

# PRELIMINARY DRAFT

## LAND USE DESIGN GUIDELINES

VISION 2050 is intended to provide a guide, or overall framework, for future development within the Region. Implementation of the plan ultimately relies on the actions of local, county, State, and Federal agencies and units of government in conjunction with the private sector. The land use component design guidelines provide direction to these bodies to facilitate implementation of the VISION 2050 land use recommendations.

### Residential Development within Urban Service Areas

► **Recommendation 1.1: Develop urban service areas with a mix of housing types and land uses**

- **Design Guideline 1.1.1:** Residential infill development and redevelopment within urban service areas provides the opportunity to strengthen vibrant, walkable neighborhoods, particularly in the Region’s highly urbanized areas. Infill and redevelopment may also be able to take advantage of existing infrastructure. Local governments should consider the following guidelines for residential infill and redevelopment proposals:
  - o Sustain or increase existing residential densities to maintain walkability and neighborhood character.
  - o Encourage a mix of uses in residential infill and redevelopment projects. Examples include dwellings above ground floor commercial/institutional uses and residential uses intermixed with commercial, institutional, civic, and recreational uses.
  - o Preserve buildings or areas with historical and/or cultural significance to the greatest extent practicable. Examples include sites and districts listed on the National and State Registers of Historic Places and locally designated historic landmarks and districts.
- **Design Guideline 1.1.2:** Developing new residential neighborhoods within urban service areas presents an opportunity to create vibrant, walkable neighborhoods for people throughout the Region. Walkable neighborhoods should foster multiple travel modes and have a mix of uses, such as housing, parks, schools, and businesses. A walkable neighborhood could be achieved through the following allocation of land:

Land Use Category	Percent of Area in Land Use Category – Recommended Urban Residential Neighborhoods <sup>a</sup>		
	Mixed-Use City Center (18.0 or more dwelling units per net residential acre)	Mixed-Use Traditional Neighborhood (7.0-17.9 dwelling units per net residential acre)	Small Lot Traditional Neighborhood (4.4-6.9 dwelling units per net residential acre)
Residential	Varies	66.0	71.0
Streets and Utilities	Varies	25.0	23.0
Parks and Playgrounds	Varies	3.5	2.5
Public Elementary Schools	Varies	2.5	1.5
Other Governmental and Institutional	Varies	1.5	1.0
Retail and Service	Varies	1.5	1.0
<b>Total</b>	N/A	100.0	100.0

- **Design Guideline 1.1.3:** Local governments should consider limiting new lower-density residential neighborhoods to infill development in existing neighborhoods with similar residential densities, or where commitments have been made to such development through approved subdivision plats or certified survey maps. These neighborhoods could occur through the following allocation of land uses:

Land Use Category	Percent of Area in Land Use Category – Other Urban Residential Neighborhoods <sup>b</sup>	
	Medium Lot Neighborhood (2.3-4.3 dwelling units per net residential acre)	Large Lot Neighborhood (0.7-2.2 dwelling units per net residential acre)
Residential	71.0	76.5
Streets and Utilities	23.0	20.0
Parks and Playgrounds	2.5	1.5
Public Elementary Schools	1.5	0.5
Other Governmental and Institutional	1.0	1.0
Retail and Service	1.0	0.5
<b>Total</b>	100.0	100.0

<sup>a</sup> Neighborhood sizes envisioned under this guideline are as follows: Mixed-Use Traditional Neighborhood – 160 acres and Small Lot Traditional Neighborhood – 640 acres. Development in Mixed-Use City Center would largely consist of infill and redevelopment projects in highly urbanized areas of the Region. Household sizes may vary between neighborhoods creating lower neighborhood population levels in some instances. This may require that an elementary school or retail and service area be provided to serve two or more contiguous neighborhoods rather than a single neighborhood. These guidelines are intended to be applied at a regional level of planning, and may be refined for application in county and community planning efforts.

<sup>b</sup> Neighborhood sizes envisioned under this guideline are as follows: Medium Lot Neighborhood – 640 acres and Large Lot Neighborhood – 2,560 acres. Lower densities creating lower neighborhood population levels often require that an elementary school or retail and service area be provided to serve two or more contiguous neighborhoods rather than a single neighborhood. These guidelines are intended to be applied at a regional level of planning, and may be refined for application in county and community planning efforts.

► **Recommendation 1.2: Focus TOD near rapid transit and commuter rail stations**

