November 2007

CHAMPAIGN
MOVING FORWARD

# City of Champaign
## Transportation Master Plan

## DRAFT

LSA

Catalyst Consulting

City of CHAMPAIGN

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# CHAPTER 1: INTRODUCTION

## PURPOSE OF THE PLAN

The City of Champaign is a vibrant active university community in central Illinois with a rich history, strong community character, and a balanced economic base. As a result, the area has seen steady population and employment expansion for several decades and is projected to continue this trend in the years to come.

Champaign Moving Forward is the Transportation Master Plan (TMP) for the City of Champaign and its projected growth area. Champaign Moving Forward will become an element of the Comprehensive Plan and will replace the existing Transportation Plan developed in 1992. The Plan creates a vision for a multi-modal transportation system that helps achieve the City's goals of sustainable growth. Champaign Moving Forward considers all transportation modes, including cars, public transportation, bicycling, and walking.

The Plan also addresses the relationship between transportation and land use, and presents the land use concept vision of connected neighborhoods and nodes. The Plan identifies future transportation needs of the area, estimates costs, and identifies short-term and long-term capital investments for improvements to existing roads, construction of new roads, transit, bicycle, and pedestrian facilities. Champaign Moving Forward provides both technical and policy direction for decisions related to planning transportation facilities. The Plan also provides the framework for a balanced transportation system that offers choices in how people travel, supported by a realistic plan to fund improvements.

**What questions does Champaign Moving Forward answer?**

- How do land use decisions and other issues affect the need for transportation facilities in the City?
- What transportation improvements are needed to serve the future growth of Champaign?
- What are the capital investment needs for Champaign to meet future transportation demand?
- How will the transportation needs be prioritized?
- What are the best ways to fund needed improvements?

**Why do we need a Plan?**

The City of Champaign needs a long-range transportation plan for several obvious and some not-so-evident reasons. As congestion increases on area roads due to growth, development, and more travel through the region, it is clear that the current roadway system will not be sufficient to accommodate future needs. In addition, citizens of Champaign have expressed interest in alternative transportation options and land use scenarios that promote those options. This rethinking of mixed-use developments and transportation choice is also consistent with current federal legislation.

Beyond any of these reasons, a long-range transportation plan just plain makes sense. Good planning involves citizens, increases efficiency and effectiveness of the investment, and promotes transportation services and infrastructure that are consistent with the community's desires. The planning process enhances the community's character and quality of life by considering the interaction between land use and transportation and their cumulative effect on the built and natural environments.

## RELATIONSHIP TO OTHER PLANS

Champaign Moving Forward is focused on the City of Champaign and unincorporated areas just outside of the City limits. The City of Champaign is part of a much greater dynamic community including the University of Illinois, the City of Urbana, Champaign County, and the Villages of Savoy and Mahomet. Champaign is also critically tied to the state and federal transportation system for travel both within the region and outside the region.

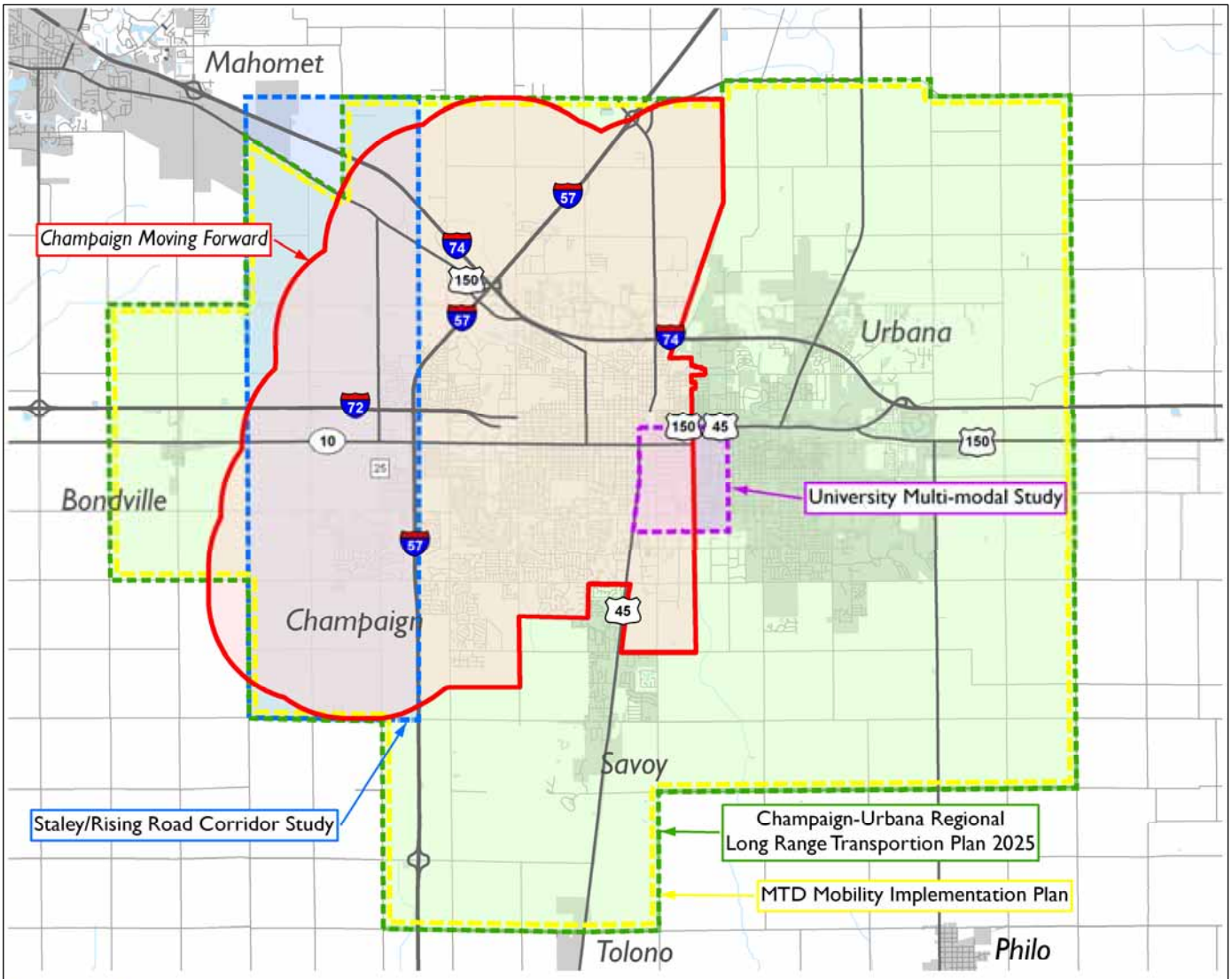
In addition to Champaign Moving Forward, other planning efforts have been initiated that impact transportation in the community. The geographic areas of focus of these studies are included in Figure 1. This map shows the generalized boundaries for Champaign Moving Forward, as well as how it fits in with other transportation studies that are underway or recently completed.

- **CHAMPAIGN-URBANA REGIONAL LRTP 2025** (Champaign-Urbana Urban Area Transportation Study): The mission of the Long Range Transportation Plan for the Champaign-Urbana area is to provide a safe, efficient, and economical transportation system that makes the best use of existing infrastructure, optimizes mobility, promotes environmental sensitivity, accessibility, and economic development, and enhances quality of life for all users. It is the basis for receiving federal funding.

- **BIG.SMALL.ALL** (Champaign County, CCRPC): A community visioning process to engage citizens, companies, and organizations of the County in an open conversation about the future of Champaign County on such topics as the economy, environment, development, housing, transportation, education, recreation, and important social issues.

- **UNIVERSITY MULTI-MODAL STUDY** (University of Illinois): A multi-modal study focused on creating a healthy, pedestrian-friendly environment on campus with a safe, well-balanced mix of transportation alternatives for students, faculty, staff, and visitors.

## FIGURE 1: CONCURRENT PLANNING STUDIES




## Legend

***Champaign Moving Forward*** (City of Champaign): The Transportation Master Plan will become an element of the Comprehensive Plan and will replace the existing Transportation Plan developed in 1992. The plan will create a vision for a multi-modal transportation system that helps achieve the City's goals of sustainable growth. The plan will also give both technical and policy direction for decisions related to the planning for transportation facilities.

*Entire County* **big. small. all** (Champaign County, CCRPC): A community visioning process to engage citizens, companies, and organizations of the County in an open conversation about the future of Champaign County on such topics as the economy, environment, development, housing, transportation, education, recreation, and important social issues.

**Champaign-Urbana Regional LRTP 2025** (Champaign-Urbana Urban Transportation Study): The mission of the Long Range Transportation Plan for the Champaign-Urbana area is to provide a safe, efficient, and economical transportation system that makes the best use of existing infrastructure, optimizes mobility, promotes environmental sensitivity, accessibility, and economic development, and enhances quality of life for all users. *(completed)*

**Staley/Rising Road Corridor Study** (City of Champaign, CCRPC): This study builds on the land use and transportation findings and recommendations developed under the Champaign-Urbana-Savoy-Bondville Long Range Transportation Plan. The objective of this effort is to look at the remaining land use opportunities in the corridor, to better define arterial management actions, and to facilitate a public discussion that will help lead to a consensus on an appropriate vision for the corridor that is sensitive to the natural, built, and human environment. *(scheduled completion December 2006)*

**MTD Mobility Implementation Plan** (Champaign-Urbana Mass Transit District): Non-automobile long range transportation plan for the MTD service area.

**University Multi-modal Study** (University of Illinois): A multi-modal study focused on creating a healthy, pedestrian-friendly environment with a safe, well-balanced mix of transportation alternatives for students, faculty, staff and visitors.

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Miles

*Base data: Champaign County GIS Consortium*

- **MTD MOBILITY IMPLEMENTATION PLAN** (Champaign-Urbana Mass Transit District): A study to find out what mobility options Champaign, Urbana, and Savoy want as a community, both now and in the future, and then craft a plan to bring those options to fruition.

- **STALEY/RISING ROAD CORRIDOR STUDY** (City of Champaign, CCRPC): This study will build on the land use and transportation findings and recommendations developed under the Champaign Transportation Master Plan and the Long Range Transportation Plan. The objective of this effort is to look at the remaining land use opportunities in the corridor, to better define arterial management actions, and to facilitate a public discussion that will help lead to a consensus on an appropriate vision for the corridor that is sensitive to the natural, built, and human environment.

Because of both the benefits of the various transportation studies occurring concurrently and the potential conflicts that could result, a major effort was undertaken as part of the development of these studies to coordinate technically throughout the plan development process. To this end, a Technical Advisory Committee was developed for the review and input of the technical work efforts. Agencies participating in the work effort included:

- City of Champaign, Planning and Engineering Staff
- Champaign Urbana Urbanized Area Transportation Study (CUUATS)
- Illinois Department of Transportation (IDOT)
- University of Illinois
- Champaign-Urbana Mass Transit District (CUMTD)

## PLANNING PROCESS

The purpose of Champaign Moving Forward is to provide not only a framework and strategies to implement the transportation systems plan and modal elements, but also provide input to the City Comprehensive Plan Update.

The planning process for the development of Champaign Moving Forward consisted of three phases.

The first phase, Issues & Values, identified the current state of transportation and development within the City. Issues addressed included automobile congestion and improvements, transit coverage and service, bicycle and pedestrian network, transportation funding, and current growth patterns.

The second phase of the plan process developed and evaluated a series of land use and transportation alternatives to understand how land use development affects transportation and vice versa how transportation solutions affect land use.

The third and final phase developed a preferred Land Use and Transportation Plan including implementation strategies and policies.

Each phase of the planning process included a public meeting, website postings, and presentations to various organizations in the community. A summary of the timing, format, and key questions addressed at each of the public meetings is listed in the chart below.

| Step | Meeting Date | Format | Key Questions |
|---|---|---|---|
| **Issues and Values** | May 11, 2006 | Public Meeting: Open House, Presentation and Workshop | • What is the Transportation Master Plan?<br>• What are conditions today?<br>• What trends will affect travel in the future?<br>• What issues and values need to be addressed in this Plan?<br>• What transportation improvements should be considered in the Plan? |
| **Alternatives Development and Evaluation** | November 2, 2006<br><br>December 7, 2006 | Community Conversation on Transportation Choices: Open House, Presentation and Discussion Groups<br><br>Focus Group Workshop on Transportation Choices | • What are the choices for the future?<br>• What are implications of these choices?<br>• What are the funding implications of these choices? |
| **Preferred Plan Selection and Refinement** | November 27, 2007 | Open House<br>Web Comments | • Did we get it right in response to your input regarding multi-modal transportation improvements?<br>• What changes or suggested additions do you propose? |

## PLAN ORGANIZATION

Champaign Moving Forward is divided into nine (9) chapters. The following provides a list of the chapters and their general contents:

1. **INTRODUCTION:** Background, purpose, and need for the Plan.

2. **MOBILITY REPORT CARD:** This chapter describes the current state of the existing transportation system – auto, transit, bicycle, and pedestrian. The existing conditions analysis focuses on answering the questions: What are the City and other transportation service providers doing today to address mobility needs? Based also on the identified trends, what might the transportation system look like in the future?

3. **CONNECTED NEIGHBORHOODS AND NODES:** A key component in the development of Champaign Moving Forward is responsiveness to the City's future land use development. To determine the best land use and transportation future, a series of land use concepts were developed and their efficiency evaluated. These land use plans and the resulting transportation improvements resulted in quite different impacts and costs. Through this process, a preferred land use concept was selected for future refinement and a Transportation Master Plan developed to support that land use concept. The vision of Connected Neighborhoods and Nodes complements a multi-modal system of mobility choices, offering opportunities to drive, take a bus, bicycle, and walk. This multi-modal framework identifies the requirements of design, policies, and implementation objectives for a multi-modal land use plan for the City.

4. **ROADWAY VISION:** This Plan provides the framework for building the future roadway infrastructure for the City. Included in this section is a map depicting the roadway hierarchy from highways to collectors. This map details the road network needed to accommodate future development anticipated in the 2030 timeframe. An additional map identifies the corridors to be preserved for Post-2030 development.

5. **TRANSIT VISION:** Transit service is provided by the Champaign-Urbana Mass Transit District (CUMTD) and will continue to be provided by MTD in the future. As the City of Champaign grows, this chapter highlights the land use and development principals to encourage transit oriented development which will lead to an improved efficient grid transit system.

6. **BICYCLE VISION:** Champaign provides a flat terrain with a system of grid streets that make bicycling a viable mode of transportation. This chapter defines a system of trails, lanes, and routes that would promote a network of bicycling opportunities.

7. **PEDESTRIAN VISION:** Because walking is the beginning and end of every trip, identifying best practices and policies for pedestrian mobility provides the framework for a viable pedestrian network for Champaign.

8. **IMPLEMENTATION OF THE PLAN:** Visions and plans become reality when implemented. This chapter identifies strategies and actions for the City to achieve a multi-modal community. Recommendations for complete streets, development guidelines, and street funding strategies are some of the implementation strategies discussed. This chapter also provides a cost estimate of the arterial roadway plan and strategies for funding.

# CHAPTER 2: MOBILITY REPORT CARD

To many, the transportation system is often viewed as a network of streets and highways that allow for automobile and truck traffic within, to, and through the region. In reality, roads make up only one component of the transportation system, although an important one. Transit service, bicycle facilities, and pedestrian infrastructure are essential to a well-balanced multi-modal transportation system.

Before determining where the community wants to be in the future, it is important to first see where we are today, how we got here, and where we are going based on current trends and policies. To describe current conditions, a Mobility Report Card was prepared. This Mobility Report Card utilized 15 different indicators or issues to grade four transportation modes - automobile, transit, bicycle, and pedestrian. It also reviewed how multi-modal system works together and the funding for needed improvements. In many areas, the City of Champaign is doing very well and has a lot to be proud of. However, some of the current trends and forecasts are concerning, particularly in the area of the ability to adequately fund the needed transportation system to accommodate future growth.

