2010



The Big Plan

An Integrated Regional Plan for Transportation, Land Use, and the Environment in the Tri-County Region



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Executive Summary

The Big Plan is an integrated plan for the Tri-County region that bridges the gaps between transportation, land use, and environmental planning. Quality planning for each of these areas occurs every year in the region, but very rarely do these planning efforts coordinate and address overlapping considerations. This project brought communities and counties from the Tri-County region together to identify a vision of what this region is capable of being, and what it wants to be. Part of the process was asking a number of questions; some were answered, some simply led to additional questions.

- Will we have a transportation system that safe and efficient not just for automobiles but for all modes including, rail, air, freight, mass transit, pedestrians and bicyclists?
- Will our transportation system protect the environment by steering clear of our unique local ecosystems, recycling construction materials and helping to minimize energy use?
- Will our development patterns be linked more adequately with the transportation network in order to reduce congestion and energy consumption?
- Will our public infrastructure be used as an investment to implement community goals for where, how, and when grow occurs?
- Will our agricultural resources be protected from encroaching development, and can they contribute in a positive fashion to reducing environmental pollution from erosion and greenhouse gas emissions?
- Will we use environmental resources to mitigate pollution by scrubbing the air and filtering runoff from our communities?
- Will our infrastructure systems support the types of business and economic activities we believe will be the foundations of tomorrow's economy?

While asking and discussing these types of questions, the Regional Steering Committee for this project came to realize that our region has much in common. Five Themes were identified as key mutual priorities for the region's future:

- Agriculture Preservation
- Balanced Growth
- Economic Development
- Environmental Stewardship
- * Transportation Infrastructure

In order to lay a strong foundation for future vitality, the region's infrastructure must support these five Themes. This plan sets forth a plan for transportation, land use, and the ecosystem that reflects these five Themes. As public policy decisions are made over the coming decades, guidance from this plan will help the region bridge the gaps and preserve, revitalize, or construct infrastructure that supports these five Key Themes. Doing so will help to create the kind of region we all want: a place to live and work that is attractive, healthy, safe, vibrant, prosperous, and most importantly, sustainable.

Introduction

Many communities, counties, and regions develop plans; land use plans, transportation plans, bicycle plans, economic development plans, watershed plans, stormwater management plans, corridor plans, and more. The list of plans completed by the average community is long, and generally they are sound, quality plans. Yet invariably they have a similarity: they are limited in scope to one functional area. While this allows for great detail and specificity, the focus on a single topical area also limits their effectiveness in analyzing and guiding a community's future.

The Big Plan has a single, but challenging, mission; to bridge the gaps between these topical plans and integrate them into a single coordinated vision for this region's future. This plan leans heavily upon the planning efforts of local communities and previous regional plans in developing specific components. The Steering Committee then took the planning effort one step further: analyzing, discussing, and stitching individual plans together into a single document organized around condensed common Themes. Five individual Themes were identified as common to planning efforts throughout the Tri-County region: Agricultural Preservation, Balanced Growth, Economic Development, Environmental Stewardship and Transportation Infrastructure.

While this plan lays out five common Regional Themes, actual implementation will occur through dozens or hundreds of individual decisions by dozens of jurisdictions. There is no regional entity with authority to actually enforce better development or transportation practices; therefore, progress on these Themes will come by improving the region one road, one subdivision, and/or one natural area at a time, by individual departments in individual communities. Coordinated, lock-step action by all these individuals, departments, and communities is impossible. This plan recognizes the drawbacks of a top-down, command-and-control regional approach to these issues and instead promotes flexibility, ingenuity, and creativity by individual jurisdictions.

<u>The Big Plan</u> focuses primarily on the regional scale, with more specific details and small area trends presented as necessary. The document is organized into three main sections: 1) **Regional Data & Trends** - Regional population & land use, transportation, and ecosystem data and trends; 2) **Regional Themes** - Discussion and detail related to each of five regional Themes, as well as recommended implementation strategies, and; 3) **Regional Concept Plans** – County-wide and corridor-specific plans, and a Greener Highways model program, that serve as models of how transportation, land use, and environmental planning can be integrated and applied locally.

Chapter One: Regional Data & Trends

The Tri-County region is growing and changing. Population has increased, the area of developed land has steadily enlarged, the size and use of our transportation network has grown, and our natural environment has been modified. The following sections of this chapter describe the most significant issues in our region, and present related data.

Population and Land Use

Population and Land Use change in the Tri-County region is occurring, but at disparate rates. In contrast, land use change in the region has occurred at a much more rapid pace, far outpacing population growth. The sections following discuss population and land use trends

Population

Population growth in the region has been uneven. The region as a whole has grown slowly. However, some communities and areas within the region have seen significant growth over the past decades. The graphs below show that in general, the west side of the region (Peoria County, including the region's central city, Peoria), has grown relatively slowly, or even lost population during some decade spans. On the east side of the Illinois River, growth has been far more significant in both absolute and relative terms.



	1950	1960	1970	1980	1990	2000	1950 to 2000
Peoria County	174,347	189,044	195,318	200,466	182,827	183,433	5.21%
City of Peoria	111,856	103,162	126,963	124,160	113,504	112,936	0.97%
Tazewell County	76,165	99,789	118,649	132,078	123,692	128,485	68.69%
Woodford County	21,335	24,579	28,012	33,320	32,653	35,469	66.25%
Total Region	271,847	313,412	341,979	365,864	339,172	347,387	27.79%

Another way to view the trends in population growth is through analysis of percentages. The table below provides U.S. Census populations since 1950.

This chart underscores the disparity in population growth between different parts of the region. Clearly, communities on the East side of the Illinois River were more attractive to new residents or residents moving within the region. Looking only at the 1980 through the 2000 Census, these population growth trends are even more exaggerated.

At the time of this writing, data from the recently completed 2010 U.S. Census is not available to ascertain growth since 2000. However, common perception is the region has continued growing since 2000. Some data has been generated to support this belief, including several special Censuses taken by local units of government. Two of these were completed in the City of Peoria, the first in 2004 and another in 2007, to count new residential units and residents in the targeted growth areas to the North and Northwest of the City. Combined, these special censuses showed an additional 8,455 people. If all these residents are new to the City, the growth in this area represents an increase of 7.5% from the baseline 2000 U.S. Census population. This seven-year increase would be a drastic change from the previous ten years, which actually saw the City's population decrease .5% from 1990 to 2000. It should be noted that the City's special censuses did not take a count of the entire City; any potential loss of population in the older parts of the City are not reflected in the new data, and the 2010 Census population may show less overall growth than these special censuses appear to indicate.

The Village of Germantown Hills also completed a special Census in 2007 to count new residents. This special census covered the entire Village, and showed that Germantown Hills has grown to be the second largest community in Woodford County, with a new population of 3,410 in 1165 housing units. This compares to a population in 2000 of 2,111 and a 1990 population of 1,195. Germantown Hills and the surrounding area of southwestern Woodford County have continued to be a strong growth area in the region since 2000. While the actual numbers are relatively small, they are indicative of a trend towards suburban and exurban development.

Looking forward, population growth projections in the region are cloudy; different agencies use different methods and give heavier weighting to certain outcomes and trends. The table on the following page shows Illinois Department of Commerce and Economic Opportunity (DCEO) population growth projections from 2000 through 2030.

County	2000 - Actual	2010	2015	2020	2025	2030
Peoria	183,433	187,876	190,903	194,083	195,266	193,314
Tazewell	128,485	139,616	146,850	154,567	161,456	165,373
Woodford	35,469	39,362	41,551	43,845	45,789	46,857
Total Region	347,455	366,854	379,304	392,495	402,511	405,544

These projections can be loosely supported by qualitative observations, including recent growth trends, observation of land use consumption in high-growth areas, and recent diversification of the local economy. Still, DCEO's projections for population growth should be considered relatively rapid by historical standards. Therefore, this plan will utilize population growth projections generated for use by the University of Illinois' Land Use Evaluation and Impact Assessment Model (LEAM).

LEAM's population projections are rooted more in line with a cohort population analysis, which considers the ages of the existing population, birth and death rates, and in- and out-migration patterns. This type of analysis often provides a sound projection of population growth, barring any radical shifts in birth or death rates, or in- and out-migration rates. This analysis was done on a regional basis, and was not broken down into smaller units of government. The population projections generated by this analysis are listed below.

	2000 - Actual	2010	2015	2020	2025	2030	2035
Population	347,455	355,283	359,305	363,373	367,486	371,646	375,853
Households	135,940	145,608	150,023	154,627	158,399	162,291	165,574
Persons/Household	2.56	2.44	2.40	2.35	2.32	2.29	2.27

Most notable about the LEAM population projections is that although the region's total population is projected to increase by 8.2%, the total number of households in the region is projected to increase by 21.8%. The reason is a reduction in average persons per household. If this projection holds true, that factor holds significant planning implications, particularly with respect to land use and development patterns, and infrastructure needs.

Land Use

The LEAM projections in the table on the previous page hold significant meaning for land use in the region. A lower person per household value means that it takes more residential buildings and infrastructure to support an equivalent number of people. The implication is that more land will be developed, and more roads, water and sewer lines built, to support the same number of people. This trend leads directly to increased land consumption for development, assuming the total population continues to grow (at any pace), as well as the development of environmental and agricultural land at a pace greater than in the past. While LEAM projects this trend over the coming decades, it is also useful to look backwards at trends of the past few decades.

Analysis of historical land use patterns is difficult, but digitized aerial photography indicate that from 1969 to 1998 nearly 25,000 acres of forested land, agricultural land, and waterways were urbanized and developed¹ in the region. Using the same data to compare urban growth on the East and West sides of the Illinois River yields a stark difference. On the east side of the River total urbanized land grew by 13,960 acres and accommodated population growth of 17,293 people countywide combined between Tazewell and Woodford Counties. In contrast, the urbanized area on the west side of the River grew by 11,016 acres but actually witnessed a population *decline* of 11,885 residents during this period in Peoria County.

Since 1998, this trend has likely continued, although perhaps not to the same extent. The 2010 Census will provide more insight into whether the urban sprawl on the west side of the Illinois River has continued. Still one thing is clear; the region has developed more and more land, built more and more infrastructure to serve the new development, while adding fewer and fewer residents.

Without policy changes, future development looks to be bringing more of the same. Using population growth forecasts and transportation system conditions (both existing and forecasted), LEAM also projects land use change for both residential and commercial development. The LEAM projections model a continuation of current growth patterns resulting from current land use policies, and not surprisingly, show a continued loss of environmental and agricultural assets. The map on the next page shows where LEAM projects new residential and commercial development pressure within the next 25 years, under a "business as usual" scenario.

¹ Peoria-Pekin Future Landscape Project, Tri-County Regional Planning Commission, 2002, p. 12.

The land use change model projects that in Peoria County nearly all of the new residential and commercial development will take place on the urban fringe. On the East side of the Illinois River the model shows that most new commercial development and much residential development pressure exists closer to the urban core, with some significant levels of residential development further out toward the urban area's fringe. Further analysis of the impacts of this projected growth trend will be presented later in discussion under the Themes, but this map underscores the point that the

combination of current development and transportation patterns and policies and projected population growth, will guide the vast majority of new development to the urban fringe.

Key Land Use & Population Points

- Regional population is increasing, but unevenly and only slightly as a whole.
- Urban land consumption has been far more rapid than the pace of population growth.
- Household density is projected to continue decreasing, meaning more infrastructure will be needed to serve an equivalent population.
- Projections show that the vast majority of pressure for new development will occur on the urban fringe.





Transportation

The transportation system in the Peoria region has grown over the past decades to support the growing developed area and population. Like many other urban areas the size of Peoria, the system improvements have been focused primarily on road projects targeted at automobiles and highway traffic, while investments in other modes of transportation, including bus, passenger train, and bicycling/walking infrastructure, has generally lagged behind.

Part of the urbanized area is served by a public transportation bus system, although the transit system does not operate in much of the suburban area east of the Illinois River. At least three bus lines provide connections from the Peoria area to other urban areas via bus or charter coach connections. Non-motorized transportation is not readily available in most parts of the region; some trails exist but for the most part they are not connected to one another, making their use difficult for anything other than recreation. There is no local rail transportation system, nor is there access to intercity rail transportation via Amtrak. This remainder of this section will discuss characteristics of various modes of the regional transportation system.

Highway

While Peoria is similar to other urban areas on how it has invested and improved its transportation system, it is dissimilar in that the Peoria region has managed to maintain a transportation system that is largely unaffected by systemic congestion issues faced by many other metropolitan areas. This is due to the negligible population growth over the past 50 years, and a history of investing in capacity-expanding road projects.

The transportation system in the Peoria-Pekin urbanized area operates efficiently, generally without congestion. Congestion can be described as the condition where the level of performance does not meet the demand of using the transportation system. Where performance does meet demand, adequate capacity exists and the users move efficiently through the system.

The regional Travel Demand Model (TDM) allows analysis of the transportation system, including the volume-to-capacity (V/C) ratio, a common tool used to evaluate road congestion. A travel demand model developed for the Tri-County region provides some information about congested roadways in the region. The model contains both the traffic volume on local roadways and the capacity of local roadways, and a volume-capacity ratio is available for different roadway segments. For the purposes of this plan, roadway segments with a volume-capacity ratio greater than 1.0 are defined as congested roadway segments.

The four maps on the following pages show the current V/C for the transportation system (for roads classified as collectors or higher). As the maps show, there is little congestion within the urbanized area. These segments – portions of Farmington Road in Peoria County, University Street in Peoria, Washington and Camp Streets in East Peoria, Illinois Route 116 near Woodford County, and Detroit Avenue in Morton – are shown in red. The congested roadway segments identified in the maps should be monitored in the future to identify and address congestion.

Outside the urban area (shown in the map at right) there is no systemic road congestion, although occasional construction projects, traffic accidents, or slow-moving vehicles will cause brief delays.



A previous analysis of the volume and capacity of local highways was completed in December 2005 as part of a freight transportation study completed for the Heart of Illinois Regional Port District by Tri-County Regional Planning Commission and Heartland Partnership. The study compared the threshold level of service for average annual daily traffic (AADT) and percent truck traffic to the actual AADT and percent truck traffic for two lane highways, four lane highways, and four lane interstate highways in the region to identify local highways that operate at a subpar level of service. For example, the threshold level of service for AADT and percent truck traffic is 10,000 vehicles and 10 percent, respectively, for a two lane highway; any two lane highways that have an AADT of 10,000 and/or percent truck traffic of 10 percent or greater were identified as operating at a subpar level of service.

Highways identified as having a subpar level of service by this study can be seen in the map to the right. It should be noted that this study focused heavily on the impact of commercial truck traffic on level of service. To the average driver, these highways will not "feel" congested, despite being identified as having a subpar level of service. Still, high levels of truck traffic do have an impact on road conditions, maintenance, and safety.

The potential for congestion is greatest during the particular portions of the morning and late afternoon when individuals are traveling to and returning from work and school. Not surprisingly, the majority of workers leave home in the morning, with nearly one-third leaving between 7:00 a.m. and 7:59 a.m., nearly 45 percent leaving between 6:30 a.m. and 7:59 a.m., and nearly two thirds leaving between 6:00 a.m. and 8:29 a.m.

Of all workers who do not work at home, more than 50 percent travel less than 20 minutes to work, and nearly 80 percent travel less than 30 minutes to reach their workplaces. Although these figures suggest congestion is minimal in the region, this data should be continuously monitored for increases in travel time in order to address possible congestion.

Sometimes, isolated events occur that reduce the efficiency of the transportation system. Construction projects, collisions, and emergency situations can lead to congestion and



inefficient traffic flow. In these situations, the presence of intelligent transportation systems (ITS), can effectively manage the transportation system by preventing congestion and maintaining adequate traffic flow.

ITS refers to the use of information and communications technology with the transportation infrastructure in order to manage the transportation system.

In 2006, a Regional ITS Architecture was developed for the region's Metropolitan Planning Organization (the Peoria Pekin Urbanized Area Transportation Study, or PPUATS) to allow for the development of regional ITS. The document that presented the Architecture included an inventory of ITS systems, a concept for operating ITS, and a list of specific regional ITS activities to be implemented. ITS is beneficial for enabling the transportation system to operate efficiently when unforeseen events occur, and ITS activities should be implemented in the region to effectively manage the regional transportation system.

Safety

One way to measure the safety of the public infrastructure is to evaluate the condition of the pavement. Pavement Conditions in the Tri County Region are rated on scale from 1 to 9, as reported by the Illinois Department of Transportation (IDOT) District 4 IRIS Marked Route System. The map to the right displays the major state owned and maintained roads and the pavement condition as of November of 2008; 1 to 4.5 = Poor (Red), 4.6 to 6 = Fair (Yellow), 6.1 to 7.5 = Good (Green), and 7.6 to 9.0 = Excellent (Blue). The majority of the roads in the urbanized area are in fair condition or better.

Another important indicator of road system safety is the condition of the region's bridges. IDOT has established a *Structure Information Management System* to maintain the data collected from the annual bridge inspections. The inspection process evaluates many factors of the



structure's condition and ultimately the inspector gives it a sufficiency rating from 1-100; 100 being the best possible score. Typically, if a structure has a rating of 50 or below it is eligible for federal funds for reconstruction or repairs. The average rating of all of these bridges in the Tri County region is an 84; with approximately 1,320 bridge structures.



There are 436 bridges in Peoria County; these structures have a total Average Daily Trips (ADT) of approximately, 2,055,000 and an average ADT of 4,713 per structure. The average rating is 77. Tazewell County has 438 bridges; these structures have a total ADT of approximately, 2,045,000 and an average ADT of 4,670 per structure. The average rating is 80. There are 446 bridges in Woodford County; these structures have a total ADT of approximately, 2,433,500 and an average ADT of 5,482 per structure. The average rating is 94. The charts on the following page show the sufficiency ratings for bridges in each of the three Counties, as compared to the year they were constructed. In sum, many of the bridges and structures in the region are old, and in need of maintenance. Funding the repair or replacement of these structures is a challenge, but must be considered a priority in order to ensure public safety, and preserve the efficiency of the system.

The majority of all trips made in the urbanized area are done by private vehicles; these trips include traveling to and from work, shopping, doctor visits, social activities, health and fitness activities, and many other types of trips. According to the 2000 Census, the 242,951 residents in the urbanized area had 113,562 vehicles available for use, or one vehicle per 2.14 persons. At the time of the Census, about 93% of working residents aged 16 or older in the Peoria-Pekin urbanized area traveled by car; about 89% of those residents traveled alone. This data clearly indicates the dependency of the private automobile in this region.

Crashes between cars, pedestrians, bicycles, and fixed objects occur everywhere. IDOT monitors traffic crashes throughout the state via local law enforcement agencies. The chart at right displays total crashes in 2007; of the 10,203 total crashes in the Tri-County Region 20.1% resulted in injuries and 3.5% in fatalities. In Peoria County approximately 28% of the accidents were rear end crashes. In Tazewell County approximately 22% of the accidents were

	TOTAL	Fatal	Injury
Peoria County	6,088	18	1,208
Tazewell County	3,405	13	678
Woodford County	710	5	163
TRI-COUNTY REGION	10,203	36	2,049

rear end crashes. In Woodford County approximately 24% of the accidents were crashes with animals.

The graph below left shows the number of crashes that occurred in each county from 2001-2008. Each county shows a similar trend throughout the years. The graph below right shows fatalities due to vehicular accidents from 2001 through 2008. There are significantly more fatalities in Peoria County than there are in Tazewell and Woodford Counties, and many more fatalities in 2004 in Peoria County. Tazewell County had no major fluctuations, ranging from 9 – 15 throughout the years. Woodford County had even fewer, ranging from 1-6 throughout the years. In large part the discrepancy between Counties can be attributed to population differences.





Major Road Projects

In addition to improvements and capacity expansion projects to existing roadways, several new roadways in the urban fringe and rural areas are in various stages of the planning process. These roadways are intended to serve multiple purposes: economic development, residential, commercial and industrial development, and congestion management. These projects include the Eastern Bypass with an Illinois River crossing, Illinois Route 336, Illinois Route 29, and Veteran's Drive; they can be seen in the map on the right. More information and detailed planning for each of these corridors is included later in the Corridor Plans section of this plan.

Transit

The region's public transportation option is provided by the Greater Peoria Mass Transit District (GPMTD). GPMTD operates fixed route general public transportation within the Peoria/Pekin urbanized area under the name of CityLink; the service area includes Peoria, West Peoria Township, and Peoria Heights and also provides service under contract to the City of Pekin and the East Peoria Mass Transit District.

CityLink is focused on its mission of providing economic, social and environmental benefits to the community through progressive, customer-focused transportation. This mission includes service for the elderly, area youth and the transportation disadvantaged. These groups are the primary focus of CityLink's services, but a concentrated effort is targeted at potential "choice" riders. These riders have other transportation options, but by offering enhanced schedules, routing, and access to service information through the use of passenger information displays placed at strategic locations, CityLink is attracting members of this group.

Due in part to CityLink's efforts to improve service and attract "choice" riders, and in part to larger trends in the rising costs of personal transportation and growing awareness of the need to reduce individual fuel consumption, CityLink's ridership levels are on a long-term increase. In 2009, CityLink posted its largest annual





ridership total ever, at more than 3,000,000 riders. The graph above demonstrates the positive ridership trend dating back to 1994. CityLink presently operates 22 regular fixed-routes, shown in the map at right. All CityLink vehicles radiate from downtown Peoria, the geographic hub of the urbanized area. The top performing routes service areas adjacent to downtown Peoria, older neighborhoods and neighborhoods with higher concentrations of lower-income populations. The lesser performing routes are located in East Peoria and north Peoria and are characterized by lower population/residential densities and higher-income levels.



Non-Motorized

Bicycling and walking are small, but growing segments of transportation system users. In the 2000 U.S. Census, .7% of MSA residents reported getting to work by "some other means," which often indicates bicycling. In the same Census, 2.2% of MSA residents reported walking to work as their primary form of transportation. Combined, pedestrians and bicyclists comprise nearly 3% of people traveling to work. This does not count children, unemployed, or retired individuals; many children and unemployed rely on these modes of transportation.

It is expected that as fuel prices continue to rise over the coming years, and the costs of motorized transportation climb, non-motorized forms of transportation like bicycling and walking will continue to become more popular, particularly for residents within relatively short distances (3 miles or less for bicycling, 1 mile or less for pedestrians) of their place of occupation.

Partly because these forms of transportation have historically been a small percentage of system users, investment in safe, efficient infrastructure to support bicycling and walking has been neglected by most communities in this MSA. The Peoria-Pekin Urbanized Area has approximately 32 miles of existing trails (Class I) within the Urbanized Area boundary. The existing system can be seen in the map to the right. Most notable from reviewing the map is the lack of connectivity. This lack of connectivity results in a fragmented non-motorized transportation system, hindering the ability of cyclists and pedestrians to use the system for transportation purposes.