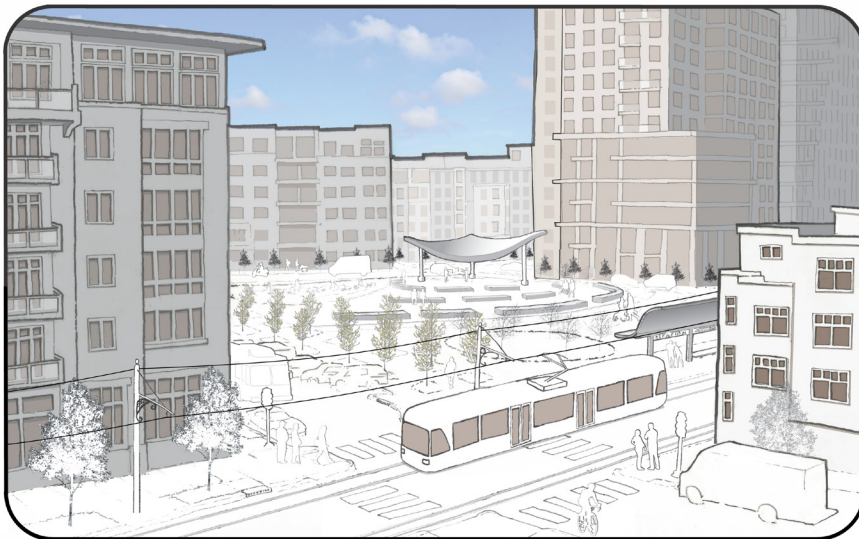
- **Design Guideline 1.2.1:** Focus transit-oriented development (TOD) within one-half mile of the rapid transit and commuter rail stations recommended under the VISION 2050 transportation component.
- **Design Guideline 1.2.2:** The following building types are typical of TOD:
  - o High-rise: Typically 10+ stories and may include residential, office, or a mix of uses with retail and services on the ground floor. Most likely to be found in the Mixed-Use City Center land use category.
  - o Mid-rise: 4 to 9 stories, commonly 4 to 6 stories and may include residential, office, or a mix of uses with retail and services on the ground floor. Most likely to be found in the Mixed-Use City Center and Mixed-Use Traditional Neighborhood land use categories.
  - o Low-rise: 3 stories or less and may include residential, office, or a mix of uses with retail and services on the ground floor. Most likely to be found in the Mixed-Use Traditional Neighborhood and Small Lot Traditional Neighborhood land use categories.
  - o Townhouse: Single-family attached units (shared walls) with direct outside entry. Most likely to be found in Mixed-Use Traditional Neighborhood and Small Lot Traditional Neighborhood land use categories.
  - o Single-family home/duplex: Single-family or two-family structure on a small lot (typically 6,000 square feet or less). Most likely to be found in the Small Lot Traditional Neighborhood and Mixed-Use Traditional Neighborhood land use categories.
- **Design Guideline 1.2.3:** Include mixed-income housing within TODs. The following strategies can be used to encourage mixed-income housing within TODs:
  - o Density bonus: A density bonus is a flexible zoning regulation that allows residential units beyond the maximum for which a parcel is zoned in exchange for a desirable public amenity, such as providing or preserving affordable housing units. Several local governments in the Region have adopted planned unit development (PUD) ordinances that allow increased density as an incentive to provide public amenities. Local governments with rapid transit or commuter rail stations should develop density bonus programs or update existing PUD regulations to allow increased density as an incentive for mixed-income housing.

- o **Public/Private Partnerships:** Public/private partnerships can be used as an incentive for developing mixed-income TOD through a number of options. Tax increment financing (TIF) can be used to publicly fund infrastructure such as parks, parking structures, and streetscape elements to encourage development. In addition, local governments can streamline rezoning and permitting processes. Land assembly and brownfields may be issues within urban centers. Local governments can assist developers with land assembly and obtaining brownfield mitigation grants.
- o **Targeted Funding:** Government funding for affordable housing could be targeted to areas with rapid transit and commuter rail stations to encourage mixed-income TOD. Creating a scoring category for the State (WHEDA) Qualified Allocation Plan that would provide an incentive to locate Low-Income Housing Tax Credit (LIHTC) developments in station areas is one example.
- o **Parking regulations:** Reducing the amount of required parking can lower construction costs for residential projects, and possibly be used as an incentive for including affordable housing units. A Transit Cooperative Research Program review of TOD case studies found that lower housing-unit-to-parking ratios could result in an increase of 20 to 33 percent in the number of housing units and lower total construction costs, even with the additional units. Local governments should consider revising parking requirements as recommended in the following design guideline.
- **Design Guideline 1.2.4:** Manage parking through the following steps to aid in pedestrian friendly TOD design and reduce construction costs:
  - o A Transit Cooperative Research Program review of TOD case studies found that parking to housing unit ratios could be lowered as much as 50 percent in TODs that have good transit connectivity to major employment centers. Local governments should review parking to housing unit ratios for residential use and parking to square footage ratios for commercial use within station areas. Local governments should consider revising zoning ordinances to remove minimum parking requirements and allow shared parking agreements within station areas. Car sharing services (such as Zipcar) may also reduce the demand for parking.
  - o Locate parking facilities within station areas away from street frontages. This may be accomplished through subgrade structures or wrapping the ground floor of parking structures with other uses, such as commercial retail and service uses, for larger developments. Larger developments should also provide bicycle parking.
  - o Use traditional neighborhood development (TND) in neighborhoods with single-family homes, duplexes, and townhomes, locating parking in the rear of the lot with alley access.
- **Design Guideline 1.2.5:** Provide convenient and safe access for walking and bicycling to the transit station within station areas through the following measures:<sup>c</sup>

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<sup>c</sup> Detailed bicycle and pedestrian facility design guidelines are presented under the *Bicycle and Pedestrian Element design guidelines*.

- o Interconnect streets to provide multiple opportunities for access and circulation, and provide sidewalks on both sides of streets.
- o Maximize pedestrian safety at street crossings through the timing of walk signal phases and the construction of curb extensions (“bulb-outs”). Provide pedestrian medians in wide or heavily traveled roadways.
- o Design and construct all pedestrian facilities in accordance with the Federal Americans with Disabilities Act (ADA) and its implementing regulations. The ADA requires all pedestrian facilities that access public and commercial buildings and services to accommodate people with disabilities.
- o Provide bicycle accommodations through on-street bicycle lanes or enhanced bicycle facilities.
- o Provide bicycle storage facilities in transit stations and encourage bike share programs (such as BublR Bikes).
- **Design Guideline 1.2.6:** Provide public spaces within transit station areas that are pedestrian friendly and welcoming for residents, workers, and transit riders.
  - o Provide amenities in TOD public spaces such as comfortable places for sitting, shade and landscaping, attractive lighting, water features, and public art
  - o Locate commercial-retail uses in a manner that is convenient and safe to access from public spaces in station areas