## Mode of Travel

The trend both locally and nationally between 1990 and 2000 has been toward increased reliance on the automobile. As suburban development patterns continue and reliance on the automobile increases, the number of vehicle trips, vehicle miles of travel and congestion also increase.

### Work Trips Mode of Travel

| | City of Champaign | | Champaign County | | Illinois | | United States | |
|---|---|---|---|---|---|---|---|---|
| | 1990 | 2000 | 1990 | 2000 | 1990 | 2000 | 1990 | 2000 |
| *Car, truck, or van:* | *72.7%* | *75.3%* | *78.1%* | *80.5%* | *82.0%* | *84.1%* | *86.5%* | *87.9%* |
| *Public transportation:* | *6.2%* | *6.2%* | *4.6%* | *4.9%* | *10.1%* | *8.7%* | *5.3%* | *4.7%* |
| Bicycle | 2.1% | 2.2% | 1.8% | 1.8% | 0.3% | 0.3% | 0.4% | 0.4% |
| Walked | 15.2% | 12.3% | 11.4% | 8.5% | 4.2% | 3.1% | 3.9% | 2.9% |
| Other/Work At Home | 3.8% | 3.9% | 4.0% | 4.3% | 3.4% | 3.8% | 3.9% | 4.1% |

*Source: 1990 and 2000 US Census*

## AUTOMOBILE

The automobile has been and continues to be the predominant mode of travel for the City of Champaign, the region, the state, and our nation. We travel along our local streets and highways for trips to work, shopping, businesses, and recreation. This infrastructure is also critically important in that it provides the system for delivering our goods and services. It is also the system that bus transit travels along. The three areas of measurement that provide an indicator of the health of our automobile mobility are congestion, street improvements, and future growth impacts.

### Congestion

**The City of Champaign's street system generally operates well with minor areas of congestion.**

Unlike major metropolitan areas and even other cities similar in size to the City of Champaign, which experience severe congestion, the residents of Champaign can generally move around without congestion to places of work, shopping, businesses, or for recreation. Based on existing traffic counts and the CUUATS regional traffic model, there are some pockets of moderate congestion in the downtown area, around the University of Illinois, and north Prospect Avenue. However, traveling from one side of the City to the other is relatively easy and quick as presented in Figure 2. There are also other noted areas of congestion such as the St. Mary's Road viaduct, the two-lane portion of Springfield Avenue, and the Bradley Avenue overpass at I-57.

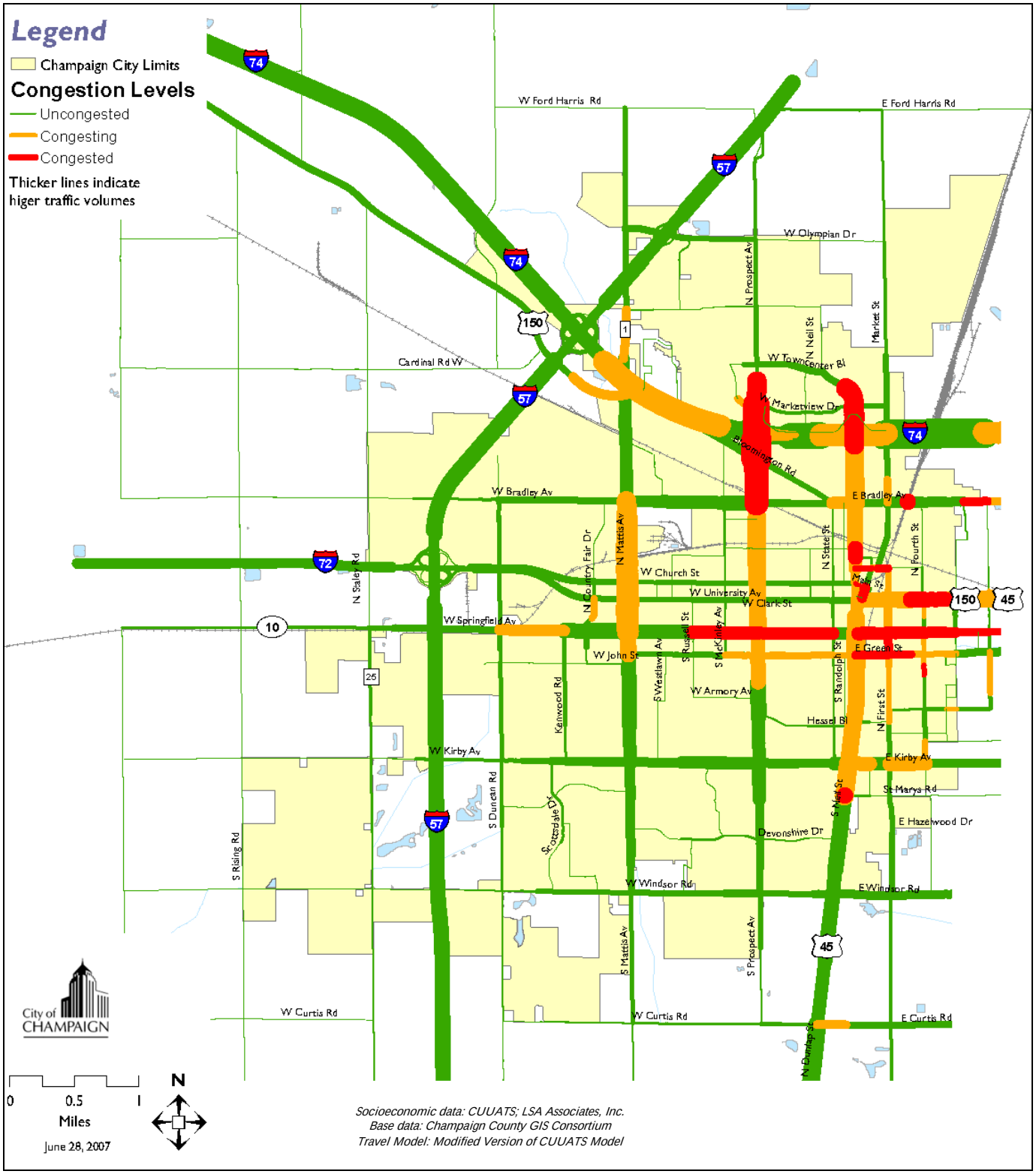
Growth is occurring within the City and region, and with that growth, traffic will also increase and will aggravate current congested areas and expand into areas not currently congested. As presented in Figure 3, traffic has grown significantly over the past 25 years. Whereas the amount of traffic growth is still within the general capacity limits of the roadways, some roads are filling up and approaching capacity. As the City grows, in both population and land area, the number of trips will increase and they will be longer. As this occurs, more and more roadways will exceed their capacity and result in congestion and delays for the users.

### What is the Definition of Traffic Congestion?

Planners and engineers use a measurement called Level of Service (LOS) to gauge the adequacy of transportation facilities. Similar to grades in school, LOS is scored using letters from A to F, where A represents the best conditions and F represents failure. Level of service scores can be grouped into three color-coded categories as defined below:

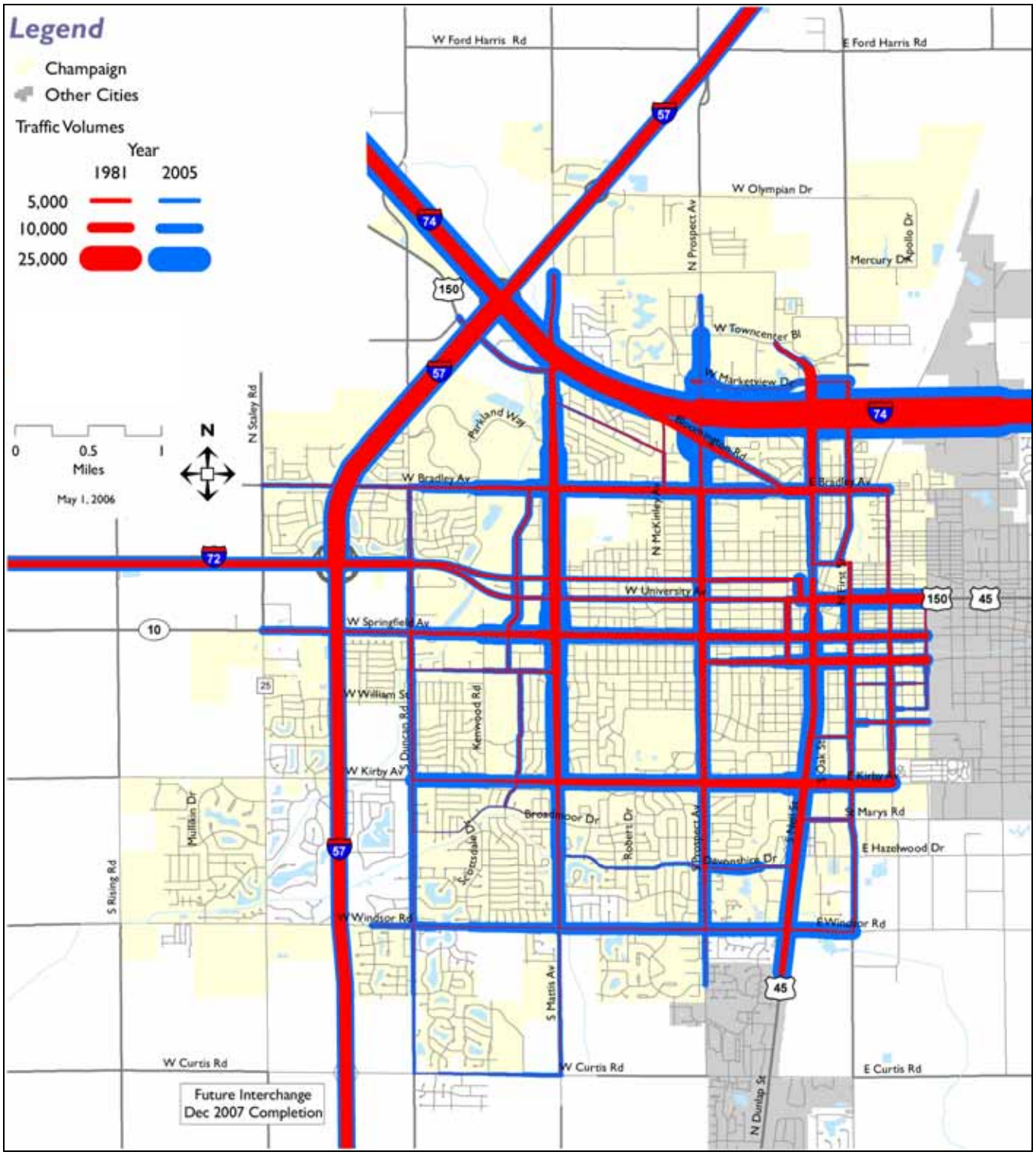
- **Uncongested (Level of Service A - C):** Corridors that generally operate in free-flow conditions, where the driver tends to be able to travel without undue delay except for typical traffic control operations, such as stop signs or traffic signals. During the peak hour, there might be some delay at a controlled intersection, but generally the driver can get through the intersection within one cycle of the traffic signal.
- **Congesting (Level of Service D):** These corridors are roadways where the driver can generally travel in free-flow conditions during the off-peak hours, but might experience having to wait more than one cycle at a signalized intersection during the peak hours. Because these corridors have existing traffic volumes approaching capacity, there can be significant variations in congestion from day to day, fluctuating between acceptable and congested.
- **Congested (Level of Service E – F):** The congested corridors in the Champaign are those roadways where traffic volumes have either reached or exceeded the facility's capacity to accommodate these volumes. These facilities experience daily congestion delays where it is not uncommon that a driver might have to wait two or more signal cycles to get through the intersection.

## FIGURE 2: EXISTING CONGESTION AREAS




*Socioeconomic data: CUUATS; LSA Associates, Inc.*
*Base data: Champaign County GIS Consortium*
*Travel Model: Modified Version of CUUATS Model*

## FIGURE 3: TRAFFIC GROWTH




*Socioeconomic data: CUUATS; LSA Associates, Inc.*
*Base data: Champaign County GIS Consortium*
*Travel Model: Modified Version of CUUATS Model*

## Street Improvements

**As new development occurs in outlying areas of the City, the traffic it generates incrementally increases and impacts the rural roadway network which was not meant to serve urban development. Arterial street improvements are not keeping up with this new development. Currently, there are over $55 million of needed City of Champaign arterial street improvements and $42.5 million of these improvements are unfunded.**

Residential growth has been occurring in the outlying areas of the City to the north, west, and south. Many of these new residential developments are served by rural roadways that were never intended for urban use. Typically, these projects are relatively small in number and size from a few dwelling units to a few hundred dwelling units. Whereas individually these developments might not result in a serious impact to the arterial street system, the collective impact is resulting into a growing number of deficient arterial streets without curbs, gutters, or sidewalks. These streets operated well for rural development and are now being strained for urbanized uses. The number of rural roadways that are deficient for urban uses is increasing and the deficit to the City to improve them is growing as presented in Figure 4, Arterial Road Improvement Deficit, and Table 1.

## Future Growth Impacts

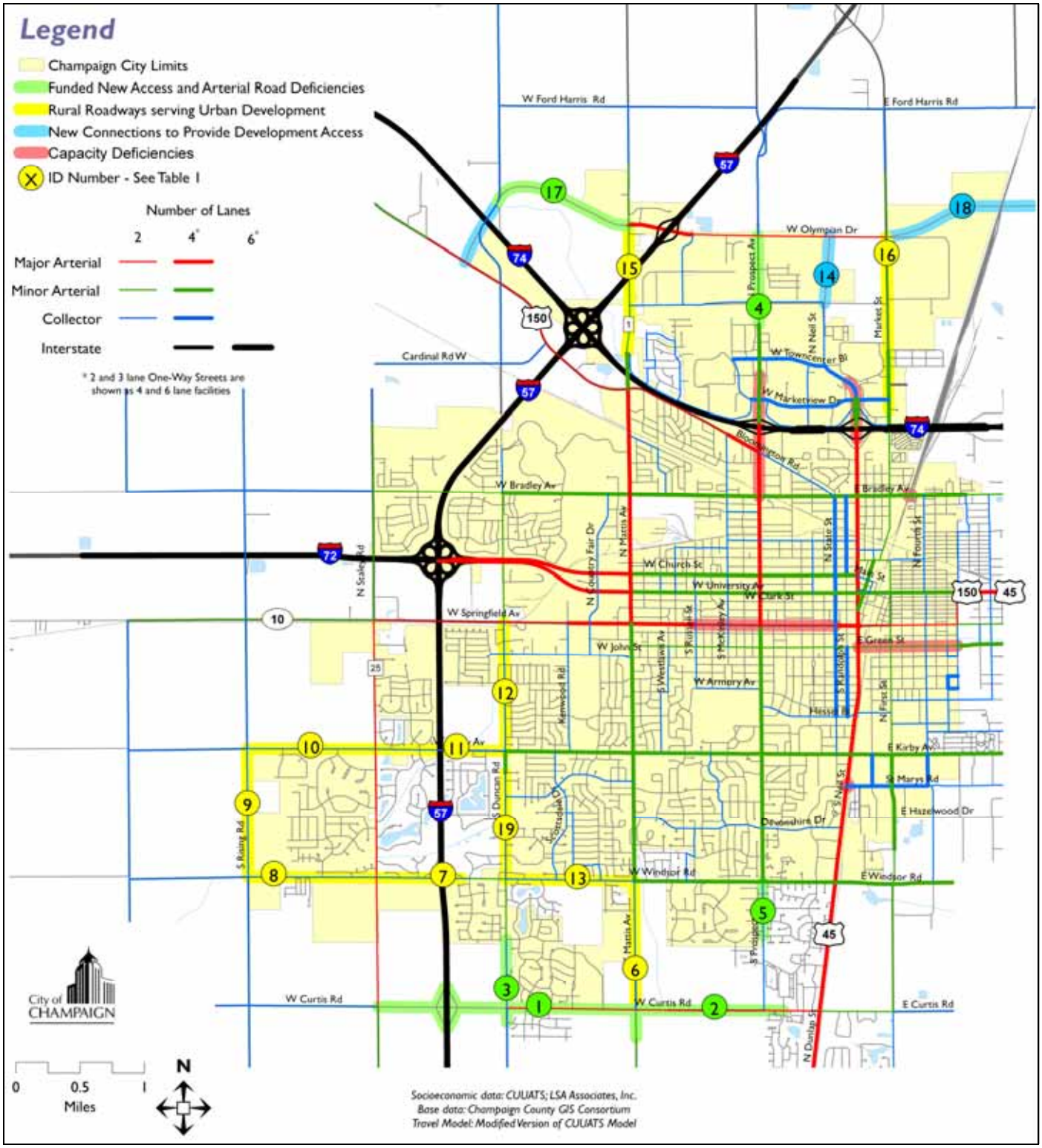
**As development occurs, the existing and funded arterial street network will not keep up with forecasted traffic demand. Increased congestion will occur without new facilities and travel times will rise.**

Without adequate revenues to fund needed improvements, the current trend toward growth in the outlying areas will continue to manifest itself into severe mobility and traffic congestion related impacts. The lack of sufficient funds to reconstruct and build complete streets with curbs, gutters, sidewalks, and necessary traffic control with the forecasted growth will put the City further behind in providing the transportation system that the citizens have enjoyed and experienced in the past.