A number of trail and bicycle plans have been completed in recent years for the Peoria area, including the Peoria Metro Area Greenways & Trails Plan (1997), the Peoria County Recreational Trail Connectivity Study (2005), the Rock Island State Trail Extension Concept Plan (2008), and the Hanna City Trail Concept Plan (2008). These plans all focus in part on the need for connectivity between communities and infrastructures, in order to make transportation on bicycle or foot feasible.



Rail

The region has solid access to railroad transportation. In fact, the Peoria area has access to service from four Class-I carriers (e.g. Union Pacific, Burlington Northern Santa Fe) and three regional Class II carriers, as well as several short-line operators. Peoria is recognized regionally as well as nationally for quality access to railroad service. This is primarily due to the region's long economic history of heavy manufacturing, industry, distilling, and commodity production/distribution, as well as the location alongside the Illinois River, a waterway that carries significant volumes of commodity freight. The map to the right shows the region's rail infrastructure.

While the region does enjoy good access to rail infrastructure, rail service is limited strictly to freight. The region currently does not have direct access to Amtrak passenger rail service, or light rail transit within the urban area. Like many urban areas, Peoria had passenger rail service in the past, but as transportation policy shifted towards the automobile and against rail, usage dropped and the service was discontinued in the 1980's. Recently, the region requested IDOT and Amtrak jointly conduct a feasibility study be completed to shed light on the possibility, and the cost, of returning passenger rail service to Peoria. That study is largely complete, but has not yet been released.



Water

Barge transportation is another mode of transportation in the tri-county area. The Illinois River, which bisects the region, carries commodities such as corn and soybeans to the Mississippi River and then to the ports in New Orleans. In 2003, a Port District was established in order to enhance the utilization of the Illinois River for freight, and to create transportation and industrial employment opportunities for the residents of the region.

Freight is moved by barge due to its low cost. It is estimated that large quantities of cargo can moved by barge for one-third the cost of rail and one-fifth the cost of truck. In addition, cargo that is too big or heavy to be transported over the highways or by rail can be efficiently moved by water.

The capacity of the river for freight transportation is directly related to the capacity of the locks and dams along the river. Currently, significant delays occur in the lock and dam system on the Illinois River. Plans are underway to improve the locks but construction is many years away.

Key Transportation Points

- Current road congestion is very modest, with little more than spot congestion.
- Local transportation plans call for capacity expansion, particularly on the urban fringe.
- Public transportation is seeing record ridership, but does not serve the entire urbanized area.
- The non-motorized transportation system is growing, but the infrastructure is mostly disconnected.
- Freight rail service is sound, but the region lacks a direct connection to the rapidly growing passenger rail network.
- Barge transportation is an important mode of transportation in the central Illinois region, especially for moving bulk agricultural commodities to New Orleans for international trade



Ecosystems

The Tri-County region is blessed with some of the most environmentally-significant, beautiful, natural and environmental resources in the State of Illinois. Picturesque, wooded bluffs lead to rolling rivers and streams, including the Illinois, Spoon, and Mackinaw Rivers. Native oak-hickory forests house significant species such as the bobcat and woodland thrush. Prairie and grasslands hark to the land our European settlers found upon their arrival. These are but a few of the many examples of natural resources the region has in its own backyard.

The region has not only a significant *quality* of natural resources, but also a significant *quantity*. Of the total land area in the Metropolitan Statistical Area (MSA), approximately 20% is open space, including forest, prairie, wetland, and open water habitats. That is an impressive amount of natural features in a state where only 0.03% of native prairie, the once dominant natural feature of Illinois, remains today.

The sheer magnitude of remaining natural areas in the region is largely attributable to the extensive stream systems and steep slopes on the Illinois River Bluffs; areas that are difficult to convert to row-crop agriculture or urban development.

Generations of leaders have recognized the critical role natural resources and habitat play in the quality-of-life and economy in this region. Prior to European settlement, Native American populations were good stewards of the land for centuries. Subsequently, European settlers in the area recognized the significance of the region's natural areas and established several hundred acres of protected land along the bluffs; today these lands are largely managed by the Peoria Park District.

The map to the right shows the location and scope of natural resources in the region. This section will focus will be on the major types of environmental land cover seen in the map: including wetlands, surface water, rural grassland (prairie), and forests. More detailed



discussion on these areas can be found later in this document, in the Regional Themes Chapter, under Environmental Stewardship.

Wetlands

Wetlands are crucial habitat to retaining high quality surface waters. A healthy wetland functions to absorb flood waters and pollutants and act as the nursery for reproducing flora and fauna in and amongst stream systems. By performing these functions, wetlands not only provide homes for animals, birds, and plants, but also serve as important sites for natural experiences such as hiking, bird watching, canoeing and hunting. Wetlands also serve an extremely important function in protecting property and structures from the damage caused by stormwater runoff, erosion, and flooding.

Surface Water

Surface water includes major features such as the Illinois River, Upper and Lower Peoria Lakes, Mackinaw River, Spoon River, and Kickapoo Creek, as well as lakes, ponds, and smaller creeks and tributaries. Aside from the recreational and visual benefits surface water provides, these water bodies also provide economic benefits (through commerce, transportation, and ecotourism), attract residential development, and help absorb stormwater. Two of these water bodies are also classified as Biologically Significant Streams by a 2007 Illinois Department of Natural Resources report; a stretch of the Mackinaw River in Tazewell and Woodford Counties, and a stretch of Kings Mill Creek in southeastern Tazewell County. They can be seen in the map to the right.

Prairies

The region is home to a significant amount of prairie and rural grassland, although nowhere near historical levels. Rural grasslands are identified and defined by the IDNR as pastureland, grassland, waterways, buffer strips, and conservation (e.g. Conservation Reserve Program) land. Prairies function to absorb and filter stormwater and provide habitat to hundreds of species of plants, insects, arachnids, and animals. Many supported bird species are migratory birds that



rely on the prairie oasis for great migrations. Re-creations of prairies are feasible in small and large scales on every land use type in the region.

Soils

One of the most valuable natural resources in the area is the rich topsoil formed from the growth and decomposition of prairie vegetation over hundreds of years. Within the region are over one-hundred soil types, each with varying characteristics. The three most predominant types are Ipava, Rozetta, and Tama. All three of these soil types are considered prime farmland.

The uppermost layer of any soil contains the highest amount of organic matter. This is necessary to provide the nutrients needed for plant growth. In this region the depth of this layer changes with each soil type, ranging from 3"-21". Ipava's top layer is 19", Rozetta's top layer is 8", and Tama's top layer is 16". This provides for a great growing environment for vegetation, including agricultural crops.

Forests

The forests, especially the forested bluffs, of the region are beautiful. The majority of the forest land resides in the rolling bluffs along the Illinois River. These forests are generally contiguous and provide prime potential for quality habitat that is not only aesthetically pleasing, but functions to serve residents by absorbing and filtering stormwater and harboring several hundred floral and faunal species.

The bluffs are a defining characteristic of the region, yielding immeasurable benefit to the quality-of-life for residents and attraction of visitors and new residents to the area. The region reaps significant revenue from tourism, much of which comes from visitors attracted by the scenic views and natural areas. Yet these areas are highly threatened.

Environmental Corridors

A number of organizations and government units have been active with plans to protect and restore the region's natural resources, especially those that have been identified and specified as environmental corridors. Environmental corridors are far more important than just for the health of flora and fauna. The resources in these corridors are a major contributor to the region's economy, quality-of-life, and public safety.

As identified by a 2005 Environmental Corridor Study², the environmental corridors are essentially a network of interlinked environmentally significant or sensitive lands. Formal recognition and adoption of these corridors as valuable greenbelts will help aid their establishment as regional greenbelts.

² Peoria County Environmental Corridor Study, Tri-County Regional Planning Commission, 2005

One significant aspect of these corridors is their value in reducing stormwater runoff, flooding, erosion, and sedimentation. The environmental corridors include waterways, wetlands, and floodplain areas. Inclusion of these features is deliberate and critical, in order to recognize the value these areas have in preventing and minimizing the aforementioned negative impact public infrastructure and private development can have on stormwater-runoff related problems.

Key Ecosystem Points

- ◆ The region is home to a significant quantity and quality of ecosystems and environmental resources.
- The major surface water bodies in the region are largely degraded, or threatened, largely due to pollutants contained in stormwater runoff from both urban and agricultural areas.
- Wetlands and prairies play an important role as green infrastructure in protecting and preserving our water and soil quality, but have largely been eliminated from our landscapes.
- ◆ The region has historically enjoyed rich and productive soils, but erosion is causing their rapid depletion.
- The forests and forested bluffs are a defining characteristic of the regions' visual appeal, quality of life, and habitat, but fire suppression and development have significantly damaged the function and health of these assets through overgrowth, invasive species encroachment, and erosion
- Landscapes and ecosystems in the region can be grouped into environmental corridors and are becoming more recognized as valuable green infrastructure, but additional protections are necessary.

Chapter Two: Themes

As shown in Chapter One, this region varies widely, from urban to rural, agrarian to industrial, small-town to high-tech. Yet the diverse set of organizations and individuals that participated in this plan quickly discovered that they share a largely similar viewpoint on the most critical areas in which the region needs to excel in order to secure a prosperous and healthy future. The Regional Steering Committee that supervised this project identified five areas of importance common to the County Plans. The Steering Committee determined that given the mutual significance of these areas to region as a whole, these areas represent common Themes that this plan should be organized around. The Themes are:

***** Agriculture Preservation

- Balanced Growth
- ***** Economic Development
- * Environmental Stewardship
- Transportation Infrastructure

The first part of this chapter lists the primary goals of each individual County Comprehensive Plan. These plans are important because they were created as part of this regional plan, and because they strongly influenced the five regional Themes listed above. The remainder of the chapter is divided by Regional Theme. Discussion for each regional Theme centers on two areas: pertinent trends and data, and recommended implementation strategies.

County Comprehensive Plan Themes

The broad Regional Themes will be implemented by dozens of individual units of government through thousands of decisions on individual issues and policies. Each of the three Counties in this region has established an individual Comprehensive Plan, in concert with municipalities and other organizations within their County. Each County has established its own set of Themes, and correlated Principles and Strategies. These sub-regional plans were completed as part of <u>The Big Plan</u>; as a result, <u>The Big Plan</u> reflects the priorities of each individual County, while individual local plans also reflect the priorities of the larger regional vision. When combined, these three plans form a singular, comprehensive regional plan that reflects both the Regional Themes. The Themes of each County plan are listed below.

Peoria County Themes

- Smart Growth. Future growth provides a diversity of safe and attractive places to live, promotes economic vitality, and minimizes infrastructure costs by adhering to managed growth principles and fiscal sustainability.
- Environmental Stewardship. Growth and development is managed in a way that promotes stewardship of our natural resources and protects environmental corridors.
- Agriculture Preservation. Prime agricultural land and agricultural operations are preserved and protected for the economic, cultural, and community benefit of current and future generations.

Tazewell County Themes

- Serve A Changing Population. Tazewell County is a popular place to raise families and has a rising population, but needs to ensure that individuals and families from all age groups seek to live in the County.
- Agriculture. Agriculture is an important component of Tazewell County's history and economy, and is ingrained with the County's identity and way of life.
- Quality Sustainable Development. Quality development is well-built, safe, represents the best use of the particular land on which it occurs, and provides value to Tazewell County; Sustainable development provides for the needs of the current generation without compromising the ability of future generations to meet their needs.
- Illinois River & Waterways. The Illinois River is a defining feature of Tazewell County, but also of importance to Tazewell County are the streams, rivers and lakes embedded within the landscape, especially the Mackinaw River and Spring Lake.
- **& Economic Development.** Land development in any area is inextricably tied to the local economy.
- Coordinated Land Use. Coordinated land use identifies both the *locations* and the *types of development* that will contribute to a harmonious built environment, minimizes conflicts and achieves orderly development.

Woodford County Themes

Solution Balanced Growth. There is a balance between agriculture and other types of development.

- Economic Development. Existing commercial and industrial uses are kept vibrant while new commercial and industrial growth is encouraged.
 Proactive Collaboration. County, municipal, and non-profit agencies work together to address opportunities and challenges.
- **Transportation**. The transportation system, including the proposed Eastern bypass, is to coordinate new infrastructure with desirable growth.
- **Environment**. Respect the environment, paying particular attention to the Illinois River and the Mackinaw River Valley.

More detailed information on each of these plans can be found in each individual County Comprehensive Land Use Plan. More important to this regional plan is that each County plan was conducted in a coordinated fashion with the regional process, and the Themes for all plans overlap significantly. The following sections detail each of the five regional Themes, and the overlaps between these and County plans should be noted. Consistent, complementary land use and transportation policies across geographic or political boundaries will play a huge role in the success or failure of implementing the regional Themes, and creating a sustainable future for the region as a whole.

Regional Theme: Agriculture Preservation

Agriculture has played an enormous role in the culture, economy, and character of the Tri-County region since the earliest days of European settlement over 300 years ago. The first settlers to the region were subsidence farmers; they raised only enough crops and livestock for family use. With the development of the railroads in the 1850's, however, local farmers could market their products across the region. Thus began the commercial farming system we know today.

Agriculture is far and away the largest single land use in the region, particularly in Tazewell and Woodford Counties. Beyond the economic impact of farm activities and federal farm subsidies agriculture has other significant physical impacts on the region, influencing transportation infrastructure, roadway operations and safety, natural resource health (both locally and downstream), and lastly, public policy.

Today's Agriculture

The region has a rich and vibrant history with farming and the production of food. Farmland in much of the region is some of the most productive ground in the State of Illinois. The vast majority of land was used for the staple commodity crops of corn and soybeans. In addition, land was used for other crops such as wheat and sorghum, and for livestock such as cattle and pigs.

The same crops and agricultural products still dominate the region's agricultural industry. However, modern agriculture has changed, and continues to change rapidly. In general, agriculture has continued moving away from the historic vision of family farms, and toward a model built on increased mechanization and capital investment, dependence on chemicals and synthetic inputs, consolidation and corporate control over a seed stock of dwindling-diversity, and government subsidies.

Although these significant changes in the industry and practice of agriculture have had some negative consequences (see below), they have also had a large positive impact on the local and



The Big Plan

regional economy. When combined with the large impact of commodity subsidies from the federal government, the economic value of industrial agriculture in the region is huge. The industry supports and employs a large number of workers and their families, not just the direct farmers, but input and machinery sales, processors, traders, and logistics and transportation professionals.

In short, today's agriculture is far different from the agriculture of yesteryear. Trends in the changing world of agriculture hold significance for transportation, the environment, and land use in the region. The section below details some of these trends and their significance for the region.

Agriculture Trends

Two of the most obvious trends relate to farm size and the number of farms. According to figures from the U.S. Census of Agriculture, a number of significant trends can be seen between 1987 and 2007. The number of farms in the region dropped from 3387 to 2087, a loss of about 42%. Average farm size rose from 277 acres to 312 acres, an increase of nearly 13%.

Another trend is the impact of technology on the region. As crop science and technology improves, crop yields continue to rise. Additionally, equipment utilized for planting, harvesting, and transporting commodity crops and livestock gets ever larger. Combined, the impacts of larger harvests and large equipment are resulting in pressures on the transportation system. Rural township roads, largely built for light volumes of light weight vehicles and equipment, are seeing demand for use by heavier commercial vehicles such as tractor-trailers, and ever wider and heavier agricultural equipment. This creates issues at times with the weight of vehicles causing damage to roads not designed to carry such loads, and also safety issues from the interactions of lightweight passenger vehicles and wide, slow-moving agricultural equipment.

In addition, the larger economies-of-scale necessary to pay for this high-value equipment has brought the vast majority of landowners to fence-row-to-fence-row farming. In essence, where fields used to be divided by a fence-row, often bordered by strip of grass on either side, farmers have removed the fence-rows and now use that area for crop production. This has increased the amount of tillable land in the region, but has also had devastating impacts on soil conservation and erosion-prevention efforts, and has negatively impacted habitat for wildlife such as pheasant. This loss of habitat has been partially offset by the implementation of conservation programs to financially encourage farmers to leave marginal ground in native habitat, but even the impact of conservation programs has been dwindling as recently-higher crop prices have encourage farmers to put that land back into production.

Despite the addition of these former fence-row areas to tilled agricultural land, total acres in production in the region from 1987 to 2007 decreased by about 7% from 941,129 to 876,872. Conservation programs have played a small role in this decrease, but the trend is largely a result of development of agricultural land for residential, commercial, and industrial uses. As municipalities have expanded to encourage growth, and counties permit single-family homes or subdivisions in unincorporated

areas, they largely target agricultural land for new development. The land is inexpensive relative to already-developed land or vacant land within the urban area, easy to develop because it is a blank slate, and a ready and willing host of developers have built a business model and a string of investments on developing these areas.

Current trends point to an increasing economic importance of agriculture, given the intense focus on the production of biofuels from commodity crops like soybeans and corn. As public policy continues to encourage and subsidize domestically-produced biofuels, the economic value of those crops and the cropland to grow them will likely continue to grow.

A last notable trend is the rising significance of specialty and organic agriculture, local food, and value-added agricultural business. While organic and specialty foods are still a small part of the total food economy, they represent larger percentage by value, and are growing in market share at a rapid pace. Similarly, more and more people are seeking locally-produced agricultural products in order to minimize environmental damage and promote feed security. Both the organic crops and local crops are often marketed through non-traditional means such as farmer's markets, farm stands, and pick-your-own operations. Value-added businesses take agricultural products as inputs and create new products, thereby creating products with higher value than the base input. Together, these markets represent a part of the future for agriculture, where agriculture offers increased additional economic, community, and cultural value for the region.

Given the importance of agriculture to the region, and the trends noted above, the Steering Committee identified a number of strategies aimed at preserving, strengthening, and improving agriculture in the region.

Agriculture Preservation Implementation Recommendations

- Right-to-Farm Ordinances The State of Illinois passed Right-to-Farm legislation in 1981 that protects existing agricultural uses from nuisance lawsuits filed by encroaching non-agricultural uses. Although local ordinances cannot supersede the State legislation, they can help strengthen and reinforce the State law. These types of ordinances make clear that agricultural areas are intended for agricultural uses, and new residents must live with those agricultural uses.
- Land Evaluation and Site Assessment (LESA) This tool, which helps practitioners assign a productivity score to land, can assist in land use planning and determining where new development should, or should not occur in order to preserve the most productive farm ground. The tool is flexible by locals, and complementary of land use planning and local agriculture preservation efforts.
- Purchase of Agricultural Conservation Easements (PACE) PACE is a tool used to permanently restrict the potential land uses on a given parcel of land, by transferring specific development rights from the landowner to an entity that wants to conserve a resource. For example, an organization could purchase development rights so that non-farm buildings cannot be built on the land, but the landowner could continue to farm. Details depend on how each individual PACE agreement is written. These are usually used in areas with development pressures, and may be used for a number of purposes

including safeguarding wetlands, conserving farmland, prohibiting types of development, and maintaining open space. Several other Counties in Illinois have active PACE programs.

- Conservation Programs A number of conservation programs target goals like erosion control, open space preservation, wildlife habitat, and wetland protection. Unlike PACE, these conservation programs focus on restoring or conserving an agricultural area's function as a natural ecological area, not the land's agricultural function. The region should support and promote these programs, and encourage individual landowners to participate.
- Value-Added Agriculture Value-added agriculture capitalizes on the region's agricultural assets, and allows the region to capture additional economic impact by making other products out of the crops grown here. It helps capture downstream economic value and creates local jobs. The region should support and encourage value-added agricultural enterprises.
- Stormwater Control Agriculture must be included in regional stormwater control efforts. Typically, agriculture has been excluded from stormwater planning, erosion control ordinances, and formal conversations about sedimentation of local waterways. However, agriculture is responsible for some of the sedimentation resulting from erosion of bare land. Honoring Our Water: A Regional Stormwater Plan for Peoria, Tazewell, and Woodford Counties of Illinois (2009) breaks ground in this regard, including agricultural impacts on stormwater and associated negative impacts of runoff. Any attempt to implement the Plan's goals will succeed or fail, in part, on the ability to reduce erosion from agricultural land through the use of nutrient management, filter strips, field borders, water and sediment control basins, grassed waterways, and no-till farming.
- Organic and Local Foods These represent small, but quickly growing segments of the food market. More and more consumers are turning towards local sources of food, often organic or chemical-free, and supporting these operations has become increasingly important. The removal of barriers and obstacles will be necessary, both for the production and sale of these agricultural products. Regulations, fees, and permits may be a small cost of business to large, multinational food corporations, but they represent a costly, prohibitive disincentive to small growers, often enough to prevent individuals from entering or surviving in the market. Support for the typical marketing and distribution channels like farmer's markets will also help to support local food production.

Regional Theme: Balanced Growth

Like *smart growth* and *quality growth*, *balanced growth* is a term that strikes a positive chord yet has different meanings depending on individual perspectives. Therefore, it is important to define balanced growth as it pertains to this plan so that it is clear what this plan describes for the future of the region.

Balanced growth describes land development in the Tri-County region that is proportional with population growth, meets economic demand, makes wise use of land resources, supports an efficient transportation system, preserves environmental assets, and makes fiscal sense for local governments. Land development that meets these objectives will promote the future vitality of the region by reflecting a coordinated approach between land use planning, transportation planning, and environmental planning.

Today's Land Development

Just as agriculture has changed over time, so have land development patterns. In the early twentieth century, developed areas in the United States were more compact. Downtown areas served as both the business and retail hubs of communities, residential development occurred in dense subdivisions with several lots per acre, and transit services in the form of trolleys and streetcars were widely used.

After World War II, for a variety of reasons including economic prosperity, the prevalence of the automobile, and changes in the housing market, more and more land located farther away from the downtown core was developed. Shopping malls and strip retail centers anchored by big-box stores in outlying areas replaced downtown cores as the primary retail areas, and single family homes were built on larger lots. These national development trends continue today across the country and within the Tri-County region.

While these development patterns have impacts for the regional transportation system and the natural environment, there are indications that they also affect the fiscal health of local governments. Some research suggests land development occurring at the urban fringe can be a drain on the budgets of local units of government. Understanding the trends behind these development patterns and the impacts of these trends is necessary to understand the implementation strategies identified by the Steering Committee to achieve balanced growth.

Development Trends

As discussed above, the two dominant development trends involve location and density. Growth in this region, like most areas of the country, has seen nearly all growth on the fringe of the urban area. Population data for the region provides some evidence of this trend. Since 1970, the population of the City of Peoria has decreased while the populations of Tazewell and Woodford Counties have increased. In addition, as discussed in the Regional Trends section, a special census conducted by Germantown Hills that covered the entire village revealed the population has increased nearly threefold between 1990 and 2007.

