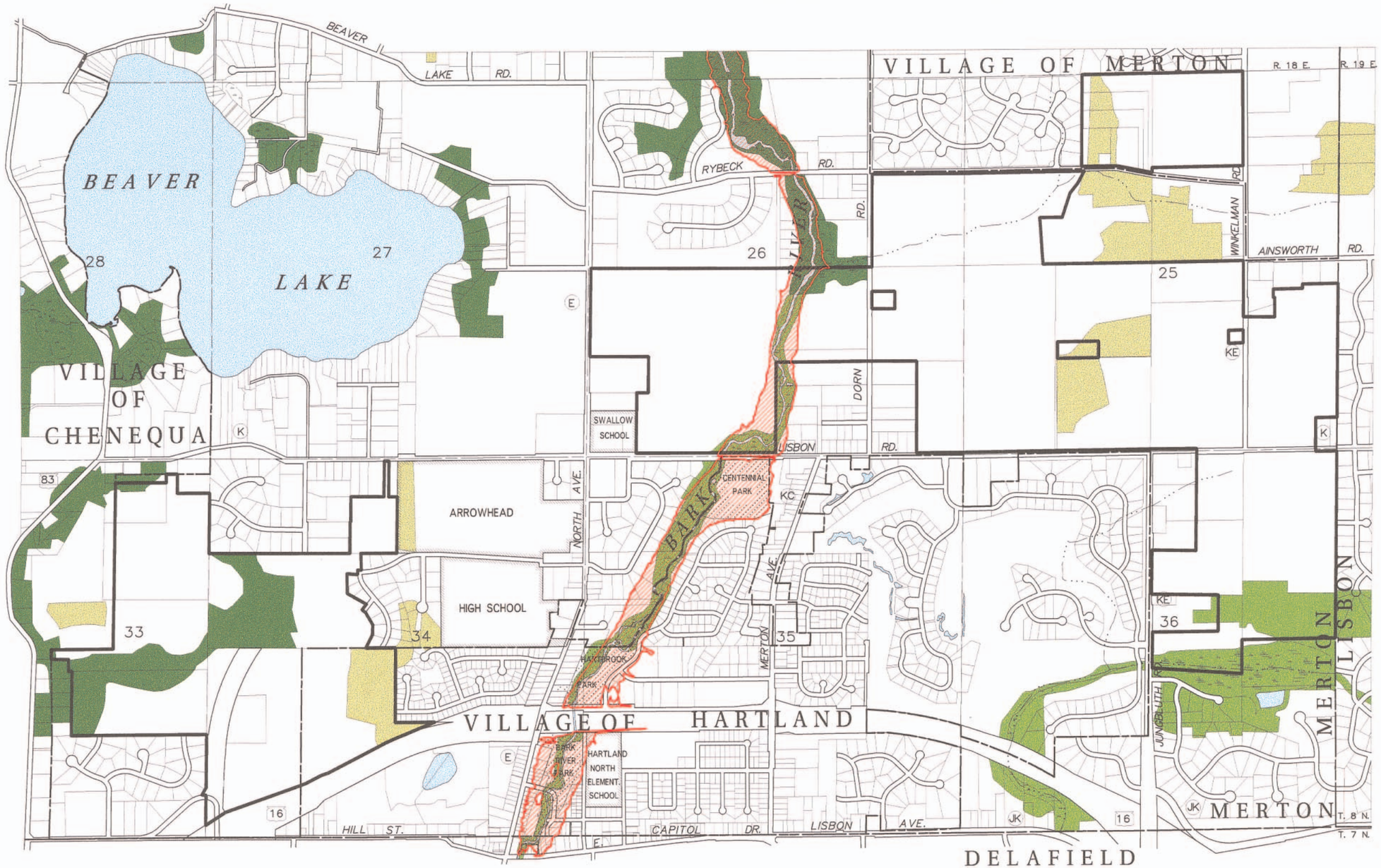
Secondary environmental corridors, often remnants of primary corridors that have been partially converted to intensive urban or agricultural use, also contain a variety of resource elements. Secondary environmental corridors are at least one mile long and 100 acres in area; except where they serve to connect primary environmental corridors. Such corridors in the study area are generally located along streams, including a portion of the Bark River, and include wetlands associated with these streams. Maintenance of these corridors in open uses can facilitate natural surface water drainage, retain pockets of natural resource features, provide corridors for the movement of wildlife and dispersal of plant seeds, and lend aesthetic character and natural diversity to an area. Secondary environmental corridors encompassed about 164 acres, or 3 percent of the study area, in 1998.

Isolated natural resource areas represent small concentrations of natural resource features that have been separated from the environmental corridors. These areas sometime serve as the only available wildlife habitat in an area, provide attractive scenic diversity, and function as surface water retention areas. Such areas, which are by definition at least five acres in size, in combination encompassed about 131 acres, or 3 percent of the study area, in 1998.

The floodplain of a river or stream includes the wide, gently sloping areas contiguous to, and usually lying on both sides of, the river or stream channel and the channel itself. For planning and regulatory purposes, floodplains are normally defined as the areas subject to inundation by the 100-year recurrence interval flood event. This is the flood event that has a 1 percent chance of occurring in any given year. Floodplain areas are generally not well suited to

Map 2

**ENVIRONMENTALLY SIGNIFICANT LANDS IN THE HARTLAND-MERTON STUDY AND PLANNING AREAS: 1998**




*Source: Federal Emergency Management Agency and SEWRPC.*

urban development, not only because of the flood hazard, but also because of the presence of high water tables and, generally, of soils poorly suited to urban uses. The floodplain areas, however, generally contain important elements of the natural resource base such as high-value woodlands, wetlands, and wildlife habitat and, therefore, constitute prime locations for needed park and open space areas. Every effort should be made to discourage indiscriminate and incompatible urban development on floodplains, while encouraging compatible park and open space uses. Map 2 shows the approximate location and extent of areas lying within the 100-year recurrence interval flood hazard area, or floodplain, in the study area for those areas in which floodplain studies have been conducted.[1] About 133 acres, or about 3 percent of the study area, are known to be located within a 100-year recurrence interval floodplain along and including the Bark River.

**Existing Land Uses**

The Regional Planning Commission conducted a special field survey in 1998 to update the 1995 existing land use data which identifies the current type, amount, and spatial distribution of urban and rural land uses in the study area, as shown on Map 3. This information was mapped and analyzed in order to assist in the design of an appropriate pattern of future land use in the planning areas. Also considered during the plan preparation process were existing community facilities, such as schools and municipal buildings, and existing public utilities, such as municipal public sanitary sewer and water supply services.

About 42 percent of the study area, or 3.2 square miles, was occupied by urban land uses. The predominant urban land uses were residential uses occupying about 23 percent of the area. Nonurban land uses occupied the remaining 58 percent of the study area, or 4.4 square miles. The predominant nonurban land uses were agricultural related uses, representing about 34 percent of the study area. The second largest category of nonurban uses was natural resource areas, occupying about 18 percent of the study area. This category includes surface water, wetlands, and woodlands.

Within the defined planning areas, urban land uses occupied about 3 percent of the total planning areas, consisting mostly of single-family residential uses, while nonurban land uses occupied the remaining 97 percent. The predominant land uses in the planning areas were agricultural uses, 83 percent, with the second largest group of uses being natural areas at about 14 percent of the total planning areas.

**Existing Plans**

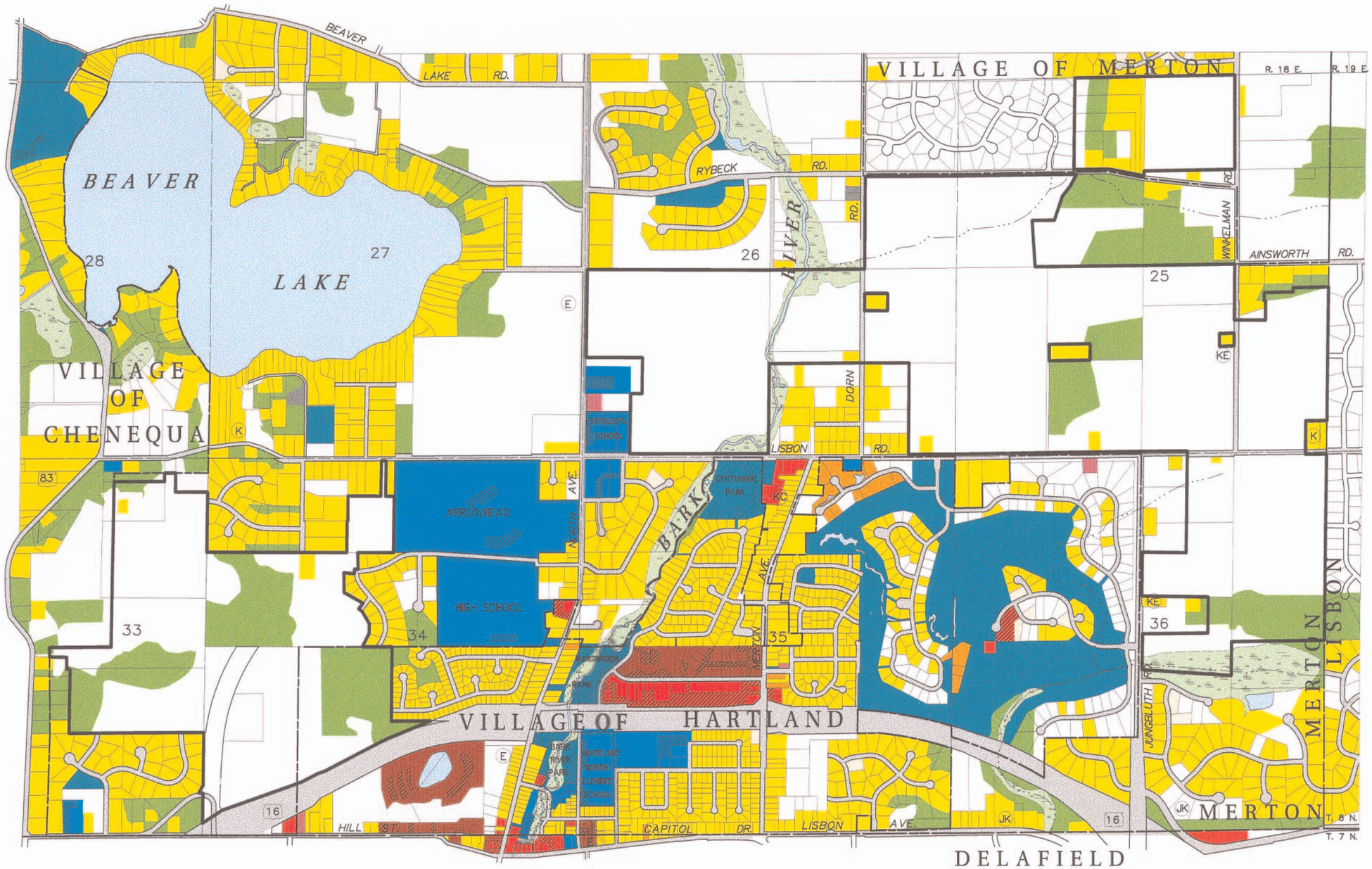
Sound local planning practice should consider areawide and local plans. The framework of plans is intended to influence both public and private sector decision-making with respect to development matters. Therefore, an understanding of pertinent recommendations contained in regional, county, and local plans and plan elements is important to the proper preparation of a detailed cluster development plan for the Hartland-Merton planning areas.

Areawide plans that are relevant to the Hartland-Merton study area include: SEWRPC Community Assistance Planning Report No. 209, *A Development Plan for Waukesha County, Wisconsin*, August 1996, which is comprised of four plan elements, a land use plan and supporting transportation, housing, and park and open space plans, all of which provide guidance to local level planning within the County; SEWRPC Planning Report 45, *A Regional Land Use Plan for Southeastern Wisconsin: 2020*, December 1997, which provides recommendations for areawide land use development; SEWRPC Planning Report No. 46, *A Regional Transportation System Plan for Southeastern Wisconsin: 2020*, December 1997, and an amendment in May 2003 to extend the plan to the design year 2025, which contains recommendations on how the regional land use plan can best be served by arterial street and highway and transit facilities; and SEWRPC Planning Report No. 43, *A Regional Bicycle and Pedestrian Facility System Plan for Southeastern Wisconsin: 2010*, December 1994, and an amendment in December 2001 to extend the plan to

[1]*No floodplain limits have been delineated for the Beaver Lake area in the Town of Merton and the Village of Chenequa. No floodplain study has been conducted for this area, even though there may be floodplain due to the presence of the lake.*

Map 3

EXISTING LAND USES IN THE HARTLAND-MERTON STUDY AND PLANNING AREAS: 1998




- PLANNING AREA BOUNDARIES
- SINGLE-FAMILY RESIDENTIAL
- TWO-FAMILY RESIDENTIAL
- MULTI-FAMILY RESIDENTIAL
- COMMERCIAL
- INDUSTRIAL
- STREETS AND HIGHWAYS
- COMMUNICATION AND UTILITIES
- PARKING
- GOVERNMENTAL AND INSTITUTIONAL
- RECREATIONAL
- WETLANDS
- WOODLANDS
- AGRICULTURAL AND OTHER OPEN LANDS
- SURFACE WATER

NOTE: UNSHADED STREET AND HIGHWAY RIGHTS-OF-WAY HAVE BEEN PLATTED BUT ARE NOT YET DEVELOPED.

*Source: SEWRPC.*

GRAPHIC SCALE

0 1500 3000 FEET

the design year 2020, which contains recommendations to encourage increased bicycle and pedestrian travel as alternatives to travel by automobile within the Region.

Pertinent Village of Hartland plans that are related to the study area include: SEWRPC Community Assistance Planning Report No. 93, *Sanitary Sewer Service Area for the Village of Hartland, Waukesha County, Wisconsin*, April 1985, and amendments thereto, which designates a planned sanitary sewer service area for the Hartland area; SEWRPC Community Assistance Planning Report No. 49, *A Land Use and Traffic Circulation Plan for the Village of Hartland: 2000, Waukesha County, Wisconsin*, July 1981, and amendments thereto in December 1991 and February 2002, which contains a combined land use and traffic circulation plan to provide guidance for future growth and development in the Village of Hartland planned urban service area; and *Outdoor Recreation Plan, Village of Hartland, Waukesha County, Wisconsin*, February 1996, which contains recommendations for park and open space preservation and development.

The Town of Merton and Villages of Chenequa and Merton plans that are pertinent to the study area include: *Town of Merton 2010 Master Land Use Plan*, June 1999, which serves as a statement of objectives and official policy regarding the future development of land within the Town; *Open Space Plan, Village of Chenequa*, October 1996, which serves as a guide to preserve significant aesthetic or environmental features that define the Village's rural character, many of which are encompassed in existing primary environmental corridors; *Year 2022 Comprehensive Plan for the Village of Merton, Waukesha County, Wisconsin*, May 2002, which provides for the orderly growth and development of the Village of Merton and its surrounding 1.5-mile extraterritorial planning area; and *Comprehensive Park and Open Space Plan, Village of Merton, Waukesha County, Wisconsin*, June 1998, which provides recommendations regarding the acquisition, preservation, development, and maintenance of needed park and open space lands in the Village.

**Mapping Sources**

Good, large-scale topographic and cadastral, or real property, maps were also essential to the preparation of this cluster development plan. Topographic maps, at a scale of one inch equals 200 feet, were utilized in this planning process. The topographic maps, in both digital and hardcopy form, consist of control survey features, such as U.S. Public Land Survey section corners and section lines; planimetric features, such as roads and buildings; hydrographic features, including streams, lakes, and wetlands; and hypsometric features, such as two-foot contour interval lines and spot elevation values. Cadastral maps, at a scale of one inch equals 200 feet, were also used in the planning process and include property boundary lines, public street right-of-way boundaries, subdivision and platted land boundaries, and associated text such as property dimensions and tax key numbers. The cadastral maps are also available in digital and hardcopy form.

**Land Use Regulations**

Land development can be guided and shaped in the public interest through the application of sound public land use controls. Existing land use regulations in effect in the Hartland-Merton study area were examined as they relate to the physical development of the defined planning areas and environs. The most important of the regulations considered were the zoning, land division, and official mapping regulations.