## TRANSIT

Excellent transit service is provided by the Champaign-Urbana Mass Transit District with ridership nearing $10 million in 2006. This transit service has been centered on the University and the City of Champaign and Urbana's downtowns. As the region grows and traffic increases, transit will be impacted with increased congestion and delays, coupled with a larger service area.

## FIGURE 4: ARTERIAL ROAD IMPROVEMENT DEFICIT



## TABLE 1: ARTERIAL ROAD IMPROVEMENT DEFICIT

| ID | Street Name | West / North Limit | East / South Limit | Necessary Improvements | Est. Total Project Cost | City of Champaign Cost | Un-Funded Amount ($M) |
|---|---|---|---|---|---|---|---|
| 1 | Curtis Rd. | Duncan | Wynstone | Widen to 4 Lanes plus Center Turn Lane | 7.48 | 2.97 | |
| 2 | Curtis Rd. | Wynstone | Wesley | Widen to 4 Lanes | 15.40 | 2.74 | |
| 3 | Duncan Rd. | Meadows West | Curtis | Improve to suburban/urban standards | 2.20 | 2.20 | |
| 4 | Prospect Ave. | Olympian | Interstate | Widen to 4 Lanes | 2.20 | 1.70 | |
| 5 | Prospect Ave. | Windsor | Savoy Limit | Improve to suburban/urban standards | 1.00 | 1.00 | |
| 6 | Mattis Ave. | Windsor | Curtis | Improve to suburban/urban standards | 2.50 | 2.50 | 2.50 |
| 7 | Windsor Rd. | Staley | I-57 | Improve to suburban/urban standards | 1.25 | 1.25 | 1.25 |
| 8 | Windsor Rd. | Rising | Staley | Improve to suburban/urban standards | 2.50 | 2.50 | 2.50 |
| 9 | Rising Rd. | Kirby | Windsor | Improve to suburban/urban standards | 2.50 | 2.50 | 2.50 |
| 10 | Kirby Ave. | Rising | Staley | Improve to suburban/urban standards | 2.50 | 2.50 | 2.50 |
| 11 | Kirby Ave. | Staley | Duncan | Improve to suburban/urban standards | 2.50 | 2.50 | 2.50 |
| 12 | Duncan Rd. | Springfield | Kirby | Improve to suburban/urban standards | 2.50 | 2.50 | 2.50 |
| 13 | Windsor Rd. | Duncan | Mattis | Widen to 4 Lanes | 4.80 | 4.80 | 4.80 |
| 14 | Neil St. | Olympian | Interstate | Improve to suburban/urban standards | 1.25 | 1.25 | 1.25 |
| 15 | Mattis Ave. | Olympian | Anthony | Widen to 4 Lanes | 4.50 | 4.50 | 4.50 |
| 16 | Market St. | Olympian | Marketview | Widen to 4 Lanes | 5.60 | 5.60 | 5.60 |
| 17 | Olympian Dr. | Bloomington Rd (Rte.150) | Mattis | New 2 Lane Arterial | 8.90 | 8.90 | 6.40 |
| 18 | Olympian Dr. | Apollo | Lincoln | Improve to suburban/urban standards, bridge over CN RR. | 15.50 | 1.70 | 1.70 |
| 19 | Duncan Rd. | Windsor | Watterson | Improve to suburban/urban standards | 2.00 | 2.00 | 2.00 |
| **Total Costs** | | | | | **87.08** | **55.61** | **42.50** |

## Transit Coverage

**The transit coverage area within the City is extremely good with over 90% of the City being within ¼ mile of a transit stop.**

The existing MTD fixed route transit service for the City of Champaign is presented in Figure 5. This service includes local, limited, and express routes. Transit typically services population and destinations that are within ¼ mile of the transit facility. Also included on this map is a ¼ mile service area overlay that illustrates that in general, the entire City is served with transit.

## Transit Access to Downtown and University

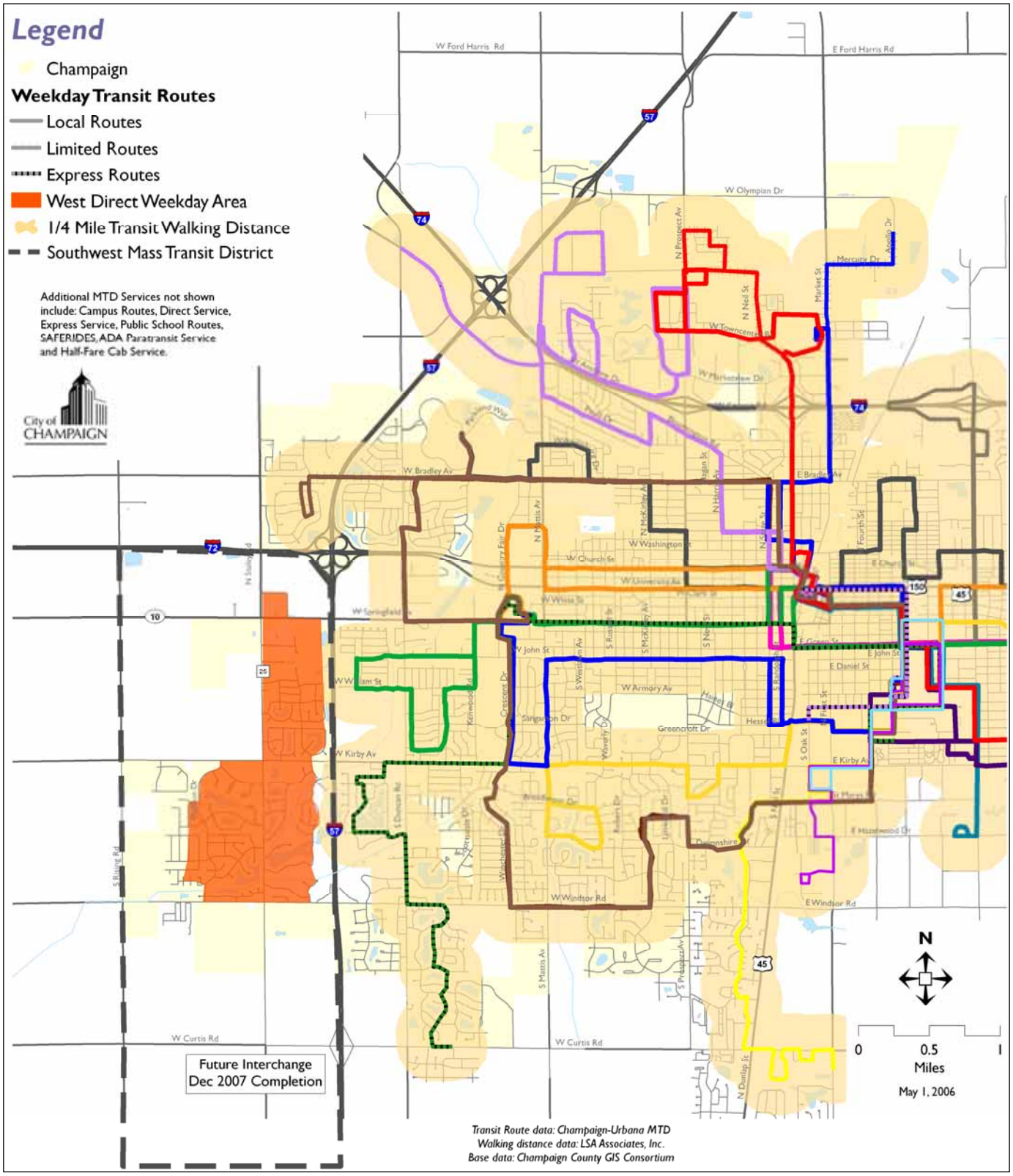
**With extensive service from all parts of the City to downtown and the University of Illinois, transit service is good and ridership is relatively high for downtown and University trips.**

The transit service by MTD is typically referred to as a "hub and spoke" type system, where various routes from outlying areas travel to higher trip end density end points and transfer facilities. Buses tend to arrive and depart on similar schedules in a pulse type fashion. Therefore, this system does very well for the type of transit service it provides to the downtown areas and the University.

## Transit Service throughout the City

**With a hub and spoke type transit network, transit service to one part of the City to another part often requires travel to the downtown or University of Illinois and then a transfer to a connecting route to the final destination. This hub and spoke type transit service can both add to travel times and can be difficult to understand.**

## FIGURE 5: MTD COMMUNITY FIXED ROUTE SERVICE



With the trend for population and employment growth in areas outside the downtown areas, transit opportunities might still exist. However, the attractiveness is diminished with increased travel times to first go into the core area to transfer.

### Transit Expansion

**With the trend toward homogeneous land uses with lower density development to the west and outlying areas and commercial retail to the north, it becomes more and more difficult for MTD to provide new transit services to these areas. Viable transit requires both higher density and a mix of uses.**

It will be very difficult for MTD to maintain transit market share given the current trends toward homogeneous and lower density developments in outlying areas away from the downtown and the University. Whereas changes in transit routes could achieve some grid type service, the lower density development with a larger coverage area will create lower demand multi-directional travel patterns, which is difficult to support with transit. Another, more major issue in limiting transit service within the region is the recent formation of a new transit district in west Champaign. This district has been formed with no intention of providing service, but rather to block the CUMTD from annexing additional land. Nationally, the trend has been to consolidate transit services, not create new ones. Creating new smaller districts precludes residents and businesses from easily connecting with a greater transit system, which serves a much wider region.

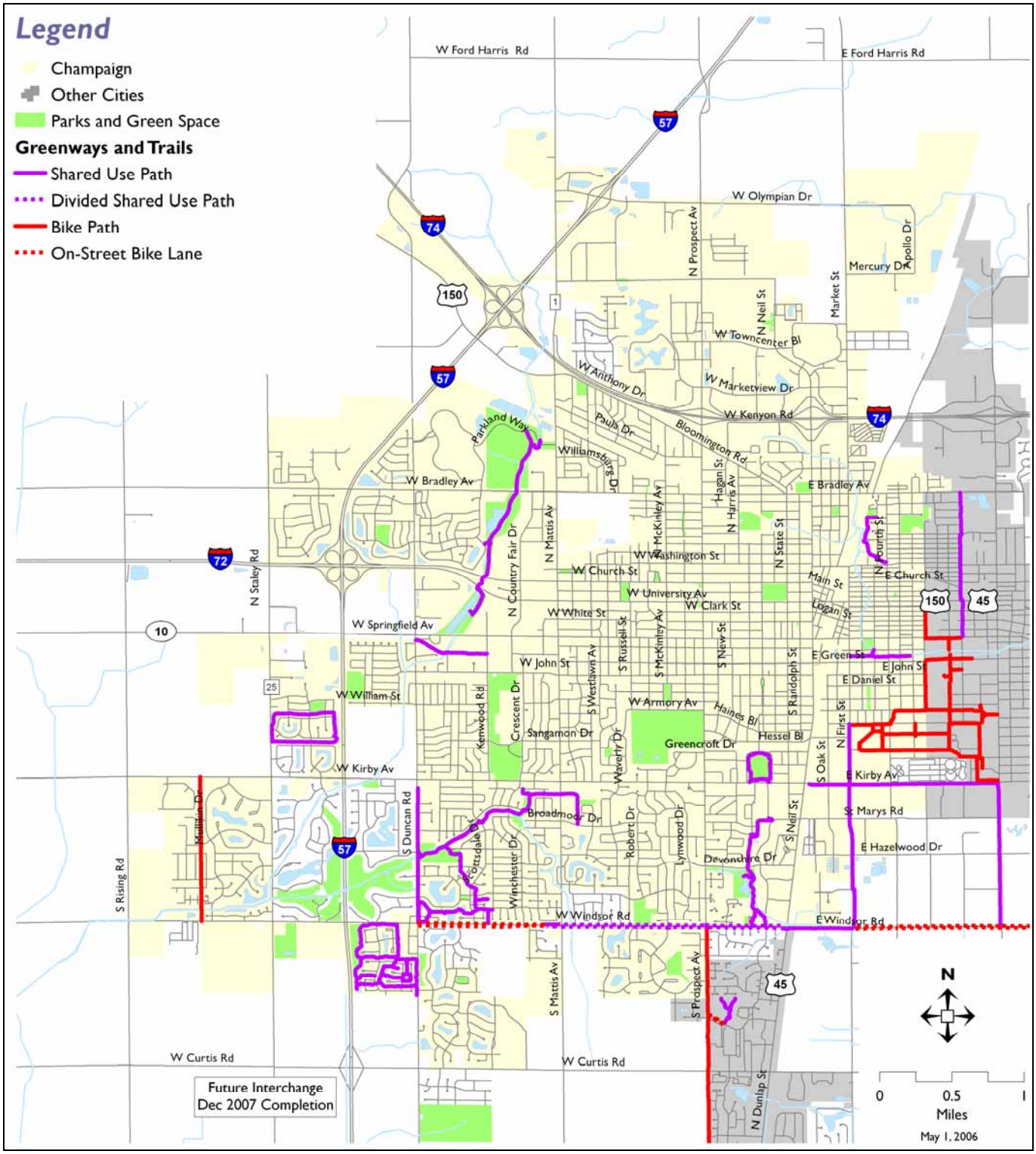
## BICYCLE

### Bicycle Network

**Except for a limited number of bike paths located primarily on the University of Illinois campus, a bike network is non-existent within the City of Champaign. With a young student population and flat terrain, the lack of a comprehensive system of bicycle facilities discourages the use of the bicycle as a mode of transportation. Fortunately, there exists a good opportunity to develop a comprehensive bicycle network because Champaign has a grid street system with opportunities to travel by bicycle along less traveled routes.**

Bicycling has positive effects on air quality, physical health, and when used extensively, traffic congestion. The City's official bicycle system, as presented in Figure 6, Existing Bicycle Facilities, has limited and disconnected greenways and trails and limited separate lanes for bicycles. In spite of these limitations, bicycling is popular and Champaign's citizens have learned to travel by bicycle along the grid of streets and routes that make bicycling popular. Strengthening and building upon these defacto routes provides the seed for a comprehensive bicycle system in the future.