Development in the region has also been characterized by decreasing density, or more specifically, land consumption disproportional to population growth. To build on the discussion of this trend presented in the Regional Trends section, the combined population density of the four largest municipalities in Peoria County (Peoria, Peoria Heights, Chillicothe, and Bartonville) decreased from 6,481 persons per square mile in 1950 to 2,092 persons per square mile in 2000, and this figure has decreased every decade since 1980.³

The trend on the East side of the region is similar: communities such as East Peoria, Pekin, and Washington are expanding geographically at a much faster pace than they are adding population. Morton is alone among the large Tazewell County communities in bucking this trend; between 1990 and 2000 the population grew at a rate larger than the Village expanded geographically. The table below shows the population and geographic expansion data for the largest communities in the region, for 1990 to 2000, the only period for which complete data could be found.

	Land Area (sq. mi.)			Populati	on	Population Density		
	1990	2000	% Increase	1990	2000	% Increase	1990	2000
Peoria City	40.9	44.4	9%	113,504	112,936	-1%	2775	2543
Pekin	10.9	13.15	21%	32,254	33,587	4%	2959	2575
East Peoria	17.1	18.81	10%	21,378	22,638	6%	1250	1203
Morton	12	12.18	1%	13,799	15,198	10%	1150	1248
Washington	6.4	7.48	17%	10,099	10,841	7%	1578	1450

Continuation of these prevailing location and density trends is concerning for farmland preservation and protection of environmental assets. Because the areas that surround communities are typically agricultural, development that occurs at the fringe of urban areas will consume farmland, and farmland will be lost at faster rates if population density continues to decrease. In the same vein, environmental assets such as forests and wetlands located in outlying areas also could be put at risk if these prevailing trends continue.

A third trend of land development in the region relates to land use. Growth has primarily been residential, with the commercial component comprised of big-box retail stores and strip commercial development. While residential development has occurred throughout the region, commercial growth has largely been clustered in areas such as the north and northwest City of Peoria, north and east Morton, north and west Washington, and east Pekin.

³ Peoria County Comprehensive Land Use Plan, Peoria County, 2009, p. 27.
The map to the right shows the location of the five most significant areas of current commercial land development. The only significant area of commercial land use development to occur within an existing developed area is in downtown East Peoria, where the City is undertaking an ambitious plan to create a new downtown (Downtown 2010) for the community in an area once dominated by Caterpillar Inc. Growth in this area has been ongoing for the past decade with a number of chain restaurants and big-box retail stores; recent growth includes a new hotel complex. Downtown 2010 development plans call for the redevelopment of an 86-acre industrial complex with 500,000 square feet of retail space and 300,000 square feet of office space. When complete, this may be the most significant urban core redevelopment project in the region's history.

Despite East Peoria's planned urban redevelopment, the prevailing trends in location and density of land development are for greenfield expansion; these trends have implications on the fiscal health of local units of government. Some municipalities located throughout the country have attempted to quantify the costs and benefits of new development occurring at the urban fringe. These cost of community services studies (COCS) identify the costs of providing services such as police protection and waste disposal for new development and weigh these costs against the revenue generated by the development. Similar analyses have been completed in the Tri-County region in an attempt to quantify the benefits of new development.

A service delivery study, a type of COCS, was completed for Peoria County as part of its recent Comprehensive Land Use Plan. The study determined the costs and revenues associated with development based on a projected land use pattern for the year 2050. Unlike a traditional COCS, which analyzes the costs and revenue associated with new development at the current time, the Peoria County study analyzed the costs and revenue associated with new development into the future. The study identified two general trends: 1) Local governments and school districts with shrinking population will have the greatest fiscal strain; and 2) Fast growing communities will also face significant fiscal strain. While the former trend is not surprising, the latter trend seems counter-intuitive. The study forecasted that future population growth will be much greater



relative to employment growth, so the residential tax base will bear a significant share of the cost of providing services for new development. Expanding the non-residential tax base by attracting more commercial and industrial development will result in a more promising fiscal outlook.

In addition, the City of Peoria attempted to quantify the costs and revenues associated with new development in its designated growth cells (growth cells are part of the city's growth management strategy in which infrastructure improvements such as sanitary sewer are concentrated into a specific geographic area.) The City's study identified the cumulative capital investment, estimated cumulative operating costs, and estimated cumulative revenue from property and sales taxes, permit and sewer connection fees, and payments from the federal government based on population growth. The study estimated that revenues will cover costs in 2015, twenty years after the first growth cell was created. The study was never formally adopted by the Peoria City Council, and an important caveat is that general estimates were used instead of detailed analysis of the type employed by Peoria County. Nevertheless, the study exemplified a wise strategy: attempting to quantify the costs and benefits of growth to ensure growth pays for itself and contributes to a community's fiscal health.

Another significant land development trend is the reliance on the automobile. In general, land uses are separated and development density is low in the region. While this development pattern is common state- and nation-wide, it has significant implications for the region:

- 2. **Regional traffic congestion**. As noted in the Regional Trends section, the region is largely unaffected by congestion, and the capacity-building roadway projects proposed in the LRTP likely will preserve the overall efficiency of the roadway network. While overall congestion is projected to remain low, the construction of capacity-building projects at the urban fringe will encourage outward expansion by opening new areas for development while keeping travel times low. Outward development will consume agricultural land and could threaten significant environmental areas, and an increase in the number of automobile trips made to outlying areas can negatively impact air quality.
- 3. **Strained local government budgets**. Cities in the region have difficulty maintaining existing roadways due to a lack of funding. The construction of additional roads will only increase the number of miles of roads local governments must maintain. Certainly, the automobile will continue to be the primary mode of transportation in the region, and revenues from new development could offset the costs of constructing and maintaining the road network, but efforts to increase the number of trips made via mass transit and non-motorized modes of transportation will benefit the region.

Another trend in regional land development is the siting of residential subdivisions near steep forested slopes. As discussed in the following Environmental Stewardship section, much residential development has occurred in and near the forested bluffs throughout the region. The resulting increase in impervious surface and concentration of stormwater runoff over erodible soils has contributed to bluff erosion, and this erosion has led to sedimentation of local rivers and streams, as well as property damage where unstable terrain has compromised retaining walls and decks on residential properties.

The map to the right shows the location of these building starts with respect to steeply-sloped land (slopes greater than 25%). According to the Peoria-Pekin Future Landscape Project, a significant proportion of residential development between 1996 and 2000 occurred near moderate and steep slopes. Overall, 83% of all homes built during this time were located within 700 feet of slopes of 7 to 14%, 50% of all homes were within 700 feet of slopes of 15 to 23%, and 31% of all homes were within 700 feet of slopes of more than 23%. In the unincorporated area, 33% of all units were built within 200 feet of slopes of 15 to



23%. More recent data was unavailable, but given the location of much of the development in growth areas around the region, it can be reasonably assumed these trends have continued over the past ten years.

Balanced Growth Implementation Recommendations

- Strengthen Older Neighborhoods The Peoria-Pekin region, spurred by an initiative in the City of Peoria known as a School-Neighborhood Improvement Zone, has renewed focus on strengthening older neighborhoods in and near the urban core. Many of these neighborhoods are in transition, and the intention is that by targeting municipal and county resources in these areas, the region may be able to keep middle-income households from moving to the urban fringe or even bringing back households that have already moved to outlying areas. Evaluating, strengthening, and expanding this approach will be critical to balanced growth in the region.
- Mixed-Use Development Mixed-use development describes a development pattern in which different uses, such as office space and residential apartments, are located within the same building or in close proximity to each other. Conventional zoning ordinances separate different land uses such as office uses and residential uses, and while mixed-use development is not completely forbidden, it can be more difficult to establish. Making mixed-use development easier to establish can provide benefits such as enabling non-motorized transportation, achieving compact growth that can lead to preservation of farmland and environmental assets, and reducing the area over which local governments must provide services. The City of Peoria recently revised its zoning ordinance to promote mixed-use development.
- Flexibility in Residential Development Conventional zoning regulations that address residential land use are tailored to the nuclear family. However, only one-third of all households conform to this demographic. The revision of residential housing standards to reflect demographic realities will allow for greater housing choice, and this can help make communities more attractive to prospective residents.
- Fiscal Impacts of Growth As Peoria County's service delivery study and other studies throughout the country have suggested, not all growth pays for itself. The costs of providing services to new development can outweigh the revenue generated by that development. The completion of studies to determine the costs and revenues associated with new development will enable local governments in the region to determine the fiscal impacts of growth. This information can be used to develop specific growth strategies, such as the need to expand the non-residential tax base and attract commercial and industrial development.
- Conservation Subdivisions An emerging residential development type in the United States, conservation subdivisions allow for residential growth while preserving open space. This open space, often a significant natural area such as a forest or wetland, can help manage stormwater runoff while enhancing property values. Trails that provide access to open space are another hallmark of this development type. By employing smaller lot sizes, a conservation subdivision can accommodate the same overall density as a conventional residential subdivision while adding quality of life benefits.
- Low Impact Development (LID) LID is a flexible approach to development that improves surface water quality by increasing the quality and reducing the quantity of stormwater runoff. In LID, small site-scale practices such as vegetated swales and infiltration areas are used to absorb stormwater runoff and filter pollutants. The resulting runoff cleaner, and less than that which otherwise would be generated can be discharged to a stream, where it positively impacts water quality. The flexibility of LID enables it to be employed for residential, commercial, industrial, and other development types.

- Regional Revenue Sharing One of the reasons elected officials tend to have a "growth at all costs" mentality, and approve virtually all development proposals, is their fear of losing a specific development, and its potential tax revenue, to a neighboring community. Much lip service is paid to the regional cooperating internally and competing externally, but this is often not the case. Regional Revenue sharing would help ensure that communities can grow and develop in ways that preserve agricultural and environmental assets, minimize wasteful public infrastructure spending, and promote sustainable economic growth. Models of revenue sharing have been implemented elsewhere in the country, and should be explored in earnest in this region. With this type of model, balanced growth is much more possible, while wasteful sprawl will be much less likely to occur.
- Livability/Sustainability The region should take a harder look at defining what makes an area livable and/or sustainable, and target resources at improving how well neighborhoods and communities fare with respect to these attributes. This will simultaneously help improve the livability of struggling, older neighborhoods near the urban core, and improve the sustainability of newer, urban fringe neighborhoods that are often not developed in a sustainable fashion. Creation of a Livability Index, a GIS-based tool that analyzes neighborhoods based on their specific attributes, is a strongly recommended first step towards a regional focus on livability/sustainability.

Regional Theme: Economic Development

An integral part of any region is its economic prosperity. Economic Development encompasses activities that seek to attract new businesses or to enhance existing ones to make them stronger or larger for the overall improvement of the region as a place to live and work. Economic Development has a large impact on the land use and transportation systems of a region. It also impacts the ecological footprint of an area, from the use of natural resources to the elimination of waste.

Land use and transportation systems are inextricably tied to the regional economy. The rate of land development and the types of uses that are developed are greatly influenced by the prevailing economic conditions. Knowledge of an area's key economic sectors and their projected rate of growth can help local government estimate future growth.

There are two parts to the economy of a region. The first focuses on the economic base of the region. The economic base is that part of the local economy that brings in dollars from outside the region in the form of wages. The second part of the economy is the recycling of those dollars throughout the region for everyday goods and services. It has been estimated that each base industry job creates four to five non-base industry opportunities.

Base Industries. Historically, the base industries in the Tri-County Region have been agriculture and heavy equipment manufacturing. The region has some of the best prime agricultural land in the nation; the main crops are corn and soybeans. The City of Peoria is home to the world headquarters of Caterpillar, Inc., which also has research and manufacturing facilities throughout the region. Numerous other heavy equipment manufacturers are also located in the region.

Non-Base Industries. Non-base industries are those that cycle dollars from base industries throughout the local economy. For the most part, these are commercial, retail, and service businesses. In any economy, there is a direct correlation between the strength of the base industries and the corresponding strength of the retail, commercial, and service sectors.

Economic Development Trends

Employment in base industries is a critical driver of any economy. In the tri-county region, employment in the agriculture sector of the economy has remained relatively steady over the past forty to fifty years. However, employment in the manufacturing sector has changed significantly. The chart on the following page shows that the number of manufacturing jobs has decreased while overall number of jobs in the region has increased. This trend is expected to continue in the foreseeable future.

THE ECONOMIC CYCLE

An example of an economic base industry is manufacturing. A heavy equipment manufacturer hires local residents to work in its factory. The products they make are sold outside of the region. Wages are paid to the employees from the revenue the company receives when it sells its products.

The employees take their wages and buy everyday good goods and services. They purchase retail products such as groceries and gasoline, and services such as banking and auto repair.

Both parts of the economy are necessary to the region. It has been estimated that every dollar of base industry wages leads to four or five dollars of additional spending in the local economy.



The region's shift away from a manufacturing economy can been seen most notably in East Peoria. In 1985, Caterpillar, Inc. shut down an eighty acre industrial facility that manufactured and assembled earth-moving equipment. At its height, the facility employed 20,000 persons. Beginning in the late 1990's, over two million square feet of factories and offices were demolished. The City of East Peoria now has plans for a mixed-use, high tech development on the site. Known as Downtown 2010, the development will include a civic plaza that will consist of a new library and City Hall as well as a public park. Additionally, the site will include space for mixed-use live/work units that will combine commercial uses on the main floors with residential on second and possibly third floors. The latter component will follow new urbanism design principles which include the mixed-uses, and no front or side yard setbacks.

This plan does not aim to develop an economic development strategy for the region. That work is being done by other groups, most notably the Economic Development Council of Central Illinois (EDC). The EDC has targeted ten industry clusters for future growth in the region. They

are: technology commercialization, intermodal logistics, healthcare services, agri-business and agri-science, visitor-based economy, retail, specialized manufacturing, professional and technical services, and global trade.

Rather, this plan aims to determine how to integrate changes in the regional economy with the regional land use, transportation, and ecological systems. Each of these will be discussed in turn.

Land use. Historically, the region's industries were located along the Illinois River. Highway and rail lines also followed the river. While there are still industries that are located along the river, such as ethanol production, the new industry clusters can be located throughout the region. As a result, there has been a trend, which is not unique to the tri-county area, to locate new businesses on greenfield sites. This has had two consequences. First, there is vacant land and buildings in the older previously industrialized areas of the city, and secondly, the population is moving out to greenfield sites, contributing to urban sprawl.

Freight Transportation. Freight transportation for base industries is concerned with movement of goods into and out of the region. The tri-county region is blessed with multiple modes of freight transportation –highway, rail, air and barge. Each of these has a role to play in the economic life of the region. A discussion of these forms of transportation can be found beginning on Page 16 of this document. As the region moves from a manufacturing to a service economy, transportation will play a different role. Freight transportation that brings raw materials and finished goods into and out of the region will diminish, while freight transportation that brings consumer goods into the region will remain steady.

Environment. Central Illinois has some of the most environmentally-significant, beautiful, natural and environmental resources in the State of Illinois. There is a small but growing sector of the economy based on eco-tourism, which educates the public about the stewardship of the natural environment. Central Illinois also has some of the most fertile farmland in the nation. It is important that this land be protected even as it is used to provide and economic benefit through farming.

Economic Development Recommendations

- Promote Contiguous Growth New commercial and industrial development clusters should be located adjacent to existing development and also be located on public water and sewer systems.
- In-fill development Encourage both business and residential uses in the older neighborhoods. An excellent example is the nine-story former warehouse building near downtown Peoria, known as 410 Water, which has been converted to offices and loft apartments.
- Multi-Modal transportation The region is well-served by both water and rail transportation infrastructure. Business growth that takes advantage of these more efficient forms of freight transportation should be encouraged.
- Coordinate utilities with the transportation system When constructing new roadways or adding capacity to existing roadways, include utility banks (empty conduit) for future technology needs, such as fiber optic cable.
- **Eco-tourism** Eco-tourism, travel to natural destinations in order to improve environmental awareness, should be developed.
- Promote entrepreneurship A focus on growing our own businesses and opportunities is as critical as recruiting new businesses. Existing residents, agencies, businesses and educational facilities have knowledge and skills that can be supported to develop new small businesses. An entrepreneurial region is also an integral component of a highly livable community.
- Green jobs –Opportunities abound in green, sustainable, and energy-efficiency. These are a key component of future economies and should be aggressively targeted.
- Build the urban Core Residents of the urban core and older neighborhoods have the potential for significant, relevant, profitable, culturally-driven business opportunities, particularly entrepreneurial enterprises. Programs to develop this potential should be undertaken, in order to strengthen economic competitiveness and help reduce urban poverty. Strengthening human capital will be critical to success, including partnerships with agencies such as the ELITE program with the Peoria Park District.
- Rural Communities Rural communities are challenged to support basic services by a lack of corresponding revenue. Program and opportunities to assist with their economic growth should be implemented.
- Healthcare Healthcare and supportive research is a primary regional economic strength. Programs that capitalize on this strength will be important.
- Agriculture Agriculture has been a foundation of this region's economy. Renewable energy is a growing economy related to agriculture, and should be supported to develop related growth opportunities.

Regional Theme: Environmental Stewardship

The Peoria region is blessed with some of the most environmentally-significant, beautiful, natural and environmental resources in the State of Illinois. Picturesque, wooded bluffs lead to rolling rivers and streams, including the Illinois, Spoon, and Mackinaw Rivers. Native oak-hickory forests house significant species such as the bobcat and woodland thrush. Prairie and grasslands hark to the land our European settlers found upon their arrival. These are but a few of the many examples of natural resources the region has in its own backyard.

Today's Environment

The region has not only a significant *quality* of natural resources, but also a significant *quantity*. Of the total land area in the Metropolitan Statistical Area (MSA), approximately 20% is open space, including forest, prairie, wetland, and open water habitats. That is an impressive amount of natural features in a state where only 0.03% of native prairie, the once dominant natural feature of Illinois, remains today.

The sheer magnitude of remaining natural areas in the region is largely attributable to the extensive stream systems and steep slopes on the Illinois River Bluffs; areas that are difficult to convert to row-crop agriculture or urban development. However, most of these areas are threatened today by one or more damaging trends. The sections below discuss the trends impacting the region's water, land, and air quality.

Environmental Trends

Water

Surface Water is one of the most important ecosystems in the region, playing an integral role in shaping and supporting most all other sub-ecosystems. Most prominent of the surface water system is the Illinois River, one of the great floodplain river systems in the entire country. In addition, water bodies like the Mackinaw River, Kickapoo Creek, Senachwine Creek, and the Spoon River help define the vision and health of surface water in the region.

Although these notable bodies of water were present in historical times, the total amount of surface water mileage is much greater than pre-European settlement conditions, due to today's vastly higher levels of stormwater runoff. Prior to agriculture and urban development of the landscape, most stormwater was absorbed by dense, fibrous root systems from native vegetation. These root systems from prairie, woodland, and wetland vegetation reached a depth of 20 feet below the ground; most of the plants' "bodies" were, in fact the root system. Today, the vast majority of native vegetation has been replaced by other forms of vegetation, or in the case of buildings, roads and parking lots, no vegetation at all. In stark contrast to the extensive root systems of native vegetation, the roots of sod grass in a typical residential acre only reach approximately 3 inches deep. Whereas native vegetation systems have virtually no runoff in even large rain events, these shallow root systems only absorb as much water as concrete after ¼" of rain. As a result, stormwater no longer soaks into the ground where it lands; rather it flows away as surface water.

The Big Plan

This dramatic change in the region's landscape has had direct negative impacts on the quality of the surface water systems. Increasing water volumes and velocities (a result of development, stream channelization, and levees) has contributed to massive erosion in the stream channel. The process of stream channel erosion reduces usable land for the property owner, disconnects the stream from the floodplain (eliminating wetlands), and contributes thousands of tons of sediment to local waterways and the Illinois River and Peoria Lakes. Channel erosion alone has been named as one of the greatest sources of

waterways and the Illinois River and Peoria Lakes. Channel erosion alone has been named as one of the greatest sources of sediment to the Peoria Lakes from local tributaries.

Erosion and subsequent sedimentation, especially the Illinois River, creates a costly drag on the economy as businesses, individuals, and government must pay increasing sums to not only try to manage stormwater runoff, but to dredge the silt and sediment that inevitably makes its way into the River and impairs recreational and commercial activities.

Soil erosion, especially in residential and commercial developments near streams and bluffs, poses a serious threat to public safety. As the base of a bluff or stream bank erodes away, it creates risk of the slope failing, or landslides. In this region a number of slope failures have directly damaged residential or commercial structures, sometimes resulting in personal injury or death.

Sediment is not the only threat to the region's waterways, however. A number of waterways in the region are also contaminated by biological substances such as bacteria. To a certain extent, like sediment, these bacteria are present naturally. However, stormwater runoff from developed areas and animal feedlots is a much larger contributor of these pollutants to the region's waterways. The map on the following page shows the Impaired Water Bodies in the region, according to Illinois Environmental Protection Agency's 2006 Integrated Water Quality report. Many of the streams in the region were not studied, so there may be additional impaired waters within the region beyond those seen in the map on the following page.

Another way to look at the quality of the region's waterways is through the Stream Integrity Ratings produced by Illinois Department of Natural Resources (IDNR). IDNR classifies the health of a number of waterways based on the health of plant and animal species populations found within the waterways. The map on the next page shows the ratings for specific water bodies in the region. As with IEPA's Integrated Water Quality report, not all bodies of water were studied in IDNR's report. Interestingly, the same water body may show up in both of these maps; the Impaired Water Quality report considered a body in its entirety, while the Stream Integrity Ratings report evaluated different parts of water bodies independently. A good example is the Mackinaw River; near the border of Woodford and Tazewell Counties the Mackinaw has a high Stream Integrity Rating and is listed as a Biologically Significant Stream, but pollution in downstream sections of the River within Tazewell County simultaneously causes the waterway to be listed as an Impaired Water by the IEPA report.



Streambank erosion along Kickapoo Creek. Erosion of the stream channel disconnects the stream from floodplains and wetlands and contributes sediment to the stream.





| Page

Wetlands. The overall biological health of the region's wetlands is unknown and no direct studies have taken place to date. Yet empirical and anecdotal evidence is relatively consistent that the health and function of the region's wetlands is being impaired through direct disturbances and through the harmful effects of surface water runoff. It is a certainty that the region must not only protect remaining wetlands but seek to improve and restore additional wetlands in appropriate areas as possible.

Land

Forests. The region's forests have undergone dramatic changes since European settlement. According to vegetation studies conducted in the year 1820, the Illinois River Bluffs once consisted of open woodland/savanna habitat with an average tree density of **32 trees/hectare**. Dominant trees were white oak, black oak, and hickory species. The bluffs were blanketed with grasses, shrubs, and flowering herbaceous plants that thrived in the open sun conditions.

Today, tree densities can range from **280 – 470 trees/hectare**, an amount much greater than that of the 1800's. Sugar maple trees and other invasive trees and shrubs now over populate the forest and dominate these slopes, replacing the oaks and hickories. This transition from open woodland/savanna habitat to dense-canopy forests has impacted the forest floor. Deep-rooted grasses and flowering plants that once blanketed the forest floor are not able to grow in the dark forests of today. This soil is vulnerable, bare, and susceptible to erosion. Today, soils that have harbored life in the bluffs near Mossville in Peoria County for over 10,000 years are washed away in a single spring rain.