**Public Plaza Near a Rapid Transit Station**

*Credit: SEWRPC*

► **Recommendation 1.3: Focus new development in areas that can be efficiently served by essential municipal facilities and services**

- **Design Guideline 1.3.1:** Compact urban development allows for efficient and cost effective provision of urban services. Compact residential development can be achieved through the following allocations of land:

<b>Recommended Urban Residential Development<sup>d</sup></b>		
<b>Recommended Urban Residential Density Category</b>	<b>Residential Area (acres per 100 dwelling units)<sup>e</sup></b>	<b>Residential Area Plus Supporting Land Uses (acres per 100 dwelling units)<sup>f</sup></b>
Mixed-Use City Center (18.0 or more dwelling units per net acre)	Less than 6.0	Less than 9.0
Mixed-Use Traditional Neighborhood (7.0 to 17.9 dwelling units per net acre)	6.0-14.9	9.0-19.9
Small Lot Traditional Neighborhood (4.4 to 6.9 dwelling units per net acre)	15.0-22.9	20.0-30.9

- **Design Guideline 1.3.2:** Conserving and revitalizing existing urban areas enhances their viability and desirability as places to live, work, recreate, and participate in cultural activities. Such efforts maximize the use of existing public infrastructure and public service systems and moderate the amount of agricultural and other open space land converted to urban use to accommodate growth in the Regional population and economy. To the extent practicable, the additional urban land necessary to accommodate this growth should be met by:
  - o Redeveloping, as appropriate, older, underutilized urban areas that are need of revitalization
  - o Infilling undeveloped land within existing urban service areas

<sup>d</sup> Residential densities are intended to be applied on an overall neighborhood, rather than parcel by parcel, basis for purposes of the regional plan. The categories represent overall densities that may be achieved within developing and redeveloping areas through various combinations of lot sizes and housing structure types over entire neighborhoods. The density ranges are broadly defined to provide flexibility to local units of government as they prepare local comprehensive plans and administer local land use regulations within the framework provided by the regional plan. Each community should determine at which point within the recommended density range that development should occur.

<sup>e</sup> Residential area is defined as the actual site area devoted to residential use, and consists of the ground floor site area occupied by housing units and accessory structures plus the required yards and site area, but excludes streets. This definition does not preclude communities from considering open space land to be preserved in the calculation of housing unit yields for development projects.

<sup>f</sup> Supporting land uses include streets and utilities, neighborhood parks and playgrounds, elementary schools, and neighborhood institutional and commercial uses.

- **Design Guideline 1.3.3:** Local governments should consider limiting lower density development as recommended under Design Guideline 1.1.3. If accommodated, lower urban residential densities could occur through the following allocations of land:

<b>Other Urban Residential Development<sup>d</sup></b>		
<b>Other Residential Density Category</b>	Residential Area (acres per 100 dwelling units) <sup>e</sup>	Residential Area Plus Supporting Land Uses (acres per 100 dwelling units) <sup>f</sup>
Medium Lot Neighborhood (2.3 to 4.3 dwelling units per net acre)	23.0-44.9	31-59.9
Large Lot Neighborhood (0.7 to 2.2 dwelling units per net acre)	45.0-144.0	60.0-179.0

**Residential Development Outside Urban Service Areas**

► **Recommendation 1.4: Consider cluster subdivision design in residential development outside urban service areas**

- **Design Guideline 1.4.1:** Rural Estate development (residential development at a density of no more than one dwelling unit per five acres) should be located and designed to minimize impacts on the natural resource base, minimize impacts on the scenic beauty and character of rural areas, and minimize the loss of farmland covered by agricultural soil suitability Class I and II soils (prime agricultural land). This should be achieved using cluster subdivision design in Rural Estate development to the greatest extent practicable as follows:

- o Locate homes in clusters surrounded by open space, thereby achieving the overall desired density for the site.
- o Layout individual lots and supporting streets to preserve the most significant natural resource features to the greatest extent practicable. Cluster subdivisions can include agricultural lands as part of the preserved open space area in a rural setting.



**Example of Cluster Subdivision Design**

Credit: SEWRPC

- o Do not use more than one acre of residential land (house and yard area) for each dwelling while maintaining an overall density of one home per five acres.



► **Recommendation 1.5: Limit low-density development outside urban service areas**

- **Design Guideline 1.5.1:** Large Lot Exurban residential development (0.2 to 0.6 dwelling unit per acre or 1.5 to 4.9 acres per unit) is neither truly urban nor rural in character. Development at this density generally precludes the provision of centralized sanitary sewer and water supply facilities and other urban amenities. It also places excessive demands on streets and highways and public safety services in otherwise rural areas and results in the loss of rural character. Avoid new Large Lot Exurban residential development.

**Commercial and Industrial Land**

► **Recommendation 1.6: Provide a mix of housing types near employment supporting land uses**

► **Recommendation 1.7: Encourage and Accommodate Economic Growth**

- **Design Guideline 1.6-7.1:** Producing and selling goods and services are principal determinants of the economic vitality of the Region. Industrial, retail, and office uses should meet the following guidelines to strengthen the Region's economy:
  - Locate a variety of housing types in proximity to employment-generating land uses to provide opportunities for living in proximity to work, including adequate multi-family housing in areas with a concentration of retail and other lower wage jobs.<sup>g</sup>
  - Have available water supply, sanitary sewer service, stormwater drainage facilities, and power supply
  - Have ready access to the arterial street and highway system
  - Have properly located points of ingress and egress controlled to prevent congestion on adjacent arterial streets
  - Use site design emphasizing integrated nodes or centers, rather than linear strips
  - Use site design appropriately integrating the site with adjacent land uses
  - Be served by local transit service (applies to industrial, retail, and office uses located within, or in proximity to, Mixed-Use City Center, Mixed-Use Traditional Neighborhood, Small-Lot Traditional Neighborhood, and Medium Lot Neighborhood areas)<sup>h</sup>

<sup>g</sup> The job/housing balance analysis presented in the regional housing plan and subsequent updates identifies areas of the Region that may have a potential shortage of multi-family housing compared to lower wage jobs and/or modest single-family housing compared to moderate wage jobs. The regional housing plan is documented in SEWRPC Planning Report No. 54, A Regional Housing Plan for Southeastern Wisconsin: 2035, March 2013.