## FIGURE 6: EXISTING BICYCLE FACILITIES




*Greenways And Trails Data: CUUATS*
*Base data: Champaign County GIS Consortium*

## PEDESTRIAN

In general, the effectiveness of the pedestrian system can be considered based on five basic measurements as follows:

- **Directness** – Does the network provide the shortest possible route?
- **Continuity** – Is the network free from gaps and barriers?
- **Street Crossings** – Can the pedestrian safely cross streets?
- **Visual Interest and Amenities** – Is the environment attractive and comfortable?
- **Security** – Is the environment secure and well lighted, with good line of sight to see the pedestrian?

In review of the City of Champaign's pedestrian system, the pedestrian environment was directly related to the age of development and the planning and development requirements that were required at that time. Therefore, the evaluation of the pedestrian environment was scored for each area as presented in Figure 7, Existing Pedestrian Facilities Assessment.

### Downtown Urban Core

**This area experiences a comprehensive pedestrian system with a direct and continuous sidewalk system, relatively easy arterial streets are relatively easy to walk along and cross, providing a visually attractive environment with tree canopy, and a secure place to walk. However, with increased growth and traffic, some areas of downtown are more difficult to walk and cross arterials, such as along University Avenue.**

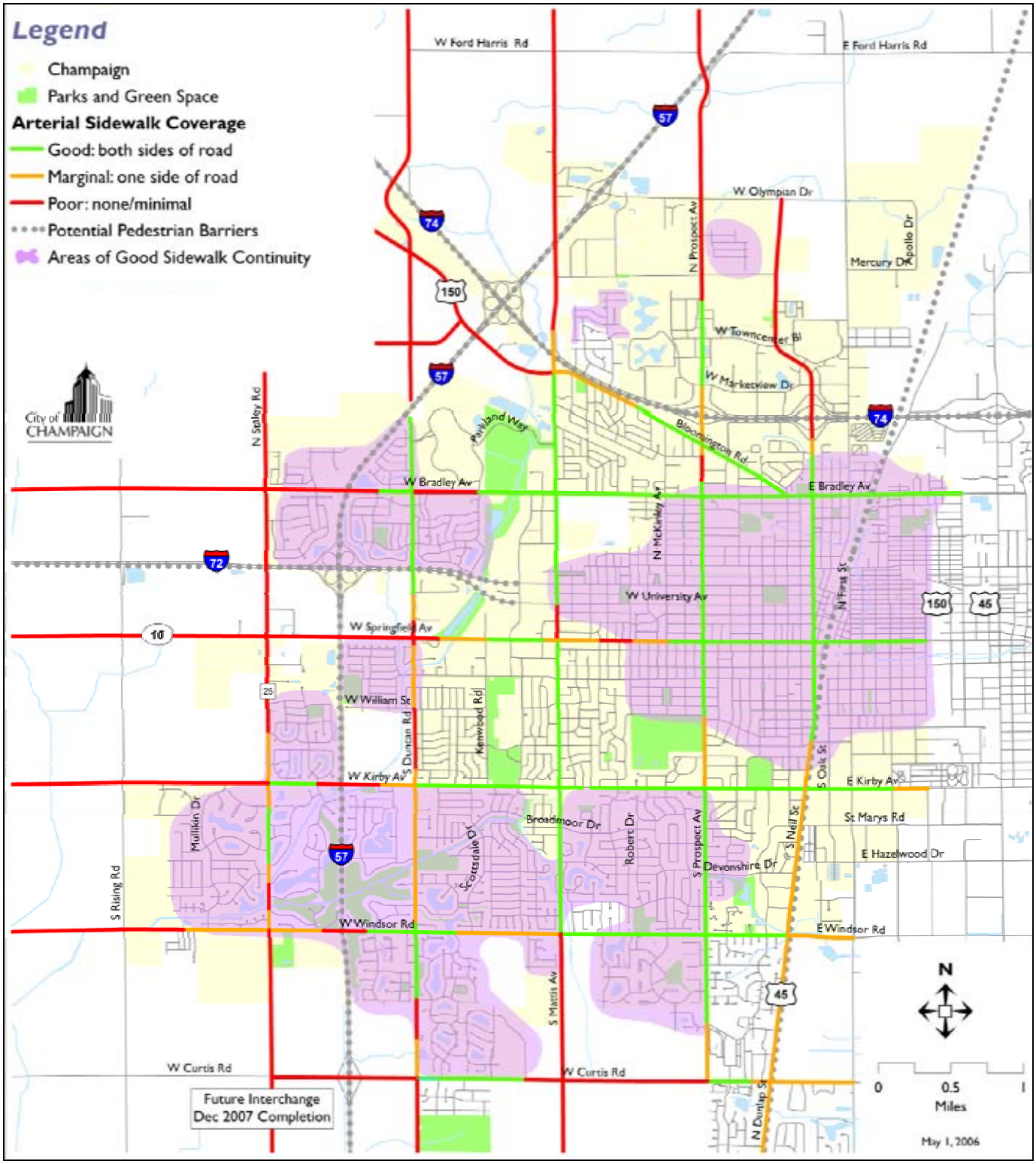
### 50's to 60's Development Areas

**Development that occurred outside the City limits during the 50's to 60's was not required to provide sidewalks. Because of this, there are large areas of the City outside the downtown area which lack sidewalks. In general, sidewalks are provided along the arterial street system that is adjacent to these neighborhoods, but sidewalks on interior local streets are lacking.**

### New Development Areas

**New development is required to build sidewalks; however, arterial streets in these areas where adjacent land has not yet developed lack sidewalks, which limit pedestrian activity between areas and to transit stops.**

## FIGURE 7: EXISTING PEDESTRIAN FACILITIES ASSESSMENT




*"Pedestrian service data: LSA Associates, Inc.*
*Base data: Champaign County GIS Consortium"*

## MULTI-MODAL

In 2000, the Federal Highway Administration (FHWA) provided the following guidance: "Bicycling, walking, and transit facilities will be incorporated into all new transportation projects unless exceptional circumstances exist." Since then, cities and counties throughout the country have started working toward providing "complete streets" in their communities. A complete street is one that works for all travel modes, including motorists, transit, bicyclists, and pedestrians. A complete street policy ensures that the entire right-of-way is routinely designed and operated to enable safe access for all users.

It should further be noted that the street facilities have different owernships; City, County, University, State, or Federal. These ownerships are presented in Figure 8, Street Ownership.

### City Street System

**In general, the City street system provides opportunities for automobile travel and transit. Bicycle opportunities are either non-existent or not well identified or major portions of the City have limited or no pedestrian facilities along the arterial street system.**

### State Highway System

**Whereas the state highway system serves the automobile well, the lack of sidewalks and bicycle facilities create a major barrier within the City for multi-modal travel. This issue is extremely critical at interstate crossings where the lack of sidewalks and bicycle lanes create an unsafe condition.**

## FUNDING

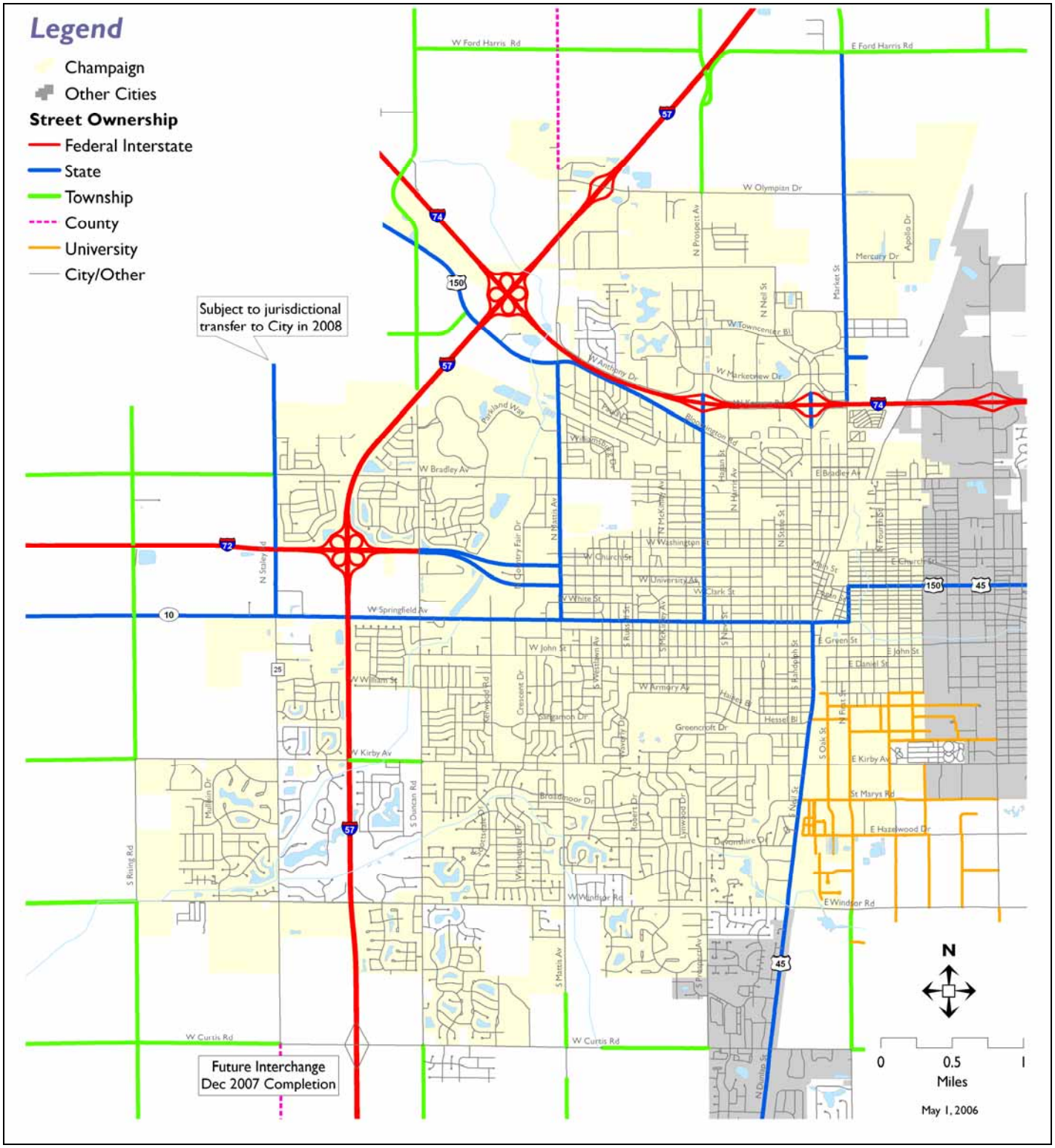
The ability to generate adequate funding to correct existing deficiencies and mitigate future impacts will be critical for providing needed long-term transportation improvements.

### State and Federal

**State and Federal funding for new improvements is virtually non-existent, with limited available funds going toward maintenance and operations of the existing system.**

Funding for Federal and State roadways has been tied to fuel tax, which has not changed since the early 90's. In addition, vehicles are getting more fuel efficient, so people are driving more miles with less fuel purchases. Added to this, the inflation for roadway construction and maintenance which uses petrochemicals is occurring at a faster rate than the overall inflation rate. Today, the Federal and State governments are limiting budgets to maintaining existing roads and are not planning infrastructure expansions.

## FIGURE 8: STREET OWNERSHIP




*Socioeconomic data: CUUATS; LSA Associates, Inc.*
*Base data: Champaign County GIS Consortium*
*Travel Model: Modified Version of CUUATS Model*

## City of Champaign

**Transportation improvements within the City of Champaign are funded through the City's Capital Improvement Program (CIP), Motor Vehicle Tax (MFT), and Federal Aid dollars dedicated to transportation improvements. These funds are insufficient to keep up with the growing transportation needs.**

**With on-going growth, transportation needs and roadway improvement costs that are increasing at a faster rate than funding, there are insufficient transportation funds to address current, and future transportation needs.**

**As illustrated in Figure 4, Arterial Road Improvement Deficit, the current City of Champaign sources of funding are not adequate to upgrade rural roadways to urban standards in the developing areas of the City. As development proposals are submitted to the City, the City negotiates with each developer through an annexation agreement regarding traffic impacts and potential mitigation. Other than turn lanes, the City has no requirements for arterial street improvements or fees in lieu of. This ad hoc approach creates different levels of improvements for each development. The negotiated transportation improvement or contribution may address impacts immediately adjacent to their development; however this approach has resulted in cumulative impacts and incremental deficiencies at greater distances from the development site. With continuation of this one-on-one review and assessment of new developments, the City will fall further behind on necessary improvements.**

## SUMMARY OF OBSERVATIONS AND TRENDS

- **THE PERCENT OF NON-AUTOMOBILE TRIPS IS DECLINING:** There exists a growing trend toward dependency on automobile travel and less on transit, walking, and bicycle. Part of this trend is the land use growth patterns toward more dispersed and homogeneous land use patterns where trip lengths are increasing to where walking and bicycle trips become less practical. The reduced densities and the distribution of growth are also making it increasingly difficult to provide adequate transit service.

- **TRANSPORTATION IMPROVEMENTS ARE NOT KEEPING UP WITH GROWTH:** The current federal, state, and city funding levels, coupled with an ad hoc approach for achieving transportation mitigation for new developments, is resulting in a growing list of transportation deficiencies which are not being mitigated. These include older arterial roadways which lack sidewalks and bicycle facilities, areas of congestion resulting from increased traffic volumes, and urban development occurring in areas supported by rural roadways.

- **TRAVEL TIMES AND CONGESTION WILL INCREASE AS THE CITY GROWS AND EXPANDS:** As the City expands in size, trip lengths and travel times will increase and it will take longer to travel from outlying areas to employment, services, and retail destinations. Many of these trips will travel along existing arterials, which will experience increased traffic volumes and congestion. Mitigating this impact is difficult because of cost and funding and traditional widening of roads in established development areas will impact the character of these neighborhoods. Whereas options such as transit, bicycle, and walking could provide choice in travel and some mitigation, the current trend in development patterns will make it difficult to support these alternative modes given distribution of uses, density and lack of mix of uses.

- **THERE IS NOT SUFFICIENT FUNDING TO COMPLETE ALL NECESSARY TRANSPORTATION IMPROVEMENTS:** Lack of sufficient transportation funding to accommodate growing needs is occurring throughout most every state, region, and city within the United States. The primary source of transportation funds, federal and state motor vehicle fuel tax, has not been raised since the early 1990's. Fuel efficiency further reduces the motor vehicle fuel revenue per vehicle per mile of travel. During this same period of time, the cost of construction has increased dramatically, particularly in road construction materials such as asphalt based on petrol chemicals. Compounding this stagnant and reduced federal and state transportation revenue stream is that the roads built in the past, now require an ever increasing investment in maintenance. State Departments of Transportation throughout the United States are building roads or at a significantly reduced level from the past. Most or all revenues are being directed to the maintenance of existing roads and bridges. This change has significantly impacted cities, and at the same time, their motor vehicle fuel tax funds have also been significantly reduced. Cities and jurisdictions that have been successful at addressing this serious funding shortfall have examined land use growth patterns that minimize transportation impacts, a mix of transportation solutions to provide choice and opportunity, and established local funding solutions.