This dramatic change over the last 200 years is a direct result of two trends: fire suppression and development. Fire is a necessary disturbance for the health and continued rejuvenation of the open woodland and savanna along the bluffs, but since European settlement, this invaluable ecological tool has been all but eradicated. Fire once played an integral role in maintaining the vegetation on the bluffs. Wildfires cleared the landscape in drought conditions and Native Americans burned the forest to maintain a vital food crop and open the lands for hunting. Without significant wildfires over the last two centuries, the bluffs ecosystem has responded with an explosion in tree and shrub populations that were once controlled and held to healthy numbers.

In addition to the challenges faced with ecological changes, much of the new residential development in the region over the past decades has taken place in and along the bluffs. This is true of the Germantown Hills area of Woodford County, and also true of Peoria County, in the Mossville Bluffs area in the northern reaches of the City of Peoria. In fact, more than 10,000 acres of forested bluffs have been developed in Peoria County alone since 1960. Residents seek to build homes here due to the undeniably beautiful scenery and close proximity to the transportation systems and services that continue to expand further north from the City of Peoria. Similar development patterns exist in both Tazewell and Woodford Counties, especially in the Ten Mile Creek, Farm Creek and Partridge Creek Watersheds.

The homes and streets nestled along the tops of these bluff areas have certainly helped maintain residential populations, but they have also increased impervious surfaces such as roofs, driveways and streets. Impervious surfaces directly contribute to stormwater runoff, erosion of personal and public property, increased flooding, and pollution and sedimentation of surface water systems. Impervious surface coverage of 10% of a watershed is generally seen as a threshold where water quality is

significantly degraded. Any watershed with 10% or greater impervious surface coverage should be considered threatened, if it isn't already in a state of poor health. These highly threatened watersheds are shown in the map to the right.

In addition to private sector development and associated impervious surfaces, development in these areas has also resulted in stormwater infrastructure that collects, concentrates, and discharges runoff into the ravines, rather than being infiltrated where it falls in small, manageable volumes. Concentrated stormwater runoff from developed land is a powerfully destructive force, and is exponentially accelerating the rate of erosion in the highly-erodible soils of the region's ravines and bluffs.

Soils. Water erosion is the single greatest challenge to the region's soil resources. Best management practices can help minimize erosion. Farmers can reduce or eliminate tillage, implement other conservation practices like terraces to reduce the length of slopes, or construct waterways to provide a safe conveyance for overland concentrated runoff flows. Additionally, rough ground that is not suited for row crop production can be planted to native or introduced grasses.

Homeowners and individual property owners can also help reduce erosion and soil loss. Best management practices easy for homeowners to employ include: replacing turf grass with native plants and wildflowers, use of rain barrels to collect (and reuse on gardens) stormwater runoff from roofs, use of rain gardens to soak up stormwater, and draining downspouts and sump pump outfalls onto the yard rather than directly into a ravine or the stormwater sewer system.

Air

The region's air is clean and healthy, as indicated by the region's current attainment of all federal Clean Air Act standards for the six criteria pollutants: ground-level ozone, particulate matter, carbon monoxide, sulfur oxides, nitrogen oxides, and lead.



However, trends with respect to air quality show a deteriorating situation. Standards for these pollutants have been tightening over the years; at the same time, generally rising amounts of these pollutants have been recorded over the past decade. As a result, the Peoria-Pekin region finds itself on the verge of being classified as a "non-attainment" area for one of the criteria pollutants: ground-level ozone. The graph below shows the tightening standard, as well as the region's generally upward-trending ozone levels over the past seven years. Important to note is the shaded area between 60 and 70 parts per billion (ppb.) This is the range for the new ground-level ozone standard, scheduled to be announced by the United States Environmental Protection Agency in August 2010. Ground-level ozone levels in the Peoria-Pekin area have typically been towards the high end, or above, this range; a new standard in this range may have significant impacts on clean air programs, requirements, and public health within the region.



In 2008, in response to the tightening standards, TCRPC and other regional organizations launched a voluntary program to encourage governments, businesses, and individuals to take actions that will reduce the emissions that form ozone. The program, known as Clean Air Action, encourages organizations and people to take simple steps to keep local air clean, such as carpooling, riding the bus or a bicycle, not mowing lawns on high-ozone days, not using oil-based stains or varnishes on high-ozone days, etc. In the graph on the previous page, a noticeable drop in ozone levels can be seen in 2008 and 2009; although these levels were largely the result of favorable weather patterns (primarily cooler temperatures), Clean Air Action is believed to have played a role as well.

Although it won't be known until later in 2010 how tight USEPA will set the new ozone standard, it is clear that the standards will continue to be tightened over time. Given that, the Peoria-Pekin region will need to become more proactive in order to keep the air clean, improve public health, and avoid potentially costly federal or state regulations.

Environmental Corridors

Much of the region's ecosystem assets are, or once were, part of contiguous environmentally-significant environmental corridors. Collectively these areas possess high scenic qualities and bring uniqueness to the region. In addition to serving as habitat for plants and animals, and as green infrastructure helping to clean the environment and protect public and private investments, these areas are visually attractive to residents, visitors, and tourists and thereby serve a valuable economic purpose.

The 2005 Peoria Area Environmental Corridor Study identified the most environmentally significant areas in Peoria County and the City of East Peoria, indicating reasons for this significance and developing measures for the future protection of these sites. A Local Legacy study completed later utilized the same methodology to identify similar sites in Tazewell and Woodford Counties. Collectively, the areas identified are referred to as Environmental Corridors, and represent areas of valuable wildlife habitat, significant aquatic or floodplain resources, mature oak-hickory growth or are erosion-prone sites. In addition, the corridors include areas of remnant woodlands, savannas,

Recent studies show that the most significant corridor, the Illinois River Bluffs, have been subject to intense development pressure. Since 1969 over 10,000 acres of forested land was lost along the Illinois River. A study completed by TCRPC in 2002 shows that 80% of new housing starts in Peoria County were built within 500 feet of forested bluff area between 1993 and 2000. Both of these trends have continued with the location of new development in the ten years since these studies. Development in these areas fractures the contiguous corridors, and reduces or eliminates the corridor's functionality.

prairies and native communities. The corridors can be

seen in the map to the right.



Environmental Stewardship Implementation Recommendations

- Stormwater Management –Stormwater is perhaps the single greatest threat to the health of the region's ecosystems. The damaging effects are not limited to ecosystems, however; residential and commercial properties, public and private infrastructure, and public health are all negatively impacted by stormwater runoff from poor urban development and agricultural practices. The 2009 Regional Stormwater Plan for Peoria, Tazewell, and Woodford Counties of Illinois contains six primary categories, and dozens of specific recommendations, on ways the region can reduce stormwater runoff and manage its damaging impacts. Included among the recommendations are:
 - 1. Create a Stormwater Utility. This could be a single regional utility, or a number of local utilities; either way, the utility would establish a secure line of funding to address stormwater and erosion problems.
 - 2. Incorporate green infrastructure into public and private infrastructure projects, particularly transportation infrastructure projects. Inclusion of green infrastructure like vegetated bioswales, pervious pavement, and wet retention basins as part of road projects not only helps reduce stormwater impacts, but is usually more cost effective once the maintenance and replacement costs are considered.
 - **3.** Retrofit existing urban landscapes for improved stormwater management. Priority for the region will lie in setting policy to prevent future development of ineffective stormwater practices to maintain water quality, but to *improve* water quality local units of government will need to retrofit existing stormwater infrastructure with greater infiltration and filtration capacities.
 - **4.** Education. In general, homeowners, developers, businesses, governments, and elected officials are ignorant of both their contributions to stormwater and the damaging impacts of that runoff. Educational efforts targeted at all these groups will be paramount for success in reducing runoff and the impacts of that runoff. Farmers should be included in these educational efforts.
 - **5.** Construct demonstration development sites that integrate stormwater best management practices. Seeing is believing. While there is a movement nationwide to incorporate stormwater best management practices into developments, stormwater treatment systems, narrow street widths, and stormwater infiltration are simply not standard practices in the Peoria area. Developers will be much more likely to embrace these practices if there is a proven demonstration site locally.
 - **6.** Improve current building permits, stormwater regulations, and environmental protection ordinances to prevent poor environmental practices. Examples of positive steps include: stream buffer ordinances, steep slope/ravine protection ordinances, and utilizing Green Infrastructure per Illinois EPA's recommendations for MS4 permits.
- Forest Management Decades of forest "protection" have left the region's forests in a compromised ecological position. The forested areas remaining today are largely overgrown, filled with invasive and/or non-native species, and generally unhealthy. As a result, the forests are more prone to erosion, disease, and fire. Forest management programs, including activities such as thinning, prescription burns, property owner education and incentives, and restoration plantings, will be necessary to bring the forests back a state of health.

- Environmental Corridors Protection Environmental Corridors must be protected, or in some cases restored. Using scarce public resources to try to control flooding, clean the air, and provide open space is generally a futile effort considering that natural landscapes will accomplish the same goals for free, if restored, protected, and allowed to function naturally. The Tiered approach to development approval, as outlined in the 2005 Environmental Corridor Study, will allow for continued development while protecting the vitality and functionality of these corridors. Incorporating the principles of this study into zoning and subdivision ordinances will help codify the protection of these areas.
- Conservation Subdivisions An emerging residential development type in the United States, conservation subdivisions allow for residential growth while preserving open space. This open space, often a significant natural area such as a forest or wetland, can help manage stormwater runoff while enhancing property values. Trails that provide access to open space are another hallmark of this development type. By employing smaller lot sizes, a conservation subdivision can accommodate the same overall density as a conventional residential subdivision while adding quality of life benefits.
- Transfer of Development Rights A Transfer of Development Rights (TDR) program is a tool used to protect critical ecological or conservation areas from new development by transferring the development rights to those properties to properties in an area of the region more appropriate for development. This has two significant benefits; private property interests have the ability to generate revenue that would otherwise have taken place on the now-conserved property, and development in the area receiving the development rights can generate additional revenues. A TDR program should be aggressively pursued in this region.
- Improve Air Quality In the Peoria-Pekin region, this largely pertains to ground-level ozone. In response to improved science that documents the public health impacts of ground-level ozone air pollution, as well as the prospect of coming federal and state regulations, the region will need to take action to improve air quality. TCRPC's Clean Air Action program outlines a number of actions that positively impact air quality, but in general, improving air quality is a function of reducing the timing and quantity of fossil fuel consumption. Several of the programs' suggested air quality strategies are listed below.
 - **1.** Develop and publicize a Clean Air scorecard. A scorecard will provide a detailed list of recommended policies and programs that units of government and businesses can adopt to improve the region's air quality. In addition, the scorecard will visually display which organizations are making progress on keeping the region's air clean and healthy.
 - 2. No-idle Policies. Idling vehicles, particularly fleet vehicles like police and public works departments, waste resources, sap government budgets, and contribute unnecessarily to air pollution. Adopting no-idle policies for units of governments makes sense on all counts.
 - **3.** Reduce mowing. Gasoline-powered lawn mowers and trimmers contribute significantly to air pollution. Reducing the use of these devices, will help air pollution. Turf-grass conversion programs (replacing turf grass with native plants and wildflowers) will also aid to reduce the total amount of mowing needed; this makes particular sense in medians, ditches, and embankments as part of the transportation system.
 - **4.** Implement a ridesharing program. Encouraging individuals in the region to carpool will help reduce congestion, and eliminate some of the pollutants formed by vehicle emissions.

Regional Theme: Transportation Infrastructure

Transportation infrastructure plays an enormous role in development decisions and land use patterns. Since the dawn of human settlement, as people converted from nomadic existences to establishing permanent communities and settlements, transportation has played a key role in decisions to locate homes and communities in certain places. The modes of transportation has changed through the millennia, from on foot to water to rail to roadway and back, but always the desire for adequate transportation infrastructure for commerce and personal movement has remained. The Peoria-Pekin region was originally settled in large part for the quality transportation access provided by the Illinois River. Subsequently, railroad transportation, combined with water and highway access, helped the region's manufacturing and population base flourish. The region is now faced with the issue of ensuring the kind of safe, efficient transportation access that *tomorrow's* residents and businesses will demand; developing a transportation system that adequately serves all users must be a priority for the region's future success.

Today's Transportation Infrastructure

As discussed in the Regional Trends section, transportation infrastructure in the region is largely in good health, and the transportation system in the region is serving the purposes for which it was built. In the Peoria-Pekin region, this primarily means vehicular traffic. Around 90% of individuals commuting to work drive by themselves in an automobile, and they are able to do so in less than 30 minutes, without much concern of congestion or safety. These factors demonstrate the general health of the transportation system in serving vehicular traffic. A recent complete reconstruction of Interstate 74 through the most urbanized part of the region added capacity and significantly improved a number of unsafe interchanges, upgrading the facility to modern standards and putting the region's most significant arterial into position to serve the region for decades to come. Recent federal and state transportation programs have poured funding into the transportation system, repairing or reconstructing most of the region's federal and state highways. Local road systems are largely in good condition, although some spots are still in need of repair.

As should be expected, the region's infrastructure systems generally reflect the policies of the past decades; however, in some cases this leaves the systems deficient when looking at the potential trends and preferences of coming decades. Additional modes of transportation are available in the region, including air, rail, barge, bus, and non-motorized transportation. The air, rail, and barge transportation systems are largely healthy and functional. The General Wayne A. Downing Peoria International Airport recently finished construction on a brand new passenger terminal, building a new facility to serve air travel in the region for many decades to come. The Airport also has a small air freight handling presence. The Illinois River offers a barge transportation route for a number of different commodities. The river is served by a somewhat antiquated lock-and-dam system that is in need of upgrades. The federal government has plans to expand and modernize the lock-and-dam system; once completed, these upgrades will allow the river to serve as a major freight transportation route for decades to come.

In the case of passenger rail and non-motorized transportation, the region's infrastructure is currently lacking. In fact, the region is not currently served by passenger rail service at all. The region does have some non-motorized transportation infrastructure, but as the map in the earlier Regional Trends section of this plan showed,

Looking forward, and considering the region's current transportation strengths and weaknesses, the region's infrastructure systems need to be transformed in order to address shortcomings, and/or serve projected needs in the coming decades.

Transportation Infrastructure Trends

There is a growing recognition that the transportation system subsidized and built by federal and state policies, incentives, and direct-funding over the past century is not sufficient to be the sole transportation system for the next century of the United States' history. The benefits of the automobile-centric highway system cannot be discounted, in terms of efficiency, mobility, and freedoms, and the simple fact of the enormous public and private investment in this system ensures it will remain the primary mode of transportation for most users into the foreseeable future. Still, many active observers of transportation in the country recognize that the transportation system of the future needs to be more inclusive of other modes of transportation for reasons of efficiency, safety, security, and environmental sustainability.

The Peoria-Pekin region is beginning to address this need. While the vast majority of available funding still goes to traditionally-constructed highway-only transportation projects, steps are being taken to increase the likelihood that future transportation in the region better encompasses other transportation alternatives and makes better use of non-traditional infrastructure to solve problems. This is particularly true of the region's Metropolitan Planning Organization, the Peoria-Pekin Urbanized Area Transportation Study (PPUATS), and several local units of government.

Over the past three years, PPUATS has taken several policy-level actions, and two significant funding actions, that demonstrate the organization's recognition of the need to start planning and building the transportation system the region will need in the coming decades.

In early 2010, PPUATS completed a five-year update of the region's Long Range Transportation Plan (LRTP). This update was timed intentionally to take place simultaneously with The Big Plan, utilize the same public participation process, and incorporate many of the recommendations and data this plan generated. The results were tremendous, and marked a significant moment of improvement in transportation planning in the Peoria-Pekin region.

As part of the joint public participation process, a Transportation Symposium was held in November 2009. Hundreds of organizations and individuals involved with transportation in the region were invited, including public and private organizations. Largely, these were "the usual suspects" involved in transportation decisions for many years. However, also invited to the Symposium were environmental groups, community activists, neighborhood groups, and land use planners. The invitation of these groups, usually not directly invited to participate in transportation planning processes, was critical to what PPUATS was attempting to do: explore all aspects of transportation, and ensure that the goals and projects included in the plan reflect the overall goals of the community and different interest groups.

The cornerstone of the Symposium was a "voting" system, in part digital, and in part manual. The digital portion selected eleven of the most regionally-significant proposed transportation infrastructure projects in the region; these were put before the entire audience, and attendees were asked to vote on how well they felt each project supported the Themes of this plan (Balanced Growth, Economic Development, Environmental Stewardship, and Transportation Infrastructure). This voting system allowed for confidentiality, as well as a fun interactive alternative to gather public input. The method was extremely engaging. The objective to the voting was to receive public input on how the audience felt the selected projects identified with the goals of the transportation plan. The remaining projects were voted on manually, with attendees affixing color-coded stickers to wall-mounted posters of each project, indicating which projects they felt best supported the goals.

Cumulative results for the voting are included in the 2010-2035 LRTP, available from TCRPC, but in summary, the results were telling. Participants generally felt that the regionally-significant projects supported the Public Infrastructure (transportation) and Economic Development goals well, but the results were much more mixed on whether attendees felt the projects supported the Balanced Growth or Green Infrastructure goals. This could be interpreted as a result of many of these highway projects being situated on the urban fringe, often times in or near environmental corridors, and almost exclusively without incorporating modes of transportation besides automobiles.

The new 2010-2035 LRTP incorporates the goals identified by this planning process: Public Infrastructure, Balanced Growth, Economic Development, and Green Infrastructure, and makes specific recommendations for transportation system improvements that will help develop the region's transportation system in a manner consistent with the goals. In past LRTP's, the focus was almost exclusively on transportation alone, and the documents were essentially "wish-lists" of individual projects being pushed by individual jurisdictions. In this most recent LRTP, specific transportation projects were analyzed for how well they support the goals, with that analysis included in the document. By doing so, this LRTP attempts to encourage jurisdictions submitting projects for federal funding to demonstrate how those projects support the goals of the Big Plan and the LRTP.

A second major policy success achieved in recent years is the adoption and implementation of a quantitative criteria for ranking projects submitted for Surface Transportation Program – Urban (STU) funding. STU is a category of federal funding passed down to urban regions like Peoria-Pekin, and the regional MPO has authority to program how those funds are spent. In past years in the Peoria-Pekin region, STU funds were generally awarded based on politics, rather than any significant analysis of how beneficial a specific project was, or whether it supported regional goals in place at the time. However, in 2007 PPUATS, at the encouragement of the Federal Highway Administration, adopted a quantitative criteria system to rank projects submitted for STU funding.

While not binding, the new STU criteria do provide a more objective basis to rank the relative merits of each project. More importantly, the criteria recognize formally the importance of moving beyond an automobile-exclusive transportation system, and award 15% of the total points based on "Non-motorized" criteria aimed at bus, bicycle, and pedestrian transportation infrastructure. This may be the first time such a criterion has been implemented within the State of Illinois for a traditionally

highway-oriented source of funding. Even more surprising is that in the first funding round after adoption of these criteria, a completely non-motorized project was selected for funding: a Village of Peoria Heights trailhead adjacent to a proposed trail facility through the heart of the urbanized area.

Although the STU criteria were adopted prior to this plan, they do indicate the general air of change in the region regarding what the transportation system is, and what it should be, and whom it should serve. Furthermore, the goals and objectives of this plan offer an excellent opportunity to compare against the point allocation structure in the STU criteria, and make appropriate changes to the criteria to reflect the prevailing desire of the public and the community as a whole towards what goals the region wishes its significant investments in the transportation system to serve. Furthermore, the region's general willingness to make progress on transportation priorities and what the region's transportation system should be, as indicated by PPUATS' recent policy changes, indicate an acceptance that the transportation system is not an end in and of itself. Rather, investments in transportation infrastructure are meant to help fulfill larger community and regional goals. This plan, coupled with the LRTP update and the STU criteria, are at the forefront of interpreting and documenting the region's complete transportation priorities.

With that framework in mind, the remainder of this chapter details the trends, goals, and objectives identified during the joint planning process for transportation in the region. The chapter also discusses several examples that demonstrate the region's growing awareness of the need for improved transportation infrastructure and a more complete transportation system.

System Efficiency/Congestion

Two independent projections of future congestion levels have been completed for the region's transportation system. The first projection, completed as part of the 2005 Heart of Illinois Regional Port District Study, a twenty-year growth rate for highway freight transportation – 32





percent⁴ – was applied to identify the highways that could be operating at a subpar level of service in 2020, assuming no capacity changes in the system. These highways are shown in the map on the previous page. A note of caution should used when analyzing the study results; the study relied heavily on an estimated growth rate of commercial freight truck traffic, a rate that is subject to a number of changing variables. In addition, the study results gave heavy weighting to truck traffic when categorizing highway level of service; while truck traffic certainly has a significant impact on roadway conditions, the study methodology may over-emphasize the impacts of that truck traffic on actual congestion and driver perceptions of congestion.

The second projection is much more analytical, utilizing the region's Travel Demand Model (TDM) to project future congestion levels based on current conditions, projected growth trends, and the transportation projects included in the LRTP. Despite the relative lack of traffic congestion currently, the majority of projects included in the urbanized area's 2010-2035 (LRTP) (see map to



⁴ Upper Midwest Freight Corridor Study; University of Wisconsin – Madison, University of Illinois – Chicago, and University of Toledo, November 1, 2004,

the right) are capacity-building projects on the urban fringe or in rural areas.

Adding the full twenty-five years' of LRTP projects to the TDM yields projections on congestion in 2035. As the maps on the following two pages show, there is very little projected congestion; furthermore, comparing the current congestion levels to congestion projected in the future shows that the LRTP capacity-expansion projects have little effect on existing congested areas.





Given that there is little congestion in the existing system, and the additional traffic expected by future population and land use change is expected to be absorbed by the existing transportation system and roadway projects planned for completion, it can be reasonably assumed that LRTP transportation projects currently planned, mostly on the urban fringe and in rural areas, will have a marginal impact on congestion reduction. Still, while the LRTP projects do not significantly reduce the few areas of existing congestion, they do help to maintain the integrity of a transportation network that, as a whole, operates far below its maximum capacity.

The LRTP projects also provide transportation infrastructure to newly developed and/or developing areas on the urban fringe. These areas have seen the largest share of new development in the region; the additional population in these fringe areas necessitates improvements to existing rural roadways to ensure roadway safety and prevent congestion. The land use sprawl on the urban fringe necessitates that the region's local units of government make costly investments in new transportation infrastructure, rather than address issues of repair, safety or congestion on existing infrastructure in already developed areas.