<sup>h</sup> Industrial, retail, and office uses located in outlying areas may not be able to be readily served by public transit.



- **Design Guideline 1.6-7.2:** Allocate approximately 12 acres of industrial land for each additional 100 industrial jobs to be accommodated in the Region.<sup>i</sup>
- **Design Guideline 1.6-7.3:** Allocate approximately six acres of land for each additional 100 commercial jobs to be accommodated in retail and service settings within the Region.<sup>i</sup>
- **Design Guideline 1.6-7.4:** Allocate approximately 2.5 acres of commercial office land for each additional 100 commercial jobs to be accommodated in office settings within the Region. The ratio of land area allocated for office use to the related office job would be significantly lower in situations where high-rise office buildings are common, such as areas within the Mixed-Use City Center land use category and TODs.<sup>i</sup>
- **Design Guideline 1.7.5:** Major centers accommodating industrial, retail, and office development<sup>k</sup> should meet the following guidelines in addition to those presented under the previous commercial and industrial land design guidelines:
  - o Served by rapid transit, commuter rail, and/or express transit
  - o Access within two miles of the freeway system for developing major centers
  - o Access to a commercial service, large general aviation, or medium general aviation airport facility within a maximum travel time of 30 minutes (for a major office and industrial center)<sup>l</sup>
  - o Reasonable access to railway and major port facilities (for a major industrial development)

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<sup>i</sup> The industrial standard is intended to represent a typical new single-story industrial development. The number of industrial jobs per acre can vary considerably from site to site, depending on the nature of the manufacturing activity, the level of automation, the extent of warehousing and office function located at the site, and other factors.

<sup>l</sup> Commercial, industrial, and governmental and institutional area includes the area devoted to the given use, consisting of the ground floor site area occupied by any building, required yards and open space, and parking and loading areas.

<sup>k</sup> A major economic activity center is defined as a concentrated area of commercial and/or industrial land having a minimum of 3,500 total employees or 2,000 retail employees. Major economic activity centers are further classified according to the following employment levels, recognizing that a major center may meet more than one of the indicated thresholds:  
Major industrial center: Accommodates at least 3,500 industrial employees  
Major office center: Accommodates at least 3,500 office employees  
Major retail center: Accommodates at least 2,000 retail employees  
General purpose major center: A center that accommodates a total of at least 3,500 employees, but does not meet any of the individual major center thresholds

<sup>l</sup> Commercial service airports support regularly-scheduled year-round commercial airline service. Large general aviation airports support all general aviation aircraft that include daily operations of all types of business jets. Medium general aviation airports support most single- and multi-engine general aviation aircraft, including those commonly used by businesses. Existing and proposed commercial service, large general aviation, and medium general aviation airports are identified in the Wisconsin State Airport System Plan: 2030.

## Governmental and Institutional Land

### ► Recommendation 1.8: Provide new governmental and institutional developments in mixed-use settings

- **Design Guideline 1.8.1:** Allocate approximately 12 acres of governmental and institutional land for each additional 1,000 people to be accommodated within the Region.<sup>i</sup> Some governmental and institutional uses, such as libraries, can be located on the ground floor of mixed-use buildings.



**Library Located on the Groundfloor of an Apartment Building**

Credit: SEWRPC

## Recreational Land

### ► Recommendation 1.9: Provide parks in developing residential areas

- **Design Guideline 1.9.1:** Providing open space<sup>m</sup> is fundamental to preserving natural resources such as soil, water, woodlands, wetlands, native vegetation, and wildlife habitat. Open space may also enhance the economic and aesthetic value of urban development and provide outdoor physical activity, recreational, and educational opportunities. Meeting the following guidelines will ensure an integrated system of open space lands in the Region:

<sup>m</sup> Open space is defined as areas of land or water that are generally undeveloped for urban residential, commercial, or industrial uses and are considered relatively permanent in character. It includes areas devoted to park and recreational uses, large land-consuming institutional uses, and resource conservation. Open space can be publicly or privately owned.



- o Provide major park and recreation sites with a minimum gross site area of 250 acres and opportunities for a variety of resource-oriented outdoor recreational activities within a 10-mile service radius of every dwelling unit in the Region.



**Recreational Trail, an Example of a Resource-oriented Outdoor Facility**

*Credit: Riveredge Nature Center*

- o Provide other park and recreation sites with a minimum gross site area of five acres within a maximum service radius of one mile of every dwelling unit in an urban area.
- o Provide park and recreation sites and associated facilities as identified in local and neighborhood plans.



**Playground in a Community Park**

*Credit: SEWRPC*

- o Do not locate urban or agricultural uses in areas having unique scientific, cultural, or educational value. Retain adjacent areas in open space, such as agricultural or limited recreational uses.
- **Design Guideline 1.9.2:** Allocate at least five acres of land in major parks of at least 250 acres in size, and allocate at least nine acres of land in other public parks for every 1,000 people living in the Region.