Communities within the study area each have an adopted zoning ordinance and attendant zoning map to regulate lands within their respective civil division. Each municipal zoning ordinance regulates the use of land and the height, size, shape, and placement of structures on sites, with the intention of assuring adequate light, air, and open space for each building; reducing fire hazards; and preventing overcrowding, traffic congestion, and the overloading or under use of utility systems. Since the municipalities have adopted their own zoning ordinance, no civil division in the study area is under the jurisdiction of the County's general zoning ordinance. However, the shoreland areas in the Town of Merton and certain annexed lands within the study area are regulated by the County's shoreland and floodland protection ordinance, as discussed below.

The Waukesha County Shoreland and Floodland Protection Ordinance regulates shorelands and lands within the 100-year recurrence interval floodplain. Shorelands are those areas lying within 1,000 feet of the shoreline—ordinary high-water mark—of navigable lakes, ponds, and flowages; or within 300 feet of the shoreline of navigable rivers and streams, or to the landward side of the 100-year recurrence interval floodplain, whichever is greater. The County ordinance applies to unincorporated areas and to lands annexed after May 7, 1982, unless the annexing city or village has adopted shoreland regulations that are at least as restrictive as the County's shoreland regulations. In cases where regulations for the shoreland areas of the Town and County conflict, the more restrictive regulations apply.

The Waukesha County Construction Site Erosion Control and Stormwater Management Ordinance protects the quality of waters in the County by reducing the amount of sediment and other pollutants leaving construction sites during land development and land disturbing activities. The unincorporated areas of the County and lands annexed after May 5, 1992, are subject to the County's construction site erosion control regulations, and those annexed after May 28, 1998, are subject to the County's stormwater management regulation, as well as the erosion control regulations, unless the annexing city or village has adopted regulations that are at least as restrictive as the County's regulations.

All communities within the Hartland-Merton study area have an adopted land division ordinance to regulate subdivisions created by plats and other minor land divisions created by certified survey maps. Waukesha County has also adopted land division regulations that apply to the unincorporated shoreland and floodplain areas in the County. These ordinances set forth requirements for the appropriate design of lots, subdivision access, and such necessary internal improvements as streets, drainage, and water and sewer facilities.

The Villages of Chenequa, Hartland, and Merton each have an official map. These maps show the general locations for future streets, parks, and parkways in order to reserve land for such future public use. Waukesha County has also adopted an Established Street and Highway Width Map that identifies planned County highways and rights-of-way.

A number of State and Federal regulatory programs control the use of waters and wetlands in the Hartland-Merton study area as well as the potential water quality impacts of development. These include Chapters NR 103, NR 110, and Comm 82 of the Wisconsin Administrative Code, and Sections 401 and 404 of the Federal Clean Water Act.

## Part III—OBJECTIVES AND DESIGN GUIDELINES

Planning is a rational process for formulating and meeting objectives or goals. Therefore, the formulation of objectives is an essential task to be undertaken before plans are prepared. As part of this process, a set of planning objectives were formulated by the Advisory Committee. Design guidelines were also formulated for evaluating and guiding future development in the two planning areas. This section presents the planning objectives and design guidelines that were used as a guide in preparing the recommended cluster development plan.

### Planning Objectives

The planning process included the formulation of a set of objectives intended to express the long-term land use goals for the Hartland-Merton planning areas. Six basic objectives were established as follows:

- Protect the remaining natural resources of the area, including those concentrated in environmental corridors and isolated natural resource areas, in order to maintain the ecological balance, natural beauty, and quality of life in the Hartland-Merton area.

- Preserve significant historical and cultural features that contribute to the cultural heritage and country character.

- Maintain the "country" character of the planning areas by promoting open space and conservation design

concepts in well-planned neighborhoods that will also result in an efficient use of supporting transportation, utility, and public facility systems. The preservation of significant natural, historical, and cultural features, pursuant to the first two objectives, will also help retain the country character.

- Establish an interconnecting open space network between various cluster developments, sometimes called conservation subdivisions, to provide a continuous link for wildlife migration as well as recreational trail-oriented pursuits.

- Provide residential areas with safe and convenient access through an integrated street, bikeway, and pedestrian/recreation pathway system connecting to local services such as schools, parks, churches, cultural centers, and shopping areas.

- Provide a "gathering place" with attendant amenities in the common area of large conservation subdivisions or a public neighborhood park to instill social interaction and a sense of community among neighborhood residents.

**Design Guidelines**

Good general land use planning alone does not ensure an attractive community or the preservation of country character, since the proper protection of significant natural resources and "planning by design," or attention paid to the detailed layout and design of development, is also crucial. To help direct proposed development activities in the planning areas, basic design guidelines were prepared. The guidelines are intended to serve as a basis for determining desired physical development layouts and appearances, and not as inflexible, rigid, and narrow rules that may stifle innovative design alternatives which still achieve the intent of the guidelines and are of at least comparable "value." These guidelines may also serve as potential solutions to design problems. Specific design decisions should be based, in part, on these guidelines, as well as on the underlying objectives set forth above. The guidelines should be further used by local officials to provide guidance to applicants and to assist in evaluating development proposals.

***"Country" Character and Design Concept***

Proposed developments should retain the country character by preserving significant natural and cultural features and by utilizing the cluster design concept, sometimes referred to as an open space or conservation design concept, as described in SEWRPC Planning Guide No. 7, *Rural Cluster Development Guide*, December 1996. Lot sizes, for example, would be reduced and clustered while the rest of the site concerned is retained in permanent open space. The amount of open space to be preserved, however, will vary depending on the density of each development project, such as rural-density residential development versus low-density residential development, and whether the development will be served by onsite septic systems or public sanitary sewers as discussed below.

***Natural Resource Preservation***

Distinct natural features such as wetlands, woodlands, wetlands, hedgerows, treelines, large single trees, pronounced hilltops, and rivers, which may also function as wildlife habitats, should be preserved whenever possible. Overly excessive clear cutting and grading should be avoided by carefully designing designated construction zones to minimize alterations to existing natural vegetative cover and the basic topographic pattern. Existing noninvasive vegetation should be protected in accordance with sound conservation practices, and noxious invasive plants identified in Appendix A should be properly removed.

As identified earlier on Map 2, many of the significant natural features lie within concentrated areas referred to as environmental corridors and isolated natural resource areas that should be protected. If development occurs within these areas, the overall density should not exceed one dwelling unit per five acres, especially in primary environmental corridors.

***Historical and Cultural Feature Preservation***
Existing significant historic structures and unique cultural features, which may not be officially designated as historically significant per se, should be protected since they may function as recognizable landmark features that help define the cultural heritage and country setting. Such farmstead structures as farmhouses, barns, wooden outbuildings, piled stone walls, vegetated fence rows, and silos should also be preserved and integrated into the design of any proposed development, where practical.

***Density and Percent Open Space***
Depending on density requirements and the use of onsite septic systems or public sanitary sewer services, a minimum of about 25 percent up to 80 percent of the site should be maintained in common open space. The calculation of common open space would not include street rights-of-way or individual residential lots. Trails and landscaped areas, such as in cul-de-sac turnarounds and at boulevard type streets or entryways, may be counted as common open space. The following are examples for determining the amount of open space that could be achieved by using the cluster design concept.

a. Areas within the Village of Hartland would be served by public sanitary sewer service with a permitted density of one dwelling unit per three-quarter net acre (32,670 square feet), where the actual average lot size would be about 20,000 square feet while the remaining approximately 25 to 40 percent of the total site area would consist of common open space.

b. Certain areas within the Town of Merton would be served by onsite sewage disposal systems with a permitted density of about one dwelling unit per 3.5 to 5.0 net acres, where the average lot size would be about one to two acres while the remaining approximately 60 to 80 percent of the total site area would consist of common open space. A density at the higher end of the range, such as one dwelling unit per 3.5 to 4.0 net acres, may be obtained as a “density bonus” awarded for preserving a higher percent of open space on the site.

c. Areas within the Village of Merton would be served by onsite sewage disposal systems with a permitted density of one dwelling unit per 40,000 square feet of net area, where the average lot size would be about 30,000 square feet while the remaining approximately 20 to 30 percent of the total site area would consist of common open space.

Density calculations should be based on net densities, or net “developable” areas that should exclude existing and proposed street rights-of-way and, desirably, floodplains and wetlands. However, floodplains and wetlands could be used to meet minimum lot area requirements provided the lot contains sufficient developable area outside the floodplain and/or wetlands that can properly accommodate a house and accessory structures, a driveway, and, if applicable, an acceptable private well system and an onsite sewage-disposal systems with suitable soils.

***Common Open Space***

*General*
Natural, historic, and cultural features and undeveloped open lands within a cluster development should be designated, dedicated, reserved, or restricted in perpetuity from further development and may be set aside in a common area for use and enjoyment by residents of a cluster development. Common open space should be properly maintained; should not be part of individual residential lots; and should be substantially free of structures, but may contain significant historical or cultural features and recreational facilities for residents of the development.

*Interconnecting Common Open Space*
Subdivisions should contain interconnecting common open space with most lots abutting and having access to the open space. Such common areas should also interconnect with other abutting common open spaces in adjacent subdivisions.

*Dimensions of Common Open Space*
The large areas of common open space, especially those located in the rear of lots, should be at least 100 feet wide, or preferably 200 feet or wider. In certain situations, the width may be reduced, but preferably no less than 50 feet, if the developer demonstrates extraordinary circumstances warranting the use of a narrower width. Generally, open spaces less than 25 feet in width or 100 feet in length should not be accepted toward meeting open space requirements, except for those in landscaped cul-de-sac islands and medians of boulevards.

*"Gathering Place"*
Large cluster developments should provide a unique amenity(s) in a park-like setting established within a readily accessible area of the private common open space, which would also function as a potential gathering place for residents within the subdivision to interact. The amenity(s) may be a tot lot with a soft base; a multi-purpose open playfield; a picnic area with a shelter and picnic tables; a gazebo with an adjacent natural garden with ornamental grasses and wildflowers; a flagstone patio with trellises and an ornamental garden; and/or a volleyball, tennis, basketball, or sand-volleyball court(s). A public neighborhood park within safe and convenient proximity of neighborhood residents may be provided in lieu of the gathering place.

***Buffering***

*General*
Buffers, sometimes referred to as buffer strips or transitional yards, should be provided between incompatible uses to reduce or block visual nuisances, air and noise pollutants, or other negative impacts. Buffers should consist of both screening and separation distances that are usually a part of the common area of cluster or conservation subdivisions. Distances alone may not necessarily create an effective buffer and, therefore, landscaping with trees and shrubs may be necessary.

*Buffers along "Major" Roads*
A buffer strip at least 100 feet wide, or preferably 200 feet or wider, should be provided along all "major" public roads such as STH 83, CTH K, CTH E, CTH KE (Winkelman Road and Jungbluth Road), Dorn Road, Rybeck Road, Ainsworth Road, and the new collector street between STH 83 and CTH K. In certain cases, the width may be reduced, but preferably to no less than 50 feet wide, if the developer demonstrates extraordinary circumstances forcing the use of a narrower strip. Ideally, lots and internal subdivision roads should be arranged mostly behind existing hills, vegetation, or structures of cultural character in order to hide new homes, accessory buildings, and mowed lawns from existing "major" roads, since the perception of country or rural character is usually a result of what is seen from roads while traveling through the countryside. Where such existing site features are absent, naturalistic berms and/or landscaping should be used to soften the view while also meeting traffic vision clearance requirements.

A landscaped buffer should project a "country-style" design theme with informal planting beds of trees, shrubs, prairie grass, and even ornamental structures such as open fencing (i.e. "buck," "snake," or "post-and-rail" style fencing), low natural stone walls (i.e. fieldstone or limestone—Lannon Stone), or a combination thereof. If a wall or fence is proposed, such structures should be high enough (i.e. about four feet or equivalent to a post-and-rail fence three rails high) to avoid complete coverage by tall natural grasses, unless lower native grasses are installed. Berms should undulate both vertically and horizontally, towards and away from the viewer, and have gentle slopes, preferably no steeper than one foot vertical to four feet horizontal.

*Other Perimeter Buffers*
A buffer strip at least 50 feet wide, or preferably 100 feet or wider, should be provided around those portions of the tract that do not abut public streets. The perimeter buffer strip could accommodate trails and provide a looped trail network as discussed below. In certain cases, the buffer width may be reduced if the tract abuts compatible land uses, such as another cluster development, or if the developer demonstrates extraordinary circumstances forcing the use of a narrower width.

***Pedestrian/Recreation Paths***

*Interconnecting Pedestrian/Recreation Pathway Network*
All proposed developments should contain a connecting pedestrian/recreation path system through the common open space with preferably a looped layout, such as around the perimeter of the tract, that connects residential lots to the common area and any proposed amenities. As an alternative to a perimeter looped trail, large concentrated common open space areas, such as in the center of a development, with trails may be allowed; however, a continuous trail network linking all residents to the open spaces should still be provided. Ideally, such paths should be continuous and interconnect other abutting path systems through mutual agreement between subdivisions (homeowner's associations) which, in turn, would provide a longer trail system and provide opportunities for social interaction among residents of different subdivisions. If such an agreement is established, then only one path would be necessary along a common property line shared by two subdivisions, instead of two separate parallel paths. Private paths should be, at a minimum, curving mowed paths at least 8 feet wide, or preferably 10 feet wide, and properly graded for good drainage. Paths may be constructed with more permanent material, such as gravel, asphalt, or a boardwalk, and certain segments of paths may be narrower due to site constraints. All paths and their demarcations should be installed by the developer prior to the sale of dwelling units, so that buyers will know what to expect as to the location and construction of the paths.

A community may require public concrete sidewalks to be provided on at least one side of public streets, usually the side that does not have private paths in the rear of lots. This sidewalk may be waived by the community if the developer agrees to make the otherwise private path network accessible to the general public and such paths are paved with asphalt at least eight feet wide.

*Paths and Common Open Spaces Between Lots*
Common open space with a path located between the side lot lines of two lots should be at least 50 feet wide, or preferably wider. In certain cases, the width may be reduced if the developer demonstrates extraordinary circumstances justifying the use of a narrower width. Blocks exceeding 900 feet long should provide access between two lots leading to paths in common open spaces located in the rear of lots. Also, additional access points should be provided to connect paths to activity centers such as schools and parks.

*Public Paths along "Major" Roads*
Paths within common open spaces that parallel the aforereferenced "major" roads should be accessible to the public, yet privately-owned, with an asphalt surface at least eight feet wide and constructed to municipal standards to accommodate two-way pedestrian and bicycle traffic. If more than 50 users are anticipated on the path during the peak-use hour, a minimum 10-foot wide shared bicycle and pedestrian path should be provided. If a path is proposed within the right-of-way of a County Trunk Highway or is to be funded by the County, Waukesha County specifications require that the path be at least 10 feet wide. Paths within common open spaces should be gently-curving and extend to the far property lines which would connect, or eventually connect, to paths on abutting parcels or within adjacent street rights-of-way where lots are already developed. A narrower width of six feet wide may be necessary in certain areas due to existing site constraints.

Where a lot(s) is proposed to be created by a certified survey map and would abut a major road, a public access easement at least 20 feet wide could be provided on the lot adjacent to major roads in order to obtain a continuous public pedestrian/bicycle circulation network.

To complete missing links where development has already occurred, ideally a separate path should be provided within or near the street right-of-way and behind roadside swales. If a separate path is not practical at this time, then ideally such a path should be provided in the future when streets are reconstructed. If the provision of such a path is still not practical due to limited right-of-way or site constraints, bicyclists can be accommodated with a minimum 4-foot wide paved shoulder, with a preference of 5- to 6-foot wide paved shoulders, on existing streets. The shoulder should be distinguished from the outside edge of the travel lane by a 6-inch wide solid white stripe. Pedestrians of cluster subdivisions would then rely on the use of interconnecting private trails provided within the interior of developments that have established mutual path-use agreements.

*Other Public Paths*
Paths along the Bark River should also be public. In addition, a public path within a southern portion of the Wisconsin Energies easement is also recommended which would connect to a public path along the base of a steep slope in the Town of Merton and eventually connect to the Bark River. Both paths should provide an asphalt surface. The path recommended along the Bark River should be coordinated with Waukesha County, and any trails proposed within the Wisconsin Energies easement must be coordinated with Wisconsin Energies and the property owner.