This trend does not seem to complement one of the LRTP's goals, that preservation of the existing system should be weighted more heavily than system expansion. This goal was identified and included in the LRTP as a reflection of the statement above; the existing transportation system is in need of enough resources to preserve its safety and efficiency that the limited resources available for transportation infrastructure and maintenance should be prioritized first for the existing system, rather than expanding the system and creating even more infrastructure that must be maintained in the future. While the numerous transportation projects focused on existing roadways, and projects in developed areas cannot be discounted, the TDM analysis does appear to indicate a need to more stringently evaluate the need to expand transportation infrastructure capacity on the urban fringe in order to serve urban sprawl, despite a lack of roadway congestion in these areas.

Beyond the infrastructure construction projects included in the 2010-2035 LRTP, the document also calls for a number of other notable goals pertaining to transportation infrastructure; two in particular are: to expand the use of green infrastructure in the transportation system, and to reduce Vehicle Miles Traveled (VMT) in the region by an average of 1% annually over the next 25 years.

Green Infrastructure

Transportation infrastructure is directly related to several key aspects of local and regional ecosystems, most notably stormwater, air quality, and energy use/climate change. The region's current transportation infrastructure must be improved in order to do a good job at contributing positively to any of the three.

Runoff from transportation infrastructure contributes directly the stormwater runoff issues described earlier in this plan. As impervious surfaces, roads, parking lots, and other paved surfaces associated with the transportation system do not allow precipitation to soak into the ground, instead channeling and discharging it, by engineering design, into concentrated areas such as storm sewers, ditches, and ravines. In these areas that concentrated stormwater runoff becomes a powerfully destructive force, despite modern engineering's efforts to mitigate the impacts. Larger trends and research in this area points to the use of green infrastructure to reduce and mitigate these impacts; several recent studies and plans have been completed by regional organizations, but this type of infrastructure is only beginning to

be considered in the Peoria-Pekin region. Replacing traditional concrete and steel stormwater infrastructure with green infrastructure in new projects, and in retrofits, will be critical to minimize the transportation systems impact on the sedimentation of the Illinois River and Peoria Lakes, flooding and erosion problems, and pollution discharged into regional surface water bodies.

Given that the region's transportation infrastructure is geared primarily towards vehicular travel, most people drive themselves around by private automobile. As a result, most travel through the region results in vehicular emissions contributing to local air pollution. Developing a transportation system with infrastructure that better supports other modes of transportation, particularly mass transit and non-motorized transportation like bicycling and walking, will be necessary as part of a comprehensive approach to reducing air pollution in the region and improving public health. The relative lack of congestion does contribute positively to helping minimize air pollution in the region; continued efforts to reduce and prevent congestion in the transportation system will help protect air quality.

Vehicle Miles Traveled Reductions

Although current and projected congestion is minimal, the 2010-2035 LRTP calls for the region to take action to reduce Vehicle Miles Travelled (VMT) by an average of 1% annually over the next 25 years. This goal is not primarily to improve roadway efficiency, although it will have some positive effects to that end. Rather, this goal focuses on making the region sustainable.

One way would be to strengthen the attractiveness of older neighborhoods and already-developed areas, thereby attracting people to move back to these areas and reducing the VMT generated by trips from people living on the urban fringe. Another method would be to strengthen and improve the alternatives to transportation by private automobile in the region. Plans to improve all three of these transportation systems exist. The recent inclusion of the bus system and non-motorized infrastructure in the STU criteria will help improve these facilities, but the region can, and should, go further, by providing safe and efficient infrastructure for the bus transit, passenger rail, and non-motorized transportation systems.

Mass Transit System

CityLink, the region's primary bus transit operator recently completed a Comprehensive Operations Analysis (COA). The COA looked at every aspect of CityLink's operations and infrastructure, as well as regional growth trends for population and economic development. The COA then made a number of recommendations on how CityLink could improve the efficiency of bus service and maintain its excellent safety record.

The full COA report can be accessed from CityLink, but one of the key recommendations is to construct a "northside transfer facility" that would offer passengers to or from the northern parts of the urban area the ability to transfer bus routes without having to travel all the way down to the existing downtown transfer station. This would immediately make public transit travel or commuting a much more efficient option for these people than it is currently. A second recommendation of the COA is to update the system's vehicles, as most of CityLink's busses in operation are far past their planned useful life, meaning higher repair bills, increased fuel consumption,

and lower reliability that leads to delays and frustrations for riders. CityLink is currently implementing this recommendation. They have recently replaced much of their fleet of 28 paratransit vehicles with new, energy efficient vehicles. Another four hybrid paratransit vehicles are on order and should be delivered by the end of 2010. In addition, twenty-one full size buses have been ordered, with a delivery date of spring 2011.

Passenger Rail System

Passenger rail travel is making resurgence across the country, and especially in Illinois. With rising fuel costs, delays and hassles from increased security for air travel, and continued environmental concerns about individual highway travel, passenger rail is becoming more and more popular. In recent years Amtrak and IDOT have added extra passenger trains on the existing Amtrak routes through the State, and the resulting improvements in train frequency and reliability have increased ridership by huge levels, some routes seeing increases as much as 70%.

The Peoria-Pekin region, despite having the third-largest urban population in the State of Illinois, is not currently served by passenger rail. Recent activity in the region aims to change that unfortunate situation. Local political and business leaders pushed for and successfully orchestrated a feasibility study to re-institute Amtrak service from the Peoria area to Chicago and St. Louis. That study is due for completion later in 2010. In addition, TCRPC has brought together a number of local leaders to serve on a Passenger Rail Advisory Committee. The Committee's sole focus is to push for the reinstitution of passenger rail service in the Peoria-Pekin region. As of this writing, the committee's focus in on establishing passenger rail service between Peoria and the Amtrak station in Bloomington/Normal, forty-five miles to the east.

Non-motorized System

Like passenger rail, non-motorized transportation is growing quickly in popularity. Data on bicycle and pedestrian trip counts, or the number of users who regularly commute to work on bike or foot, is virtually non-existent in the region, aside from U.S. Census data which is now ten years old. The 2010 U.S. Census will provide important information on how quickly this form of transportation has grown, but in absence of that data, anecdotal evidence suggests non-motorized travel is increasing at a steady rate.

The non-motorized transportation system in this region has recently had a breakthrough success with the announced end to a legal battle over the construction of the Kellar Branch Trail. This trail, on an underutilitzed rail corridor and seen in the map on to the right, will serve as the backbone of the regional trail network, connecting existing trails in the urban core with those in the northern and northwestern growth areas of the City of Peoria. Once constructed, the facility will serve as the primary transportation and recreation infrastructure for much of the urban area.

The region has opportunity to capitalize on the Kellar Branch by constructing additional connections from growth areas and already developed areas to the trail. These connections do not necessarily need to be separated trails; bicycle lanes and sidewalks often provide as much safety and efficiency for cyclists and pedestrians, oftentimes with much less expense and with fewer obstacles than finding and acquiring right-of-way for separated trails. By completing these connections, the region will be able to connect the currently-fragmented recreational trails into an infrastructure system capable of supporting and encouraging safe and efficient non-motorized transportation throughout the region.

Transportation Infrastructure Implementation Recommendations

- Complete Streets Local jurisdictions need to build "complete streets," a name given to roadways that provide safe and efficient access for all users of the transportation system, including vehicular, transit, and non-motorized users, as well as the disabled. The type of infrastructure appropriate will vary based on the road type and surrounding development types. In addition, local jurisdictions, through PPUATS, must ensure that IDOT lives up to the new State of Illinois Complete Streets legislation that mandates IDOT build highways in urban areas that meet the Complete Streets standard.
- TIP Complete Streets Checkoff As a way to ensure that all projects submitted for federal funding support the Complete Streets concept, the Transportation Improvement Program (TIP) process should be amended to include a "checkoff" that each project meets Complete Streets standards. This will be useful to ensure that both State and



Local projects are using scarce transportation dollars to build infrastructure that will meet the needs of all users, and continue to be safe and useful for the transportation needs of the near future.

- Development Ordinance Improvements In most cases, current zoning, subdivision, land development, and road-building codes discourage alternative types of development that would help the transportation system and related development support the goals identified in this plan. This includes things like more narrow streets that reduce stormwater runoff and support new urbanism, reduced parking requirements, use of green infrastructure to mitigate pollution from transportation infrastructure. Improvements to these ordinances will help remove obstacles to improved infrastructure that local units of government currently have in place unintentionally.
- Preservation of Existing System As stated in the LRTP, a primary goal in an era of limited transportation infrastructure funding is to preserve and improve the safety and efficiency of the existing transportation system, before expanding the system to serve new areas. Any new infrastructure in previously undeveloped areas only serves to add to the pressures for future maintenance. Two tools that may be of use to accomplish this are:
 - 1. Impact Fees Impact fees ensure that developers pay for the infrastructure that serves their new developments. These fees are assessed based on the projected impact of a new development on existing infrastructure, and for the cost of new infrastructure needed to provide adequate public infrastructure. These fees are often assessed on a range of infrastructure beyond just transportation infrastructure, such as public water and sewer lines, and schools.
 - 2. Adequate Public Facilities Ordinances These ordinances require that adequate public facilities are in place to serve a new development, *before* that new development can be built. They help to ensure that taxpayers are not on the line for the costs of upgrading infrastructure systems, including transportation infrastructure, due to excessive growth in an area.
- Improve Local Input into State Transportation System Plans A pervasive issue in recent decades has been the limited ability of local jurisdictions to be actively engaged in how the State of Illinois allocates transportation resources within the region. This issue is common to most urban areas across the State, and has resulted in legislation being pushed at the State level to require IDOT to be a more open and partner with regional councils and Metropolitan Planning Organizations. Increased communication and local participation will help to ensure that State and Federal resources are spent according to a given region's transportation priorities, as expressed by that region's LRTP. Although much room for improvement remains, IDOT has made improvements in this regard through the Context Sensitive Solutions (CSS) process. The purpose of CSS is to incorporate environmental and community values into the transportation planning process at an early point in planning, and continue through project design.
- Non-Motorized Transportation Establishing biking and walking as feasible transportation choices will become more important for the future of the region. Prevailing national trends such as the aging of the population and the rising cost of fuel coupled with increasing interest in "green" living and active lifestyles suggest communities that are walkable will have a competitive economic advantage. However, establishing sidewalks and multi-use paths, providing bike lanes, and building trails is not enough. Development patterns that are compact and contain a range of uses are needed to make biking and walking feasible.

- Develop Passenger Rail The region is not currently served by passenger rail service of any type. Re-establishing passenger rail service will be a critical component of future accessibility into and out of the region. Current planning work is seeking to establish a connection to existing Amtrak service at Bloomington-Normal; this would be a good first step but ultimately passenger rail will need to directly connect the region to larger urban areas in order to be viable.
- Congestion Management The region's Congestion Management Plan should be updated and implemented to ensure that congestion levels remain minimal. Roadways that have the potential for congestion should be monitored during the morning hours when the majority of individuals are leaving for work and the corresponding late afternoon hours when individuals are leaving workplaces. Congestion management practices such as staggered work schedules and flexible work week schedules should be promoted to spread vehicular traffic over longer periods of time and reduce workplace commutes.
- Promote Integrated Planning Methods to encourage local jurisdictions to integrate land use and transportation planning should be explored. One alternative could be to tie federal funding (such as Surface Transportation Program Urban funds) for transportation projects to local plans. Communities that have adopted an integrated plan, such as The Big Plan, would be eligible for federal funding through the region's MPO; communities that haven't adopted such a plan would not be eligible. A similar method would be to not require local adoption in order to be eligible for these funds, but to allocate some points for adopted integrated plans in the criteria used by the MPO to evaluate proposed transportation projects. The regional Travel Demand Model and the related LEAM land use change model are excellent tools that should be incorporated in this process.
- Strengthen Older Neighborhoods The Peoria-Pekin region, spurred by an initiative in the City of Peoria known as a School-Neighborhood Improvement Zone, has renewed focus on strengthening older neighborhoods in and near the urban core. Many of these neighborhoods are in transition, and the intention is that by targeting municipal and county resources in these areas, the region may be able to keep middle-income households from moving to the urban fringe or even bringing back households that have already moved to outlying areas. Evaluating, strengthening, and expanding this approach will be critical to balanced growth in the region.

Chapter Three: Corridor Concept Plans

After the identification and detailed research for each of the five regional Themes, a series of four Corridor Plans was created as a pat of this planning process. These corridor plans are concept plans for how the Regional Themes can be applied to specific Transportation Infrastructure projects within the region. Four of the most regionally significant roadway projects were selected for corridor planning: Illinois Route 336, Illinois Route 29, Veterans Drive, and the Eastern Bypass. The map to the right shows their locations in the region.

Each corridor plan contains background and pertinent information about that proposed infrastructure and the surrounding area, data analysis on transportation, land use, and local ecosystems, and specific recommendations on how to develop the infrastructure and surrounding areas in accordance with the Themes.



Corridor Plan: Illinois Route 336

The completion of Illinois 336 between Peoria and Macomb will provide communities in western Illinois improved access to Interstate 74 and the greater Peoria area. The recent completion of Illinois 336 to connect Macomb and Quincy and the completion of U.S. 67 between Macomb and Monmouth has increased access to the west and north, and the proposed section of US 67 between Macomb and Alton will improve access to the south. The portion of Illinois 336 between Peoria and Macomb will improve access to the east and has the potential to increase economic opportunities in the Peoria area.

The facility will consist of four lanes and stretch from Peoria to Macomb through Peoria, Fulton, and McDonough Counties. The Peoria County portion, shown in the "Area Overview" map on the following page, will begin at the "Bellevue Stub" that connects to Interstate 474; this roadway currently ends at Maxwell Road. From this location, Illinois 336 will extend west nearly 3 miles before curving to the southwest at Taylor Road. The highway will be oriented to the southwest for over one mile before orienting due west and passing south of Hanna City. Illinois 336 will continue west into Fulton County. The highway will reach the Fulton County line approximately two-thirds of a mile southeast of the Farmington city limits.



Corridor Information

Illinois 336 will begin at the Bellevue Stub as a freeway; access will only be allowed at grade-separated interchanges. The highway will have grade-separated access to Maxwell Road, Christ Church Road, Taylor Road, and Hanna City Glasford Road; the latter interchange will be less than one mile south of Hanna City. The freeway portion of the highway ends west of Hanna City. From this point, the highway will be constructed as an expressway and have at-grade access to Eden Road, Fisher Road, Texas

Road, Trivoli Road (directly south of the unincorporated community of Trivoli), Gronewalt Road, Stone School Road, Cramer Road, and Downs School Road. The highway will have controlled access to Lightfoot Road at the Fulton County line; this road becomes Route 78 north of Route 116.

According to a traffic study conducted by the Illinois Department of Transportation (IDOT) in 2003, the 2002 annual average daily traffic (AADT) volumes on two-lane roadways in the Illinois 336 corridor area indicate the need for a new highway. In Peoria County, U.S. 24 between Peoria and Banner and Illinois 116 between Peoria and Hanna City have AADT volumes over 8,000, and Illinois 116 between Hanna City and Farmington has an AADT volume nearing 8,000. U.S. 24 follows the Illinois River and intersects Illinois 9, providing access between Peoria and Canton. Illinois 116 is oriented east-west and provides access between Peoria and Farmington and, along with Illinois 78, Peoria and Canton. The Illinois 336 alignment is located north of Illinois 116 at its eastern terminus and will cross over Illinois 116 just west of Taylor Road. The alignment is located less than one mile south of Illinois 116 between Hanna City and Farmington.

A specific traffic count conducted in 2003 for a seven-day period within the corridor area confirmed the AADT volumes reported in the IDOT study. On U.S. 24 east of Glasford Road, located between Peoria and Banner, 10,200 vehicles travel daily. On Illinois 116 west of Taylor Road, located between Peoria and Hanna City, 9,600 vehicles travel daily. On Illinois 116 east of County Highway 18, located between Hanna City and Farmington, 6,700 vehicles travel daily.

The traffic counts suggest that the existing two-lane roadways may be functioning at a subpar level of service (LOS) and not meeting the travel demand. The 2003 IDOT traffic study estimated LOS for roadways in the corridor area using the 2002 AADT volumes. The analysis concluded that generally, highways with an AADT volume greater than 8,000 have an LOS lower than "C." According to the six-level LOS rating scale in which roadways receive ratings of A through F, a "C" rating denotes that highway operations are negatively impacted by traffic density. Therefore, U.S. 24 between Peoria and Banner and Illinois 116 between Peoria and Hanna City may not be operating efficiently.

The specific traffic count conducted in 2003 revealed that the percentages of truck traffic on U.S. 24 east of Glasford Road, Illinois 116 west of Taylor Road, and Illinois 116 east of County Highway 18 are 7, 7, and 8, respectively. These counts are not especially concerning, but given the estimated low LOS for two of these segments, increasing truck traffic will only decrease operating efficiency.

Land Use

The vast majority of land – 91 percent – within the corridor area is used for agriculture. Residential land accounts for 5.6% of the corridor area. Commercial, industrial, and vacant lands each comprise less than 2 percent of the corridor area.

The location of different land uses within the corridor area is shown in the current land use map below. The alignment itself passes through agricultural land. From the alignment's eastern terminus at the Bellevue Stub, land to the north primarily consists of residential uses and land to the south primarily consists of commercial uses. The alignment passes south of residential uses located east of Hanna City and residential, commercial, and industrial uses within Hanna City proper. A cluster of
dwellings and an industrial parcel are located north of the alignment along Eden Road. The alignment passes south of residential uses and some commercial uses located within and outside of Trivoli along Illinois 116. The remainder of the alignment passes through agricultural land to the Fulton County line. Isolated single-family dwellings in rural areas are scattered throughout the corridor area.

The specific location of Illinois 336 – called the *alignment* – has been approved. A draft environmental impact statement (EIS) has been written, and public hearings on the draft EIS were held in August 2009. The final EIS is being prepared and is scheduled to be completed during the summer of 2010. When the Federal Highway Administration approves the final EIS, the study phase will be complete and specific design work and land acquisition can begin. Currently, funding exists only to complete the study phase; specific design work and land acquisition are not funded.



A computer land use model developed for the Tri-County region gives some indication of areas where residential and commercial development pressure may exist in the future. This model incorporates existing development patterns in the Tri-County region and proposed transportation improvements to indicate possible development areas through the year 2035. The projections of the model within the corridor area are shown in the "LEAM Model Analysis" map. The model indicates significant pressure for residential development at the highway's eastern terminus and along Taylor Road. The model further indicates light pressure for commercial development

at the eastern terminus and slight pressure for residential development around smaller communities along the corridor. It is important to emphasize that the model gives an *indication of where development pressure may exist* in the future. The model cannot account for all factors that influence development, so its projections only inform – not dictate – future planning efforts.



Ecosystems

As mentioned earlier, the corridor is comprised mostly of agricultural land and a little developed land. Wetlands occupy 1.6% of the corridor, and less than one percent of the corridor is covered by surface water.

According to the draft EIS prepared by IDOT for the corridor area, the alignment will pass along the divide between the Kickapoo Creek watershed to the north and the Copperas Creek and Lamarsh Creek watersheds to the south. All three creeks flow into the Illinois River, so all land within the corridor is part of the larger Illinois River watershed.

Three perennial streams are located within the corridor: the East Branch of Copperas Creek, an unnamed tributary of the West Branch of Lamarsh Creek, and an unnamed tributary of the West Fork of Kickapoo Creek. The highway will cross the East Branch of Copperas Creek just east of Eden Road west of Hanna City. The highway will also cross several smaller streams, including tributaries of the East Branch of Copperas Creek, an unnamed tributary of Largent Creek, and an unnamed tributary of the West Branch of Lamarsh Creek.

A total of 73 acres within the corridor are part of a 100-year floodplain; 62 acres are within the Lamarsh Creek floodplain and 11 acres are within the East Branch of Copperas Creek floodplain. This portion of the Lamarsh Creek floodplain consists primarily of agricultural land and forested land, although about 5 percent of the land is developed. The section of the Copperas Creek floodplain is mostly agricultural, but about one-quarter of the area is developed. The highway itself will affect 3.4 acres of the Copperas Creek floodplain.

According to a land cover analysis conducted using geographic information systems, wetlands are scattered throughout the corridor, primarily east of Hanna City. Site visits to determine impacts on specific wetlands were conducted as part of the process followed by IDOT to develop the draft EIS. The study determined that just 4.86 acres of wetlands will be impacted by the highway between Peoria and Macomb. Within the Peoria County corridor, no proposed interchanges are located near wetlands, so the impacts of future development on wetlands should be minimal. However, scattered development within the corridor could impact wetlands, and because of their value as wildlife habitat and flood storage areas, wetlands should be protected from the impacts of development.

Like wetlands, forested land is also scattered throughout the corridor. The areas where forested land is most prevalent are the eastern and southern portions of the corridor. No forests within the corridor qualify for inclusion on the Illinois Natural Area Inventory, and no land within the corridor is a designated site such as a nature preserve or state fish and wildlife area.

Much of this forested land is within an environmental corridor as identified by the Local Legacy Plan developed by Tri-County Regional Planning Commission to identify and preserve significant natural areas within the region. Forested land north and northwest of the Bellevue Stub, east of Hanna City, and west of Trivoli in the northern portion of the corridor is part of the Kickapoo Creek environmental corridor; this area was delineated for its significance as part of an important waterway system. The "fingers" of forested land that encompass small tributaries and stretch into the southern portion of the corridor between Cramer Road at the west and the Bellevue Stub at the east are within the Lamarsh-Largent Creeks environmental corridor; these wooded areas are part of a larger system of river bluffs. Highly erodible soils mapped in the draft EIS align closely with the environmental corridors, indicating that these forested lands are sensitive. If these areas are disturbed by large quantities of storm water runoff, sedimentation of creeks and streams will likely occur.

No other significant natural areas – such as prairies and parks – are located within the corridor. The draft EIS concluded that highway construction will not impact any threatened or endangered species.

Corridor Recommendations

Illinois 336 will be a new highway with limited access points in a largely undeveloped area. Therefore, it will drive land development and land use change within the corridor. The purpose of this corridor plan is to guide land development and land use change to occur in a manner that is beneficial for area residents, roadway users, and individuals throughout the region who will be impacted by development in this corridor.

The Peoria County Comprehensive Plan contains a future land use map that shows the desirable future land use *forms* for different areas throughout the county; specific land uses are proposed for each form. According to the Peoria County Comprehensive Plan Future Land Use Map, shown on the following page, land at the eastern end of the corridor is within the "Interchange," "Rural," and "Agriculture" land use forms. This land is at the edge of a developed area and is in transition, necessitating the need for a variety of future land use forms. Between the eastern end of the corridor and Hanna City, land is primarily within the "Agriculture Preservation" land use forms. All land within the corridor between Hanna City and the Fulton County line is within the "Agriculture Preservation" form.

The "Agriculture Preservation" and "Agriculture" land use forms promote agriculture and open space, so the corridor is not currently targeted for significant development. The "Rural" and "Village" land use forms accommodate more intensive residential development, so development is targeted for land at the eastern edge of the corridor and near Hanna City.