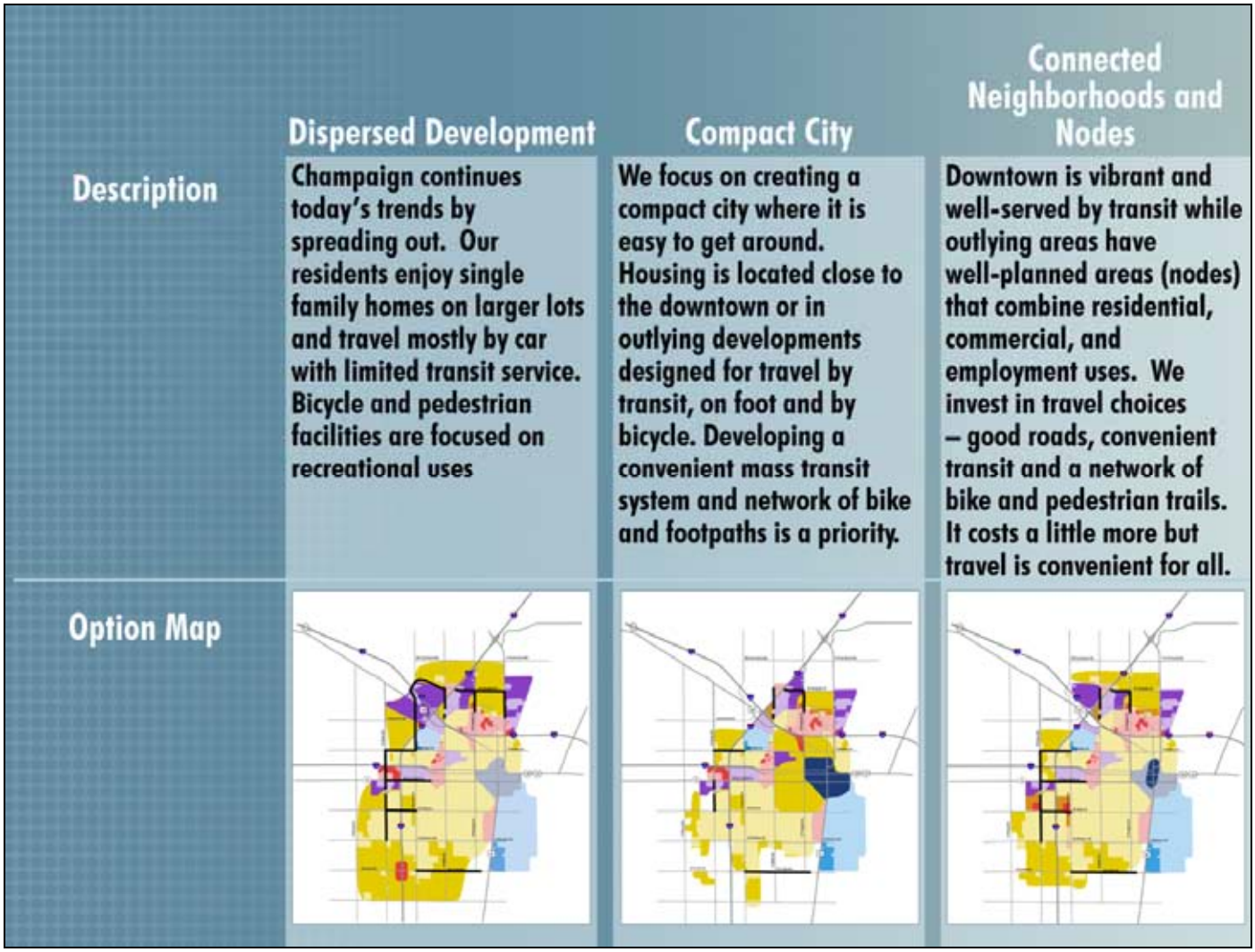
# CHAPTER 3: CONNECTED NEIGHBORHOODS AND NODES

## INTRODUCTION

The existing and future land use development patterns will impact the operation and performance of the transportation system. Conversely, the existing and future transportation system will affect the land use pattern. Under current patterns, new residential development at the fringe of the City of Champaign will travel further to get to existing shopping and employment destinations within the central portions of the City. These new trips will also have to travel down existing arterials to reach those destinations and impact the existing arterial street systems and their adjacent neighborhoods. Conversely, the design of the transportation system will affect mobility and where development will occur. As an example, the proposed I-57 interchange at Curtis will increase accessibility to this area and facilitate new development. It will also increase accessibility from the area to other parts of the City via the interstate system.

In order to better understand the relationship between land use and transportation, three land use alternatives were tested. The first was a "Dispersed Development" alternative that generally reflects current development trends. The second option, "Compact City," examined the affect of infill development and intensification in the central portions of the City. The third alternative, "Connected Neighborhoods and Centers," analyzed the transportation impacts of a land use pattern that targeted development at key nodes, with some infill and intensification in the core area, and lower density areas outside the core and nodes. A summary of each alternative description and a generalized land use map is presented in Figure 9.

## FIGURE 9: ALTERNATIVE DESCRIPTION AND GENERALIZED LAND USE MAP




Each alternative has its set of virtues and each has its set of drawbacks. These are presented in Figure 10.

A traffic analysis was performed on each alternative. This analysis assumed the same growth for each alternative in residential dwelling units and retail, service, and industrial employment. The differences were the distribution of these land uses. These three alternatives were evaluated utilizing the CUUATS regional travel model to determine what transportation mitigations would be needed to support the land use alternative, what might be the cost of those improvements, and how did the land use alternative perform using some standard measures including land consumption, vehicle miles of travel, and average trip length. The results of this analysis are summarized in Figure 11.

## FIGURE 10: VIRTUES AND DRAWBACKS

| | Dispersed Development | Compact City | Connected Neighborhoods and Nodes |
|---|---|---|---|
| **Support** | 1. This choice reflects the operation of the marketplace. Free markets are the fairest way to make choices when there are many people with different preferences.<br><br>2. In this market-oriented approach, consumers can buy the houses they want.<br><br>3. Development at the edge of the city offers a focus on neighborhoods where there is less traffic, noise, pollution and crime. | 1. Focusing on downtowns would rejuvenate our central cities and reduce the need for farmland and open space conversion.<br><br>2. This option gives people more choices in how they travel so that they are not dependent upon the automobile.<br><br>3. The health of the central city affects the economy and attractiveness of the entire region. | 1. This choice integrates how we build our transportation system with how we use our land. By locating housing close to jobs, we reduce commute distances.<br><br>2. Transit oriented developments provide economic vitality by bringing customers and jobs to an area and increasing property values.<br><br>3. This choice gives people options in where they live and how they travel. It is more likely to produce choices in affordable housing. |
| | **Dispersed Development** | **Compact City** | **Connected Neighborhoods and Nodes** |
| **Opposition** | 1. We can no longer afford low density development that does not contain a mix of uses. The infrastructure and service costs are too high.<br><br>2. The development we see now at the edge of the city offers few options for affordable housing.<br><br>3. Dispersed development isn't a healthy choice. | 1. It's the market that is fueling outward expansion as people seek larger homes and less expensive locations for industrial development. Plans to lure people back to the inner-city have failed in many cases.<br><br>2. Redevelopment costs more, not less, than building on vacant land.<br><br>3. In the United States, 95% of our land is undeveloped. Concerns about sprawl are overstated. | 1. In today's world, with both parents working, it isn't likely that both will work near where they live. One parent will still need to commute into or across town.<br><br>2. This choice still doesn't consistently produce the population density needed to make transit viable. It provides choices in how people travel but at a cost.<br><br>3. Putting housing and employment next to each other may create conflicting land uses, ultimately pushing down property values. |

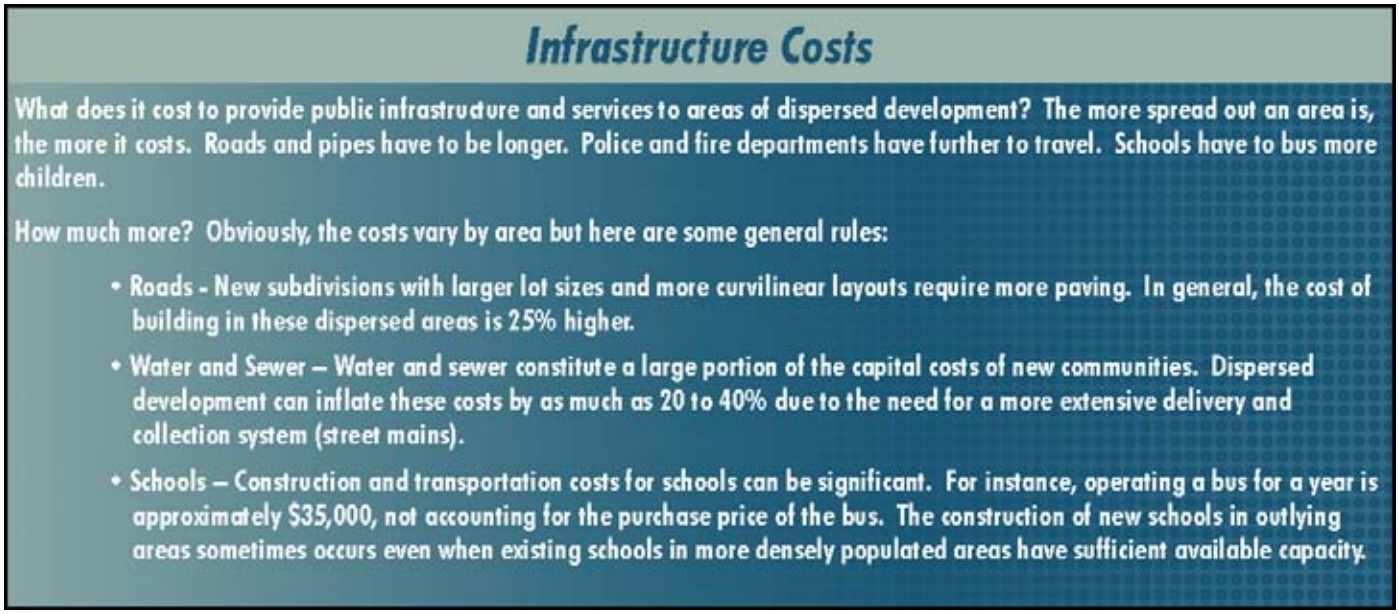
## FIGURE 11: TRAFFIC ANALYSIS RESULTS

| | | | |
|---|---|---|---|
| Land Consumption* | 8,000 Acres<br>60% Increase | 2,700 Acres<br>20% Increase | 4,900 Acres<br>35% Increase |
| Vehicle Miles Traveled* | 1.35 million miles<br>55% Increase | 1.2 Million Miles<br>36% Increase | 1.25 Million Miles<br>45% Increase |
| Average Trip Length* | 4.5 Miles<br>16% Increase | 4.2 Miles<br>8% Increase | 4.4 Miles<br>12% Increase |

In review of the performance analysis, it became evident that the trends toward dispersed development in the outlying areas will have a negative impact to the City in regards to both land consumption and the impacts to the transportation system. This is particularly true of new development traffic impacts on existing established neighborhood arterials and streets as these new trips traveled from outlying areas to core destinations of downtown and campus.

As part of the public outreach process for Champaign Moving Forward, these choices were presented at public meetings and focus groups to solicit input on how the City should address future development and the supportive transportation system. The public input process for this question was supported by a comprehensive booklet, which provided background on the alternatives and the potential impacts of each. The Choices booklet is presented in Appendix B: ***Choices A Community Conversation***.

Based on the public meetings and focus groups, there was concern about the current trends of dispersed development and a strong preference expressed for a future land use plan that provided for infill development, redevelopment, and a system of mixed-use activity areas that become the neighborhood centers for local shopping and services.




## Land Use Concept Plan: Connected Neighborhoods and Nodes

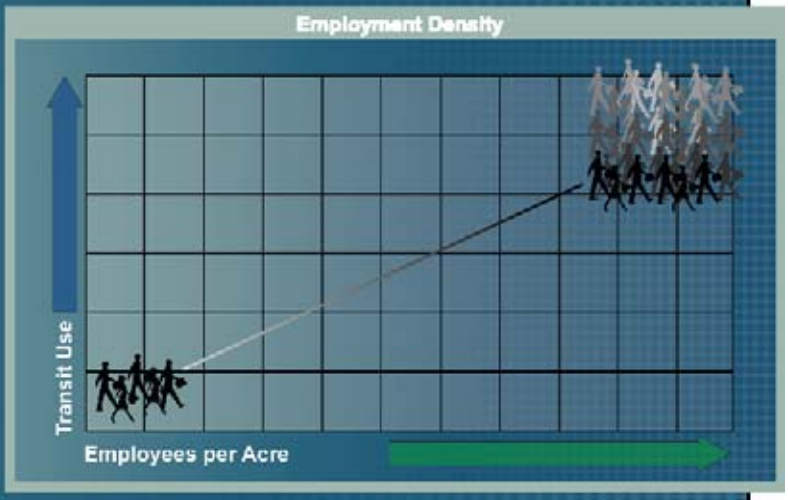
The Land Use Concept Plan is intended to reflect the future for the City of Champaign and serves as the basis for a proposed transportation system plan. The theme of the land use plan is "*Connected Neighborhoods and Nodes*" as presented in Figure 12.

The Land Use assumptions for preparing Champaign Moving Forward included two timeframes. The first timeframe was the year 2030. This timeframe was selected because it is consistent with the 2030 CUUATS Regional Transportation Plan. The socio-economic development assumptions (dwelling units and retail, service and industrial employment) for 2030 are the same as those assumed by CUUATS, although the distribution of the housing and jobs within the City has changed. This 2030 timeframe creates the base from which to develop a transportation plan, identify improvements, estimate cost of those improvements and identify funding options for implementation.

The second timeframe is for Post-2030. The Post-2030 period does not have a specific date, but might be in the 2040 to 2060 time horizon. The reason for selecting a Post-2030 timeframe is two fold. First developing a future development pattern that has the density mix of uses that can be connected with alternative transportation modes including transit, bicycle and pedestrian may take longer then 2030. The second reason is that the Post-2030 horizon provides a framework for corridor preservation. It is very difficult to widen and improve an arterial located in an established neighborhood.

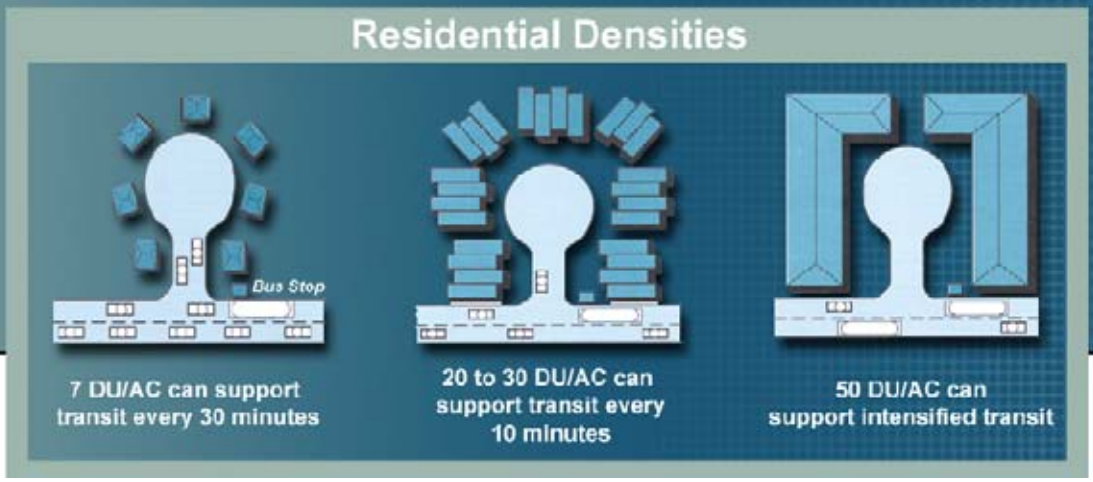
## Density Affects Transit Mobility

Although many cities claim that they desire a balanced transportation system that provides for automobile, transit, bicycle and pedestrian mobility, they often do not provide the land use mix and densities to promote a balanced transportation system, particularly for transit.