### Environmentally Significant Land

#### ► Recommendation 1.10: Preserve primary environmental corridors

#### ► Recommendation 1.11: Preserve secondary environmental corridors and isolated natural resource areas

- **Design Guideline 1.10-11.1:** Preserve primary environmental corridors in essentially natural, open uses. In addition, preserve secondary environmental corridors and isolated natural resource areas in essentially natural, open uses to the greatest extent practicable as determined by county and local plans.<sup>n, °</sup> Preserving environmental corridors and isolated natural resource areas in essentially natural, open use has many benefits, including:
  - o Recharge and discharge of groundwater
  - o Maintaining surface water and groundwater quality
  - o Reducing flood flows and flood stages
  - o Maintaining base flows of streams and watercourses
  - o Reducing soil erosion
  - o Abating air and noise pollution
  - o Providing wildlife habitat

<sup>n</sup> Environmental corridors are elongated areas in the landscape that contain concentrations of natural resource features (lakes, rivers, streams, and their associated shorelands and floodplains; wetlands; woodlands; prairies; wildlife habitat areas; wet, poorly drained, and organic soils; and rugged terrain and high-relief topography) and natural resource-related features (existing and potential park and open space sites, historic sites, scenic areas and vistas, and natural areas and critical species habitat sites). Primary environmental corridors include a variety of these features and are at least 400 acres in size, two miles long, and 200 feet wide. Secondary environmental corridors also contain a variety of these features and are at least 100 acres in size and one mile in length, unless connecting primary environmental corridors. Isolated natural resource areas are smaller concentrations of natural resource features that are physically separated from environmental corridors by intensive urban or agricultural uses. They are at least five acres in size.

<sup>°</sup> The term “preserve” generally means to retain existing conditions. This term indicates certain types of uses that can be accommodated while maintaining the overall integrity of the existing resources when used in relation to environmental corridors or isolated natural resource areas (shown in Table K.1 at the end of this Appendix). The design guidelines presented in this Appendix indicate certain areas should be preserved; however, they do not indicate the measures that may be used to assure preservation. These measures may include public interest ownership, conservation easements, or land use regulation. Such measures are discussed in Chapter 3 of Volume III.



- o Protecting plant and animal diversity
- o Protecting rare and endangered species
- o Maintaining scenic beauty
- o Providing opportunities for recreational, educational, and scientific pursuits
- o Avoiding serious and costly development problems because these areas are frequently poorly suited for urban development



**Primary Environmental Corridor Along a Stream**

*Credit: SEWRPC*

► **Recommendation 1.12: Preserve natural areas and critical species habitat sites**

- **Design Guideline 1.10-12.2:** Carefully locate urban and rural development in relation to natural areas, critical species habitat sites, and other environmentally sensitive areas to help maintain the overall environmental quality of the Region and avoid developmental problems as follows:



**Natural Area Including Southern Dry-mesic Forest**

Credit: SEWRPC

- o Preserve wetlands in accordance with applicable regulations
- o Preserve small woodlands and prairies not identified as part of an environmental corridor or isolated natural resource area to the greatest extent practicable, as determined in county and local plans<sup>p</sup>
- o Preserve all natural areas and critical species habitat sites identified in the regional natural areas and critical species habitat management and protection plan<sup>q</sup>

<sup>p</sup> The following definitions are used throughout this report:

Wetlands are areas that are inundated or saturated by surface water or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions.

Woodlands are upland areas having 17 or more deciduous trees per acre each measuring at least four inches in diameter at breast height and having at least 50 percent canopy cover. In addition, coniferous tree plantations and reforestation projects are defined as woodlands. Lowland wooded areas, such as tamarack swamps, are defined as wetlands because the water table in such areas is located at, near, or above the land surface and because such areas are generally characterized by hydric soils that support hydrophytic trees and shrubs.

Prairies are open, generally treeless areas that are dominated by native grasses. There are three types of prairies in the Region corresponding to soil moisture conditions: dry prairies, mesic prairies, and wet prairies. Savannas, which are defined as areas dominated by native grasses but having between one and 17 trees per acre, are classified as prairies for the purposes of this report.

<sup>q</sup> Natural areas are tracts of land or water so little modified by human activity, or that have sufficiently recovered from effects of such activity, that they contain intact native plant and animal communities believed to be representative of the pre-European-settlement landscape. Critical species habitat sites consist of areas, located outside natural areas, that support endangered, threatened, or rare plant or animal species.

- o Do not locate any development that would cause or be subject to flood damage during the 1-percent-annual-probability (100-year recurrence interval) flood; and do not allow any unauthorized structures to encroach upon and obstruct the flow of water in perennial stream channels
- o Direct urban and rural development away from areas that are covered by soils with severe limitations for the use concerned, to the greatest extent practicable

## Agricultural Land

### ► Recommendation 1.13: Preserve productive agricultural land

- **Design Guideline 1.13.1:** Agricultural areas contribute to the economy and ecological balance of the Region. Preserving agricultural lands also contributes to the scenic beauty and cultural heritage of the Region. Preserve to the greatest extent practicable agricultural uses in areas with soils designated by the U.S. Natural Resources Conservation Service as agricultural capability Classes I and II to protect the agricultural production, scenic beauty, and cultural heritage of the Region through measures such as:
  - o Minimizing the conversion of productive agricultural land by redeveloping existing urban areas and using compact development designs when agricultural land is converted to urban uses at the edge of an existing urban area
  - o Using cluster subdivision design to minimize the impact of Rural Estate development on agricultural land
  - o Locating Rural Estate development to minimize conflicts with dust, odors, and noise associated with farming

### ► Recommendation 1.14: Preserve productive agricultural land through farmland preservation plans

- **Design Guideline 1.14.1:** Restrict nonagricultural development in farmland preservation areas identified in county farmland preservation plans.