*Street Crossings*
Eventually safe pedestrian and bicycle crossings should be provided where warranted at major street intersections such as, for example, the intersections of CTH K with STH 83, CTH E, CTH KC, and the future realigned CTH KE. Defined crosswalks and handicap ramps, for example, will improve safety for pedestrians and bicyclists.

***Streets***

*Interconnecting Streets*
The street pattern for a proposed development should interconnect with existing adjacent streets and abutting tracts of land.

*Street Cross-Sections*
Subdivision streets within the Town and Village of Merton should be designed as rural cross-sections with roadside swales and no curbing, unless warranted for stormwater conveyance purposes. Curbing may also be advised for the protection of existing large trees near a street edge which do not pose a particular hazard, where regrading to accommodate a swale system would otherwise endanger the tree. Side slopes of roadside swales should preferably not exceed one foot vertically to every four feet horizontally, but no steeper than one to three. Side slopes steeper than one to four are not only more difficult to mow, but do not blend well with natural land forms. If curbing is necessary, “butterfly” or roll-face curbing—sometimes referred to as mountable curbs—should be used instead of vertical face curbs to retain a more rural character. However, subdivision streets within the Village of Hartland will continue to require vertical-faced curbing and engineered stormwater sewer systems.

*Cul-de-Sac Streets*
The use of cul-de-sac streets should be limited. The length of cul-de-sac streets should not exceed 900 feet. For lengths exceeding 900 feet, the developer should show extraordinary circumstances forcing the use of such lengths due to exceptional environmental constraints such as floodplains, wetlands, and steep topography, irregular tract shape, the preservation of hilltops, and other limiting factors. Where excessively long cul-de-sac streets are permitted, a mid-street turnaround should be provided with preferably a landscaped island.

*Cul-de-Sac Turnarounds and Landscaped Islands*
All cul-de-sac turnarounds and “eyebrow” turnarounds—half cul-de-sac turnarounds—should have an interior landscaped island. The islands should be preferably protected with curbing. The diameter of the right-of-way for the turnaround should be at least 130 feet, preferably wider to create large islands, with travel lanes 22 to 24 feet wide. If

larger turnarounds are proposed, one-way travel lanes that are 18 to 20 feet wide could be used provided the island length is not too long (more than 200 feet in length) and the minimum turning radius for the municipality's service vehicles are met. In addition, appropriate traffic signs, such as "One-Way Only" with direction arrows and "Do Not Enter" signs, should be provided in the proper locations. Such large islands should also be designed with a kidney, oval, or other creative shape in lieu of the traditional circular shape. The local municipalities concerned will require that landscaped islands be properly maintained by private means such as a homeowner's association.

*Street Trees*

All streets should provide one street tree for every 50 linear feet of street frontage, including "outlots" for common open space. Street trees could have some randomness or informality, such as staggering, in their arrangement to avoid the urban appearance that regular spacing may evoke. Wherever roadside swales are proposed, street trees should preferably be planted outside of such swales, near the street right-of-way lines. Trees, however, could be installed on gentle slopes with proper staking. Trees should have a caliper of at least two inches in diameter measured at about chest height. Appendix B provides a list of trees that may be used as street trees. Existing healthy trees that are noninvasive and properly protected should be allowed to fulfill a municipality's street tree requirement, except that tree density in woodlots should not be allowed to compensate for long gaps without trees in any system of "averaging."

***Landscape Plan and Maintenance***

A landscape plan and attendant maintenance program should be submitted for all proposed developments, with a design theme that complements the country character, as discussed earlier under the buffering design guidelines. Appendix C provides a list of recommended trees, shrubs, ornamental grasses, and groundcovers for landscaping purposes, which should also meet the most recent edition of the American Standard for Nursery Stock, (ANSI Z60.1). The developer should install the landscaping, including those within buffer strips and common open space, to help ensure proper installation and design continuity.

A landscape guarantee should be provided in which the developer deposits with the municipality a sum of money in the form of cash, certified check, letter of credit, or bond that is at least 20 percent of the total landscaping costs to cover the potential cost of replacing all dead, dying, defective, or diseased plant material for a period of at least 18 months and, in the case of prairie plantings, at least three years, which is the time needed to properly establish such vegetation.

***Other Pertinent Design-Related Guidelines***

*Outdoor Lighting and Street Signs*

Outdoor lighting should consist of shielded luminaries, or luminaries with cutoff optics, with downward reflections to preserve the night sky. Such lighting could also consist of lighting on timers or motion detectors so that light is only emitted when necessary. Street lights and street signs should be further installed with a design that is compatible with the neighborhood character and type of development proposed and as approved by the municipality. Street lights should be installed at most street intersections and in any other locations required by the municipality.

*Utility Cables*

All utility cables should be buried.

*Signs*

If a community allows advertising signs for certain uses, then the sign should be a low monument-type sign constructed of natural stone or wood-carved materials or similar cultured materials and be set in a landscape bed with a "natural" or "country" design theme.

*Detention and Retention Basins*
Stormwater detention and retention basins should blend into the landscape with a free form, curving configuration and natural plantings around the perimeter as opposed to one that looks like a bare "impact crater" or an "ice-cube tray." Such ponds or "dry" basins should have a 10 to 20 feet wide gently sloping "safety shelf" with a maximum depth of one foot around the perimeter and should be graded to a safe slope, no steeper than one vertical to four horizontal above the safety shelf. A stormwater maintenance program should be established to ensure the proper care of such facilities.

## Part IV—THE RECOMMENDED PLAN

The Hartland-Merton cluster development plan contains recommendations to achieve the land use pattern and "country" character desired for the defined planning areas and environs by utilizing open space and conservation design concepts, as illustrated in Map 4. The plan consists of recommendations for the type, amount, and spatial arrangement of various land uses and supporting facilities. The plan also depicts a detailed street and lot layout along with interconnecting open space, bikeways, and pedestrian/recreation pathways. The inclusion of certain adjacent lands to the defined planning areas was necessary to help indicate how the recommended land use, street, bikeway, and path configurations for the planning areas would connect with development that may occur on adjoining lands. As the area continues to develop, implementation of the recommended plan will help prevent the concerned communities from becoming indistinguishable from each other by providing a clear demarcation between the "countryside" and urban areas. All the basic data pertinent to good cluster or conservation subdivision design, as inventoried and analyzed earlier in this report, were carefully considered in the plan design. The design planning process was further guided by the objectives and design guidelines previously outlined.

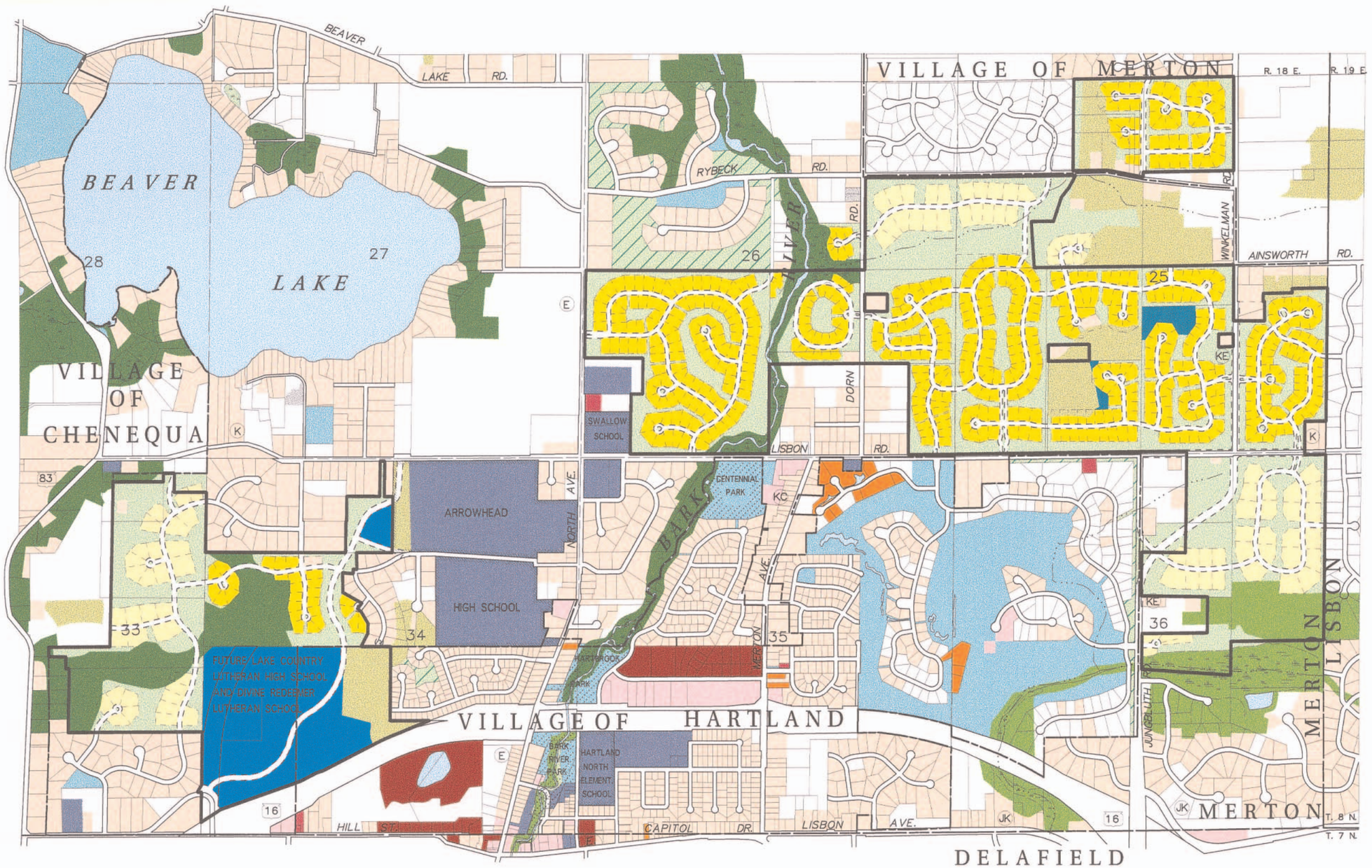
The recommendations of this plan, while quite detailed should, nevertheless, also be considered flexible. The plan is intended to be used as a point of departure for evaluating development proposals. It should not be presumed that developers cannot present development plans harmonious with sound community development objectives and design guidelines or that any development plans that are privately advanced and at variance in some respects with the plan are necessarily unacceptable. Local planning officials should remain receptive to proposed plan changes that can be shown by the developer to be better than the plan presented herein while remaining compatible with the objectives for the development of the defined planning areas as a whole.

**Residential Uses**
Most new urban uses within the Hartland-Merton defined planning areas would consist of clustered single-family residential uses with associated street rights-of-way. Under the recommended plan, residential uses are recommended to occur contiguous to, and extending outward from, existing residential developments. Table 1 indicates that areas designated for such uses would total approximately 415 acres, or 37 percent, of the total planning areas. Of this total, about 310 acres, or 75 percent, would consist of low-density, clustered single-family residential uses. As indicated under the design guidelines, such developments would have a density of about 32,670 to 40,000 square feet per dwelling unit with a reduced lot size of no less than 20,000 square feet served by public sanitary sewer, while the rest of the parcel of land would be preserved as common open space.

The remaining approximately 105 acres, or 25 percent, of total residential uses would consist of rural-density, clustered single-family residential uses at a density of about 3.5 to 5 acres per dwelling unit, depending on the density bonus approved by the local government concerned. A higher density within the range, such as one dwelling unit per 3.5 to 4.0 net acres, may possibly be obtained as a "density bonus" awarded for preserving a higher percentage of open space on a development site. The average lot size would be about one to two acres, while the remaining approximately 60 to 80 percent of the total site area would consist of common open space. Lots in this density category would be served by onsite sewage-disposal systems.

Map 4

RECOMMENDED CLUSTER DEVELOPMENT PLAN FOR THE HARTLAND-MERTON PLANNING AREAS AND ENVIRONS




- PLANNING AREA BOUNDARIES
- EXISTING CORPORATE LIMITS: 2000
- RECOMMENDED RURAL-DENSITY, CLUSTERED SINGLE-FAMILY RESIDENTIAL (3.5 TO 5 ACRES PER DWELLING UNIT, DEPENDING ON DENSITY BONUS, WITH A MINIMUM LOT SIZE OF 1 TO 2 ACRES)
- RECOMMENDED LOW-DENSITY, CLUSTERED SINGLE-FAMILY RESIDENTIAL (32,670 TO 40,000 SQUARE FEET PER DWELLING UNIT WITH A MINIMUM LOT SIZE OF 20,000 SQUARE FEET)
- SINGLE-FAMILY RESIDENTIAL
- TWO-FAMILY RESIDENTIAL
- MULTI-FAMILY RESIDENTIAL
- COMMERCIAL
- INDUSTRIAL
- COMMUNICATION AND UTILITIES
- RECOMMENDED INSTITUTIONAL
- GOVERNMENTAL AND INSTITUTIONAL
- RECOMMENDED NEIGHBORHOOD PARK
- PARKS AND RECREATION
- PRIMARY ENVIRONMENTAL CORRIDOR
- SECONDARY ENVIRONMENTAL CORRIDOR
- ISOLATED NATURAL RESOURCE AREA
- OTHER LANDS RECOMMENDED TO BE PRESERVED
- PRESERVED OPEN LAND (EXISTING)
- AGRICULTURAL AND OTHER OPEN LAND
- SURFACE WATER
- EXISTING PROPERTY LINE
- PROPOSED PROPERTY LINE
- EXISTING STREET RIGHT-OF-WAY LINES
- PROPOSED STREET RIGHT-OF-WAY LINES
- EXISTING CUL-DE-SAC WITHOUT A LANDSCAPED ISLAND
- PROPOSED CUL-DE-SAC WITH A LANDSCAPED ISLAND
- PROPOSED BOULEVARD-TYPE ENTRANCE WITH A LANDSCAPED ISLAND

NOTE: LAND USES SHOWN OUTSIDE OF THE DEFINED PLANNING AREAS ARE EXISTING 1998 LAND USES UNLESS NOTED AS "RECOMMENDED" USES IN THE LEGEND.

*Source: SEWRPC.*

GRAPHIC SCALE

0 1500 3000 FEET

**Table 1**

**SUMMARY OF EXISTING AND RECOMMENDED LAND USES IN THE HARTLAND-MERTON DEFINED PLANNING AREAS**

| Land Use Category | Existing 1998 Land Use | | Planned Change | | Recommended Land Use | |
|---|---|---|---|---|---|---|
| | Acres | Percent | Acres | Percent Change | Acres | Percent |
| Urban | | | | | | |
| Single-Family Residential | 8 | 0.7 | 407 | 508.8 | 415 | 37.0 |
| Institutional | 0 | -- | 94 | -- | 94 | 8.4 |
| Recreational[a] | 0 | -- | 7 | -- | 7 | 0.6 |
| Streets and Highways | 20 | 1.8 | 110 | 550.0 | 130 | 11.6 |
| Urban Subtotal | 28 | 2.5 | 618 | 270.7 | 646 | 57.6 |
| Nonurban | | | | | | |
| Primary and Secondary Environmental Corridors[b] | 101 | 9.0 | 0 | -- | 101 | 9.0 |
| Isolated Natural Resource Areas | 52 | 4.6 | 0 | -- | 52 | 4.6 |
| Agricultural and Other Open Lands | 941 | 83.9 | -618 | -65.7 | 323[c] | 28.8 |
| Nonurban Subtotal | 1,094 | 97.5 | -618 | -56.5 | 476 | 42.4 |
| Total | 1,122 | 100.0 | -- | -- | 1,122 | 100.0 |

[a]*Includes only areas of intensive outdoor recreational activities.*

[b]*Includes associated surface water areas.*

[c]*This total represents the areas identified as "Other Lands Recommended to be Preserved" on the recommended plan map.*

*Source: SEWRPC.*

## Other Uses

Other land uses shown on Map 4 would consist of a new public neighborhood park encompassing an isolated natural resource area to serve residents in the eastern portion of the study area. Residents in the western part would be served by the Bark River Greenway and the existing and future recreational facilities at schools in the area. A future Lake Country Lutheran High School and Divine Redeemer Lutheran School, along with ancillary recreational facilities, are planned in the western part of the study area. Except for recommended streets, most of the other urban uses shown on Map 4 are existing urban uses located outside of the defined planning areas.