Development Pressure

Currently, there is little pressure for land development within the corridor. The corridor consists primarily of agricultural land, and the low population within the corridor area has changed little in recent decades. The corridor encompasses portions of three townships: Limestone, Logan, and Trivoli. Limestone Township ends near Taylor Road, so the majority of the corridor lies within Logan and Trivoli Townships. The combined population of these two townships in 2000 was 4,126. This total decreased by 81 residents during the 1990s. The highway will likely stimulate development at interchanges, may lead to residential growth within and near Hanna City, Trivoli, and Farmington, and generate pressure for scattered, isolated residential development throughout the corridor. The preferred land development pattern is shown in the "Projected Growth" map on the next page.

IL 336 Corridor **Projected Growth** 100 Legend Study Area Future Development N Commercial Interchange Mixed Use Residential Intersections 336 Alignment IL 336 Taylor Rd. to I-474 IL 336 south of Farmington to west of Hanna City IL 336 west of Hanna City to Taylor Rd. Roads 0.5 1 2 Miles 0 Fulton County

2010

Interchanges

Illinois 336 will have grade-separated interchanges at Maxwell Road, Christ Church Road, Taylor Road, and Hanna City Glasford Road between Peoria and Hanna City on the freeway portion of the highway. On the expressway portion between Hanna City and the Fulton County line, the highway will have at-grade access to eight roadways, including Trivoli Road south of the unincorporated community of Trivoli. Development pressure is likely to be greatest at the Maxwell Road, Taylor Road, Hanna City-Glasford Road, and Trivoli Road interchanges.

The location of the proposed Maxwell Road interchange is bordered by residential and institutional uses, so development opportunities are constrained. Given the nearby residential uses, additional residential uses and commercial uses that can serve area residents are the most appropriate uses for this area. Typical land uses found at interchanges such as gas stations and fast food restaurants are not well suited for this location.

Much more open land exists at the location of the proposed Taylor Road interchange, so opportunity for interchange-style development will be greater at this location. The area consists of agricultural land with some farm operations and farmsteads. The conventional pattern of development at an interchange consists of uses on separate lots with separate entrances, leading to "strip" development along the roadway. Should this type of development extend north along Taylor Road, the rural character of the surrounding area will be irreparably altered. The preferable alternative is to construct a secondary road that intersects Taylor Road. This will enable commercial uses to develop along the secondary road, avoiding strip development along Taylor Road that could impact the environmental corridor areas located to the northwest and southeast. Property acquisition and road construction will make this development technique more expensive than conventional development, so specific development regulations that support this development technique will need to be enacted.

The alignment's intersection at Hanna City Glasford Road is less than 1,000 feet south of residential development in Hanna City. Similarly, the alignment's intersection at Trivoli Road is less than 2,000 feet from residential development within Trivoli, so development opportunities at both interchanges are constrained. Limited development pressure for commercial uses will exist at the Hanna City Glasford Road interchange, and the preferable siting of these uses is along a secondary road to avoid strip development along Hanna City Glasford Road. The highway will exert some pressure for residential uses near Hanna City. These uses should be sited in a subdivision along new local streets to avoid the addition of multiple entrances along Hanna City Glasford Road.

In the same manner, development pressure for commercial and residential uses will be limited at the Trivoli Road at-grade interchange. Commercial uses should be sited along a secondary road and residential uses should be sited along local streets. Several single-family residences currently exist in this area along Trivoli Road and Gronewalt Road. Siting future uses along new local streets will minimize access points along existing rural roads and improve traffic flow.

Alternative Transportation

The study area for Illinois Route 336 is also home to an inactive Union Pacific Railroad line. That corridor has been planned for decades for purchase by local units of government, and conversion to a rail-trail, commonly known as the Hanna City Trail. The trail would extend nearly twenty-five miles from Kickapoo Creek Road (at the eastern village limits of Bellevue) through Peoria County, Hanna City, Farmington, and into Fulton County. A 2008 intergovernmental agreement between the five local jurisdictions along the line (two Counties, three Municipalities) established the Hanna City Rail-Trail Commission to cooperate on negotiating with the railroad to purchase the corridor through rail-banking. The Illinois Department of Natural Resources has been instrumental as a technical and legal guide through that process.

As of July 2010, the negotiation process to acquire the corridor from the railroad is ongoing. Future planning for the Route 336 corridor should be cognizant of the potential for this trail to be developed over the next decade, and ensure that highway infrastructure not only avoids negatively impacting the trail corridor, but maximizes its presence by making North-South trail connections possible over bridges and overpasses, ensuring access to the trail, and even considering parking areas on state right-of-way for users to access the trail facility. In addition, residential and commercial development in the area should be planned to take advantage of the trail, including access from subdivisions and developments to the trail, preserving the natural character and beauty of the area, and constructing connecting facilities between new developments and the trail.

Residential Development

As noted in the draft EIS, the construction of Illinois 336 will exert pressure for residential development within Peoria County because the highway will decrease travel times from western Peoria County to Peoria. Residents employed in the Peoria area who seek to live in a rural environment will be drawn to the corridor. In order to protect the corridor's agricultural nature and environmental corridor areas, residential development should be guided to certain areas within the corridor.

Land to the east of Hanna City north of Route 116 and to the southwest of Hanna City should be targeted for residential development **as shown in the future land use map**. The land east of Hanna City is not prime farmland or farmland of statewide importance, and it abuts forested areas within an environmental corridor. This location is well suited for conservation subdivision development in which the forested land can be protected as a natural area for the enjoyment of residents. In order to protect the forested land from the harmful impacts of storm water runoff, vegetated areas should be planted along the edge of the forested land and runoff should be directed to infiltration areas.

Land southwest of Hanna City does consist of prime farmland and farmland of statewide importance. However, development of this land in a compact manner adjacent to Hanna City will allow for efficient provision of services and concentrate traffic near the Hanna City Glasford Road interchange while minimizing the volume of traffic that will travel on other roads within the corridor. This development pattern will support the practice of agriculture and the corridor's agricultural character.

Some pressure will be generated for residential development in the corridor between Hanna City and Farmington for residents willing to exchange longer travel times for living in a rural environment. Commonly, residential development in an area of this nature takes the form of isolated single-family dwellings located along rural roads in a seemingly haphazard pattern which can break up parcels of farmland. Development regulations should be enacted to guide residential development toward clusters along new local roads and to limit the number of isolated residential parcels that are developed. Although clusters of dwellings could occupy prime farmland, this development pattern will protect contiguous areas of farmland and more fully promote agriculture in the corridor. In this way, the corridor's agricultural character will be maintained while new growth is accommodated.

Corridor Plan: Illinois Route 29

The Illinois Department of Transportation's IL Route 29 Study is investigating alternatives to enhance transportation systems in the IL Route 29 corridor between IL Route 6 and Interstate 180. Proposed improvement enhancements include increasing travel efficiency, providing better transportation continuity, and facilitating modal interrelationships. An improved facility would accommodate existing and future traffic demand for both local and regional travelers and would offer more safety while minimizing disturbance to the environment.

The IL Route 29 Study began in November 2001. Since that time, many alternatives have been developed and studied to obtain an indication of the impacts of an improved facility. Public meetings were held in June 2003 and July 2004 to present the findings to date. Following the public meetings, IDOT reviewed the comments received and considered them, along with the impact information, in the selection of alignments to be carried forward for further engineering studies and environmental analyses.

In June 2006, IDOT held public hearings to present the preferred IL Route 29 alternative and proposed road closures to the public. Approximately 350 people attended a hearing in Chillicothe, and over 175 people attended a hearing in Henry. The project's Draft Environmental Impact Statement (DEIS) was also made available at this time for public and agency review and comment. The department continued refinement of the design based upon public and agency input as well as more detailed studies. In January 2008, a public meeting was held in Sparland to describe design changes in the Sparland area and to receive comments on those changes.

In April 2009, the Illinois Department of Transportation and the Federal Highway Administration signed the Illinois Route 29 (IL 29) Study Final Environmental Impact Statement (FEIS). The FEIS summarizes the public and agency comments on the DEIS and the responses to those comments. It also describes coordination with agencies and local governments since the June 2006 public hearings.



Corridor Information

The preferred alternative through Peoria County is a 4-lane freeway on new alignment to the west of the City of Chillicothe. From the IL 6 interchange, the proposed alignment continues north, west of Old Galena Road, passing west of the Caterpillar Tech Center on Cedar Hills Drive. North of Cedar Hills Drive the alignment curves northeast and crosses Old Galena Road, Wayne Road, Rome West Road and Krause Road, west of Galena Knolls Subdivision. North of the Galena Knolls Subdivision, the alignment curves north across a planned extension of McGrath Street, Cloverdale Road, Sycamore Street, Truitt Avenue, the BNSF Railroad and Senachwine Creek.

The alignment then curves northeast along Senachwine Creek and connects with existing IL 29 north of Chillicothe. Interchanges are proposed at Cedar Hills Drive, Rome West Road, an extension of McGrath Street, Truitt Avenue, and with existing IL 29 north of Chillicothe. Access to the new freeway would only be allowed at interchange locations. Road closures are proposed at Dickison Lane and Boy Scout Road Within Chillicothe, existing IL 29 would be reconstructed from the Truitt Avenue intersection to the proposed interchange north of Chillicothe.

From Truitt Avenue to Gail Avenue, IL 29 would have two lanes each direction separated by a 12foot-wide bi-directional turn lane. There would be sidewalks on both sides of IL 29. Between Gail Avenue and the interchange north of Chillicothe, IL 29 would have two 12-foot-wide lanes in each direction separated by a raised median. Bicycle and pedestrian access would be provided with the reconstructed roadway.

A rail line runs East-West through the corridor north of Chillicothe; improvements in Chillicothe would also include the replacement of the BNSF Railroad bridge over IL 29.



Most of the land within a one-mile buffer of the project area lies within Peoria County; a small portion also includes land within the city limits of the City of Chillicothe. Land use within the 51,000 acre study corridor as defined through Peoria County's Comprehensive Plan is 84% agriculture, 7% rural residential, and 9% urban. There is an active sand and gravel mining operation west of the City of Chillicothe and east of the proposed freeway. North of the active quarries, historical gravel pits have been reclaimed for recreational purposes such as fishing, boating, and swimming. According to the LEAM growth assessment model, there is very little growth pressure within the study corridor for both residential and commercial development.

Environmental Corridors

In 2005, Peoria County mapped environmental corridors of the region. These corridors include environmentally sensitive areas, buffers for those areas, and connecting corridors to promote contiguous habitats and local species migration. The proposed IL 29 freeway does intersect Peoria County's environmental corridors at the southern terminus and at the northern most portion of the project within Peoria County. Most of the environmental corridor interaction at the Southern terminus takes place within the environmentally sensitive area *buffer* as opposed to direct impact on local habitats. Environmental corridor interaction in northern Peoria County takes place in the Senachwine Creek Watershed, where the project crosses the creek 3.5 miles from the stream's delta and then runs between a winding Senachwine Creek and the Illinois River Bluffs, and in the very northeastern portion of the county where IL 29 runs narrowly through Illinois River and Illinois River.

Streams and Wetlands

The proposed IL 29 project intersects Dickison Run Creek approximately 2 miles from the delta in the Illinois River and Senachwine Creek approximately 3.5 miles from the delta at the Illinois River. The Illinois Route 29 (IL 29) Study: Final Environmental Impact Statement (FEIS) on this corridor indicate that Dickison Run, as evaluated via macroinvertabrate (aquatic insect) presence, has poor habitat viability. The upper reaches of Senachwine Creek are rated as "fair"



habitat quality and the lower reaches as "fairly poor". More detailed information on the environmental quality of these stream systems can be found in IDOT's April 2009, *Final Environmental Impact Statement: Illinois 29 (FAP 318) from IL 6 to I-180*.

As mentioned, the project does intersect wetlands in northeast Peoria County as the projects runs along the Illinois River. According to IDOT's environmental impact statement, 1,068.5 acres of wetlands are impacted from Route 6 to I-180. Of these, the forested wetland is the wetland community of greatest prevalence at 83.3 percent. The forested wetlands within the study area are dominated principally by silver maple, eastern cottonwood, American elm, lack willow, green ash, and box elder. Most of the forested wetlands are disturbed and are at various levels of regrowth after logging and cutting.

Groundwater

Groundwater recharge areas are categorized between Zones 1 and 7, Zone 1 indicating the highest potential for groundwater recharge. According to Keefer and Berg's 1990 map of groundwater recharge zones in Illinois, the entire project area lies within Zone 1. According to IDOT's environmental impact study, the potential for groundwater contamination in the study area is high and from IL 6 to the City of Chillicothe, the project is located within the second highest level of potential groundwater contamination. Potential sources of contamination associated with roadway construction include sedimentation, surficial siltation, and hydrocarbon runoff. During operation, potential sources of contamination include road oils and operation activities that involve the storage of pesticides and fertilizers.

Corridor Recommendations

Land Use

There are opportunities for development and land use change within the IL 29 study corridor; however, as stated, much of the land within a one-mile buffer of the IL 29 project is currently farm land, and according to regional modeling, there is little projected growth pressures within the corridor with the exception of the projected residential development pressure at the unincorporated community of Mossville. In addition to Mossville growth, additional residential growth is expected to continue west of Chillicothe and to grow out of existing rural residential pockets. In terms of commercial development, Cloverdale Road is a proposed intersecting road with the IL 29 freeway and leads directly to the commercial centers of the City Chillicothe; therefore, commercial development along the Cloverdale Road corridor would complement existing land uses and provide economic growth opportunities for the City of Chillicothe.

Industrial development is also a possibility with this corridor. Gravel mining operations are expected to continue and expand west and north of the City of Chillicothe. There is also opportunity, because of the adjacency to the Illinois River, to create a barge port at the Senachwine Creek delta where gravel and silt can be harvested and then transported by barge. While the economic rationale for gravel transport is obvious and well known, harvesting and disseminating silt from the Peoria Lakes is a relatively new concept. Recent studies by the Illinois Department of Natural Resouces indicated that silt, a problematic pollutant of the Peoria Lakes, is valuable nutrient rich topsoil that can be harvested, dried and distributed to consumers. In 2004, for example, several barge loads of silt were shipped to Chicago's US Steel South Works to cover the brownfield and create a park. Similarly, Peoria Lakes silt was used to create East Peoria's Riverfront Park.

Environment

Stormwater Management

To address stormwater, IDOT is planning to install several stormwater detention ponds in the project area in the following locations: on the east side of Old Galena Road, on the east side of Krause Road northeast of the proposed Rome West Road interchange, in the southwest quadrant of the proposed McGrath Road interchange, and on the south side of Senachwine Valley Road near Senachwine Creek. While stormwater detention ponds do allow a certain amount of settling of heavier particulate matter and slow the stormwater discharge rate of runoff into local stream systems, there are better options to reduce overall runoff volumes and to provide greater filtration of the contaminated stormwater that will be running off of both the paved and landscaped surfaces.

One of the easiest and perhaps most effective stormwater best management practices to implement within the IL 29 right-of-way is the use of native vegetation that is maintained by an ecosystem management approach as opposed to mowed turf grass. Many highway systems in Illinois and throughout the nation are converting their landscaping to native systems to save on overall maintenance costs and to reduce pollution. Native grasses and forbs absorb great quantities of stormwater and can alter to soils to create a more absorbent soil base through the formation of aggregates. Native plantings are also a more cost effective approach to landscaping along highways. Natives do not require fertilizers and require limited mowing or burning. The native plantings would also provide habitat within Peoria County's environmental corridors for local flora and fauna.

Another opportunity to integrate stormwater best management practices in the IL 29 project is to improve the proposed detention basins to create a system that filters and infiltrates stormwater to the greatest extent possible. Sand filters, for example are usually designed as two-chambered stormwater practices; the first is a settling chamber, and the second is a filter bed filled with sand or another filtering media. From the sand filter, the stormwater could flow into a bio-retention pond where water is absorbed by native vegetation and allowed to percolate into the ground via a gravel base or other infiltration medium. Filtration would be key along this alignment because the sandy soils are very permeable and create a vulnerable situation for groundwater contamination.

Responsible stormwater management and the use of stormwater best management practices beyond the traditional detention basin should not only be considered for stormwater runoff directly from IL 29, but should be considered for all urban developments within the study area. Low Impact Development principals incorporate stormwater management strategies that reduce the overall impact of stormwater runoff from urbanized areas. The table on the following page delineates traditional stormwater management versus low impact practices. This is not an exhaustive list, as stormwater technologies are rapidly emerging.

A sample of Low Impact Development Options for the IL-29 Corridor

Traditional Development	Low Impact Development	LID description
	(LID)	
Curb and Gutter	Vegetated bioswales	Infiltration of stormwater into grass-filled "ditches" near the side of the road
Raised medians in parking lots	Depressed areas with	Raingardens appear in parking lot islands and have potential to provide on-site treatment of
	raingardens or bioswales with	stormwater run-off through use of soil and mulch; they are constructed as beautified landscapes, but
	proper overflow structures	provide a useful service
Traditional concrete or asphalt	Pervious concrete/asphalt or	Concrete with reduced sand or fines that allows water to filter through; process occurs due to air
parking lots/sidewalks/driveways	pervious pavement blocks	pockets in the concrete, which simultaneously support the concrete structure as well as provide
		storage of water and run-off treatment
Large lot sizes	Smaller lot sizes, more Design technique that concentrates dwelling units in a compact area in one p	
	contiguous open space	development sight
Detention basins	Retention ponds and stormwater Retention ponds are constructed basins that contain a permanent pool of water at all	
	wetlands	stormwater wetlands are similar to wet ponds that incorporate wetland plants into the design
Wide streets	Narrower streets to reduce	The construction of narrower streets is best for serving a smaller number of residential homes and can
	impervious surfaces	reduce stormwater run-off as well as associated pollutant loads
Exotic species landscaping/turf	Prairie and wetland gardens with	Exotic species used in landscaping have a tendency to reduce habitat quality and eliminate native
grass	native vegetation	vegetation when used; they also increase erosion, reducing natural wetland vegetation; by using
		native vegetation for planting within prairie and wetlands gardens, competition among plants is
		eliminated and these plants are better suited to the environment

Peoria County Environmental Corridors

Environmental Corridor interaction at the southern terminus of the project is mostly buffered areas along the Illinois River Bluffs and does not disturb any existing habitat. These buffer areas however do provide ample opportunity to *restore* habitat in an effort to provide greater protection for the buffered ecosystem. In the case of IL 29, integrating native vegetation in landscaping and stormwater control measures as recommended above will play a role in preserving biodiversity and habitat functionality in the nearby bluffs. According to IDOT's environmental impact statement for IL 29, dozens of acres of forest and prairie restoration are planned for specified areas the throughout the corridor. These specified areas would optimally be connected via native plantings along the roadside.

The environmental corridor interaction near the northern terminus more directly impacts native ecosystems. The project crosses Senachwine Creek 3.5 miles from the stream's delta and an improvement to existing IL 29 will also take place 1.3 miles from the delta. The project also impacts existing wetlands east of IL 29 and the Illinois River Bluffs west of IL 29. IDOT has taken a number of precautions into consideration to accommodate local ecosystems and wildlife. To reduce overall impact on floodways and wetlands, IDOT has planned for a split profile design to reduce the expansion of the road into the bluffs, a narrowed median from the standard 50-foot to 22 feet to designated lands north of Chillicothe to reduce impacts near the Miller-Anderson Woods Nature Preserve, and retaining walls to limit the amount of new right-of-way required.

To minimize the animal-vehicle collisions and the effects of retaining walls on wildlife movement, 41 wildlife passages spaced at 0.5-mile intervals are incorporated into the design of the alignment from Rt 6 to I-180. These passages consist of bridges and culverts. At all 19 proposed bridges, the bridge length will be extended an additional 10 to 25 feet to provide a sufficiently wide, dry crossing area adjacent to the stream for large animals. Large and small culverts are also proposed to accommodate deer and smaller wildlife. The larger 10-foot high culverts will be engineered to allow for daylight penetration that would pass beneath the median and act as a mechanism to attract deer. The culverts will function to carry stormwater; however the culverts are designed to allow for a 2-foot walking ledge up to a 2-year storm. To minimize the effect of median barriers on wildlife movement, medians that do not trap wildlife are being considered at several locations throughout the project area. Openings in the barrier about 2 feet wide would allow smaller species migration.

Finally, IDOT is purchasing 657 floodplain acres to mitigate the projects' environmental impacts. This land will be turned over to Illinois Department of Natural Resources and includes 294 acres of high quality forested floodplain wetlands. Three farm fields within the floodplain east of IL 29 will be converted to wetlands.

Because of the sensitive nature of impacted environmental sites, IDOT has worked extensively with environmental experts on identifying the appropriate mitigation measures. Local governments and developers should put that same emphasis on environmental protection as development occurs as a result of this freeway. Peoria County's Environmental Corridor Plan recommendations include the following:

- Reduced ability to subdivide large lots
- Incorporation of stormwater management technologies to improve water quality and decrease runoff volumes
- Utilize native landscaping to support local biodiversity and habitats
- Avoid development on sensitive habitat areas

Corridor Plan: Veterans Drive

The Veterans Drive corridor is located in the city of Pekin and unincorporated Tazewell County. Most of the corridor is included in Pekin's 1.5 mile Planning Boundary. The corridor spans from IL 29 on the west and terminates at Fischer Road at the north. The corridor is approximately 10.7 miles in length and would provide the south and east sides of Pekin direct access to Interstate 474 and IL 29. For the purpose of this plan, the corridor includes a mile buffer around the proposed alignment of Veterans Drive. Veterans Drive is proposed to have a 4 lane alignment from IL 29 to I-474. The completion of Veterans Drive would divert some truck traffic from Court Street, in the center of Pekin, and IL 29, north of Pekin. This truck traffic would have access to I-474.

Approximately 2.4 miles of the alignment is constructed, from Mall Road, just south of IL 9/Court Street, north and northeast to Broadway Road. This portion of Veterans Drive was completed in Fall 2003. The remaining sections of the alignment have completed Phase 1 Engineering Studies. Section 4, from Broadway Road north to Sheridan Road has design and right-of-way complete. The interchange at I-474 has a justification study approved. In January 2010, Governor Quinn announced that \$30 million dollars was earmarked in the state capital bill for the section from IL 29 to IL 9/Court Street. Work is expected to begin on this section in 2011. Following is an outline of the sections of the Veterans Drive project:



Section	Location	Status
Section 1	IL 29 to Mall Road	Phase 1 Engineering Study Complete - \$16M Estimate
		(State Capital Plan, Work projected to begin in 2011)
Section 2	Mall Road to IL 9	Construction Complete – November 2003
Section 3	IL 9 to Broadway Road	Construction Complete – September 2003
Section 4	Broadway Road to Sheridan Road	Design and ROW Complete - \$4M Estimate
Section 5	Broadway Road to IL 98	Phase 1 Engineering Study Complete - \$12M Estimate
Section 6	IL 98 to Fischer Road	Phase 1 Engineering Study Complete - \$19M Estimate
Veterans Drive/I-474 Interchange		Justification Study Approved

Corridor Information

The Veterans Drive corridor is a 10.7 mile corridor that begins at IL 29 in the southwest corner of Pekin, near the Federal Prison, continuing eastward across the southern end of Pekin. South of the Sunset Oaks Golf Course, the alignment of Veterans Drive turns to the northeast. Approximately 2.4 miles of Veterans Drive is constructed from the Pekin Mall north and northeast to Broadway Road. At Broadway Road the corridor continues north for approximately 4.3 miles to I-474. At I-474 the corridor continues north for an additional quarter of a mile, terminating at Fischer Road.