### ► Recommendation 1.15: Develop a regional food system

- **Design Guideline 1.15.1:** Ensure zoning ordinances do not create barriers to urban agriculture on vacant or underutilized land. Maintaining agricultural land near and within urban areas may improve food accessibility in the Region. Urban agriculture may also bring activity to vacant and blighted land. Urban agriculture can include less intensive uses such as community gardens. Community gardens typically use land for growing crops, plants, or other vegetation by a group of individuals, public organization, or non-profit organization. Urban agriculture can also include more intensive agricultural activities operated by a commercial, public, or non-profit farming enterprise. These activities may include the use of land for crop production, greenhouses, nurseries, and vertical farming.





**Community Garden**

*Credit: Town of Lake Community Garden*

- **Design Guideline 1.15.2:** Ensure zoning ordinances do not create barriers to alternative sources of healthy foods such as farmers markets and produce stands.
- **Design Guideline 1.15.3:** Work with local non-governmental organizations (NGO) to implement innovative urban agriculture techniques and public outreach to connect food production, distribution, and land use policy. Southeastern Wisconsin NGOs can provide expertise in areas such as:
  - o Working with property owners to implement urban gardens on vacant or underutilized land
  - o Implementing innovative and sustainable urban agriculture projects to increase urban agricultural production
  - o Providing outlets for fresh, healthy foods in underserved areas, such as farmers markets and retail stores
  - o Educating business owners on providing fresh, healthy foods
  - o Educating residents on urban agricultural practices and resources for obtaining fresh, healthy foods

## Water Supply

### ► Recommendation 1.16: Preserve areas with high groundwater recharge potential

- **Design Guideline 1.16.1:** Design land use development patterns and stormwater management practices to preserve areas of high and very high groundwater recharge potential identified in the regional water supply plan and maintain the natural surface and groundwater hydrology to the greatest extent practicable. Additional design recommendations are set forth in the regional water supply plan, documented in SEWRPC Planning Report No. 52, *A Regional Water Supply Plan for Southeastern Wisconsin*, December 2010.
- **Design Guideline 1.16.2:** Do not locate potentially contaminating land uses in areas where the potential for groundwater contamination is the highest (areas of the Region that are potentially vulnerable to groundwater contamination are presented on Map 15 of the regional water supply plan).

## Sustainable Land Use

### ► Recommendation 1.17: Manage stormwater through compact development and sustainable development practices

- **Design Guideline 1.17.1:** Use environmentally sustainable development practices to the maximum extent practicable in new development and redevelopment projects. These practices include, but are not limited to, arranging land uses and site features (i.e., lots, buildings, and infrastructure) to preserve natural features and productive farmland; minimizing total impervious surface in the Region; and locating near services, employment centers, and alternative transportation systems such as public transit, sidewalks, and bicycle facilities.



**Traditional Neighborhood Development**

Credit: SEWRPC

The following promote the environmentally sustainable development concept: TOD, traditional neighborhood development (TND), redeveloping underutilized urban areas or remediating and redeveloping contaminated sites, cluster subdivisions, and areas with high residential density and/or mixed use development.

- **Design Guideline 1.17.2:** Use environmentally sustainable construction concepts to integrate techniques that contribute to managing stormwater, sustainability, and reducing carbon footprint. These concepts should be used to the maximum extent practicable in new development and re-development projects. They include, but are not limited to:
  - Installing stormwater quality control mechanisms such as bioswales and bioinfiltration trenches or basins in parking lots and along roadways; rain gardens and barrels or cisterns; rooftop and wall vertical gardens; landscaping for cooling, wind protection, and conserving water through drought resistant plants; and native plantings or mulch versus traditional turf/grass.



**Bioswale Promoting Native Plant Species that Requires Management to Protect Against Invasive Species**

*Credit: SEWRPC*





**Rooftop Garden**

*Credit: SEWRPC*

- o Using permeable pavement; however, the use of alternatives to applying chloride (salt) compounds for ice and snow removal should be considered for areas with permeable pavement. Such alternatives could include substituting plowing for salting of collector and land access streets and minimizing the use of chlorides. Anticicing or deicing salt should not be applied to areas of permeable pavement. Permeable pavement and bioinfiltration facilities should not receive runoff from paved areas where chlorides are routinely applied for winter maintenance.
- o Studying methods to reduce impacts of chlorides on groundwater and implementing those methods that are determined to be most effective.
- o Considering underground stormwater storage and/or infiltration where there are site constraints to conventional storage.
- o Providing opportunities to make use of renewable energy sources, such as south-oriented buildings to capture passive solar radiation or orienting buildings to capture wind for natural air ventilation.
- o Using sun, wind, and/or earth for natural lighting, ventilation, heating, cooling, and other purposes (i.e., solar panels, wind turbines, and geothermal systems).
- o Using local, reused, recycled, recyclable, and/or energy efficient construction materials and energy efficient appliances.
- o Incorporating emerging energy and water conservation and efficiency measures into site and building designs, taking cost into consideration.
- o Using “green-related” certification programs, such as Leadership in Energy and Environmental Design (LEED), Energy Star Qualified Homes, Green Built Home, Sustainable Tools for Assessing and

Rating (STAR) Communities, and the Sustainable Sites Initiative (SITES) that provide assistance and initiatives that certify new buildings and redevelopment projects that meet environmentally sustainable building and energy standards.

► **Recommendation 1.18: Target brownfield sites for redevelopment**

- **Design Guideline 1.18.1:** The Southeastern Wisconsin Region, like many urbanized regions throughout the Country, has experienced an increase in vacant or underutilized land once devoted to industrial, commercial, and related uses. Brownfields are sites whose reuse is frequently constrained by contamination problems created by past industrial and commercial activities. Redevelopment of brownfields is often hindered by high cleanup costs that tend to reduce private-sector interest in these sites. Redeveloping these sites would promote the implementation of other VISION 2050 land use recommendations. Assist the private sector in redeveloping brownfields through tax increment financing (TIF) and securing State and Federal financial assistance.