## Environmentally Significant Areas and Other Open Lands

The plan recommends that new urban development be properly related to natural resources in order to maintain the environmental quality and natural beauty of the area and to avoid the creation of costly developmental problems such as flood damage, wet basements, and failing pavements. Environmental corridors, such as primary and secondary environmental corridors, and isolated natural resource areas contain concentrations of high value elements of the natural resource base where intensive development would be ill-advised.[2] The protection of such environmentally significant areas against intrusion by urban development is an important objective of the recommended plan. Table 1 reflects no overall loss of environmental corridors or isolated natural resource areas. As

[2]*Primary environmental corridors are, by definition, at least two miles in length, 400 acres in size, and 200 feet in width. Secondary environmental corridors are at least one mile in length and 100 acres in area. Such corridors that link or serve to connect primary environmental corridor segments, particularly when the secondary corridors are related to surface drainage, have no minimum area or length criteria. Isolated natural resource areas are between five and 100 acres in size.*

shown on Map 4, environmental corridors would occupy approximately 101 acres, or 9 percent of the planning areas, and isolated natural resource areas, about 52 acres, or 5 percent. The environmental corridors and isolated natural resource areas consist of concentrated areas of wetlands, woodlands, wildlife habitat areas, floodplains, steep slopes, and waterways, including the Bark River.

The plan also recommends other open lands to be preserved which would consist largely of the common open spaces of cluster developments that may contain important natural resource values. Even though these areas do not currently qualify as part of an environmental corridor or isolated natural resource area, they may be environmentally significant in the sense that they contain hedgerows, small wetlands and woodlots, soils poorly suited for urban uses, steep slopes, or floopdplains; provide buffer areas between incompatible lands uses; or provide areas for detention or retention ponds. As natural vegetation develops on these undisturbed areas, the revegetated areas may eventually be reclassified as part of an adjacent existing environmental corridor or isolated natural resource area. Areas designated as "Other Lands Recommended to be Preserved" would occupy about 323 acres, or 29 percent, of the total defined planning areas. This total, however, does not include the additional open lands that will likely be preserved on the future school sites.

The plan recommends that environmentally significant areas continue to be preserved, to the maximum extent practicable, in essentially natural, open uses. Development within these areas should be limited to required transportation and utility facilities, compatible outdoor recreational facilities, and very low density residential development carefully designed so as to minimize the impact on significant natural features. Any sites considered for development that contain environmentally sensitive features should incorporate the preservation of these elements into the site design whenever possible. The cluster design concept, as shown on Map 4, is recommended over conventional subdivision design if residential development occurs within environmentally sensitive areas.

**Greenways and Interconnecting Common Open Spaces**

Linear environmental corridors that are held in public ownership are often termed "parkways" or "greenways." Greenways are generally located along a stream, ridge line, or other linear natural feature and are intended to provide aesthetic and natural resource continuity. Greenways and other interconnecting open spaces often serve as ideal locations for recreational trail facilities. The Hartland-Merton area has a unique opportunity to continue to establish a greenway with trail facilities along the Bark River. This greenway design concept could also be extended to include permanently preserved open lands within cluster or conservation subdivisions where these common open spaces would connect to each other and ultimately to the Bark River Greenway. In addition, the adopted Waukesha County Park and Open Space Plan recommends that the Bark River Greenway continue along the River to the north and south of the study area to, respectively, the Village of Merton and Lake Nagawicka, thereby providing opportunities for a variety of long-distance trail-oriented activities while preserving significant natural features along the waterway.

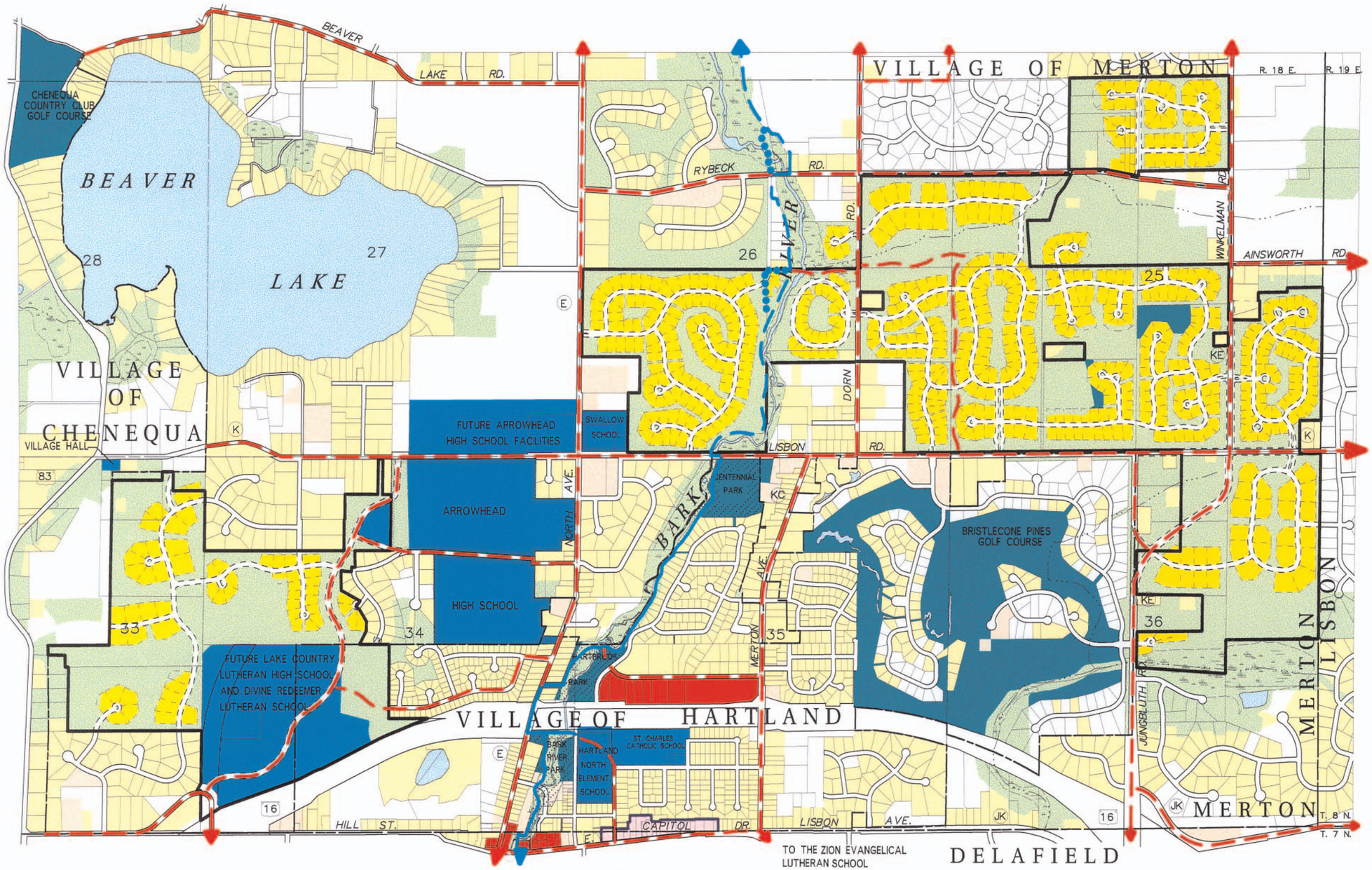
**Interconnecting Bikeway and Pedestrian/Recreation Pathway Network**

Trial-oriented facilities are advanced by the recommended plan for both recreational and utilitarian purposes. These interconnecting facilities would accommodate pedestrians and bicyclists, serving as recreational facilities as well as providing safe pedestrian and bicyclist access to services such as schools, parks, and shopping areas. As shown on Maps 5 through 7, a network of trails located in interconnecting open spaces and street rights-of-way is recommended to traverse the Hartland-Merton area to comprehensively link residential areas and provide convenient access to major activity centers. Map 5 shows recommended bikeways[3] in the entire Hartland-Merton

[3]*A "bikeway" is a general term that includes any road, path, or way that may legally be used for bicycle travel. Types of bikeways include "bike paths," which are physically separated from motorized vehicles; "bike lanes," which are portions of roadways that are designated by striping, signing, and pavement markings for the exclusive or preferential use of bicycles; and "shared roadways," which are roadways that do not have designated bicycle lanes, but may legally be used for bicycle travel. A "bike route" is a bikeway designated with directional and information markers, and may consist of a combination of bike paths, bike lanes, or shared roadways.*

Map 5

**RECOMMENDED BIKEWAYS FOR THE HARTLAND-MERTON STUDY AREA**




- PLANNING AREA BOUNDARIES
- EXISTING CORPORATE LIMITS: 2000
- RECOMMENDED CLUSTERED RESIDENTIAL USES
- OTHER RESIDENTIAL USES
- EAST CAPITOL DRIVE HISTORIC DISTRICT
- COMMERCIAL CENTERS
- SELECTED GOVERNMENTAL AND INSTITUTIONAL USES
- SELECTED PARKS AND RECREATIONAL USES
- OTHER URBAN LAND USES
- AGRICULTURAL AND OTHER OPEN LANDS
- ENVIRONMENTALLY SIGNIFICANT AREAS
- SURFACE WATER
- EXISTING BARK RIVER/ WOOLY MAMMOTH (aka ICE AGE) BIKEWAY
- RECOMMENDED BARK RIVER/ WOOLY MAMMOTH (aka ICE AGE) BIKEWAY
- ALTERNATIVE BIKEWAY
- RECOMMENDED LOCAL BIKEWAY

NOTE: ENVIROMENTALLY SIGNIFICANT AREAS CONSIST OF AREAS DELINEATED AS ENVIRONMENTAL CORRIDORS, ISOLATED NATURAL RESOURCE AREAS, EXISTING PRESERVED OPEN LANDS, AND "OTHER LANDS RECOMMENDED TO BE PRESERVED" ON THE RECOMMENDED CLUSTER DEVELOPMENT PLAN (SEE MAP 4).

*Source: SEWRPC.*

GRAPHIC SCALE

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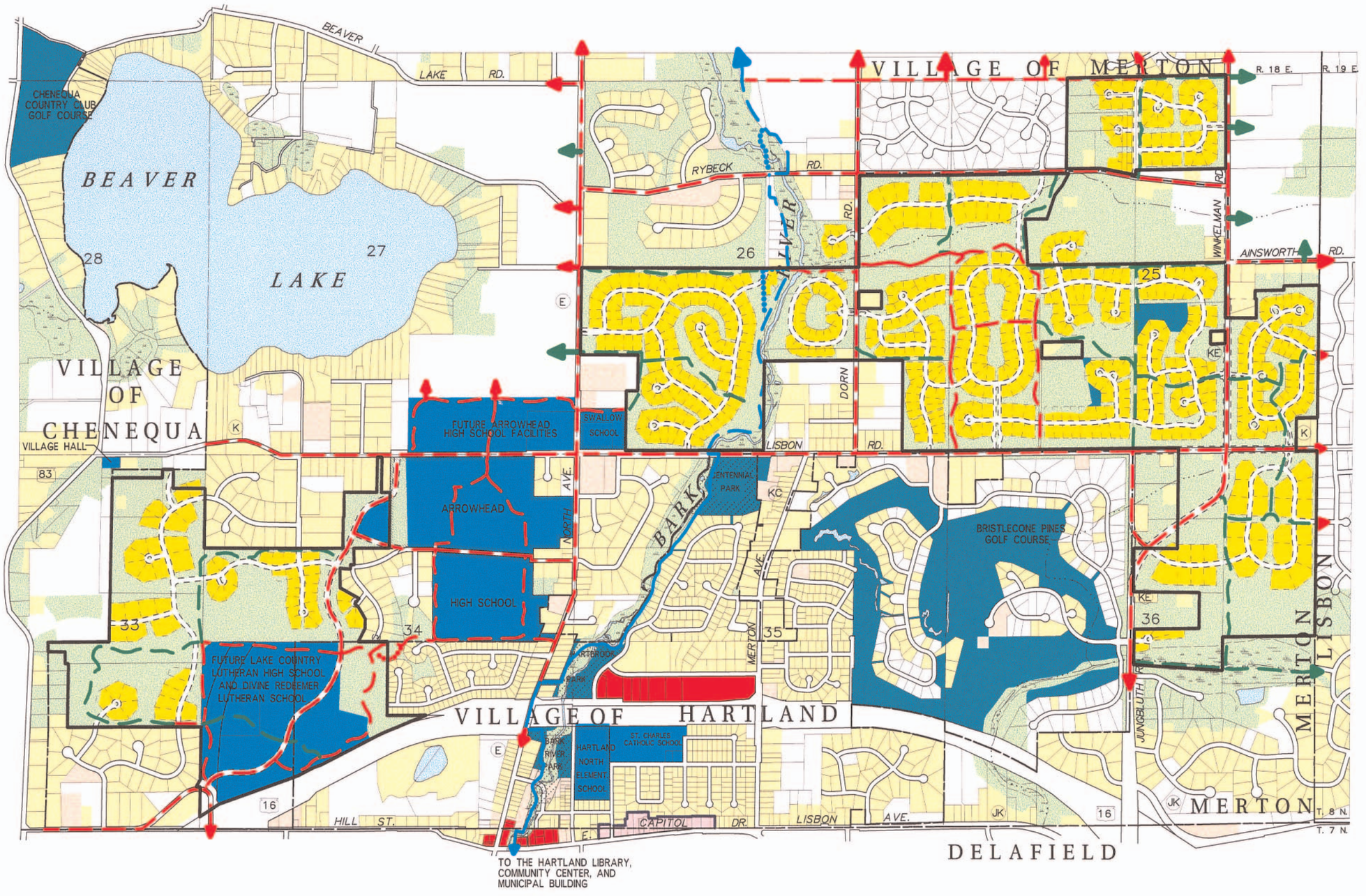
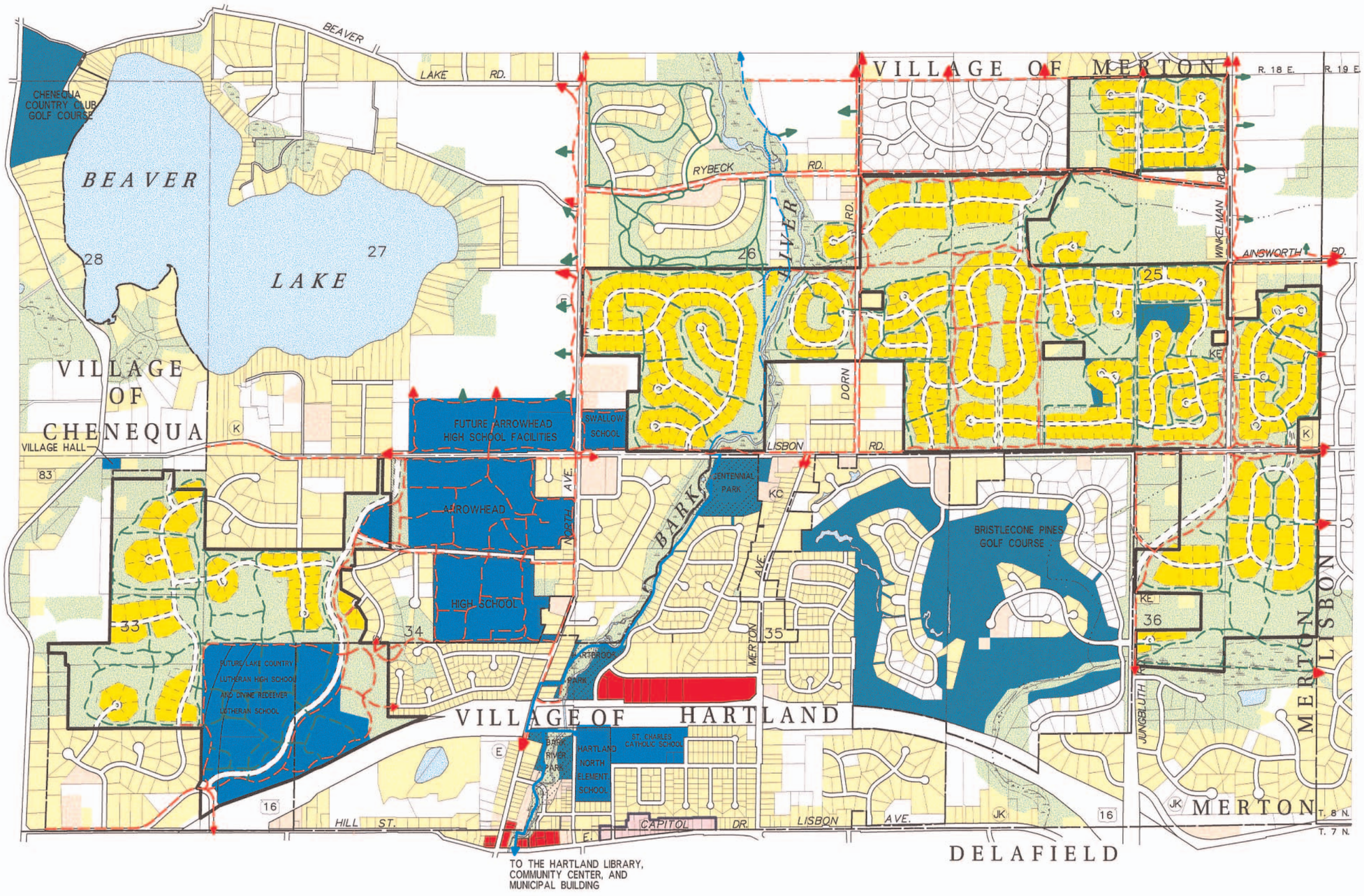
Map 6