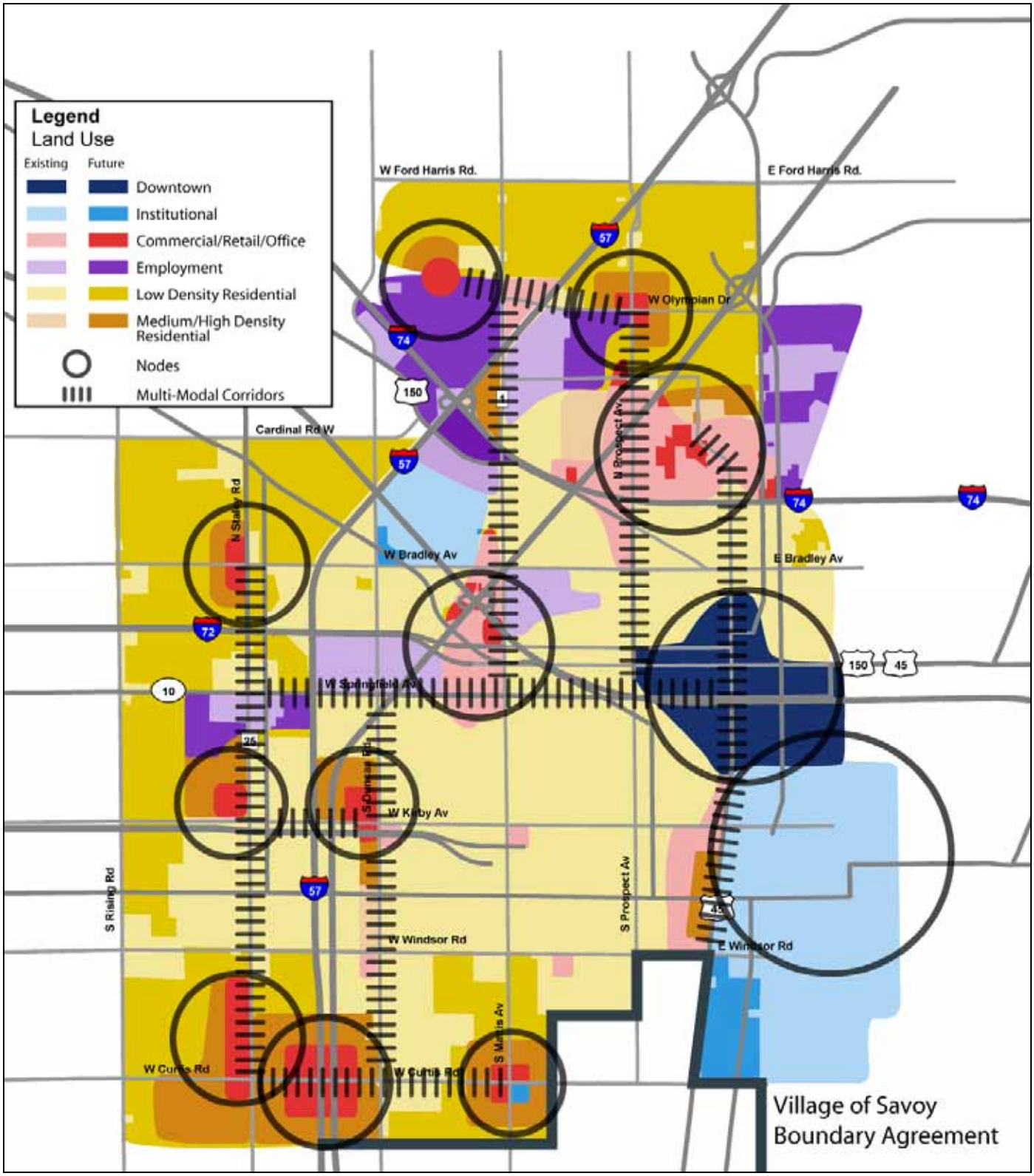

Historically, medium to high transit connectivity captures 5% or greater of commuter trips. As densities go down, so does transit viability. As an example, to provide for basic bus transit service with a bus running every 30 minutes in the peak period and one hour during the non-peak periods, there is a residential density need of about seven dwelling units per acre within the typical one-quarter mile walking area around the transit stop. If dwelling units are increased to 20 to 30 per acre, bus transit frequencies can be increased to about once every 10 minutes during the peak hours. At this level of frequency, ridership increases significantly as patrons no longer are concerned about transit schedules, as they know a bus will be showing up within a short period of time. Intensified transit service requires 50 dwelling units an acre or more to be supported.

Similar to residential densities, employee densities must be of a minimum level of between 50 and 60 employees per acre to support local bus service. Higher employee densities would permit higher frequency service.




*Source: Denver RTD*

## FIGURE 12: LAND USE CONCEPT PLAN




*Source: LSA Associates, Inc.*
*October 24, 2007*

Additional right-of-way to accommodate the widening can impact the development frontage that was built to serve a lesser roadway. The purpose of the Corridor Preservation is to preserve the future right-of-way that might be necessary to support increased development after 2030, while only requiring improvements for the 2030 horizon.

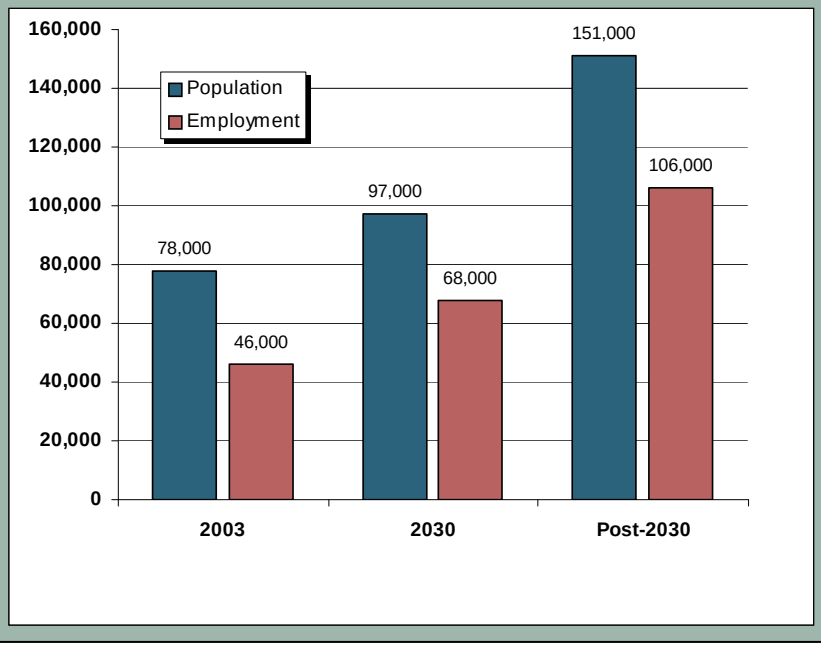
In the development of the Land Use Concept Plan, all previously approved residential and non-residential developments were included in the Plan. Additional development was targeted for the downtown and University of Illinois area. In addition, a number of nodes were identified for mixed-use development. These are as follows:

- Champaign Downtown;
- Market Place Map
- University of Illinois;
- Curtis Road Interchange;
- Springfield at Duncan and Staley;
- Country Fair and Church;
- Olympian west of Mattis Avenue;
- Mattis Avenue and Curtis Road;
- Bradley and Staley;
- Kirby and Staley; and
- Kirby and Duncan.

### Population and Employment

The current 2006 population estimate for the City of Champaign is approximately 78,000. Based on local, regional, and state forecasts, the City's population growth will increase by 24% to 97,000. The land use concept plan of connected neighborhoods and nodes would accommodate almost a doubling in population to about 150,000.

Employment will also increase at approximately 40% between 2006 and 2030. This employment growth will occur at a higher rate then residential, which would indicate additional employees will be living outside the City of Champaign.




In review of Figure 12, Land Use Concept Plan, it is these nodes that provide the density, mix of use and density which can support transit and alternative modes including walking and bicycling along multi-modal travel corridors. The long-term objective of these nodes is that they will have the density to support viable transit service with pedestrian and bicycle connections. Higher density residential would be targeted for locations adjacent to the activity centers with lesser density residential areas located between the nodes.

## Node Design

Multi-modal node design concepts provide the basis for expanding land use planning and site design to accommodate opportunities for enhancing the use of various alternative transportation modes – most notably public transportation, walking, and biking. The node design recognizes the link between land use and transportation. It will likely not be applied to every node the same way.

However, common elements include the presence of mixed-use retail, office, and residential land uses, connected by complete streets, transit-friendly design features, and accessibility to alternative modes of transportation.

The Connected Neighborhood and Node design encourages a rich diversity of compatible and complementary land uses. Such uses should relate to the physical scale and character of the neighborhood and enhance linkages to surrounding uses. The size, shape, and location of buildings on their parcels should create patterns that help define neighborhood character. New development should be compatible with and compliment existing development and further the feel planned for the area. This overall design principle can be achieved through a variety of approaches.

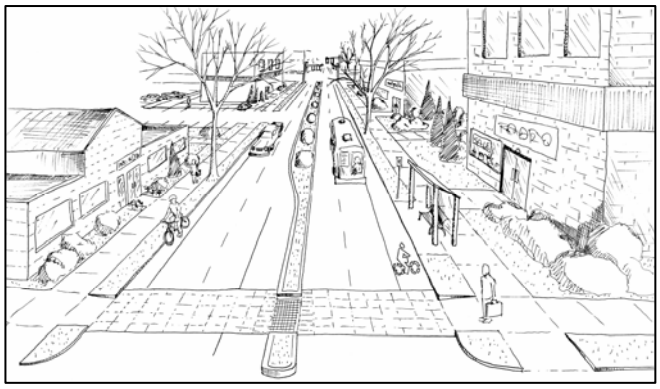
- **MIXED AND MULTIPLE-USE DEVELOPMENT.** Public policies and standards should accommodate the integration of retail, office, service, entertainment, education, and residential land uses. The specific mix, amount, and intensity of such uses will vary depending upon the type of development projected for the neighborhood. Some areas may have higher concentrations of commercial uses with residential uses complementing these activities. In other locations, residential uses may serve as the dominant land use pattern with local office, retail, and services supporting the mix of uses.

  In general, these developments have a conveniently located commercial area containing a mix of office, retail, and service uses. The core commercial district should be centrally located to support transit usage. The size and intensity of the center will vary to fit the needs and preferences of the neighborhood it supports.

- **MIX OF HOUSING TYPES.** Residential development is a key ingredient to the ultimate success of any multi-modal development. No single form of residential use is likely to be called for in this style of development. Diversity of ownership patterns, price ranges, and building types should be considered.

- **INTENSITY OF DEVELOPMENT.** The intensity of development will typically transition from a higher level of development near the core of the district to lower levels in the surrounding areas. Residential densities will vary in accordance with the projected buildout of the district, ranging from 60 units per acre in a downtown setting to as low as four to seven units per acre in suburban areas. In general, the higher the density of residents within an area, the greater the potential for sustaining a diversity of modal choice.

- **BUILDING PLACEMENT AND ORIENTATION.** Design guidelines should encourage appropriate placement and orientation of buildings. Buildings aid in defining the street right-of-way and pedestrian space. The main entryway to commercial buildings should face streets, plazas, or parks.



- **WINDOWS AND DOORS.** Windows and doors are arranged to "enliven" the street and provide visual interest in order to encourage walking and use of other alternative transportation modes. Blank walls along pedestrian ways should be avoided. Windows should be placed at ground level. Fenestration standards may be used to promote visual interaction between the street and adjacent buildings. Standards are set to ensure a minimum level of window placement along public ways relative to window length, height, and materials.

- **BLOCK SIZE.** The length of any given block can be a critical design element in determining the success of multi-modal developments. The longer the block length, the less appealing the development for foot traffic and on-street interaction. The length of any block within a node should generally be no longer than 500 feet. Blocks should be delineated by either streets or major pedestrian separations.

- **FOCAL POINTS.** Locating transit stations/stops within the center of node activity provides a visual and functional focal point to aid in generating ridership and heighten the sense of user security and orientation.

### What are Basic Criteria for Development Nodes?

| | |
|---|---|
| **Land Use** | • Contain a variety of land uses, including both employment and residential.<br>• Include land uses promoting pedestrian, bicycle, and transit use. |
| **Appropriate Density and Intensity of Land Uses** | • Sufficient densities to demonstrate transit ridership.<br>• Sufficient intensities in and around central cores.<br>• Sufficient intensity along major transit corridors. |
| **Interconnected Street System** | • Adequate levels of service for bicyclists, pedestrians and transit.<br>• Appropriate numbers of connections within the street network.<br>• Connected pedestrian, bicycle and transit network.<br>• Convenient modal connections.<br>• Convenient connections to regional transportation. |
| **Design** | • Adequate access for pedestrians and bicyclists to transit.<br>• Transit-oriented development.<br>• Shorter block length providing easier access and better quality pedestrian environment. |
| **Additional Considerations** | • Special considerations given to schools and their multi-modal needs to provide a safe, accessible environment for students.<br>• Reduction in vehicle miles of travel. |

## Node Design Guidelines

1. Modify the land development code to provide for an appropriate density, intensity, and mix of land uses to support multi-modal transportation, and specifically to ensure:

   - A strong central core consisting of government centers, transit stations, or town square surrounded by relatively high density/intensity residential and non-residential development;
   - A compatible mix of land uses that supports alternative modes of transportation and promotes activity during peak and non-peak hours; and
   - Proximity of shopping, services, and employment centers to each other and to the surrounding residential uses to facilitate walking and bicycling, as an alternative to driving.

2. Maximize internal circulation and minimize conflicts with State highways and other major arterial roadways that have the primary function of moving high volumes of statewide and regional traffic. Where such roadways are present, a minimum of two (2) safe pedestrian crossings shall be provided per mile.

### Preferred Mix of Land Uses

| Land Use | Preferred Mix* |
|---|---|
| Open Space/Parks/Recreation | 5 – 15% |
| Office/Commercial/Industrial | 30 – 70% |
| Residential | 20 – 60% |

** Select a percentage that reflects a reasonable target for the specific development node.*

3. Establish multi-modal street cross sections, design standards, and operational measures to ensure streets are safe, convenient, and appealing for all modes of travel including transit, automobiles, trucks, bicycles, and pedestrians.

4. Provide a dense, interconnected network of local and collector streets that supports walking, bicycling, and transit use, while avoiding excessive traffic in residential neighborhoods.

**Promote Activity at All Hours**

| Land Use | Peak | Off-Peak |
|---|---|---|
| High Density Residential | Yes | Yes |
| Commercial/Office | Yes | |
| Destination Retail | | Yes |
| Convenience Retail | Yes | Yes |
| Entertainment | | Yes |
| Institutional | Yes | Yes |
| Day Care | Yes | |
| School | Yes | |
| Grocery Store | Yes | Yes |
| Restaurants | Yes | Yes |

5. Provide direct bicycle and pedestrian connections within and between residential areas and supporting community facilities and services, such as shopping areas, employment centers, transit stops, neighborhood parks, and schools.

6. Give special consideration to schools and their multi-modal needs to provide a safe, accessible environment for students by giving high priority to bicycle and pedestrian facilities within a two-mile radius of all schools in both new development and re-development.

7. Give special consideration to areas with concentrations of students, seniors, low-income families, or others that are more dependent on modes other than the automobile to provide a safe, accessible environment.

8. Ensure that new developments or re-development projects contribute to providing a safe, convenient, comfortable, and aesthetically pleasing transportation environment that promotes walking, bicycling, and transit use. Appropriate improvements or enhancements to the multi-modal network may be required as a condition of development approval.

9. Work with MTD to ensure that the community is well connected via transit to major trip generators and attractors both inside and outside the community, that transit stops and waiting areas are safe and comfortable, and to enhance intermodal connections.