**Table K.1  
Guidelines for Development Considered Compatible with  
Environmental Corridors and Isolated Natural Resource Areas**

Component Natural Resources and Related Features within Environmental Corridors <sup>a</sup>	Permitted Development														Rural Density Residential Development (see General Development Guidelines below)	Other Development (see General Development Guidelines below)	
	Transportation and Utility Facilities (see General Development Guidelines below)				Recreational Facilities (see General Development Guidelines below)												
	Streets and Highways	Utility Lines and Related Facilities	Engineered Stormwater Management Facilities	Engineered Flood Control Facilities <sup>b</sup>	Trails <sup>c</sup>	Picnic Areas	Family Camping <sup>d</sup>	Swimming Beaches	Boat Access	Ski Hills	Golf	Playfields	Hard-Surface Courts	Parking			Buildings
Lakes, Rivers, and Streams	-- <sup>e</sup>	-- <sup>f,g</sup>	--	-- <sup>h</sup>	-- <sup>j</sup>	--	X	X	X	--	--	--	--	--	--	--	--
Riparian Buffer <sup>l</sup>	X	X	X	X	X	X	X	X	--	X	X	--	X	X	X	--	--
Floodplain <sup>k</sup>	-- <sup>j</sup>	X	X	X	X	X	X	X	--	X	X	X	--	X	X	--	--
Wetland <sup>m</sup>	-- <sup>j</sup>	X	--	--	X <sup>n</sup>	--	--	X	--	-- <sup>o</sup>	--	--	--	--	--	--	--
Wet Soils	X	X	X	X	X	--	X	X	--	X	--	--	--	X	--	--	--
Woodland	X	X	X <sup>p</sup>	--	X	X	--	X	X	X	X	X	X	X	X <sup>q</sup>	X	X
Wildlife Habitat	X	X	X	--	X	X	--	X	X	X	X	X	X	X	X	X	X
Steep Slope	X	X	--	--	-- <sup>r</sup>	--	--	--	--	X <sup>s</sup>	--	--	--	--	--	--	--
Prairie	--	-- <sup>g</sup>	--	--	-- <sup>r</sup>	--	--	--	--	--	--	--	--	--	--	--	--
Park	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Historic Site	--	-- <sup>g</sup>	--	--	-- <sup>r</sup>	--	--	--	--	--	--	--	--	X	--	--	--
Scenic Viewpoint	X	X	--	--	X	X	--	X	X	X	--	--	--	X	X	X	X
Natural Area or Critical Species Habitat Site	--	--	--	--	-- <sup>g</sup>	--	--	--	--	--	--	--	--	--	--	--	--

**NOTE:** An "X" indicates that facility development is permitted within the specified natural resource feature. In those portions of the environmental corridors having more than one of the listed natural resource features, the natural resource feature with the most restrictive development limitation should take precedence.

**APPLICABILITY**

These guidelines indicate the types of development that can be accommodated within primary and secondary environmental corridors and isolated natural resource areas while maintaining the basic integrity of those areas. Throughout this table, the term "environmental corridors" refers to primary and secondary environmental corridors and isolated natural resource areas.

**Under VISION 2050:**

- As regionally significant resource areas, primary environmental corridors should be preserved in essentially natural, open use—in accordance with the guidelines in this table.

**Table continued on next page.**

**Table K.1 (Continued)**

- Secondary environmental corridors and isolated natural resource areas warrant consideration for preservation in essentially natural open use, as determined in county and local plans and in a manner consistent with State and Federal regulations. County and local units of government may choose to apply the guidelines in this table to secondary environmental corridors and isolated natural resource areas.

**GENERAL DEVELOPMENT GUIDELINES**

- Transportation and Utility Facilities: All transportation and utility facilities proposed to be located within the important natural resources should be evaluated on a case-by-case basis to consider alternative locations for such facilities. If it is determined that such facilities should be located within natural resources, development activities should be sensitive to, and minimize disturbance of, these resources, and, to the extent possible following construction, such resources should be restored to preconstruction conditions.

The above table presents development guidelines for major transportation and utility facilities. These guidelines may be extended to other similar facilities not specifically listed in the table.

- Recreational Facilities: In general, no more than 20 percent of the total environmental corridor area should be developed for recreational facilities. Furthermore, no more than 20 percent of the environmental corridor area consisting of upland wildlife habitat and woodlands should be developed for recreational facilities. It is recognized, however, that in certain cases these percentages may be exceeded in efforts to accommodate needed public recreational and game and fish management facilities within appropriate natural settings. In all cases however, the proposed recreational development should not threaten the integrity of the remaining corridor lands nor destroy particularly significant resource elements in that corridor. Each such proposal should be reviewed on a site-by-site basis.

The above table presents development guidelines for major recreational facilities. These guidelines may be extended to other similar facilities not specifically listed in the table.

- Rural Density Residential Development: Rural density residential development may be accommodated in upland environmental corridors, provided that buildings are kept off steep slopes. The maximum number of housing units accommodated at a proposed development site within the environmental corridor should be limited to the number determined by dividing the total corridor acreage within the site, less the acreage covered by surface water and wetlands, by five. The permitted housing units may be in single-family or multi-family structures. When rural residential development is accommodated, conservation subdivision designs are strongly encouraged.