RECOMMENDED MAIN PEDESTRIAN/RECREATION PATHWAYS FOR THE HARTLAND-MERTON PLANNING AREAS AND ENVIRONS



Map 7

## RECOMMENDED DETAILED PEDESTRIAN/RECREATION PATHS FOR THE HARTLAND-MERTON PLANNING AREAS AND ENVIRONS




- PLANNING AREA BOUNDARIES
- EXISTING CORPORATE LIMITS: 2000
- RECOMMENDED CLUSTERED RESIDENTIAL USES
- OTHER RESIDENTIAL USES
- EAST CAPITOL DRIVE HISTORIC DISTRICT
- COMMERCIAL CENTERS
- SELECTED GOVERNMENTAL AND INSTITUTIONAL USES
- SELECTED PARKS AND RECREATIONAL USES
- OTHER URBAN LAND USES
- AGRICULTURAL AND OTHER OPEN LANDS
- ENVIRONMENTALLY SIGNIFICANT AREAS
- SURFACE WATER
- EXISTING BARK RIVER/ICE AGE PATH
- RECOMMENDED BARK RIVER/ICE AGE PATH
- ALTERNATIVE PATH
- RECOMMENDED LOCAL PUBLIC PATH
- ALTERNATIVE PATH
- EXISTING PRIVATE PATH
- RECOMMENDED PRIVATE PATH

NOTE: ENVIRONMENTALLY SIGNIFICANT AREAS CONSIST OF AREAS DELINEATED AS ENVIRONMENTAL CORRIDORS, ISOLATED NATURAL RESOURCE AREAS, EXISTING PRESERVED OPEN LANDS, AND "OTHER LANDS RECOMMENDED TO BE PRESERVED" ON THE RECOMMENDED CLUSTER DEVELOPMENT PLAN (SEE MAP 4).

*Source: SEWRPC.*

GRAPHIC SCALE

0 1500 3000 FEET

study area. Map 6 conceptually shows recommended main pedestrian/recreation pathways[4], while Map 7 shows a more precise and detailed path system for the defined planning areas and environs indicating not only the primary routes, but also the supplementary secondary routes connecting residential areas to the main pathways.

Approximately 22 miles of designated bikeways are recommended in the Hartland-Merton study area to serve recreational and utilitarian purposes by linking local residents to significant urban and natural features identified on Map 5. Existing segments of the Bark River Trail in the Villages of Hartland and Merton are popular multi-use trails, and it is recommended that remaining segments of the trail be completed. Completion of the trail would continue to allow users the opportunity to practice a wide array of trail-related activities such as walking, jogging, bicycling, in-line skating, roller skiing, and cross-country skiing.

Collector and minor land-access streets can generally function as supplementary bikeways connecting to the primary bikeways shown on Map 5 without widening roadways, due to the usually low traffic speed and volume on these streets. Bikeways shown within street rights-of-way may consist of a bicycle route designated on a street or highway, a paved shoulder designated for bicycle use, or a separate paved public path located within the street right-of-way or in the common areas of cluster developments with public access easements. Existing busy streets that are recommended as bikeways should provide bicycle facilities as such streets are reconstructed or resurfaced.[5]

Map 7 shows not only the Bark River Trail, which also encompasses Ice Age National Scenic Trail, but also the location of other recommended pedestrian/recreation paths in the Hartland-Merton area. Preferably private trails within individual subdivisions should be shared between adjoining subdivisions, as shown on Map 6, to avoid duplicating parallel trail facilities, which are shown on Map 7 in certain locations. A mutually agreed upon shared use of trails between subdivisions would provide a longer trail network, and would promote social interaction between residents of adjacent subdivisions. Segments of paths within subdivisions located along major streets are recommended to be publicly accessible, as identified on Maps 6 and 7, by the use of public access easements. Some of the other recommended private paths may also be open to the public, as discussed under the design guidelines.

It is envisioned that some of the main trail routes will connect to other surrounding key recreation attractions in the general Lake Country area, including Nagawaukee, Nashotah, Monches, Ryan, Lowe Lake, and Lapham Peak Parks; and the Bugline, Lake Country, and Glacial Drumlin Trails. It is recommended that the local communities concerned work with other surrounding communities, Waukesha County, and the State Departments of Transportation and Natural Resources to insure that, as the overall trail system is developed, adequate linkages with surrounding trail systems are established. This interlinked network of bikeways and pedestrian/recreation paths would provide the residents of the Hartland-Merton area opportunities for a longer and wider array of trail-oriented recreational pursuits, as well as safe and convenient utilitarian access to major activity centers.

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[4]*For the purpose of this report, a "pathway" is coined as a general term that includes sidewalks and paths used at least by pedestrians for utilitarian and/or recreational purposes. Types of pathways include concrete sidewalks, paved asphalt paths, and unpaved paths consisting of compacted gravel, bark mulch with underlying filter fabric weed barrier, boardwalks, or simply mowed grass. All pathways should be properly graded for good drainage and include stormwater drainage facilities if necessary. In some cases, paths may be designated with directional and informational markers, including signs indicating the type of activities allowed on the path, such as bicycling, in-line skating, and/or cross-country skiing.*

[5]*It is recognized that major bicycle-related improvements, such as the ideal addition of separate bicycle paths, may not be feasible at the time a street is resurfaced or reconstructed due to cost, space, or topographic constraints. However, consideration should be given to re-striping the street; fixing pavement irregularities such as holes, cracks, and grates; paving street shoulders (no less than four feet wide); or making other improvements to better accommodate bicycle travel.*

**Street System**
The plan recommends an integrated street system which, through its location, capacity, and design, can effectively serve the existing and probable future traffic demand in the Hartland-Merton area. In the preparation of the street system, all modes of travel, including walking and bicycling, were considered with emphasis on how those modes may affect the utilization of the street network. The recommended street system is organized on a functional basis and consists of arterial, collector, and minor land-access streets in order to safely and efficiently move traffic within and through the area. Map 4 shows this integrated street system and the existing and recommended street rights-of-way. Streets, highways, and attendant facilities, such as pedestrian and bicycle facilities, should comply with the street cross-sections typically included in locally adopted land division ordinances or engineering specifications. Street cross-sections may be subject to variations with regard to a number of considerations, including topography, vehicular and pedestrian traffic patterns and volumes, bicycle path and lane widths, and adjacent land uses.

An efficient arterial street and highway network provides the necessary means of access from both rural and urban areas to supporting service, employment, recreational, and cultural centers. The arterial highway system is based on the regional transportation system plan, including the recommendation to realign CTH KE near the northeast corner of the Hartland-Merton study area. Map 4 reflects a proposed realignment of CTH KE located south of Lisbon Road (CTH K), while Map 8 shows an alternative northern realignment along with alternative interconnecting street and attendant lot layouts for the same general area. In order to promote traffic safety and protect the efficiency of the arterial street system, the plan recommends limited direct access of building sites to arterial streets by backing lots against the arterials. The plan further recommends that a landscaped buffer be provided between homes and adjacent arterial streets for visual screening and noise mitigation.

Collector streets, such as the recommended street with a north-south alignment west of North Avenue between Lisbon Road (CTH K) and STH 16 on Map 4, were arranged to collect traffic from urban uses abutting minor land-access streets and to convey it to the arterial streets and activity centers identified on the plan. Collector streets should be related to special traffic generators such as schools, churches, shopping centers, and other proposed concentrations of population or activities, and to the arterial streets to which they connect. The minor land-access street network was designed to achieve the most efficient use of land; to discourage use by through traffic; to minimize street area and cost; to provide an attractive setting for residential development; to facilitate the provision of efficient stormwater drainage and utility facilities; and to complement the natural terrain, thereby minimizing the need for extensive grading during the development process. All street locations were based on careful consideration of a number of factors, including soil characteristics, topography, property boundaries, the hierarchy within the total street system, existing and proposed land uses, the principles of good neighborhood planning, and the design guidelines presented herein.

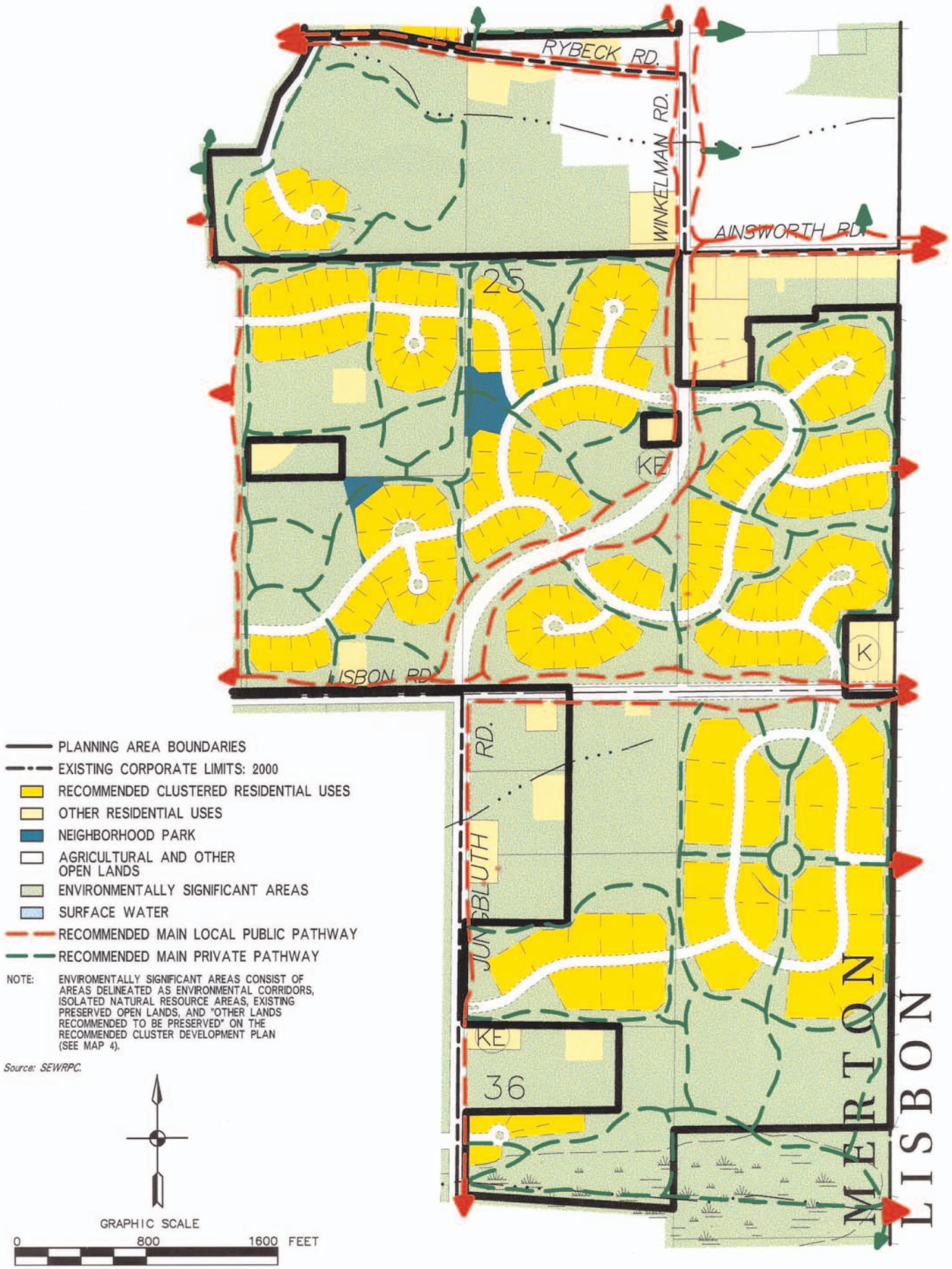
## Part V—IMPLEMENTATION

The recommended cluster development plan described in the preceding sections is not complete until the steps to implement the plan are specified. After formal adoption of the plan, realization of the plan will require faithful, long-term dedication to the underlying planning objectives by the local officials concerned with its implementation. Adoption of the plan is only the beginning of a series of actions necessary to achieve plan recommendations. This section presents techniques that can be used to implement the plan.

**Plan Adoption**
An important step in plan implementation is the formal adoption of the plan. It is recommended that the cluster development plan be adopted as a plan element of each community's overall master or comprehensive plan, or, as an alternative, that the cluster development plan be integrated into each community's comprehensive plan as that plan is prepared or updated. Formal adoption of the plan as a plan element or inclusion into a community's adopted comprehensive plan would clearly express that the plan has been endorsed as an official public policy.

Map 8

## ALTERNATIVE LAYOUT FOR THE EASTERN HARTLAND-MERTON PLANNING AREAS AND ENVIRONS



The Village of Hartland is currently updating the Village master plan. It is recommended that the cluster development plan be adopted by the Plan Commission as an element of the master plan. Although not required by the master planning statute (Section 62.23 of the *Wisconsin Statutes*), it is recommended that the Village Board also adopt the cluster development plan to indicate its support for the plan. Sample resolutions for adoption of the plan as an element of the Village master plan are provided in Appendices D and E.

The Town of Merton has not adopted a master plan under Section 62.23 of the *Statutes*, or a comprehensive plan under Section 66.1001 of the *Statutes*. It is recommended that the Town Plan Commission and Town Board consider adopting the cluster development plan as the first element of a Town master plan. The sample resolutions provided in Appendices D and E may be used by the Town. Alternatively, the Town may consider integrating the cluster development plan into the Town comprehensive plan as that plan is prepared.

The Village of Merton adopted a Village comprehensive plan in 2002. Section 66.1001 of the *Statutes* requires that an amendment to an adopted comprehensive plan follow the same procedure used to adopt the plan, including public review, a public hearing, approval of the amendment by a resolution of the Village Plan Commission, and adoption of the amendment by an ordinance enacted by the Village Board.

**Zoning**

Following adoption of the plan, the local Plan Commissions concerned should initiate any necessary amendments to their zoning district map and zoning ordinance to bring that map and ordinance into conformance with the recommendations advanced in the adopted plan. Local zoning ordinances may also be amended to include additional design-related provisions to implement the design guidelines set forth in this report, including minimum landscaping and buffer yard requirements between incompatible or dissimilar uses. Pursuant to State enabling legislation, any zoning changes recommended by a local Plan Commission must be enacted by the governing body (Village or Town Board) after a formal public hearing. The cluster development plan, once adopted, should also serve as the basis on which all rezoning requests are reviewed. Only those proposals which are consistent with the objectives of the plan should be approved.