10. Incorporate Transportation Demand Management (TDM) strategies to alleviate congestion. A range of techniques can be considered, including vanpool/ridesharing programs, parking management, transit vouchers, flextime, and others.

11. Orient buildings to provide pedestrians and bicyclists with easy access and a visually interesting environment that reduces perceived travel distances and increases the understanding of the bicycle and pedestrian network.

## TRANSPORTATION VISION

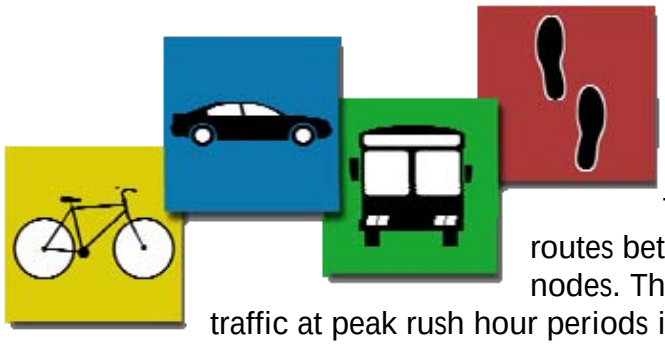
Champaign's transportation system is envisioned as a multi-modal network of roads, bicycle lanes and paths, transit services, and pedestrian facilities that will support the planned uses in the City by providing mobility to residents and visitors. The term *multi-modal* refers to the provision of travel mode options, including the automobile, bicycle, pedestrian, and transit. The goal is to provide a seamless transportation system that facilitates easy and efficient movements between travel modes. The intent is to create a balance between various travel modes so they work to complement each other.

The City's downtown reflects the City's historic development patterns and opportunities for multi-modal travel. However, as identified in the Mobility Report Card, transportation priorities over the past several decades have shifted, focusing almost solely on accommodating automobile travel. Input received from the community indicates a strong desire to return to a more balanced approach to funding and implementing transportation projects by expanding opportunities for alternative modes of travel and mobility for the community. This effort must acknowledge the community's current dominant mode of travel (the automobile) while seeking greater usage of alternative transportation modes.

The City recognizes that expanding and enhancing travel choices takes time. Clear actions can be implemented today to improve the transportation system. However, other actions are incremental and can only be accomplished over a long period of time. The Plan recognizes the link between land use policy and transportation and provides guidelines to ensure that new development and re-development proposals accommodate all travel modes.

The goal of the Champaign Moving Forward is to enhance the overall quality of life of the City of Champaign by providing transportation choices and mobility to all residents of the community. Mobility for the young and old, the able and those less able, those with means and those with lesser means, is essential to the City's economic vitality.

## CONNECTING NEIGHBORHOODS AND NODES



The transportation vision for connecting neighborhoods and nodes is a multi-modal system that incorporates all travel modes into a comprehensive, integrated transportation system.

The Multi-Modal Corridors are primarily travel routes between nodes and from neighborhood areas and nodes. These corridors accommodate a high volume of traffic at peak rush hour periods in an efficient manner. Traffic signals are typically synchronized to maximize travel flow and minimize congestion. Multi-Modal Corridors provide the framework for transit service requiring good pedestrian facilities to the corridor and along the corridor. Multi-Modal Corridors are dominant during morning and evening rush hours. A separation zone between vehicle travel lanes and the pedestrian way is utilized for transit shelters, street trees, furnishings.

Several important themes are associated with the multi-modal transportation system. One is balance. The City's transportation system has been historically influenced by the automobile as the primary mode of travel. By integrating all of the travel modes, Champaign Moving Forward aims to elevate the alternative modes to achieve a balanced system that offers several travel opportunities to all residents and visitors of the City, including those who do not drive. While it is likely that the automobile will remain the primary travel mode for the foreseeable future, the move towards a more balanced system of modes will eventually reduce its influence in our built environment and enhance the quality of life in the City.

Connections between neighborhoods and nodes are along multi-modal travel corridors. These corridors are fundamental for linking the transportation modes together and for integrating activities within developments.

The relationship between land use and transportation is another important element of the System Plan. Based on valuable public input, there is strong public support for a move from a dispersed development pattern to system nodes with mixed-use activity, connected with all modes of transportation.

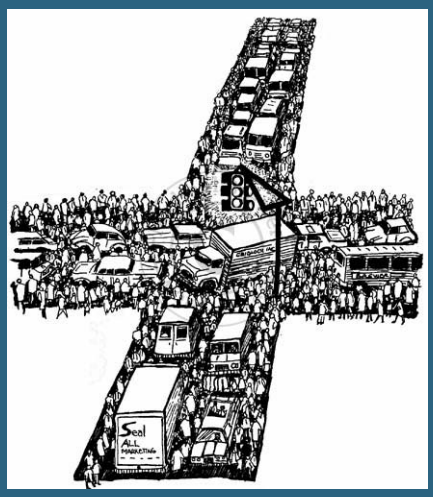
An important aspect of the land use and transportation relationship is the Development Review Process. This process, defined in the City's Subdivision Code, is used to review new development proposals for their compatibility with the transportation system, among other objectives. As discussed subsequently, Champaign Moving Forward provides recommendations to enhance the multi-modal considerations during the development review process.

## Issues (Balance of Modes, Growth and Congestion, Changing Markets, and Quality of Life)

A number of questions were identified during the planning and public input process early in the Plan's preparation to facilitate the development of a multi-modal transportation plan. The public assisted in determining the issues of importance to the community and they responded to the questions with numerous ideas and suggestions for improving the system. The issues are summarized below by category.

### BALANCE

- At what locations in Champaign could the various transportation modes be better connected?
- What is Champaign's multi-modal funding priorities?
- How does development within the Southwest Transit District Area get integrated into a multi-modal system within the City?



### GROWTH AND CONGESTION

- What transportation improvements will be necessary to keep pace with development?
- What land use adjustments are desired to make the transportation system work?
- How are growth policies in surrounding jurisdictions affecting Champaign's transportation system?
- How can the City work with regional interests to plan a coordinated system, including transit?

### DEVELOPMENT REVIEW PROCESS

- What multi-modal improvements should the City require when reviewing applications for development?
- To what extent should connections between developments and the multi-modal system be required?


### CHANGING MARKETS

- What transportation alternatives are necessary to accommodate changing travel markets, including the aging and disabled populations?

### QUALITY OF LIFE/ENVIRONMENT

- What mix of future transportation improvements best supports the City's quality of life?
- How can travel delays be minimized?

## Why establish a multi-modal transportation system?

Establishing a successful multi-modal transportation system can provide many benefits to a community and its residents. The multi-modal transportation system provides an alternative to the typical, disconnected, auto-dependent developments that are often seen throughout the country. Shortened distances between work, home, and shopping areas promote walking and bicycling; greater emphasis on transit boosts ridership; and increased pedestrian activity heightens security. With automobile dependency reduced, expenditures that would otherwise be dedicated to building and widening major roads can be used for sidewalks, bicycle routes, transit facilities, and other improvements aimed at supporting alternative modes of transportation. Multi-modal transportation options provide an alternative to automobile travel, resulting in reduced roadway congestions, better air quality, and improved quality of life through mobility choices.

## CHAMPAIGN MULTI-MODAL CORRIDORS

The multi-modal corridors are the major transportation facilities which accommodate auto, bus, bicycle, and pedestrian travel. These corridors provide for travel across town and connect with the regional transportation system. These corridors also support the opportunity to build distinctive, vibrant, high-quality, and high-density transit based linear neighborhoods that are attractive to pedestrians.

We can increase travel efficiency in how we integrate future land uses along these multi-modal transportation corridors. In the future, these corridors will facilitate linking different modes together (i.e., bikes on buses or being able to park once and walk to multiple destinations), giving people workable choices to travel. Information systems can also greatly improve how we travel in the future. Using technology to provide up-to-the-minute information on bus arrival times, carpool availability and road conditions will make transportation choices more convenient "Smart" transportation can also help us provide workable transportation options for our aging population.

The ideal starting and ending points of a multi-modal corridor are located at nodes which contain major activity uses. Between these nodes, a significant amount of travel demand is expected. Multi-modal corridors are typically at least two miles in length. The corridor, however, should not be so long that through traffic is negligible.

Champaign Moving Forward identified eight multi-modal transportation corridors (three east-west and five north-south corridors) and called for improving all modes of travel along them. These multi-modal transportation corridors include:

### North-South Multi-Modal Corridors

- Staley Road: Curtis to Bradley
- Duncan Road: Curtis to Springfield
- Mattis Avenue: Springfield to Olympian
- Prospect: Springfield to Olympian
- Neil: Windsor Road to Town Center Boulevard

### East-West Multi-Modal Corridors

- Curtis: Staley to Mattis
- Springfield: Staley to Neil
- Olympian: Duncan to Prospect

As these corridors carry a majority of the trips in the community and link important activity and commercial centers, maximizing their efficient trip-carrying ability requires improving the relationship between the Multi-modal transportation system, land use and design along these corridors.

### Characteristics of a Quality Multi-Modal Transportation Corridor

- A primary corridors in the community which connects to the regional transportation system;
- A high frequency transit service for its length and connections to regional transit services;
- A high quality pedestrian and bicycle facilities allowing for safe and convenient travel along the corridor;
- Numerous safe and convenient crossing opportunities of the corridor, including underpasses and signalized intersections;
- Pedestrian and bicycle access to the corridor allowing easy access to transit and facilities on the corridor;
- A mix of uses with a high concentration of users including residential areas which produce trips and commercial retail, office and business activity centers;
- A high-quality, pedestrian-friendly design in the nodes.

## MULTI-MODAL CORRIDORS GOALS AND OBJECTIVES

Each of the eight multi-modal corridors is unique and requires different types and level of investment. The following summarizes key goals and objectives for each corridor. General requirements for all multi-modal corridors are also contained in the roadway, transit, bicycle, and pedestrian chapters of this report.

### What Multi-Modal Corridors Include

**Roadway**

- Traffic flow operational improvements through intersection enhancements focusing on system "bottlenecks";
- Roadway improvements which support multi-occupant vehicle use;
- Roadway-related functional efficiency and safety) improvements; and
- Signal coordination optimization based on current traffic flow patterns.

**Pedestrian**

- Complete sidewalks that provide direct and continuous connections between destinations and to transit;
- Enhanced pedestrian crossings at strategic locations; and
- Pedestrian signals and crossing count-down heads and signal locations.

**Bicycle**

- Complete bicycle trails, lanes and route system to provide direct and continuous connections;
- Safe street crossings; and
- Bicycle route signage.

**Transit**

- High-frequency transit;
- Enhancements at key high-frequency transit stops which include transit signs and pavement platforms. At higher demand transit stops include shelters, benches and trash receptacles; and
- Operational system efficiency improvements, such as bus bypass lanes, bus signal prioritization and other improvements to increase the efficiency of the transit system.

## MULTI-MODAL CORRIDORS RECOMMENDED IMPROVEMENTS

The following provides a summary of issues and recommended improvements for each of the eight multi-modal corridors. These issues and recommendations are in addition to the recommendations for multi-modal corridors contained in the roadway, transit, bicycle and pedestrian vision chapters of Champaign Moving Forward.

### East-West Multimodal Corridors

### Staley Road: Curtis to Bradley

Located one-half mile west of I-57, Staley Road is the most westerly north-south arterial within the City except for Rising Road. Currently, the majority of Staley Road is a 2-lane rural roadway with some improvements to four lanes with detached sidewalks along short sections. The 2030 Roadway Plan identifies this facility as a 4-lane Major Arterial. With City of Champaign Street Standards, Staley Road should provide for two lanes of travel, a landscaped parkway and a 10-foot multi-use trail on both sides, with a continuous center left-turn lane in the middle.

Because the majority of this corridor is just beginning to be developed, Staley Road provides the City with the opportunity to build the ideal multi-modal corridor at the outset, rather than trying to retrofit an existing corridor. Abiding by the City's Street Standards and not waiving improvements will be very important.

Ideally this corridor should be constructed with a raised median to channel traffic and for potential use as a refuge island for pedestrian and bicycle crossings. Limiting vehicular access points will also be important to preserve the carrying capacity of the roadway. This is particularly important at major east-west intersections such as Curtis, Kirby, Springfield, and Bradley.

As part of the design, identifying where future pedestrian and bicycle crossings should be will be important.

### Duncan Road: Curtis to Springfield

Located one-half mile east of I-57, Duncan Road is a 2-lane roadway with adjacent development from south of Windsor to Springfield. There are major stretches of this facility that do not have curb gutter, sidewalk, nor bicycle facilities. In essence this roadway is a rural facility, serving an urban environment. This facility is ultimately identified as a 5-lane arterial as identified in the Roadway chapter.

Critical to the success of Duncan becoming a multi-modal corridor is the design and construction of this facility to an arterial, including four lanes, curb, gutter, landscaped parkway, and a 10 foot multiuse trail or a 5-foot side walk and 5-foot bike lane on both sides of Duncan.

Access control will be very difficult given the significant number of homes that take direct access off of Duncan. As traffic volumes increase, it will become difficult to back out of these driveways.

With projected major development occurring at the I-57 Curtis Road Interchange, it will be critical to design Duncan from between Curtis and Winsor Road at the ultimate vehicle, bicycle, and pedestrian improvements possible to allow for entering and exiting traffic an opportunity to get to Winsor Road and alternative mode connections.

## Mattis Avenue: Springfield to Olympian

Mattis Avenue at Springfield Avenue represents one of the greatest opportunities for a transit hub at the Country Fair Shopping Center. It is centrally located in the City and a redevelopment of Country Fair center could include a facility similar to Illinois Terminal in downtown. This hub could include a transfer center with sufficient park and ride space and supporting convenience retail. The City of Champaign and CU-MTD have grant money to facilitate this center. Should it be built it will make the multi-modal corridors connecting Country Fair even more important.

Mattis is a designated 5-lane arterial and is currently constructed at this width. There are three specific areas of concern associated with Mattis as a multimodal transportation corridor, all associated with alternative modes.

The first issue is that the corridor is not a pedestrian friendly corridor. Although there are sidewalks along much of the length of Mattis, there are some missing segments which need to be completed, particularly where Mattis crosses I-74. Pedestrian crossings at signalized intersections can also be intimidating. The lack of raised islands creates a vast open intersection where painted medians and turn lanes do not control vehicle movements nor provide a refuge island. Countdown signal heads would be an improvement to notify the pedestrian as to how much time there might be to cross. There is also a lack of safe pedestrian crossing of Mattis in between signals. There should be a safe crossing at major schools, park and bicycle routes and at least one for every quarter of a mile. Pedestrian crossing treatments utilizing pedestrian activated flashing yield to pedestrian signs would be appropriate.

The second issue is that this entire corridor lacks any bicycle facilities. The narrowness of the right-of-way limits the ability to add bike lanes along Mattis south of Bradley. Adding bike facilities along Mattis north of Bradley is important. For Mattis, south of Bradley, a parallel route to Mattis, such as illustrated on the Bicycle Vision Plan and connections to Mattis should be pursued.

The third issue is enhancements for transit that include improved stop locations with amenities beyond a sign. These amenities could include a concrete pad and bench, with a shelter at the higher demand areas or at transfer locations.

## Prospect Avenue: Springfield to Olympian

Prospect Avenue is a gateway from the historic Champaign to the newer Market Place. Currently Mattis is constructed at the 5-lane arterial designations per the recommended Roadway Vision Plan. Whereas Prospect Avenue south of Bradley has a fairly complete pedestrian system, the corridor north of Bradley is extremely pedestrian unfriendly. This section of Mattis is also one of the few areas of the City that currently is congested, creating difficulties for not just vehicles, but the other modes as well. Areas such as West Bloomington Road and crossing I-74 with high-speed on- and off-ramps create a hazardous condition for pedestrians and bicyclists.