- Other Development: In lieu of recreational or rural density residential development, up to 10 percent of the upland corridor area in a parcel may be disturbed in order to accommodate urban residential, commercial, or other urban development under the following conditions: 1) the area to be disturbed is compact rather than scattered in nature; 2) the disturbance area is located on the edge of a corridor or on marginal resources within a corridor; 3) the development does not threaten the integrity of the remaining corridor; 4) the development does not result in significant adverse water quality impacts; and 5) development of the remaining corridor lands is prohibited by a conservation easement or deed restriction. Each such proposal must be reviewed on a site-by-site basis.

Under this arrangement, while the developed area would no longer be part of the environmental corridor, the entirety of the remaining corridor would be permanently preserved from disturbance. From a resource protection point of view, preserving a minimum of 90 percent of the

**Table continued on next page.**



**Table K.1 (Continued)**

environmental corridor in this manner may be preferable to accommodating scattered homesites and attendant access roads at an overall density of one dwelling unit per five acres throughout the upland corridor areas.

- Pre-Existing Lots: Single-family development on existing lots of record should be permitted as provided for under county or local zoning at the time of adoption of the regional land use plan.
- All permitted development presumes that sound land and water management practices are utilized.

**FOOTNOTES**

<sup>a</sup>The natural resource and related features are defined as follows:

Lakes, Rivers, and Streams: Includes all lakes greater than five acres in area and all perennial and intermittent streams as shown on U. S. Geological Survey quadrangle maps.

Riparian Buffer: Includes a band 50 feet in depth along both sides of intermittent streams; a band 75 feet in depth along both sides of perennial streams; a band 75 feet in depth around lakes; and a band 200 feet in depth along the Lake Michigan shoreline.

Floodplain: Includes areas, excluding stream channels and lake beds, subject to inundation by the 1 percent annual probability flood event.

Wetlands: Includes areas that are inundated or saturated by surface water or groundwater at a frequency, and with a duration sufficient to support, and under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions.

Wet Soils: Includes areas covered by wet, poorly drained, and organic soils.

Woodlands: Includes areas one acre or more in size having 17 or more deciduous trees per acre with at least a 50 percent canopy cover as well as coniferous tree plantations and reforestation projects; excludes lowland woodlands, such as tamarack swamps, which are classified as wetlands.

Wildlife Habitat: Includes areas devoted to natural open uses of a size and with a vegetative cover capable of supporting a balanced diversity of wildlife.

Steep Slope: Includes areas with land slopes of 12 percent or greater.

Prairies: Includes open, generally treeless areas that are dominated by native grasses; also includes savannas.

Park: Includes public and nonpublic park and open space sites.

Historic Site: Includes sites listed on the National Register of Historic Places. Most historic sites located within environmental corridors are archaeological features such as American Indian settlements and effigy mounds and cultural features such as small, old cemeteries. On a limited basis, small historic buildings may also be encompassed within delineated corridors.

Scenic Viewpoint: Includes vantage points from which a diversity of natural features such as surface waters, wetlands, woodlands, and agricultural lands can be observed.

Natural Area and Critical Species Habitat Sites: Includes natural areas and critical species habitat sites as identified in the regional natural areas and critical species habitat protection and management plan.

<sup>b</sup>Includes such improvements as stream channel modifications and such facilities as dams.

<sup>c</sup>Includes trails for such activities as hiking, bicycling, cross-country skiing, nature study, and horseback riding, and excludes all motorized trail activities. It should be recognized that trails for motorized activities such as snowmobiling that are located outside the environmental corridors may of necessity have to cross environmental corridor lands. Proposals for such crossings should be evaluated on a case-by-case basis, and if it is determined that they are necessary, such trail crossings should be designed to ensure minimum disturbance of the natural resources.

<sup>d</sup>Includes areas intended to accommodate camping in tents, trailers, or recreational vehicles that remain at the site for short periods of time, typically ranging from an overnight stay to a two-week stay.

**Table continued on next page.**

**Table K.1 (Continued)**

- <sup>e</sup> Certain transportation facilities such as bridges may be constructed over such resources.
- <sup>f</sup> Utility facilities such as sanitary sewers may be located in or under such resources.
- <sup>g</sup> Electric power transmission lines and similar lines may be suspended over such resources.
- <sup>h</sup> Certain flood control facilities such as dams and channel modifications may need to be provided in such resources to reduce or eliminate flood damage to existing development.
- <sup>i</sup> Bridges for trail facilities may be constructed over such resources.
- <sup>j</sup> Previous editions of these guidelines identified this category as "Shoreland," rather than "Riparian Buffer." Riparian buffers, as defined in footnote "a" of this table, typically would be located within a State-defined shoreland area (see Chapters NR 115 and NR 117 of the Wisconsin Administrative Code).
- <sup>k</sup> Consistent with Chapter NR 116 of the Wisconsin Administrative Code.
- <sup>l</sup> Streets and highways may cross such resources. Where this occurs, there should be no net loss of flood storage capacity or wetlands. Guidelines for mitigation of impacts on wetlands by Wisconsin Department of Transportation facility projects are set forth in Chapter Trans 400 of the Wisconsin Administrative Code.
- <sup>m</sup> Any development affecting wetlands must adhere to the water quality standards for wetlands established under Chapter NR 103 of the Wisconsin Administrative Code.
- <sup>n</sup> Only an appropriately designed boardwalk/trail should be permitted.
- <sup>o</sup> Wetlands may be incorporated as part of a golf course, provided there is no disturbance of the wetlands.
- <sup>p</sup> Generally excludes detention, retention, and infiltration basins. Such facilities should be permitted only if no reasonable alternative is available.
- <sup>q</sup> Only if no alternative is available.
- <sup>r</sup> Only appropriately designed and located hiking and cross-country ski trails should be permitted.
- <sup>s</sup> Only an appropriately designed, vegetated, and maintained ski hill should be permitted.

Source: SEWRPC