**Land Division Review**

Properly applied, sound land division ordinances are an important means of implementing a community plan and of coordinating the layout, design, and improvement of private land development proposals within a community. The cluster development plan should serve as a basis for the preparation and review of proposed subdivision plats and certified survey maps for the defined planning areas. The review should ascertain that each proposed land division is properly related to existing and proposed land uses. Land divisions should consider the proper layout of streets and lots as well as the topography, soils, drainage, and vegetation of the site. Proposed subdivisions should be designed as integral parts of the larger community. Any proposed departures from this plan should be carefully considered by local officials and should be allowed only when it finds that such departures are warranted in the public interest. Proposed departures from the plan may require that a local comprehensive plan be amended, in order to meet the requirements for consistency between a local comprehensive plan and implementing zoning, subdivision, and official mapping ordinances set forth in Section 66.1001(3) of the *Wisconsin Statutes.*

**Official Mapping**

Following adoption of the plan, existing and proposed street and highway rights-of-way, parks, greenways, and other public ways shown on the plan should be incorporated into the Official Map of the community concerned. A community's engineer should have an official map sheet of the Hartland-Merton defined planning areas and environs drafted that shows the aforereferenced existing and proposed plan features. The local Plan Commission and Board should act to adopt the map sheet following a public hearing. It should be noted that the *Wisconsin Statutes* specifically provide that the approval of a subdivision plat by a Board constitutes an amendment to the Official Map, thus providing flexibility in its administration.

**Capital Improvements Program**

A Capital Improvements Program (CIP) is a list of major public improvements needed in a community over a short-term period, typically the next five years, arranged in order of priority of need and adjusted to the community's ability to finance the improvement. Major public improvements include such items as street improvements and new construction, pedestrian/bicycle paths, storm sewers, public utilities, and public buildings and parks, which together form the infrastructure required to support land use development and redevelopment. A CIP is intended to promote well-balanced community development without overemphasis on any particular phase of such development, and to promote coordinated development both in time and between functional areas. With such a program, required bond issues and tax revenues can be foreseen and provisions made. Lands needed for the projects can be acquired in a timely fashion and staged construction facilitated. A capital improvements program can serve as a major catalyst to implementation the cluster development plan by including such public works projects necessary to promote development of the Hartland-Merton planning areas in accordance with the plan in a timely manner.

It is recommended that those elements of the cluster development plan requiring public expenditures for implementation, including utility projects, street improvements, and pedestrian/bicycle facilities, be included in the CIP of the community concerned.

**Intergovernmental Planning Efforts and Cooperation**

The cluster development plan presented in this report includes land use recommendations for the Town of Merton and the Villages of Merton and Hartland. In the preparation of this plan, the communities have taken a cooperative approach to planning and decision-making regarding future land uses in areas of mutual concern. It is recommended that such efforts continue, and that other adjacent communities be included in cooperative planning efforts as appropriate. Such communities may include, but are not limited to, the Village of Chenequa and Town of Lisbon. Additional activities in this respect could range from: the cooperative preparation of detailed development or neighborhood plans for other areas outside of the planning areas defined herein; periodic meetings of public officials for the purpose of discussing land use matters; and preparing and executing formal agreements regarding future boundaries and arrangements for the provision of public services, as provided for under Sections 66.0301 and 66.0307 of the *Wisconsin Statutes*. Such cooperative efforts increase the likelihood for coordinated development within the boundary areas, achieving, insofar as practicable, the planning objectives for all municipalities involved.

## CONCLUDING REMARKS

The main intent of the Hartland-Merton Cluster Development Plan is to achieve the physical development and "country" character desired for the defined planning areas and environs. The plan provides a recommended land use pattern along with a detailed street and lot layout design to foster sound development. An interconnecting network of open space, bikeways, and pedestrian/recreation paths is further advanced by the plan to link residents to key activity centers and natural features of the Hartland-Merton area for utilitarian and recreational purposes. The plan also provides design guidelines to help the local communities concerned to maintain the unique visual "Lake Country" character of the area. The plan provides information and recommendations that public officials can use in making consistent decisions about future development in the defined planning areas and environs. The plan would provide developers and other private interests a clear indication of local planning objectives, enabling them to take those objectives, including design guidelines, into account when preparing development proposals. Only those proposals that are consistent with the objectives and design guidelines of the plan should be approved.

The recommended cluster development plan, together with supporting implementation measures, provides an important means for promoting the orderly development of the planning areas in the public interest. Consistent application of the plan will assure protection of historic, cultural, and natural resources, while providing for the needs of the existing and probable future residents of the Hartland-Merton area.

# APPENDICES

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## Appendix A

## INVASIVE PLANTS

The following list of invasive plants should not be used for landscaping. If these plants are already located in existing natural areas, they should be promptly removed to protect native vegetation provided that extensive clearing in the absence of a detailed restoration plan does not result in problems related to bare ground and erosion.

| Common Name(s) | Botanical Name(s) |
|---|---|
| ***TREES*** | |
| Black Locust | *Robinia pseudoacacia* |
| White Poplar | *Populus alba* |
| ***SHRUBS*** | |
| European Barberry | *Berberis vulgaris* |
| Common Buckthorn | *Rhamnus cathartica* |
| Glossy,Columnar, or Tall-Hedge Buckthorn | *Rhamnus frangula* |
| Most Honeysuckles | *Lonicera (L.) tatarica, L. x bella, L. morrowii,* and *L. maackii* |
| Autumn Olive | *Elaeagnus umbellata* |
| Russian Olive | *Elaeagnus angustifolia* |
| Multiflora Rose | *Rosa multiflora* |
| ***VINES*** | |
| Porcelain Berry | *Ampelopsis brevipedunculata* |
| Japanese Honeysuckle | *Lonicera japonica* |
| ***FORBS*** | |
| Spotted Knapweed | *Centaurea maculosa* |
| Japanese Knotweed | *Polygonum cuspidatum* |
| Purple Loosestrife | *Lythrum salicaria* |
| Garlic Mustard | *Alliaria petiolata* |
| Dame's Rocket | *Hesperis matronalis* |
| Leafy Spurge | *Euphorbia esula* |
| Canada Thistle | *Cirsium arvense* |
| Musk or Nodding Thistle | *Carduus nutans* |
| Crown Vetch | *Coronilla varia* |
| Black Swallow-Wort | *Vincetoxicum nigrum* |
| ***GRASSES*** | |
| Reed Canary Grass | *Phalaris arundinacea* |
| Quack Grass | *Elytrigia repens* or *Agropyron repens* |

*Source: SEWRPC.*

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## Appendix B

## POTENTIAL STREET TREES

In the table, the nonitalicized first name is the common name(s) for a plant, and the second name is its botanical name.

| | | | |
|---|---|---|---|
| ***TALL TREES – 40-100 feet in height; plant at least 40-50 feet apart; columnar species, 20-30 feet apart*** | | | |
| Ash, Fallgold Black | *Fraxinus nigra* 'Fallgold' | Linden Littleleaf (L.L.) | *Tilia cordata* |
| * Ash, Green (G.A.) | *Fraxinum pennsylvanica* | Chancellor L.L. | 'Chancellor' |
| Aerial G.A. | 'Aerial' | Glenleven L.L. | 'Glenleven' |
| Marshall Seedless (G.A. | 'Marshall Seedless' | Greenspire L.L. | 'Greenspire' |
| Patmore G.A. | 'Patmore' | Linden, Silver | *Tilia tomentosa* |
| Summit G.A. | 'Summit' | Maple, Norway (N.M.) | *Acer platanoides* |
| * Ash, White (W.A.) | *Fraxinus Americana* | Cleveland N.M. | 'Cleveland' |
| Autumn Applause W.A. | 'Autumn Applause' | Columnar N.M. | 'Columnare' |
| Autumn Purple W.A. | 'Autumn Purple' | Crimson King N.M. | 'Crimson King' |
| Champaign County W.A. | 'Champaign County' | Deborah N.M. | 'Deborah' |
| Rosehill W.A. | 'Rosehill' | Emerald Lustre N.M.; Pond N.M. | 'Emerald Lustre' |
| Skyline W.A. | 'Skyline' | Emerald Queen N.M. | 'Emerald Queen' |
| Elm, Hybrid (H.E.) | *Ulmus x* 'New Horizon' | Harlequin N.M.; Silver Variegated N.M. | 'Drummondii' |
| Regal H.E. | 'Regal' | Greenlace N.M. | 'Greenlace' |
| Ginkgo (G.); Maidenhair Tree (Male only) | *Ginkgo biloba* | Royal Red N.M. | 'Royal Red' |
| Autumn Gold G. | 'Autumn Gold' | Schwedler N.M. | 'Schwedler' |
| Lakeview G. | 'Lakeview' | Summershade N.M. | 'Summershade' |
| Sentry G. | 'Fastigiata' | Superform N.M. | 'Superform |
| * Hackberry, Common (C.H.) | *Celtis occidentalis* | * Maple, Red (R.M.) | *Acer rubrum* |
| Prairie Pride C.H. | 'Prairie Pride' | Autumn Flame R.M. | 'Autumn Flame' |
| Honeylocust, Thornless Common (T.C.H.) | *Gleditsia triacanthos* var. *Inermis* | Bowhall R.M. | 'Bowhall' |
| Imperial T.C.H. | 'Imperial' | Red Sunset R.M. | 'Red Sunset' |
| Majestic T.C.H. | 'Majestic' | Schlesinger R.M. | 'Schlesingeri' |
| Moraine T.C.H. | 'Moraine' | * Maple, Sugar (S.M.) | *Acer saccharum* |
| Shademaster T.C.H. | 'Shademaster' | Black Maple | ssp. *nigrum* |
| Skyline T.C.H. | 'Skyline' | Green Mountain S.M. | 'Green Mountain' |
| Sunburst T.C.H. | 'Sunburst' | Legacy S.M. | 'Legacy' |
| Horsechestnut, Bauman | *Aesculus hippocastanum* 'Baumannii' | Oak, Pin | *Quercus palustris* |
| | | * Oak, Red | *Quercus rubra* |
| Linden, American (A.L.) | *Tilia americana* | Zelkova, Japanese (J..Z.) | *Zelkova serrata* |
| Redmond A.L. | 'Redmond' | Green Vase J.Z. | 'Green Vase' |
| American Sentry L. | 'American Sentry' | Village Green J.Z. | 'Village Green' |
| ***MEDIUM TREES – 30-40 feet in height; plant at least 20-35 feet apart, depending on spread*** | | | |
| Cherry, Sargent (S.C.) | *Prunus sargentii* | Pear, Callery (C.P.) | *Pyrus calleryana* |
| Columnar S.C. | 'Columnaris' | Aristocrat C.P. | 'Aristocrat' |
| Elm, Lacebark; Chinese Elm | *Ulmus parvifolia* | Autumn Blaze C.P. | 'Autumn Blaze' |
| Horsechestnut, Ruby Red | *Aesculus x carnea* 'Briotii' | Bradford C.P. | 'Bradford' |
| | | Chanticleer C.P.; Cleveland Select C.P. | 'Chanticleer' |
| | | Redspire C.P. | 'Red Spire' |
| | | Select C.P. | 'Select' |
| ***LOW TREES – 15-30 feet in height; plant at least 15-30 feet apart, depending on spread*** | | | |
| Hawthorn, Thornless Cockspur | *Crataegus crus-galli* var. *inermis* | Lilac, Japanese Tree (J.T.L.) | *Syringa reticulata* |
| | | Ivory Silk J.T.L. | 'Ivory Silk' |
| * Hophornbeam; Ironwood | *Ostrya virginiana* | Summer Snow J.T.L. | 'Summer Snow' |
| * Hornbeam, American; Ironwood; Musclewood | *Carpinus caroliniana* | Maple, Globe Norway | *Acer platanoides* 'Globosum' |

*Wisconsin Native

NOTE: The abbreviations ssp. and var. represent subspecies and variety, respectively.

Source: *E.R. Hasselkus,* A Guide to Selecting Landscape Plants for Wisconsin, *University of Wisconsn-Extension, Madison, Wisconsin, 1998; Michael A. Dirr,* Manual of Woody Landscape Plants: Their Identification, Ornamental Characteristics, Culture, Propagation and Uses, *5th Ed., Stipes Publishing Company, Champaign, Illinois, 1998; Richard D. Schein, Ph.D.,* Street Trees: A Manual for Municipalities, *Treeworks, State College, Pennsylvania, 1993; Henry D. Gerhold, Willet N. Wandell, and Norman L. Lacasse,* Landscape Tree Factsheets, *Pennsylvania State University, University Park, Pennsylvania, 2005; Henry D. Gerhold, Norman L. Lacasse, and Willet N. Wandell,* Compatible Tree Factsheets for Electric Lines and Restricted Spaces, Including Evergreens for Screens, *2nd Ed., Pennsylvania State University, University Park, Pennsylvania, 2001; and SEWRPC.*

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## Appendix C

## A PLANT SELECTION GUIDE FOR LANDSCAPE PLANTING WITHIN THE HARTLAND-MERTON PLANNING AREAS

The following tables list plants recommended for landscape use within the Hartland-Merton planning areas. The plant selection guide is divided into seven tables consisting of deciduous trees, evergreen trees, deciduous shrubs, evergreen shrubs, ornamental grasses, groundcovers, and vines. The first five tables further group the plants by height. The tables are not exhaustive, but include plants that are usually available within southeastern Wisconsin.

Prior to selecting plants for a specific location, various site characteristics should be carefully analyzed including soil type, drainage conditions, hardiness zone, growing space, available sunlight, wind exposure, salt exposure/plant tolerance, utility lines, traffic visibility, typical snow cover, expected foot traffic and compaction, among other site conditions that could affect the growth of plants.

Plants should also be selected to help establish a design theme for a development and/or achieve the desired neighborhood or community character. Interesting or creative landscape architectural details should be further encouraged that use a diverse variety of plants in planting patterns integrated with other landscape features to avoid uncreative and monotonous landscape designs. To be avoided are plants spaced too far apart with excessively large gaps or the monotonous view of a long straight hedge consisting of only one or two types of shrubs and not properly integrated as a part of a design theme.

As a general guide, trees and shrubs used for buffering or screening purposes should consist of the following minimum sizes:

1. Deciduous shade trees and ornamental trees should contain a caliper size of at least two inches and 1.5 inches in diameter, respectively, which are measured at least six inches above the root system or ground level.

2. Evergreen trees should be at least five to six feet in height.

3. Deciduous and evergreen shrubs used to screen parking areas from public streets should be at least 18 to 24 inches in height and grow to obtain an overall screening height of at least four feet, preferably higher, above the parking surface after three years. A minimum plant size of five to six feet in height is suggested for buffering between incompatible land uses. Smaller plants could be used if combined with other landscape measures, such as planters or berms, provided the desired degree of buffering or screening is achieved.

Deciduous trees selected for installation along streets should contain a caliper size of at least two inches in diameter, measured 4.5 feet (about chest height) above ground level. The over-use of one type of tree should be avoided. For a more complete guide to street tree planting, refer to the sources referenced at the end of this appendix.

In the table, the nonitalicized first name is the common name(s) for a plant, and the second name in parentheses is its botanical name. Abbreviations used in the following tables include:

cvs. – cultivars;
spp. – species;
ssp. – subspecies;
var. – variety.