The corridor contains 4 major intersections, IL 29, IL 9/Court Street, IL 98, and I-474.

IL 29 connects Pekin with the cities of East Peoria and Peoria. IL 29 also provides Pekin with non-interstate access to the state capital of Springfield. The Annual Average Daily Traffic (AADT) along the intersecting section of IL 29 ranges from 4,750 south of the Veterans Drive corridor to 7,000 north of the corridor. The truck traffic ranges from 500 to 1,150 AADT along the same section of IL 29.

IL 9/Court Street serves as a main east/west route in the City of Pekin. IL 9 connects Pekin with Canton and Fulton County to the west and Tremont, I-155 and Bloomington to the east. The route has seen the amount of truck traffic growing recently. One of the benefits of completing Veterans Drive would be diverting truck traffic from an already busy IL 9/Court Street. The AADT for IL 9/Court Street ranges from 14,800 west of Veterans Drive to 7,500 east of intersection; with truck traffic ranging from 925 to 500 along the same section.

The next major intersection traveling north along the corridor is IL 98. IL 98 is a short state highway that connects IL 29 north of Pekin to I-155 and the Village of Morton. IL 98 is lightly traveled in the Veterans Drive corridor with AADT's ranging from 3,550 east of the corridor to 4,700 in the west. A moderate amount of truck traffic travels IL 98 from 270 AADT in the west to 425 in the east.

The final major intersection along the Veterans Drive corridor is I-474. I-474 serves as the southern and southwestern bypass around the Peoria area. The interstate provides local residents' access to the Peoria International Airport. The highway also serves as a bypass for through travelers along I-74. An interchange is proposed for Veterans Drive approximately a mile east of the IL 29 interchange. An interchange is an important component of any future planning for Veterans Drive. Without an interchange to I-474, much of the justification for Veterans Drive becomes null. Access to I-474 is needed to divert truck traffic from Court Street and around the City of Pekin. AADT along I-474 ranges from 19,600 east of the proposed interchange to 21,000 west of the proposed interchange. Because I-474 serves as a bypass for long-distance trucks, the truck traffic in this area is high, with approximately 5,000 AADT.

A large majority of the corridor, nearly 65%, is currently undeveloped with agricultural land the dominant land use in the corridor; especially at the western and northern ends of the corridor. Approximately 18% of the land in the corridor is developed. The intersection of IL 9/Court Street features the major commercial component along the corridor. The intersection is home to the Pekin Mall, a Wal-Mart Supercenter, as well as a number of smaller commercial developments. Residential development is present south of the Sunset Oaks Golf Course as well as north of Broadway Road and halfway between IL 98 and I-474. The remained of the land in the corridor is classified as forestland, wetlands or surface water. The current Tazewell County Zoning Map, shown at right, reflects the current land use patterns with most of the corridor zoned A-1, Agricultural Preservation District. The residential areas zoned near Broadway and IL 98 are zoned R-1, Residential. The Pekin Zoning Map shows residential zoning south of



Sunset Oaks and commercial zoning around the intersection of IL 9/Court Street and Veterans Drive.

Using population growth forecasts and transportation system conditions (both existing and forecasted), LEAM projects land use change for both residential (in yellow) and commercial (in red) development. LEAM does not specify where specific developments will occur, but projects where growth pressures will occur. The LEAM projections are based on current land use policies and show continuing growth pressures for residential development expanding into agricultural and environmentally sensitive areas, in particular the river bluff areas between Sheridan Road and IL 98. According to population and LEAM projections, an estimated 2,032 residents will be added to the corridor by 2035. Using the most recent Census estimates of average number of 2.48 people per household, approximately 820 housing units will need to be constructed to house the increased population.

The Veterans Drive corridor will direct some of the future growth of Pekin eastward into current agricultural areas. The corridor also features densely wooded river bluffs, primarily located along the east side of the corridor between Sheridan Road and I-474. The bluff areas are shown in red on Map #. The site of the proposed interchange at I-474, mostly south of the Interstate, also includes bluff land. Another small area of bluff land is located south of the Sunset Oaks Golf Course Much of this forested land is within an environmental corridor as identified by the Local Legacy Plan developed by Tri-County Regional Planning Commission to identify and preserve significant natural areas within the region. Approximately 14% of the corridor area is classified as forested. A majority of the river bluffs



featured wetlands or surface water; approximately 4% of the corridor area is classified as either wetlands or surface area.

Corridor Recommendations

The recommendations in this section are to promote development that is consistent with local Comprehensive Plans, and employ sound planning concepts. Development should maintain community amenities such as bike trails, and parks in areas of new development, while continuing to promote efficient, logical development. Future development should attempt to protect sensitive environmental areas, such as wooded and bluff areas, as well as agricultural land. The corridor will also serve as a new entrance to Pekin and should include a gateway that welcomes visitors to the City. Tazewell County, Pekin and Marquette Heights have an opportunity to brand Veterans Drive. Branding Veterans Drive will give the corridor a sense of identity and can help attract high-quality development to the corridor.

Land Use

Commercial development along the corridor should be developed in nodes at key intersections. It is recommended that commercial nodes be sited at Broadway Road, IL 98 and the proposed I-474 interchange. Continued commercial growth should be encouraged at IL 9/Court Street. The commercial node at the I-474 interchange should be developed with more highway commercial uses such as gas stations, restaurants, hotels and other services for travelers. Development at the interchange should be planned in a cohesive manner to ensure that traffic flow will not be impeded, that development is compact and occurs in a manner that mitigates negative impacts on surrounding property owners. The commercial nodes at IL 98 and Broadway Road should be developed with services that serve local traffic and neighboring residential areas. These nodes should develop with neighborhood commercial uses such as gas stations, pharmacies, small retail and restaurants. Regional commercial should continue at IL 9/Court Street with large retail establishments with outlots, restaurants, and other similar uses.

The exact extent of commercial development is not depicted to allow flexibility with local zoning and regulations. Prior to zoning, each of the nodes should be studied to ensure that development in the nodes will meet each community's needs and expectations. This study should include an analysis of how much retail and service development is needed to serve the needs of the surrounding neighborhoods. Commercial developments should demonstrate sensitivity to significant environmental features. Whenever possible, commercial development should focus on providing a unique identity and form to individual nodes and the surrounding community. Development should be appropriated scaled with less intensive development located in the neighborhood commercial nodes. Architectural consistency and provisions for transit and pedestrian facilities are recommended where appropriate.

Residential development along the corridor should be developed contiguous to existing residential development. Locating new residential development in this fashion will lessen the amount of agricultural land is taken out of production for development. Encouraging this fashion of development will also lessen the amount of infrastructure needed to serve new developments. Low-medium density should be encouraged, with 4 to 5 units per acre. Medium density residential, townhomes, multi-family may be located near neighborhood commercial nodes. Pedestrian oriented, walkable, and mixed-use development should be considered in the design process for residential areas. Residential areas should be designed in a manner so residents are within a reasonable walking distance (5 to 10 minutes). Natural and physical features including existing vegetation and trees should be preserved and incorporated into new developments. Future development should be mindful of the locations of the bluff and wetlands. The proposed interchange at I-474, primarily south of the



interstate, includes bluff area, and should be taken into account when developing the interchange.Residential development should avoid environmentally sensitive areas whenever possible. Development should be concentrated in nodes near major intersections to protect as much agricultural land as possible.

Road Design

The Veterans Drive corridor will serve as a new entrance to Marquette Heights, Pekin and surrounding Tazewell County. All affected communities should work together to establish a common brand for the corridor. Similar signage and identifying features, such as lighting, should be incorporated throughout the corridor. A zoning overlay district could be established to encourage development standards throughout the corridor. At major intersections, a landscaped median should be installed to create an identity for the intersection. A landscaped median or boulevard also helps to slow down traffic and create a more pedestrian-friendly environment.

Alternative Transportation

The City of Pekin is fortunate to have a popular off-road paved bike trail. The Pekin Park Bike Trail is a total of 4.3 miles in length. The western edge of the corridor encompasses a portion of the trail. The trail currently ends less than a mile from the completed section of Veterans Drive. It is recommended that the Veterans Drive corridor include a multi-use path along its length. The path should be a minimum of 8 feet in width to allow two-way traffic and users to pass each other safely. The trail could then be connected to the Pekin Park Bike Trail, providing a more comprehensive trail system.

Transit is also a possibility along the Veterans Drive corridor. Pekin and CityLink have worked together to provide public transportation between Peoria and Pekin. The City of Pekin and CityLink should study the feasibility of an express route from Pekin to Peoria. An ideal location for a park and ride lot would be intersection of Veterans Drive and IL 9/Court Street. The express route could then continue north on Veterans Drive with potential stops at Broadway and IL 98 before continuing to I-474 and Downtown Peoria. The current ridership levels between Pekin and Peoria demonstrate that a need may exist for expanded and improved service between the two cities.

Corridor Plan: Eastern Bypass

First proposed several decades ago, the Eastern Bypass is perhaps the single most significant piece of proposed transportation infrastructure in the Tri-County region. Originally proposed as part of a Kansas City-to-Peoria-to-Chicago Freeway, the Eastern Bypass is now proposed as a standalone facility; its supporters believe the project to be worthy of construction based on its own merits.

The Eastern Bypass is proposed as a bypass around the East and North sides of the urbanized area. Two thirds of the full bypass has already been constructed, in Interstate 474 and Illinois Route 6; both four-lane, divided, controlled-access freeways. Generally, the Bypass would have an interchange on the existing Interstate-74, run northward through Tazewell County into Woodford County, and then turn West-Northwest to the Illinois River. The Bypass would include a new bridge crossing over the Illinois River to the north of the urban area, in the general vicinity of where much of the new residential growth has occurred over the past twenty years. The final alignment proposed in the mid-1990's, along with the alignments studied in the mid-1990's and the current Phase-I Study Area, can be seen in the map to the right.

The Bypass is proposed to serve several purposes:

Create more convenient travel patterns. The road would provide access between residential growth areas in the Village of Morton and City of Washington, both in Tazewell County, residential growth areas in and around the Villages of Germantown Hills and Metamora in Woodford County, and the industrial and commercial employment centers to north and northwest of the City of Peoria.

Reduce heavy commercial vehicle and freight traffic in the urban core. Currently, traffic coming from the East to the northern parts of the urban area must cross a bridge in the heart of the urban area and travel through the urban core; this facility would allow them to bypass the relatively congested commercial and residential areas in the



urban core. The end result will be more efficient travel patterns, and reductions in transportation-related nuisances (e.g. noise, air pollution, congestion) for residents of the urban core.

Complete the ring road around the urban area. A full ring road would help to prevent future congestion from occurring and facilitate more efficient travel patterns that may result in savings of 5-10 minutes on some trips from one end of the urban area to the other.

Support the freight logistics industry. The region is centered in a six-county Heart of Illinois Regional Port District, known as TransPORT; more efficient transportation infrastructure, particularly this ring road, will improve logistics industry viability and attraction.

Create a North-South arterial between Woodford and Tazewell Counties. This traffic currently travels on collector or local roads, which generally were not designed to carry the volumes of vehicles making those trips.

After decades of studies, starts and stops, the Bypass is under study once again. At the request of local officials throughout the region, Illinois Department of Transportation (IDOT) began a partial Phase-I Engineering Study in 2008. This study will identify a preferred corridor for the road, but stop short of specific alignments. Local jurisdictions and officials are trying to secure additional funding to complete the Phase-I Engineering, including a final alignment and corridor preservation. As of March 2010, IDOT is nearing the completion of the partial Phase-I Engineering study, and anticipates announcing the proposed corridor in summer 2010.

Because the preferred corridor and final alignments for this infrastructure have not yet been identified, corridor planning for the Eastern Bypass must be somewhat more general in nature. However, the principles in this Plan remain just as applicable. In fact, the principles identified and promoted by the multiple community interests involved in this plan may be even more prescient, given the relative "blank slate" this roadway is working on. Since the project is at a very early stage, there is much more time, and much less cost involved in locating and designing the road and future nearby development in accordance with the principles stated in this plan. The following section details the characteristics of the general corridor area.

Corridor Information

The general area where the Eastern Bypass would be built showcases the entire spectrum of ecosystems, land uses, and assets found in the Tri-County region: prime agricultural land, forests, bluffs, steep slopes and ravines, rivers and streams, and the fastest growing suburban communities. Due to the variety of ecosystems in the immediate area, this road offers an excellent opportunity to design Eco-Logical principles on the ground.

The existing transportation system in the area is sound, with the exception of a significant north-south connection between the rapidly growing communities. The existing transportation system provides excellent access from outlying areas in Tazewell and Woodford Counties to the urban core. These areas are prototypical bedroom communities, with most residents commuting to the urban core, particularly for white and blue collar jobs in the manufacturing and medical fields. The map to the right shows existing regional transportation infrastructure and transit service, and the general corridor study area for the Bypass.

Alternative transportation is an issue in this area. With the exception of the City of East Peoria, which has limited bus access provided by CityLink, none of the communities in the vicinity of the Eastern Bypass have alternative transportation available. Expansion of the transit system to key communities like Morton and Washington has been discussed and studied at length; to date these communities have resisted the service, partly out of taxing concerns. These communities are exploring more informal transportation options, such as car- and van-pooling, as a response to demand from the major employers (and their employees) in those communities. In addition, several of these communities have been very active in building their non-motorized transportation systems. This is particularly true of the City of Washington, which is constructing an excellent trail system within their community, and the City of East Peoria and Village of Morton, which are making plans to expand upon the trail that connects their two communities.



Congestion in the study area is relatively non-existent, with the exception of spot congestion caused by road construction or vehicle crashes. In fact the only regional transportation facility that sees anything close to regular congestion is the McCluggage Bridge (U.S. Routes 24 and 150 over the Illinois River). This bridge is the northernmost crossing of the Illinois River in the urban area, but with most of the new residential development going north in Peoria and Woodford Counties, this bridge is now located in the southern half of the urban area. This means that the McCluggage carries the majority of vehicle trips with a northern destination on either side of the Illinois River. As a result, the bridge is often perceived as congested during peak morning and evening commute periods, although in truth traffic still flows relatively freely. The map at right shows the Corridor study area and existing congestion levels.

In addition to almost no congestion in the study area currently, the TDM also projects virtually no congestion in the year 2035. Still, the Eastern Bypass may have a positive effect on congestion closer to the urban core, particularly on the McCluggage Bridge and adjacent roadways, including Illinois Routes 116, 26, and 29.



Land use and land cover within the corridor study area is highly diverse. The area contains three of the fastest growing communities/growth areas in the Tri-County region: Morton, Washington, and Germantown Hills/Metamora/southwestern Woodford County. Each of these three areas has seen population and housing growth at a pace far more rapid than the rest of the region. Accompanying the residential growth is some commercial and retail growth, particularly in Morton near Interstate 74, and on the western side of Washington. While the area has seen a burst in population and growth through the past couple of decades, LEAM is projected even more significant growth in the area. The map to the right shows residential and commercial development pressures projected by LEAM.

LEAM projects a residential demand of 6,300 people in or within one mile of the corridor study area, representing about 22% of the regions total residential demand forecasted by LEAM. At a projected 2.27 persons/household, that means about 2.783 new households. Assuming an average of 1.5 acres developed space per each household (includes structures, driveways, associated roads, infrastructure and public buildings and spaces, and other impervious surfaces like turf grass yards), this projected residential demand translates to an additional 4,175 acres developed by 2035. The majority of this would be agricultural land, with a sizeable portion in or adjacent to environmental corridors.

In addition, LEAM projects a demand for 2,234 new jobs in the Corridor Study area, representing 21% of the total projected for the region. The vast majority of this new commercial development pressure is currently projected on the north side of Morton, near the interchange of Interstate 74. It could reasonably be presumed that some, perhaps most, of this commercial pressure could shift to wherever the new interchange of the Eastern Bypass and Interstate 74 is located. This interchange would likely be further east of the existing Morton interchange. Additional areas of projected commercial development pressure are in East Peoria along Route 8, within the City of Washington, and in Peoria County near the interchange of the Bypass with Route 6.



Ecosystem features and resources in the area are very significant. This is particularly true of western and southwestern Woodford County, which boasts vast expanses of forested bluffs, steep slopes, and stream systems. The map to the right shows the significant ecosystem features in and near the Bypass study area.

As the map shows, the Study Area for this project largely avoids the largest clusters of ecosystem features. These areas are mostly identified as parts of environmental corridors, primarily for characteristics including steep slopes, floodplains, and forest cover. Instead the general study area for the corridor largely stays east of the environmental corridors. Given the amount of proximity of existing developed areas within and adjacent to municipalities like Washington and Morton, there is little chance that the final alignment would cut through the environmental corridors in much of this area.

Still, the corridor would transect several degraded and threatened watersheds, including Farm Creek and Partridge Creek, bringing development pressure into these already threatened areas. Compounding the issue is that new development would be constructed largely upstream of existing development, creating the potential for increased downstream flooding.

Given the highly erodible nature of the soils in these bluff and ravine areas, the introduction of stormwater runoff from newly constructed impervious surfaces will exacerbate the region's problems of erosion, siltation, and biological contamination of our waterways, including the Illinois River. The Eastern Bypass itself will have a negative impact in this regard, if it is constructed with conventional engineering and construction practices, not to mention the new development the infrastructure would attract to the area.



Corridor Recommendations

The Eastern Bypass represents a significant opportunity to prove that in Central Illinois, transportation infrastructure can be designed and built in a manner more complementary with our native ecosystems. Given that the Bypass is widely considered the most significant transportation project in the region, and certainly the most visible project currently being promoted, incorporation of Eco-Logical principles into the roadway's design is absolutely essential for two reasons.

First, if constructed using conventional engineering, design, materials and systems, a roadway of this size, length, and significance will have a tremendous negative impact on several of the Themes identified in this planning process as critical to the region's future. This is particularly true of Environmental Stewardship (water, air, and light pollution, erosion, environmental corridor preservation), Agricultural Preservation, and Balanced Growth.

Second, the regional significance of the project makes it a showcase for how transportation infrastructure can, and should, be built in the region. This is not to say that a Bypass designed according to principles recommended by this plan will necessarily cost significantly more; on the contrary, research shows that often "green" infrastructure and associated development actually costs the same or less due to decreased need for ongoing maintenance and associated costs from things like stormwater erosion. Constructing the Bypass with many of the Best Management Practices, particularly the Green Highway recommendations from this Plan, will set an exemplary new standard in this region for the positive integration of ecosystem and land use principles with transportation infrastructure.

To that end, this section contains specific recommendations for the actual Eastern Bypass infrastructure and nearby development it triggers. These recommendations should be considered a menu of options to be selected from at three phases: first, after the final road corridor has been selected, but before the final alignment is identified. This provides an excellent time to consider the principles in this plan. The second time is during design and engineering (Phase II) of the project, when specific BMP's should be designed into the project in order to make the facility as green as possible, and realize cost savings. The last phase to incorporate this Plan's principles is actually an on-going phase, as local jurisdictions adopt parts or all of the land use planning recommendations included here, in order to put on the ground specific practices that make our region a better place and minimize the damage from development and transportation infrastructure.

Recommendations for the Eastern Bypass Corridor are listed below, and are based on Committee, local stakeholder, and public input. Unlike recommendations for the other three corridor plans created for this Plan, the Eastern Bypass recommendations are not shown on a map because the specific alignment for the Eastern Bypass has not yet been identified. Without an alignment, it is not possible to create a specific land use plan; rather, the recommendations below should be applied to planning efforts and infrastructure once more concrete data is known.

Controlled Access. The Eastern Bypass should be a controlled-access facility, in keeping with the existing parts of the ring-road around the urbanized area. Not only will this create a similar transportation facility and help with traffic flow, congestion, and efficiency, but it will also have a positive impact in helping to control land use and development. Uncontrolled access, combined with the business-as-usual land use policies common across the region currently uses,

will result in urban sprawl and strong negative impacts to our ecosystems, agricultural areas, and cost efficiency of public infrastructure. In order to minimize these damages, interchanges should be limited to the five major transportation facilities the full facility would cross: Interstate 74, U.S. Highway 24, Illinois Route 116, Illinois Route 26, and Illinois Route 29/Route 6. Each of these intersections is somewhat unique in terms of existing land use and development, ecosystem type, and plans for future growth, and should therefore be planned for by individual jurisdictions, but general recommendations for local land use decisions are included below.

River Crossing. The bridge over the Illinois River is arguably the most critical component of the Eastern Bypass. Without this bridge, which would be much further North in the urban area than the current northernmost bridge, traffic will still be funneled to the existing McCluggage Bridge and minimize much of the Bypass' proposed efficiencies and congestion-relieving impacts.

Infrastructure Location. The new facility should be located close to existing communities, without being so close as to cause a nuisance to existing community residents. Since the facility will spur new development, particularly at interchanges, locating the facility near an established community will have several positives benefits when compared to a similar road built in between two communities or further out from a given community. Benefits may include: minimizing the amount of new public infrastructure needed to be built by shortening the distance between existing infrastructure and new infrastructure, easing the future strain on public services like police and fire by having a smaller expansion of the service area, and a relative reduction in the amount of urban sprawl (and corresponding loss of agricultural land) by minimizing the amount of land that is annexed into the nearby community.

Public Transportation. This part of the region is not currently served by public transportation, but in the future access to public transportation will likely be desired. Given the nature of the proposed Bypass, specific infrastructure to accommodate public transportation such as pull-outs and bus-only lanes are likely not necessary on the actual roadway. However, connecting and adjacent roadways should be designed for public transportation accommodation as they are reconstructed or built new.

Non-Motorized Transportation. Some of the communities in the area are moving forward on trail and sidewalk systems within their own jurisdictions. The Eastern Bypass offers an excellent opportunity to create links and access for bicyclists and pedestrians between these communities. In addition, a pedestrian/bicyclist only area should be included as part of the bridge over the Illinois River in order to connect the growing systems of trails on either side of the River, and allow these users to cross the River safely in the northern part of the urbanized area.

Energy Efficiency. The facility should utilize as much energy efficient technology as possible, particularly lighting technology such as Light-Emitting Diodes (LED), full-cutoff downward-facing hoods, and minimization of installed lighting.