## A. DECIDUOUS TREES

### *TALL TREES -- 40-100 feet in height; plant at least 40-50 feet apart; columnar species, 20-30 feet apart*

| | | | | | |
|---|---|---|---|---|---|
| ● | Ash, Fallgold Black | (*Fraxinus nigra* 'Fallgold') | | Larch, European | (*Larix decidua*) |
| ●* | Ash, Green | (*Fraxinus pennsylvanica* and cvs.) | | Larch, Japanese | (*Larix kaempferi*) |
| ●* | Ash, White | (*Fraxinus americana* and cvs.) | * | Linden, American; Basswood | (*Tilia americana* and cvs.) |
| * | Beech, American | (*Fagus grandifolia*) | ● | Linden, Littleleaf | (*Tilia cordata* and cvs.) |
| | Beech, European | (*Fagus sylvatica*) | ● | Linden, Silver | (*Tilia tomentosa*) |
| | Catalpa, Northern | (*Catalpa speciosa*) | ● | Maple, Norway | (*Acer platanoides* and cvs.) |
| * | Cherry, Black | (*Prunus serotina*) | ●* | Maple, Red | (*Acer rubrum* and cvs.) |
| * | Coffeetree, Kentucky | (*Gymnocladus dioica*) | * | Maple, Silver | (*Acer saccharinum* and cvs.) |
| ● | Elm, Hybrid | (*Ulmus x* 'New Horizon' and cvs.) | ●* | Maple, Sugar | (*Acer saccharum* and cvs.) |
| ● | Ginkgo; Maidenhair Tree Male Only | (*Ginkgo biloba* and cvs.) | * | Oak, Bur | (*Quercus macrocarpa*) |
| | | | ● | Oak, Pin | (*Quercus palustris*) |
| ●* | Hackberry, Common | (*Celtis occidentalis* and cvs.) | ●* | Oak, Red | (*Quercus rubra*) |
| * | Honeylocust, Common | (*Gleditsia triacanthos*) | * | Oak, Swamp White | (*Quercus bicolor*) |
| ● | Honeylocust, Thornless Common | (*Gleditsia triacanthos* var. *inermis* and cvs.) | * | Oak, White | (*Quercus alba*) |
| | | | | Tuliptree; Tulip Magnolia | (*Liriodendron tulipfera*) |
| | Horsechestnut | (*Aesculus hippocastanum* and cvs.) | ● | Zelkova, Japanese | (*Zelkova serrata* and cvs.) |

### *MEDIUM TREES -- 30-40 feet in height; plant at least 20-35 feet apart, depending on spread*

| | | | | | |
|---|---|---|---|---|---|
| * | Birch, River | (*Betula nigra* and cvs.) | | Corktree, Macho Amur | (*Phellodendron amurense* 'Macho') |
| | Birch, Whitespire | (*Betula platyphylla* var. *japonica* 'Whitespire') | ● | Elm, Lacebark; Chinese Elm | (*Ulmus parvifolia*) |
| | | | ● | Horsechestnut, Ruby Red | (*Aesculus x carnea* 'Briotii') |
| | Buckeye, Ohio | (*Aesculus glabra*) | | Katsuratree | (*Cercidiphyllum japonicum*) |
| ● | Cherry, Sargent | (*Prunus sargentii* and cvs.) | ● | Pear, Callery | (*Pyrus calleryana* and cvs.) |
| | Chokecherry, Amur | (*Prunus maackii*) | | Willow, Golden Weeping | (*Salix x sepulcralis* 'Tristis') |

### *LOW TREES -- 15-30 feet in height; plant at least 15-30 feet apart, depending on spread*

| | | | | | |
|---|---|---|---|---|---|
| * | Chokecherry | (*Prunus virginiana* and cvs.) | | Maple, Amur | (*Acer ginnala* and cvs.) |
| | Crabapples, Ornamental; Flowering Crabapples | (*Malus* spp. and cvs.) | ● | Maple, Globe Norway | (*Acer platanoides* 'Globosum') |
| | | | * | Mountainash, American | (*Sorbus americana*) |
| * | Dogwood, Pagoda | (*Cornus alternifolia)* | | Mountainash, European | (*Sorbus aucuparia* and cvs.) |
| * | Hawthorn, Cockspur | (*Crataegus crus-galli* and cvs.) | | Mountainash, Korean | (*Sorbus alnifolia*) |
| * | Hawthorn, Dotted | (*Crataegus punctata*) | * | Mountainash, Showy | (*Sorbus decora*) |
| * | Hawthorn, Downy | (*Crataegus mollis*) | * | Plum, American | (*Prunus americana*) |
| | Hawthorn, Washington | (*Crataegus phaenopyrum*) | | Plum, Newport | (*Prunus x* 'Newport') |
| | Hawthorn, Winter King | (*Crataegus x viridis* 'Winter King') | | Redbud, Eastern | (*Cercis canadensis)* |
| ●* | Hophornbeam; Ironwood | (*Ostrya virginiana*) | * | Serviceberry, Allegany | (*Amelanchier laevis* and cvs.) |
| ●* | Hornbeam, American; Ironwood; Musclewood | (*Carpinus caroliniana*) | * | Serviceberry, Apple | (*Amelanchier x grandiflora and cvs.*) |
| | | | * | Serviceberry, Downy; Juneberry | (*Amelanchier arborea*) |
| ● | Lilac, Japanese Tree | (*Syringa reticulata* and cvs.) | | | |
| | Magnolia, Loebner | (*Magnolia x loebneri* and cvs.) | | Willow, Contorted; Corkscrew Willow | (*Salix matsudana* 'Tortuosa') |
| | Magnolia, Saucer | (*Magnolia x soulangiana*) | | | |
| | Magnolia, Star | (*Magnolia stellata*) | | Willow, Laurel | (*Salix pentandra*) |

## B. EVERGREEN TREES

### *TALL TREES -- 60-80 feet in height; plant at least 25-35 feet apart, depending on spread*

| | | | | | |
|---|---|---|---|---|---|
| | Fir, Douglas | (*Pseudotsuga menziesii*) | * | Pine, Eastern White | (*Pinus strobus*) |
| | Fir, White | (*Abies concolor*) | | Spruce, Colorado Blue | (*Picea pungens* var. *glauca* and cvs.) |
| * | Hemlock, Canadian | (*Tsuga canadensis*) | | Spruce, Norway | (*Picea abies*) |

### *MEDIUM TREES -- 40-60 feet in height; plant at least 25-35 feet apart, depending on spread*

| | | | | | |
|---|---|---|---|---|---|
| | Pine, Austrian | (*Pinus nigra*) | | Pine, Swiss Stone | (*Pinus cembra*) |
| * | Pine, Jack | (*Pinus banksiana*) | | Spruce, Serbian | (*Picea omorika*) |
| * | Pine, Red | (*Pinus resinosa*) | * | Spruce, White | (*Picea glauca*) |
| | Pine, Scots; Scotch Pine | (*Pinus sylvestris*) | | | |

### *LOW TREES -- 15-40 feet in height; plant at least 10-25 feet apart, depending on spread*

| | | | | | |
|---|---|---|---|---|---|
| * | Arborvitae, American; White Cedar | (*Thuja occidentalis* and certain cvs.) | * | Redcedar, Eastern | (*Juniperus virginiana* and cvs.) |
| | | | | Spruce, Black Hills | (*Picea glauca* var. *densata*) |
| | Juniper, Iowa Chinese | (*Juniperus chinensis* 'Iowa') | | Yew, Upright Japanese; Pyramidal Japanese Yew | (*Taxus cuspidata* 'Capitata') |
| | Juniper, Mountbatten | (*Juniperus chinensis* 'Mountbatten') | | | |

## C. DECIDUOUS SHRUBS

### *TALL SHRUBS -- 8-10 feet in height, sometimes 15 feet in height; plant at least 4-6 feet apart*

| | | |
|---|---|---|
| | Beautybush | (*Kolkwitzia amabilis*) |
| * | Bladdernut, American | (*Staphylea trifolia*) |
| | Buckeye, Bottlebrush | (*Aesculus parviflora*) |
| | Buffaloberry | (*Shepherdia argentea*) |
| | Cherry, Manchu; Nanking Cherry | (*Prunus tomentosa*) |
| | Cotoneaster, Manyflowered | (*Cotoneaster multiflorus*) |
| | Dogwood, Corneliancherry | (*Cornus mas* and cvs.) |
| * | Dogwood, Gray | (*Cornus racemosa*) |
| * | Dogwood, Pagoda | (*Cornus alternifolia*) |
| * | Dogwood, Redosier | (*Cornus sericea* and cvs.) |
| | Euonymus, European; Spindletree | (*Euonymus europaea*) |
| | Euonymus, Winged; Burning Bush | (*Euonymus alata*) |
| | Forsythia, Meadowlark | (*Forsythia x* 'Meadowlark') |
| | Fringetree | (*Chionanthus virginicus*) |
| | Hydrangea, Peegee | (*Hydrangea paniculata* 'Grandiflora') |
| | Lilac, Chinese | (*Syringa x chinensis*) |
| | Lilac, Common | (*Syringa vulgaris* and cvs.) |
| | Lilac, Hyacinth | (*Syringa x hyacinthiflora* and cvs.) |
| | Lilac, Japanese Tree | (*Syringa reticulata*) |
| | Lilac, Preston | (*Syringa x prestoniae* and cvs.) |
| | Magnolia, Star | (*Magnolia stellata*) |
| | Maple, Dwarf Amur | (*Acer ginnala nana*) |
| * | Ninebark, Common | (*Physocarpus opulifolius*) |
| | Peashrub, Siberian | (*Caragana arborescens*) |
| | Pearlbush | (*Exochorda racemosa*) |
| | Plum, Double Flowering; Flowering Almond; Rose-Tree-of-China | (*Prunus triloba*) |
| | Privet, Amur | (*Ligustrum amurense*) |
| | Privet, Cheyenne | (*Ligustrum vulgare* 'Cheyenne') |
| * | Serviceberry (See Low Deciduous Trees) | (*Amelanchier* spp.) |
| | Serviceberry, Shadblow | (*Amelanchier canadensis*) |
| | Smoketree; Smokebush | (*Cotinus coggygria* and cvs.) |
| * | Sumac, Smooth | (*Rhus glabra*) |
| * | Sumac, Staghorn | (*Rhus typhina* and cvs.) |
| * | Viburnum, American Cranberrybush | (*Viburnum trilobum*) |
| | Viburnum, Arrowwood | (*Viburnum dentatum*) |
| * | Viburnum, Blackhaw | (*Viburnum prunifolium*) |
| | Viburnum, Burkwood | (*Viburnum x burkwoodii*) |
| * | Viburnum, Nannyberry | (*Viburnum lentago*) |
| | Viburnum, Sargent | (*Viburnum sargentii*) |
| | Viburnum, Wayfaringtree | (*Viburnum lantana* and cvs.) |
| * | Wahoo, Eastern | (*Euonymus atropurpurea*) |
| | Willow, Goat; French Pussy Willow | (*Salix caprea*) |
| * | Witchhazel, Common | (*Hamamelis virginiana*) |

### *MEDIUM SHRUBS -- 5-8 feet in height; plant at least 3-4 feet apart*

| | | |
|---|---|---|
| | Bayberry | (*Myrica pennsylvanica*) |
| | Cherry, Purpleleaf Sand | (*Prunus x cistena*) |
| | Chokeberry, Red | (*Aronia arbutifolia*) |
| | Cotoneaster, Hedge | (*Cotoneaster lucidus*) |
| | Cotoneaster, Peking | (*Cotoneaster acutifolius*) |
| | Cotoneaster, Spreading | (*Cotoneaster divaricatus*) |
| | Crabapple, Jewelberry | (*Malus* 'Jewelberry') |
| | Crabapple, Sargent | (*Malus sargentii* and cvs.) |
| | Dogwood, Creamedge; Variegated Dogwood | (*Cornus alba* 'Argenteo-marginata') |
| | Dogwood, Isanti Red | (*Cornus sericea* 'Isanti') |
| | Euonymus, Dwarf Winged; Dwarf Burning Bush | (*Euonymus alata* 'Compacta') |
| | Forsythia, Sunrise | (*Forsythia x* 'Sunrise') |
| * | Hazelnut; American Filbert | (*Corylus americana*) |
| | Jetbead | (*Rhodotypos scandens*) |
| | Lilac, Miss Kim | (*Syringa patula* 'Miss Kim') |
| | Lilac, Meyer; Palibin Lilac | (*Syringa meyeri* 'Palibin') |
| | Lilac, Persian | (*Syringa persica*) |
| | Mockorange, Glacier | (*Philadelphus x virginalis* 'Glacier') |
| | Mockorange, Lemoine | (*Philadelphus x lemoine* and cvs.) |
| | Privet, Golden Vicary | (*Ligustrum x vicaryi*) |
| | Privet, Regel's Border | (*Ligustrum obtusifolium* var. *regelianum*) |
| | Rose, Father Hugo | (*Rose hugonis*) |
| * | Rose, Prairie; Climbing Rose | (*Rosa setigera*) |
| | Rose, Rugosa | (*Rosa rugosa* and cvs.) |
| | Spirea, Bridalwreath | (*Spiraea prunifolia*) |
| | Spirea, Ural False | (*Sorbaria sorbifolia*) |
| | Spirea, Vanhoutte | (*Spiraea x vanhouttei*) |
| | Viburnum, Koreanspice | (*Viburnum carlesii*) |
| * | Viburnum, Witherod | (*Viburnum cassinoides*) |
| | Weigela, Old-Fashioned; Cardinal Bush | (*Weigela florida*) |
| | Weigela, Red Prince | (*Weigela x* 'Red Prince') |
| | Willow, Dwarf Arctic | (*Salix purpurea* 'Gracilis') |
| * | Winterberry | (*Ilex verticillata*) |

### *LOW SHRUBS -- 2-5 feet in height; plant at least 2½-3 feet apart*

| | | |
|---|---|---|
| | Barberry, Japanese | (*Berberis thunbergii* and cvs.) |
| | Barberry, Korean | (*Berberis koreana*) |
| | Box or Boxwood, Green Velvet | (*Buxus x* 'Green Velvet') |
| | Box or Boxwood, Wintergreen Korean Littleleaf | (*Buxus sinica* var. *insularis 'Wintergreen'*) |
| * | Chokeberry, Glossy Black | (*Aronia melanocarpa* var. *elata*) |
| * | Cinquefoil, Bush; Potentilla | (*Potentilla fruticosa* and cvs.) |
| | Coralberry, Indiancurrant; Buckbrush | (*Symphoricarpos orbiculatus*) |
| | Cotoneaster, Cranberry | (*Cotoneaster apiculatus*) |
| | Cotoneaster, Rock | (*Cotoneaster horizontalis*) |
| | Currant, Alpine | (*Ribes alpinum*) |
| | Daphne, Burkwood | (*Daphne x burkwoodii* and cvs.) |
| | Deutzia, Compact Lemoine | (*Deutzia x lemoinei* 'Compacta') |
| | Floweringalmond, Pink Dwarf | (*Prunus glandulosa* 'Sinensis') |
| | Floweringquince, | (*Chaenomeles x superba* 'Texas Scarlet') |
| | Forsythia, Bronx | (*Forsythia viridissima* 'Bronxensis') |
| | Honeysuckle, Clavey's Dwarf | (*Lonicera x xylosteoides* 'Clavey's Dwarf') |
| * | Honeysuckle, Dwarf Bush | (*Diervilla lonicera*) |
| | Hydrangea, Smooth | (*Hydrangea arborescens* and cvs.) |
| | Mockorange, Golden | (*Philadelphus coronarius* 'Aureus') |
| | Ninebark, Dwarf Common | (*Physocarpus opulifolis* 'Nanus') |
| | Oregongrape, Mayhan | (*Mahonia aquifolium* 'Mayhan') |
| | Privet, Lodense | (*Ligustrum vulgare* 'Lodense') |
| | Rose, Virginia | (*Rosa virginiana*) |
| | St. Johnswort, Kalm's | (*Hypericum kalmianum*) |
| * | Serviceberry, Running | (*Amelanchier stolonifera*) |
| * | Snowberry | (*Symphoricarpos albus*) |
| | Spirea, Billiard | (*Spiraea x billiardii*) |
| | Spirea, Bumalda | (*Spiraea x bumalda* and cvs.) |
| | Spirea, Grefsheim | (*Spiraea x cinerea* 'Grefsheim') |
| | Spirea, Japanese | (*Spiraea japonica* and cvs.) |
| | Spirea, Japanese White | (*Spiraea albiflora*) |
| | Spirea, Snowmound | (*Spiraea nipponica* 'Snowmound') |
| | Stephanandra, Cutleaf | (*Stephanandra incisa* 'Crispa') |
| * | Sumac, Fragrant | (*Rhus aromatica* and cvs.) |
| | Viburnum, Compact European Cranberrybush | (*Viburnum opulus* 'Compactum') |
| | Viburnum, Dwarf European Cranberrybush | (*Viburnum opulus* 'Nanum') |
| | Viburnum, Dwarf Koreanspice | (*Viburnum carlesii* 'Compacta') |
| | Willow, Silver Creeping | (*Salix repens* var. *nitida*) |
| | Winterberry, Red Sprite | (*Ilex verticillata* 'Red Sprite') |

**D. EVERGREEN SHRUBS**

| | | | |
|---|---|---|---|
| ***TALL SHRUBS -- 8-10 feet in height, sometimes 15 feet, plant at least 6-8 feet apart, depending on spread*** | | | |
| | Arborvitae, American | (*Thuja occidentalis* and certain cvs.) | Juniper, Rocky Mountain; Colorado Red Cedar | (*Juniperus scopulorum* and cvs.) |
| | Arborvitae, Ware | (*Thuja occidentalis* 'Wareana') | | |
| | Juniper, Chinese | (*Juniperus chinensis* and certain cvs.) | Yew, Upright Japanese; Pryramidal Japanese Yew | (*Taxus cuspidata* 'Capitata') |
| | Juniper, Hetz Blue | (*Juniperus chinensis* 'Hetzii') | | |
| ***MEDIUM SHRUBS -- 2-8 feet in height; plant at least 4-6 feet apart, depending on spread*** | | | | |
| | Arborvitae | (*Thuja occidentalis* and certain cvs.) | Juniper, Pfitzer | (*Juniperus chinensis* 'Pfitzeriana') |
| | Arborvitae, Globe | (*Thuja occidentalis* 'Globosa') | Pine, Mugo | (*Pinus mugo* var. *mugo*) |
| | Juniper, Blue Star Singleseed | (*Juniperus squamata* 'Bluestar') | Spruce, Dwarf Alberta | (*Picea glauca* 'Conica') |
| | Juniper Chinese | (*Juniperus chinensis* and certain cvs.) | Spruce, Nest | (*Picea abies* 'Nidiformis') |
| | Juniper, Fishtail | (*Juniperus squamata* 'Meyeri') | Yew, Anglojapanese | (*Taxus x media* and cvs.) |
| * | Juniper, Oldfield Common | (*Juniperus communis* var. *depressa*) | Yew, Dwarf Japanese | (*Taxus cuspidata* 'Nana') |
| ***LOW SHRUBS -- 6-24 inches in height; plant at least 4-6 feet apart depending on spread*** | | | | |
| | Juniper, Chinese | (*Juniperus chinensis* and certain cvs.) | Juniper, Kallay's Compact Pfitzer | (*Juniperus chinensis* 'Pfitzeriana Kallay's Compacta') |
| | Juniper, Common | (*Juniperus communis* and cvs.) | | |
| * | Juniper, Creeping | (*Juniperus horizontalis* and cvs.) | Juniper, Sargent | (*Juniperus chinensis* var. *sargentii*) |
| | Juniper, Japanese Garden | (*Juniperus chinensis* var. *procumbens*) | Juniper, Savin | (*Juniperus sabina* and cvs.) |

**E. ORNAMENTAL GRASSES**

| | | | | |
|---|---|---|---|---|
| ***TALL GRASSES -- 6-8 feet in height*** | | | | |
| * | Bluestem, Big | (*Andropogon gerardii* 'Sentinel') | Reed Grass, Feather | (*Calamogrostis x acutiflora* 'Karl Foerster'; 'Stricta') |
| | Dot Grass, Little | (*Miscanthus sinensis* 'Puenktchen') | | |
| | Feather Grass, Silver | (*Miscanthus sinensis* 'Silberfeder') | Silver Grass, Amur; Silver Banner Grass | (*Miscanthus sacchariflorous*) |
| * | Indian Grass | (*Sorghastrum nutans* and cvs.) | | |
| | Maiden Grass; Japanese Silver Grass | (*Miscanthus sinensis* and certain cvs.) | Silver Grass, Purple; Flame Grass | (*Miscanthus sinensis* 'Purpurascens') |
| | Moor Grass, Tall Purple | (*Molinia caerulea* ssp. *arundinacea* and cvs.) | Switch Grass; Panic Grass | (*Panicum virgatum* and certain cvs.) |
| | | | Zebra Grass | (*Miscanthus sinensis* 'Zebrinus') |
| | Porcupine Grass | (*Miscanthus sinensis* 'Strictus') | | |
| | Ravenna Grass | (*Saccharum ravennae; Erianthus ravennae*) | | |
| ***MEDIUM GRASSES -- 3-5 feet in height*** | | | | |
| * | Bluestem, Little | (*Andropogon scorparium* and cvs.) | Reed Grass, Korean Feather; Fall Blooming Reed Grass | (C*alamagrostis brachytricha*) |
| | Fountain Grass | (*Pennisetum alopecuroides* and certain cvs.) | Reed Grass, Variegated Feather | (*Calamagrostis arundinacea* 'Overdam') |
| | Frost Grass; Siberian Graybeard | (*Spodiopogon sibiricus*) | Rye Grass, Wild | (*Leymus arenarius*) |
| | Maiden Grass, Little Fountain | (*Miscanthus sinensis* 'Kleine Fontane') | Switch Grass, Red | (*Panicum virgatum* and certain cvs.) |
| | Oats, Northern Sea; Wild Oats; Wood Oats | (*Chasmanthium latifolium*) | | |
| ***LOW GRASSES -- 8-24 inches in height*** | | | | |
| | Blood Grass, Japanese | (*Imperata cylindrica* var. *koenigii* and cvs.) | Moor Grass, Purple | (*Molinia caerulea* and cvs.) |
| | Dropseed, Prairie | (*Sporobolus heterolepis* 'Wisconsin') | Oat Grass, Blue | (*Helictotrichon sempervirens* and cvs.) |
| | Fescue, Blue | (*Festuca glauca* and cvs.) | Oat Grass, Striped Bulbous; Tuber Oat Grass | (*Arrhenatherum elatius* ssp. *bulbosum* 'Variegatum') |
| | Fountain Grass | (*Pennisetum alopedcuroides* and certain cvs.) | Quaking Grass, Perennial | (*Briza media*) |
| | Hair Grass, Tufted; Tussock Grass | (*Deschampsia cespitosa* and cvs.) | Sedge, Creeping Broad-Leaved | (*Carex siderosticha* 'Variegata') |
| | Hakone Grass, Golden Variegated | (*Hakonechloa macra* 'Aureola') | Sedge, Japanese; Kan Suge | (*Carex morrowii* 'Variegata') |
| | | | Sedge, Tufted | (*Carex elata* 'Bowles Golden') |
| | June Grass; Hair Grass | (*Koeleria macrantha; Koeleria cristata*) | Woodrush, Greater | (*Luzula sylvatica* 'Marginata') |
| | Mondo Grass, Black | (*Ophiopogon planiscapus* 'Niger') | | |

**F. GROUNDCOVER**

| ***GROUNDCOVER*** | | | |
|---|---|---|---|
| | Bugleweed | (*Ajuga reptans* and cvs.) | |
| | Cinquefoil, Cushion | (*Potentilla verna nana*) | |
| | Cotoneaster, Cranberry | (*Cotoneaster apiculatus*) | |
| | Daylily | (*Hemerocallis* and cvs.) | |
| | Deadnettle, Spotted | (*Lamium maculatum* and cvs.) | |
| | Euonymus, Purpleleaf | (*Euonymus fortunei* 'Colorata') | |
| | Fleeceflower, Low Japanese | (*Polygonum cuspidatum* var. *compactum*) | |
| | Goutweed, Silveredge; Snow-on-The-Mountain; Bishop's Weed | (*Aegopodium podagraria* 'Variegatum') | |
| | Hat, Bishop's | (*Epimedium* spp.) | |
| * | Honeysuckle, Dwarf Bush | (*Diervilla lonicera*) | |
| | Ivy, Bulgarian | (*Hedera helix* 'Bulgaria') | |
| | Juniper (See Low Evergreen Shrubs) | (*Juniperus* spp. and cvs.) | |
| | Lily, Plantain; Funkia | (*Hosta* and cvs.) | |
| | Lily-of-the-Valley | (*Convallaria majalis*) | |
| | Pachysandra, Japanese; Japanese Spurge | (*Pachysandra terminalis* and cvs.) | |
| | Periwinkle; Myrtle | (*Vinca minor* and cvs.) | |
| | Phlox, Moss | (*Phlox subulata* and cvs.) | |
| | Stephanandra, Cutleaf | (*Stephanandra incisa* 'Crispa') | |
| | Stonecrop; Sedum | (*Sedum* spp.) | |
| | Strawberry, Barren | (*Waldsteinia ternata*) | |
| | Sumac, Gro-Low Fragrant | (*Rhus aromatica* 'Gro-Low') | |
| | Trefoil, Bird's-foot | (*Lotus corniculatus*) | |
| * | Wildginger, Canada | (*Asarum canadense*) | |
| | Woodruff, Sweet | (*Galium odoratum*) | |

**G. VINES**

| ***VINES*** | | | |
|---|---|---|---|
| | Akebia, Fiveleaf | (*Akebia quinata*) | |
| * | Bittersweet, American | (*Celastrus scandens*) | |
| | Bittersweet, Oriental | (*Celastrus orbiculatus*) | |
| | Clematis | (*Clematis* and cvs.) | |
| | Clematis, Sweet Autumn | (*Clematis maximowicziana*) | |
| | Creeper, Engelmann Virginia; Woodbine | (*Parthenocissus quinquefolia)* 'Engelmannii') | |
| | Dutchmanspipe | (*Aristolochia durior*) | |
| | Euonymus, Bigleaf Wintercreeper | (*Euonymus fortunei* var. *vegeta* and cvs.) | |
| | Fleecevine, Silver; Silver Lace Vine | (*Polygonum aubertii*) | |
| | Grape | (*Vitis* spp. and cvs.) | |
| | Honeysuckle, Dropmore Scarlet | (*Lonicera x brownii* 'Dropmore Scarlet') | |
| | Honeysuckle, Everblooming; Goldflame Honeysuckle | (*Lonicera heckrottii*) | |
| | Hydrangea, Climbing | (*Hydrangea anomala* spp. *petiolaris*) | |
| | Ivy, Boston; Japanese Creeper | (*Parthenocissus tricuspidata* and cvs.) | |
| | Kiwi, Arctic Beauty; Kolomikta Actinidia | (*Actinidia kolomikta*) | |
| | Trumpetcreeper; Trumpetvine | (*Campsis radicans*) | |
| | Wisteria, Kentucky | (*Wisteria macrostachya*) | |

- Street Tree. Only male Ginkgo trees should be selected for this purpose.

*Wisconsin native.

*Source: E. R. Hasselkus*, A Guide to Selecting Landscape Plants for Wisconsin, *University of Wisconsin-Extension, Madison, Wisconsin, 1998; Michael A. Dirr,* Manual of Woody Landscape Plants: Their Identification, Ornamental Characteristics, Culture, Propagation and Uses, *5th Ed.*, *Stipes Publishing Company, Champaign, Illinois, 1998; Richard D. Schein, Ph. D.*, Street Trees: A Manual for Municipalities, *Treeworks, State College, Pennsylvania, 1993; Henry D. Gerhold, Willet N. Wandell, and Norman L. Lacasse*, Landscape Tree Factsheets, *Pennsylvania State University, University Park, Pennsylvania, 2005; Henry D. Gerhold, Norman L. Lacasse, and Willet N. Wandell,* Compatible Tree Factsheets for Electric Lines and Restricted Spaces, Including Evergreens for Screens*,* 2nd Ed., *Pennsylvania State University, University Park, Pennsylvania, 2001; M. Hockenberry Meyer, D. B. White, and H. Pellett,* Ornamental Grasses for Cold Climates, *North Central Regional Extension Publication 573, University of Minnesota-Extension, St. Paul, Minnesota, 1998*; *Rick Darke,* The Color Encyclopedia of Ornamental Grasses, *Timber Press, Inc., Portland, Oregon, 1999; and SEWRPC.*

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## Appendix D

### A SUGGESTED PLAN COMMISSION RESOLUTION FOR ADOPTING THE HARTLAND-MERTON CLUSTER DEVELOPMENT PLAN

In the following model resolution, the community should select the proper text that is applicable to their municipality for certain italicized text. For example, where the word "*Community*" appears in italics, the name of the community should be substituted; and where the words "*Village/Town*" appear in italics, either the word "Village" or "Town" should be selected.

**WHEREAS**, representatives of the Town of Merton, Village of Merton, Village of Hartland, and the Arrowhead Union High School District have established a Hartland-Merton Cluster Development Plan Advisory Committee and jointly prepared, with the assistance of the Southeastern Wisconsin Regional Planning Commission (SEWRPC), a "neighborhood" cluster development plan for defined planning areas located within the aforereferenced communities and school district; and

**WHEREAS**, the plan document includes an inventory and analysis of existing natural resources, land uses, local plans, and land use regulations; planning objectives and design guidelines; a recommended cluster development plan; and implementation recommendations as set forth in a published report entitled SEWRPC Memorandum Report No. 163, *A Hartland-Merton Cluster Development Plan, Waukesha County, Wisconsin*; and

**WHEREAS**, the *Village/Town* Plan Commission of the *Community* concurs with the recommendations set forth in SEWRPC Memorandum Report No. 163 and that the cluster development plan is a necessary guide to the future development of the Hartland-Merton defined planning areas and environs; and

**WHEREAS**, it is the duty and function of the *Village/Town* Plan Commission, pursuant to Section 62.23 (2) of the *Wisconsin Statutes*, to make and adopt a master plan for the physical development of the *Community*; and

**WHEREAS**, the *Village/Town* Plan Commission may adopt the master plan as a whole or as parts thereof, and such plans are intended to aid the Plan Commission and *Village/Town* Board in making day-to-day decisions.

**NOW, THEREFORE, BE IT RESOLVED**, that pursuant to Section 62.23(3)(b) of the *Wisconsin Statutes*, the *Village/Town* Plan Commission hereby adopts SEWRPC Memorandum Report No. 163 and the attendant recommended cluster development plan, including design guidelines, as a plan element of the *Community* master plan; and

**BE IT FURTHER RESOLVED**, that the Secretary of the *Village/Town* Plan Commission transmit a certified copy of this resolution, after recording the action on the adopted cluster development plan, to the *Village/Town* Board of the *Community*, to the Southeastern Wisconsin Regional Planning Commission, and to Waukesha County.

**PASSED** and **ADOPTED** the ____ day of _____, 200_, by the *Village/Town* Plan Commission.

_____
Chairperson
*Village/Town* Plan Commission

ATTEST:

_____
Secretary
*Village/Town* Plan Commission

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## Appendix E

### A SUGGESTED BOARD RESOLUTION FOR ADOPTING THE HARTLAND-MERTON CLUSTER DEVELOPMENT PLAN

In the following model resolution, the community should select the proper text that is applicable to their municipality for certain italicized text. For example, where the word "*Community*" appears in italics, the name of the community should be substituted; and where the words "*Village/Town*" appear in italics, either the word "Village" or "Town" should be selected.

**WHEREAS**, the *Community*, pursuant to the provisions of Section _____ [Town--*61.10(2)(c)* or Village--*61.35 and 62.23*] of the *Wisconsin Statutes*, has created a *Village/Town* Plan Commission; and

**WHEREAS**, a Hartland-Merton Cluster Development Plan Advisory Committee has prepared, with the assistance of the Southeastern Wisconsin Regional Planning Commission (SEWRPC), a plan for the physical development of certain defined planning areas and environs located within the general Hartland-Merton area, said plan embodied in SEWRPC Memorandum Report No. 163, *A Hartland-Merton Cluster Development Plan, Waukesha County, Wisconsin;* and

**WHEREAS**, the *Village/Town* Plan Commission on the ____ day of _____, 200_, adopted SEWRPC Memorandum Report No. 163 and the attendant recommended cluster development plan, and has submitted a certified copy of that resolution to the *Village/Town* Board of the *Community*; and

**WHEREAS**, the *Village/Town* Board of the *Community* concurs with the *Village/Town* Plan Commission and the objectives and recommendations set forth in SEWRPC Memorandum Report No. 163.

**NOW, THEREFORE, BE IT RESOLVED**, that the *Village/Town* Board of the *Community* hereby adopts SEWRPC Community Assistance Memorandum Report No. 163 and the attendant recommended cluster development plan as a guide for the future development of the defined planning areas and environs as set forth in the memorandum report.

**PASSED** and **ADOPTED** the ____ day of _____, 200_, by the Board of *Supervisors/Trustees* of the *Community*.

_____

*President/Chairperson*
*Community*

ATTEST:

_____

*Administrator/Clerk*
*Community*