Stormwater Management. Conventional stormwater management does not do an adequate job of managing surface water runoff. While the structures typically used do a very effective job of removing water from the roadway itself, they often simply channel the water, including pollutants collected from the roadway, shoulder, and ditch, directly into a now-overwhelmed waterway or detention basin, often leading to highly increased rates of erosion, flooding, siltation, and downstream groundwater pollution. Instead, the Eastern Bypass should utilize green infrastructure and the types of best management practices identified elsewhere in this plan, such as native-vegetated bioswales, permeable pavement on shoulders, construction of new wetlands.

Recycled Materials. The facility should make use of as many recycled materials as feasible, such as slag cement, fly ash cement, reclaimed asphalt, and foundry sand.

Low-Impact Development. Given that much of the new development triggered by the Bypass would be on top of the bluffs, and stormwater runoff would subsequently travel down and through the highly-erodible bluffs and ravines, use of LID principles in new developments will help maximize the amount of water infiltrated, reducing erosion and flooding. In addition, these types of development typically cost less than conventional development.

Balanced Growth. Residential growth by itself often does not pay for itself from a taxing perspective; collective units of government spend more on infrastructure and services for that new development than the development returns in taxes. This creates an unsustainable situation where taxes must rise or services must be cut. Implementing a more balanced mix of commercial and industrial along with residential development helps to overcome this problem. Therefore, local jurisdictions should work actively to assist and engage local entrepreneurs and businesses, as well as attempt to recruit new businesses from outside the region to relocate here.

Economic Development. Beyond the emphasis new businesses have in terms of balanced growth and healthy tax rolls, the areas surrounding the Bypass are eager for economic development and jobs. In Woodford County, well more than half of residents left the County to go to work (2000 U.S. Census), indicating a lack of quality jobs within the County. Smart policies regarding new commercial and industrial development, including not just where the development goes but what kind of development is encourage and/or permitted, will help bring quality jobs to the area, rather than just minimum wage positions at big-box retail stores.

Contiguous Development. Prohibiting "leapfrog" development is a good start towards a balanced land use approach, and preserving agricultural land. New development should start at major interchanges or existing communities and grow outward slowly from there, as opposed to random developments scattered throughout the area. Scattered development is much harder to provide services to, making it a much costlier form of development due to larger extensions of public infrastructure and wider service areas.

Strengthen Existing Communities. Existing communities, be they small towns or older urban neighborhoods, are at risk as new development, population, and tax dollars flow to new developments on the urban fringe. Attempts to reduce this urban sprawl often focus on land use controls in the urban fringe. While these can be effectiveness, they are often limited by local elected officials' desires for growth-at-all-costs and developers' political power. Therefore, to truly strengthen and preserve the communities most at-risk from urban sprawl, programs targeted at these areas must be pursued. These can focus on municipal services like police and fire protection and sidewalks, quality-of-life issues, schools, or community issues. Keeping (or making) these areas attractive to a wide range of people will help to reduce the amount of urban sprawl the region may see from the construction of this major highway.

Redevelopment. Some areas near the Bypass will be ideal for redevelopment. For instance, near Spring Bay and Bay View Gardens in Woodford County, a number of depleted gravel and aggregate pits exist, as well as some currently operation pits. After their useful life, these areas are suitable for redevelopment into residential areas. They may also be desirable as pieces of local history. Whatever their ultimate use, areas like these should be capitalized upon rather than left unused.

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Conservation Design. Conservation Design can help minimize a new development's impact on public infrastructure, existing development, and the ecosystem. When implemented correctly, it provides developers more flexibility in design, more lots on the same total amount of land, and results in more attractive and more valuable subdivisions. Anywhere within or near Environmental Corridors, Conservation Design should be a requisite part of subdivision approval.

Environmental Corridors. Preservation of the Environmental Corridors in the vicinity of the Eastern Bypass will help accomplish many environmental Stewardship goals, as well as help maintain some of the area's existing character that has proven so attractive to new and relocating residents.

Restore Ecological Systems. In many cases, the beneficial functions of native ecosystems (e.g. flood control, water and air pollution filtration, soil preservation, natural cooling in the summer, etc) have been degraded or eliminated by careless public infrastructure and development practices. Gradually returning some of the natural processes to areas like the environmental corridors, streams, and forests will help restore their functionality and benefit to human populations. For instance, carefully-managed prescribed burns in bluff areas will remove over-vegetation and non-native vegetation, thereby reducing erosion, flooding, and siltation downstream.

Chapter Four: Green Highways

A core principle of this plan is that the region's infrastructure, particularly transportation infrastructure, must become green and sustainable. Current transportation infrastructure succeeds at a number of goals, particularly efficiency, but fails in a number of other evaluations, including being green or sustainable. Sustainability of the transportation system and transportation infrastructure encompasses many factors, including social justice, supporting the local economy, safety, and financial sustainability. However, this chapter focuses specifically on the environmental sustainability of the region's road transportation system, beginning with an overview of a model green highways program and then outlining a green highways program for this region.

The Green Highways Partnership (GHP) is an initiative created by US EPA, US Federal Highway Administration, and the Maryland State Highway Administration. The program incorporates environmental streamlining and stewardship into all aspects of the highway lifecycle through concepts such as integrated planning, regulatory flexibility, and market-based rewards. The partnership emphasizes multidiscipline collaboration to achieve environmental goals above and beyond standard regulations. Highway projects completed through this partnership have demonstrated that not only can there be minimal impacts on the environment as communities build out their transportation infrastructure, but with the proper partnerships, forethought, and planning in place, transportation projects can bring a net benefit to local environments and green infrastructure.

The young Green Highways Partnership has already gained tremendous recognition in the Mid-Atlantic region through various pilot projects. One example of a green highway under construction through the partnership is Maryland State Highway Administration's Inter-County Connector (ICC). The ICC will link existing and proposed development areas between the I-270/I-370 and I-95/US 1 corridors within central and eastern Montgomery County and northwestern Prince George's County with a state-of-the-art, multi-modal east-west highway that limits access and accommodates the movement of passengers and goods. Environmental protection measures under this project include, but are not limited to the following:

- Nearly 74,000 linear feet of stream restoration in Northwest Branch, Indian Creek and the Paint Branch and Upper Paint Branch watersheds.
- 1,500 linear feet of fish passage work, which will remove or bridge blockages, thus enabling fish to reach prime upstream spawning areas.
- More than 83 acres of new wetlands at seven major sites. The restoration of wetlands adjacent to Northwest Branch was completed fall of 2008.
- Approximately 4,300 acres of water quality and stormwater management improvements, including state-of-the-art stormwater controls and 16 stormwater-management sites, in each of the major watersheds.
- 21 projects, totaling 620 acres, aimed at improving water quality, protecting brown trout and other environmental conditions in the Upper Paint Branch watershed.
- 44 bridges and culverts (in addition to the bridges at major stream crossings) to provide safe passage for deer and small mammals.
- More than 700 acres of reforested land to create new forest habitat.
- Over 775 acres of new parkland to mitigate the approximately 88 acres that will be used for the ICC. One park project was completed in late summer 2006: a new soccer field for the Wheaton Boys and Girls Club has replaced a field that was prone to flooding.
- Extra effort by contractors to reduce emissions from construction equipment.
- ICC bridges over parks and streams will be longer than normal to lessen the amount of environmental impact in these sensitive areas and to allow greater clearance for wildlife and vegetation.

The environmental program for the ICC is budgeted for \$370 million, more than 15 percent of the project's estimated cost.

Green Highways and Central Illinois Communities

A recent summer meeting of the Transportation Research Board's Environmental Analysis and Transportation Committee was attended by federal and state agency staff from Federal Highway Administration, US Fish and Wildlife Service, US Environmental Protection Agency, American Association of State Highway and Transportation Officials, numerous state highway agencies, and regional Metropolitan Planning Organization representatives. The message communicated by participants of this meeting was clear. Transportation projects of the future are not solely the responsibility of the Federal Highway Administration and State Departments of Transportation. US EPA, Fish and Wildlife Services and other agencies will have a much greater degree of participation in an effort to form partnerships to preserve, protect, and enhance green infrastructure as it relates to transportation.

Greening the roadway system in Central Illinois will take a great deal of collaboration with the Illinois Department of Natural Resources, the US and IL Environmental Protection Agencies, the Federal Highway Administration, the Unites States Department of Agriculture, and others. With immense natural resources including the Illinois River Bluffs and a collection of rivers and streams, Central Illinois has great potential to positively or negatively impact environmental resources with transportation infrastructure. As stated, Maryland State Highways' ICC has demonstrated that building transportation infrastructure can result in a net *benefit* to green infrastructure. To accomplish this, Central Illinois must form new partnerships and introduce green infrastructure improvement strategies early in project planning to morph status-quo transportation practices to this greener alternative.

Best Management Practices (BMP) menu

The following sections detail a list of best management practices identified by the Green Highways Partnership (<u>www.greenhighways.org</u>). This menu is divided into three categories: watershed-driven storm water management, conservation and ecosystem protection, and re-use and recycling. These are practices that local governments and Illinois Department of Transportation can begin to consider as the region progresses into the future of transportation.

Watershed Driven Stormwater Management

Prior to urbanization of the Peoria area, the landscape consisted of a vast network of green infrastructure in the form of prairies, wetlands and forests. During a rain event, vegetation absorbed most of the water as it hit the ground. Streams were fed, not by surface water runoff, but by groundwater. In today's urbanized environment, rainwater hits impervious, hard surfaces such as roads, driveways, and rooftops. It is no longer absorbed onsite by vegetation but is channeled and discharged into local streams or ravines at discrete locations. The hydraulic force of this increased volume and velocity of water to the stream system causes massive erosion of the stream

channel and results in sedimentation of downstream waterbodies. Stormwater runoff from impervious surfaces also contributes to the distribution of land-based chemicals, debris and other non-point source pollutants to local streams and rivers.

The most common methods for addressing stormwater runoff from urbanized areas is to mimic natural processes that absorb, infiltrate and filter urban stormwater runoff.

Native vegetation in swales. Typically, swales that convey stormwater along roads and highways are a maintained turf that absorbs little to no stormwater runoff. Simply converting these swale areas to native prairie plants will increase the system's capacity to absorb stormwater. Native planting are also an aesthetically pleasing and economically sound choice; maintenance is limited to mowing or a prescribed fire every two – three years.

Bioretention. Bioretention is a BMP that uses soil and herbaceous plants to remove pollutants from storm water runoff. Appropriate design specifications can vary from region to region due to soil types, infiltration rates, etc. One example of this practice is a bioretention basin that works by forcing water to flow through a sand bed (which slows the water's velocity) and into a retention area with native, wet-loving plant species. Water is pooled until it infiltrates the bioretention area or is evaporated into the environment. In highway projects, bioretention basins are often linear swales that collect runoff along the roadside.

Residential implementation can range from \$3 to \$4 per square foot. Commercial, industrial, and institutional uses range \$10 to \$40 per square foot. In assessing cost, it is important to consider long term maintenance of the entire drainage system, including the stream or drainageway that receives the water. http://www.lid-stormwater.net/bio_costs.htm

Stormwater Wetlands. Stormwater wetlands are a constructed wetland system designed to use natural biological processes to remove pollutants from surface water runoff. Pollutants are removed through settling and biological uptake as stormwater flows through the wetland. These constructed wetlands are among the most effective means of removing non point source pollutants from



stormwater runoff. Advantages include: improvements in water quality, settlement of particulates, biological uptake of pollutants, flood attenuation, reduced peak discharges, and relatively low maintenance costs. Limitations include: difficulty maintaining vegetation under various flow conditions, depending upon design there is a larger land requirements than other BMP's, and relatively high construction costs compared with other BMP's. Stormwater wetlands require a contributing drainage area of at least 10 acres, although pocket wetlands can be created for smaller areas if there is sufficient groundwater flow.

http://www.metrocouncil.org/environment/Watershed/bmp/CH3_STConstWLSwWetland.pdf

Porous Pavement. Porous pavement is a permeable pavement surface with an underlying stone reservoir that temporarily stores surface runoff before infiltrating into the subsoil. This porous surface replaces traditional pavement, allowing stormwater runoff to infiltrate directly into the soil and receive water

quality treatment. Options include porous asphalt and pervious concrete. Porous asphalt and pervious concrete appear the same as traditional pavement from the surface, but are manufactured without "fine" materials, and incorporate void spaces to allow infiltration. Water is conveyed to the stone reservoir through the surface of the pavement, and infiltrates into the ground through the bottom of this stone reservoir. A geosynthetic liner and sand layer should be placed below the stone reservoir to prevent preferential flow paths and to maintain a flat bottom. Designs also need some method to convey larger storms to the storm drain system. One option is to set storm drain inlets slightly above the surface elevation of the pavement. This allows for temporary ponding above the surface if the surface clogs, but bypasses larger flows that are too large to be treated by the system.

Maintenance of the pavement surface is critical to prevent clogging. Frequent vacuum sweeping is needed to keep the surface clean. Porous pavement should be located only on low traffic or overflow parking areas, which are expected to be not sanded during wintertime conditions.

http://www.stormwatercenter.net/Assorted%20Fact%20Sheets/Tool6 Stormwater Practices/Infiltration%20Practice/Porous%20Pavement.htm

Ecosystem Protection

Why are ecosystems important to people? Local ecosystems, otherwise known as green infrastructure, are the systems that provide the most efficient mechanism to clean, infiltrate, and store groundwater; an in-tact green infrastructure controls flooding, improves surface water quality, and controls pest infestations. If the role of green infrastructure is underestimated, it can be of great consequence to any community. At a 2009 meeting of the Transportation Research Board, Larry Selzer,





President and CEO of the Conservation Fund provided and example where a rapidly growing community came within weeks of losing their groundwater supply. Forest land that once contributed to the groundwater supply could have been purchased for under \$1,000 per acre in its natural state, but is now under deconstruction of strip malls and reforestation for a cost of over \$500,000 per acre.

Avoidance. Wildlife corridors have been identified in the tri-county areas through the Local Legacy initiative developed by Tri-County Regional Planning Commission and the Illinois Department of Natural Resources. As road projects are identified in the tri-county area, avoid sensitive environmental areas.

Habitat Mitigation. Where green infrastructure must be disturbed, identify restoration and preservation opportunities that go beyond traditional regulation. It is with habitat mitigation, that a transportation project could very well improve ecosystems on a regional scale. Mitigation involves prairie, wetland, and forest restoration as well as stream channel stabilization. The IL 29 improvement project, for example, outlines a strategy to plant 64 acres of trees and 255 acres of prairie. Partnerships with environmental agencies are crucial in identifying appropriate habitat mitigation practices.

Wildlife Crossings. Millions of birds, reptiles, mammals, and amphibians are killed every year by vehicles travelling on America's roads, in addition to the more than 200 motorists that are killed each year striking these creatures. The easiest way to prevent animal-vehicle collisions on a built environment is to provide wildlife a safe path across roadways. Bridges, tunnels, culverts, and barriers can direct wildlife over, under, or around the roadway. Crossings can be designed to coincide with the natural



Photo examples of wildlife crossings, courtesy of the Green Highways Partnership.

environment and with natural animal movement paths. Smart design allows for optimum usage and minimizes habitat disruption and fragmentation. Roadways themselves can be modified to include escape areas, which allow a safe exit for trapped animals.

Nature oriented design. Nature oriented design includes a broad spectrum of practices that accommodate wildlife at the project location. These practices include the details that may specifically benefit a certain species. For example, South Carolina Department of Transportation's (SCDOT) Ravenel Bridge, a gateway connecting Charleston with the town of Mt. Pleasant, was designed to include lighting that did not disturb migratory birds and aquatic creatures in close proximity. SCDOT signed an agreement with the US Fish and Wildlife Service to use 250-watt bulbs instead of the originally planned 1,000-watt bulbs to illuminate the bridge's towers. SCDOT also agreed to turn the lighting off during certain hours during turtle nesting season.

There are many examples of simple strategies to protect wildlife that are endorsed by the Federal Highway Administration. For example, signage warning motorists of deer or elk has proven to reduce auto speed and decrease the likelihood of animal-vehicle collisions. Another simple solution to a specific problem is implementing the use of inexpensive wire fencing in order to prevent tortoises from reaching the road. This method is used in Arkansas with great success.

Re-use, and Recycling

Re-using and recycling building materials and implementing construction techniques to mitigate waste and minimize natural resource consumption are economical as well as environmentally friendly measures for greening transportation infrastructure. Status quo concrete production consumes a vast amount of natural resources and emits tremendous quantities of waste into the atmosphere in the form of toxic fumes and gasses. Recycled industrial products can significantly reduce concrete production waste and resources.

Slag cement. Slag cement, or ground granulated blast-furnace slag, is a byproduct of iron production. It can be used to replace large portions of Portland cement, saving on the necessary extraction of limestone and clay from the earth's surface. Typical mixture designs for structural or paving concrete normally use substitution rates between 25 and 50 percent; high-performance and mass concrete applications can use substitution rates up to 80 percent. These high proportions for slag cement dramatically reduce the embodied material, energy, and emissions in a cubic yard of concrete. Substituting 50 percent slag cement can save between 281 and 640 pounds of virgin material per cubic yard of concrete, a reduction of between 6 and 15 percent.

In Portland cement manufacturing, almost one ton of CO^2 is released for every ton of portland cement produced. Between 165 and 374 pounds of CO^2 are saved per cubic yard of concrete by using a 50 percent slag cement substitution, a 42 to 46 percent reduction in greenhouse gas emissions. Slag cement also requires nearly 90 percent less energy to produce than an equivalent amount of portland cement.

Slag cement is whiter in color than Portland cement or other cementitious materials, such as fly ash or silica fume. This results in lighter-colored concrete products with higher reflectivity which aides in higher visibility, improved safety, and reduced heat island effect. (source: Slag Cement Association)

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Fly Ash Concrete. Substituting fly ash for portland cement is another way to make concrete greener. Fly ash is a by-product of coal combustion for electric power facilities. Fly ash is normally used in quantities between 15 and 25 percent, as compared with substantially higher substitution levels for slag cement.

Over 61 million metric tons (68 million tons) of fly ash were produced in 2001. Currently, over 20 million metric tons (22 million tons) of fly ash are used annually in a variety of engineering applications. Typical highway engineering applications include: portland cement concrete (PCC), soil and road base stabilization, flowable fills, grouts, structural fill and asphalt filler. Fly ash utilization, especially in concrete, has significant environmental benefits including: (1) increasing the life of concrete roads and structures by improving concrete durability, (2) net reduction in energy use and greenhouse gas and other adverse air emissions when fly ash is used to replace or displace manufactured cement, (3) reduction in amount of coal combustion products that must be disposed in landfills, and (4) conservation of other natural resources and materials. (source: American Coal Ash Association)

Foundry Sand. Metal foundries use large amounts of sand as part of the metal casting process. Foundries successfully recycle and reuse the sand many times in a foundry. When the sand can no longer be reused in the foundry, it is removed from the foundry and is termed "foundry sand." Foundry sand production is nearly 6 to 10 million tons annually. Like many waste products, foundry sand has beneficial applications to other industries.

Foundry sand is a fine aggregate. It can be used in many of the same ways as natural or manufactured sands. This includes many civil engineering applications such as embankments, flowable fill, hot mixasphalt and portland cement concrete. Foundry sands have also been used extensively as agricultural topsoil.

Currently, approximately 500,000 to 700,000 tons of foundry sand is used annually in engineering applications. The largest volume of foundry sand is used in geotechnical applications, such as embankments, site development fills and road bases. Foundries are located throughout the United States in all 50 states. However, they tend to be concentrated in the Great Lakes region, with strong foundry presence. (source: Federal Highway Administration)

Asphalt Pavement Recycling with Reclaimed Asphalt Pavement (RAP). The Federal Highway Administration (FHWA) supports and promotes the use of recycled highway materials in pavement construction in an effort to preserve the natural environment, reduce waste, and provide a cost effective material for constructing highways. As part of the FHWA recycled materials policy, the FHWA actively promotes asphalt pavement recycling and technology.

Reclaimed asphalt pavement (RAP) is the term given to removed and/or reprocessed pavement materials containing asphalt and aggregates. These materials are generated when asphalt pavements are removed for reconstruction, resurfacing, or to obtain access to buried utilities. When properly crushed and screened, RAP consists of high-quality, well-graded aggregates coated by asphalt cement.

Although the majority of old asphalt pavements are recycled at central processing plants, asphalt pavements may be pulverized in place and incorporated into granular or stabilized base courses using a self-propelled pulverizing machine. Hot in-place and cold in-place recycling processes have evolved into continuous train operations

that include partial depth removal of the pavement surface, mixing the reclaimed material with beneficiating additives (such as virgin aggregate, binder, and/or softening or rejuvenating agents to improve binder properties), and placing and compacting the resultant mix in a single pass. Quality control is needed to ensure that the processed RAP will be suitable for the prospective application. This is particularly the case with in-place pavement recycling.

Reliable figures for the generation of RAP are not readily available from all state highway agencies or local jurisdictions. Based on incomplete data, it is estimated that as much as 41 million metric tons (45 million tons) of RAP may be produced each year in the United States. (source: Federal Highway Administration)

Moving Forward

The practices mentioned above cannot be implemented through traditional road construction partnerships and programs. Green Highways Partnerships are gaining momentum and the near future will hold pilot programs, tools, and information that can help Peoria, Tazewell, and Woodford Counties launch new Partnerships. It is integral to reach out to natural resource agencies for guidance and collaboration from project conception to construction and maintenance. This planning process has started the dialogue in the Peoria region, but continued efforts to engage environmental and resource agencies and organizations must be made. This is particularly true when corridor, alignment, and design work is being completed for individual pieces of infrastructure. While the ideas expressed in this plan are a good start, and can help raise awareness, the development phases of real infrastructure are the only way to actually put the Green Highways principles into physical form.

The region must be attentive to opportunities to implement green highways. In addition, the region must be vigilant about taking advantage of those opportunities when they come. Green Highways no doubt represents a significant change in how our transportation infrastructure would look, and significant change usually encounters significant resistance. Still, this resistance must be met and overcome if this region truly cares about continued growth and health without sacrificing the very natural and environmental assets that attract new people and businesses and keep those already here.

Conclusion

This region often professes to care about principles like sustainability, preservation of the Illinois River, etc. Indeed, many individuals, organizations and communities truly do care, and take action towards sustainability; we know this because they came together to contribute to the creation of this plan. However, in order to truly become a sustainable place, this region as a whole will have to realize many significant changes. These changes will be made one at a time, by many different communities and people.

<u>The Big Plan</u> puts forward specific policies and programs, and recommendations that will help the region's communities and people make progress towards sustainability, and demonstrate the proclamations are more than just feel-good messages and political tricks. The plan is not the be-all, end-all, for methods to move the region to a sustainable future; other worthy ideas and programs exist, and others are being created continuously. However, if the region truly does care about restoring and preserving the Illinois River, about the Bluffs and forests, about a sustainable transportation system, about public health, about reducing air pollution, about a sustainable regional economy, about transportation opportunities and alternatives, the pages of <u>The Big Plan</u> contain a quality blueprint for sustainability-focused public policy and action. Progress on these recommendations is progress towards true regional sustainability.