Prospect is strategically important as a multimodal corridor because of its connections and from the fact that I-74 creates a barrier with very few alternatives.

The area of Prospect from Bradley to Interstate Drive requires a detailed safety study to determine solutions for improving pedestrian, bicycle and transit mobility.

## Neil Street: Windsor Road to Town Center Boulevard

Neil Street is very unique road with many facets; it is also US-45. At the south end of the City, Neil is fairly wide 5-lane arterial, has sidewalks on both sides of the street, and is probably wide enough to accommodate bike lanes. As Neil enters the historic downtown, the roadway narrows and northbound traffic is diverted to Walnut Street, where it is reconnected with Neil north of the downtown. The pedestrian system for Neil and Walnut and the downtown is very good, with short blocks, relatively easy to cross streets and wide sidewalks. Neil is a fairly narrow 5-lane arterial north of the downtown to the interchange with I-74. Whereas sidewalks are provided for much of this segment, vehicle travel speeds increase and it makes for a more difficult time for a pedestrian to cross Neil. The narrowness of Neil also precludes bike facilities. The section of Neil north of I-74 is relatively new. Whereas sidewalks were provided, intersection crossings are unfriendly. There was also no provision for bicycles in this area and transit stops tend to be the typical transit sign at the curb with no facilities.

Because Neil Street is made up with so many different facets, there needs to be many different solutions to implement multimodal improvements for the entire corridor. Neil Street is a key entryway node from I-74 into downtown. Not only should transportation improvements be made to make the corridor safer and more accommodating to multi-modes, but action should be taken to beautify the corridor since it is a “front door” to the community and University.

Key pedestrian facilities are missing on Neil Street north of I-74. This includes sidewalks and crosswalks at Marketview Drive, as well as sidewalks along Neil Street north to Town Center Boulevard. These improvements are critical since the land uses in the area include hotels, restaurants and shopping. Not only is there an immediate safety need for these facilities but their absence leaves an impression with visitors to the community trying to walk from these hotels to other uses.

## East-West Multimodal Corridors

### Curtis Road: Staley to Mattis

Curtis Road is the most southerly east-west corridor. It is for the most part unconstructed, including the Curtis and I-57 interchange, which creates an excellent opportunity to doing it correct.

Curtis Road is identified in the CUUATS Long Range Transportation Plan as an "Enhanced Urban Arterial Fringe Road," which will serve as the southern portion of a regional transportation loop. Curtis Road is also a key gateway to the University of Illinois and the interchange at I-57 will include design elements signifying this gateway to campus.

Key to making this corridor work is how access is provided to major development nodes at the I-57 interchange, Curtis and Mattis. Secondary routes to these destinations other than Curtis are critical. Connections between parcels, bicycle facilities and a robust pedestrian network will allow this area to form into a multimodal area.

The segment east of Duncan has residential units take driveway access to Curtis which will become problematic for exiting as traffic along this corridor increases.

Bicycle facilities along Curtis will be very important as these facilities will provide connections from a major portion of the City's residential area to the future commercial retail, office and service uses.

### Springfield Avenue: Staley to Neil

Springfield is a major and important east-west connector with many variations of street and right-of-way cross sections. Springfield is designated a six lane arterial west of North County Fair Drive, a four lane arterial from North Country Fair Drive to Russell Street and a two lane arterial from Russell to the downtown. This future designation reflects the realities of the narrowing right of way from the west to the east.

Note that there are significant "back-ups" on portions of Springfield Avenue during rush hour times, especially Prospect Avenue and at Neil Street. However, the preservation of existing neighborhoods is important and widening Springfield Avenue would negatively impact these neighborhoods. Therefore, a combination of tolerance with traffic, an emphasis on alternative transportation, and encouraging some traffic to use different routes is the best approach for this portion of the corridor.

Whereas Springfield will remain an important east-west facility for the automobile, the restricted number of lanes will restrict traffic and result in users diverting to other routes. The strength of Springfield can be its alternative mode potential. A corridor with high frequency transit and good pedestrian connections would be the recommendation for this corridor. The narrowness of Springfield would also suggest a close by parallel route for bicycle facilities. It should be

specifically noted that the bridge over I-57 must be improved to include bicycle and pedestrian facilities.

## Olympian Drive: Duncan to Prospect

Olympian Drive is a fast growing area in which a corridor with multimodal opportunities for automobile, transit, bicycle and pedestrian would be ideal at the outset. Olympian Drive is identified in the CUUATS Long Range Transportation Plan as an "Enhanced Urban Arterial Fringe Road," which will serve as the northern portion of a regional transportation loop. It is also a key connection from Urbana, which will be important for strengthening developing industrial parks on the corridor. Also, there is a significant amount of residential growth developing and planned near the Olympian Drive corridor, so providing bicycle and pedestrian facilities connecting commercial areas to the west is critical.

Critical to the success of this corridor is adequate bicycle and pedestrian improvements along Olympian Drive as it crosses I-57. Also important is access control along this facility and alternative mode connections from the corridor to the major nodes along this corridor.

# CHAPTER 4: ROADWAY VISION

## INTRO

The roadway network forms the backbone of the entire multi-modal transportation system in Champaign. In addition to automobiles, roads accommodate transit, bicycles, and pedestrians and commercial vehicles carrying freight on these roads. Streets and highways are an important part of the local and national economy, and they provide mobility for most ground transportation users.

Historically, the automobile and roadway construction have dominated transportation investments in the City. Roadway improvements will continue to be an issue, but a balanced system of modes is desired. For the foreseeable future, the automobile will likely continue to be the primary mode of transportation. The roadway network must continue to be maintained and improved to keep pace with growth.

Champaign Moving Forward's Roadway Vision is based on the hierarchical designation of streets and highways in the City's existing development code. Proposed land use policies and transportation relationships were integrated to identify this Roadway Vision. In this manner, a balance between future land uses and congestion levels was used.

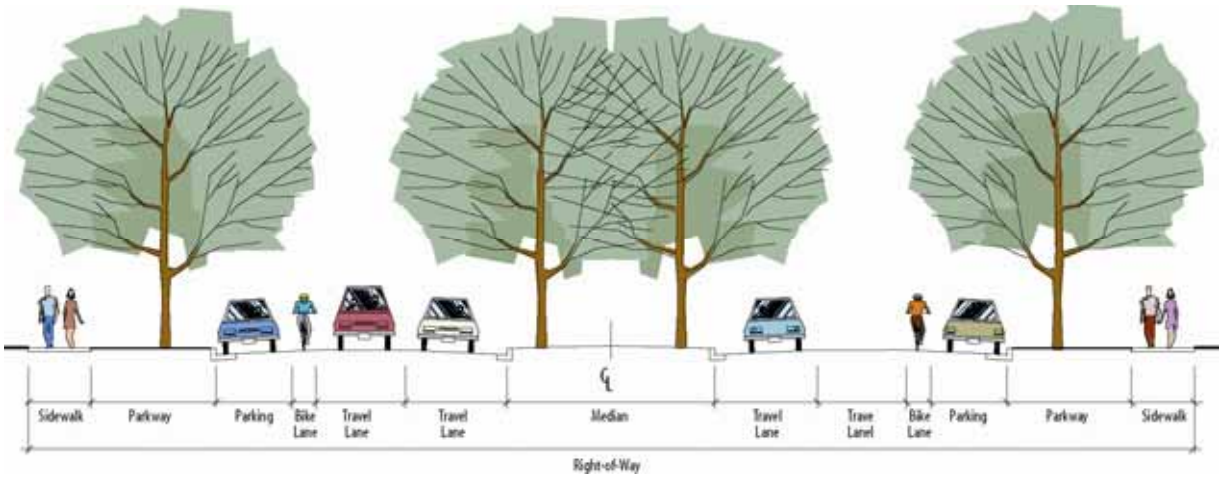
## ISSUES

Several issues were identified as part of the roadway system analysis. They include:

- Identifying and addressing major traffic concerns;
- Funding of current deficiencies and need created by future development;
- Utilizing roadway corridors to support additional multi-modal use; and
- Establishing a balance between roadway capacity and land access for arterial streets.

## COMPLETE STREETS

In 2000, the Federal Highway Administration (FHWA) provided the following guidance: "Bicycling and walking facilities will be incorporated into all new transportation projects unless exceptional circumstances exist." Since then, cities and counties throughout the country have started working toward providing "complete streets" in their communities. A complete street is one that works for all travel modes, including motorists, transit, bicyclists, and pedestrians. A complete street policy ensures that the entire right-of-way is routinely designed and operated to enable safe access for all users. In keeping with the "complete streets" philosophy, the following outlines some general guidelines or "best practices" for creating "complete streets" and accommodating bicyclists and pedestrians within roadway corridors.




### Federal Guidelines

In 2003, FHWA published *Design Guidance Accommodating Bicycle and Pedestrian Travel: A Recommended Approach* (Guidance), a policy statement to guide jurisdiction in integrating bicycling and walking into their transportation systems. The Guidance establishes the following four policies:

1. Bicycle and pedestrian facilities shall be established in new construction and re-construction projects in all urbanized areas unless one or more conditions are met:
    - Bicyclists and pedestrians are prohibited by law from using the roadway;
    - The cost of establishing bikeways or walkways would be excessively disproportionate to the need or probable use; and
    - Where a sparse population or other factors indicate that there is no need.
2. In rural areas, paved shoulders should be included in all new construction and reconstruction projects on roadways used by more than 1,000 vehicles per day.

3. Sidewalks, shared use paths, street crossing, pedestrian signals, signs, street furniture, transit stops and facilities, and all connecting pathways shall be designed, constructed, operated, and maintained so that all pedestrians, including people with disabilities, can travel safely and independently.

4. The design and development of the transportation infrastructure shall improve conditions for bicycling and walking through the following additional steps:

    - Planning projects for the long-term;
    - Addressing the need for bicyclists and pedestrians to cross corridors, as well as travel along them;
    - Getting exceptions approved at a senior level; and
    - Designing facilities to the best currently available standards and guidelines.

It should be noted that exemptions to the complete streets requirement calls for exceptional reasons and facilities with Federal funding require FHWA approval of the exemption. A State or local agency could be put on probation for receiving additional Federal funds, if the FHWA finds inappropriate use of exemptions to exclude accommodation of all modes.

## Complete Street Design

While the definition of a complete street is universally applicable, the design of complete streets is variable. Each street has unique characteristics that make it distinctive from another. Therefore, a complete street in a rural area will look quite different from a complete street in a highly urban area. However, both streets are designed to balance safety and convenience for everyone using the road.

Elements that may be found on a complete street include: sidewalks, bike lanes, crosswalks, wide shoulder, medians, bus pullouts, special bus lanes, raised crosswalks, audible pedestrian signals, sidewalk bulb-outs, and more. The following outlines the characteristics of “typical” complete streets in an urban and suburban setting.

**Multi-Modal Connections - Complete Streets**

Although all streets should be complete streets, there are some streets that should be held to a higher standard and prioritized for improvements. The Multi-Modal Connections identified in Figure 12: Land Use Concept Plan creates the framework for a multi-modal system and should be targeted for “Complete Street” improvements.

- **SUBURBAN.** Suburban roadways provide unique design challenges to develop complete streets. Suburban streets typically evolved from unimproved rural roads. These changing rural to suburban roadways typically lack sidewalks and bicycle facilities. As development occurs along rural roadways, they need to be improved to suburban street standards that include sidewalks and bicycle lanes and/or paths. Ideally, these suburban roadways should ultimately achieve the City's street standards, the recognition that there already exists a $42.5 million in unfunded roadway improvement backlog, options such as separated sidewalks and paths or shoulders to accommodate the bicyclist should be incorporated in all new roadway improvements.

- **URBAN.** Urban streets are utilized to access mixed-use and commercial areas. These streets typically carry a higher volume of traffic and have more pedestrians and bicyclists present. Transit is an active component of these areas and intermodal connections are prioritized.

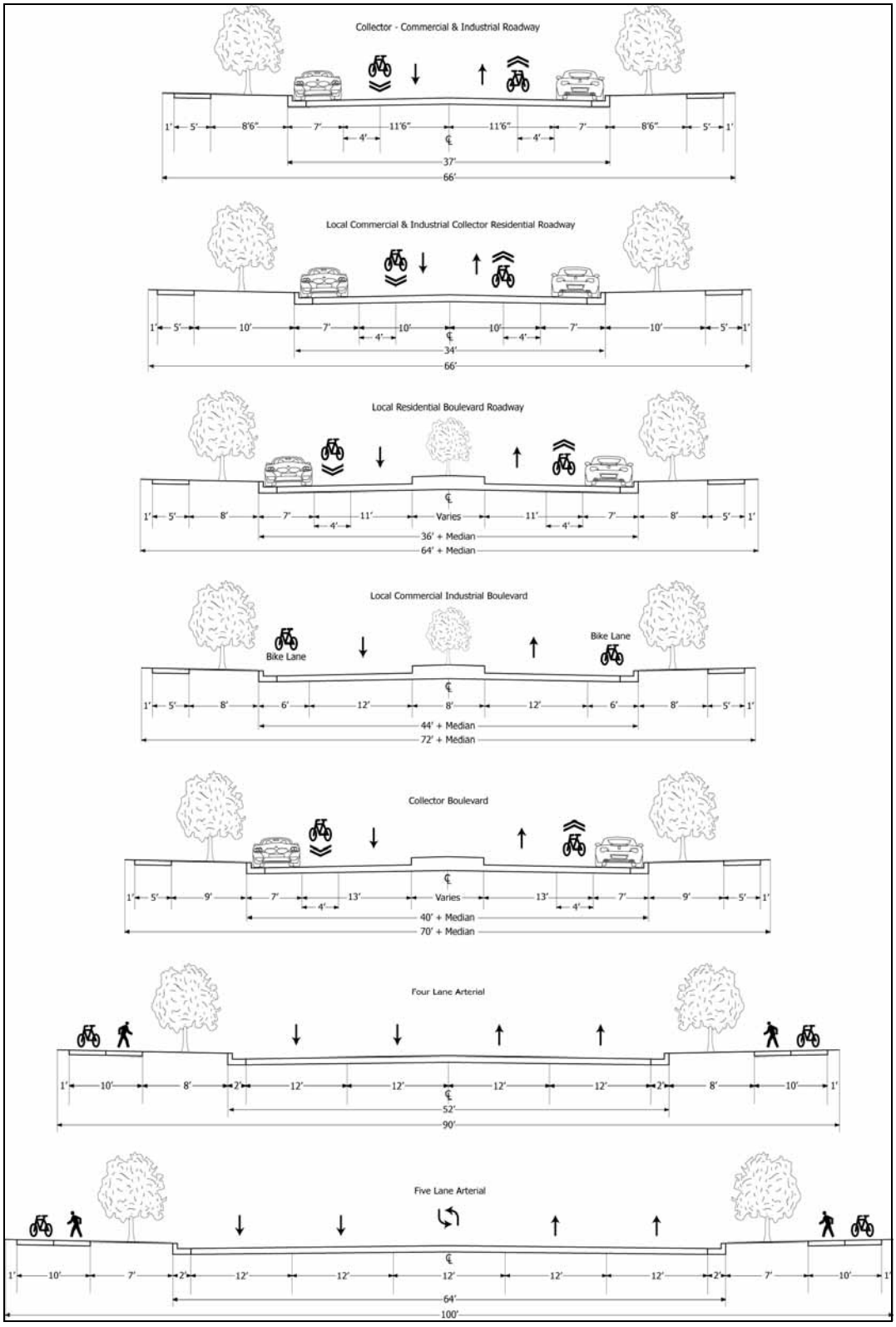
## City of Champaign Street Standards

The City of Champaign Street Standards for new development technically provide for a complete street requirements. Often, these standards have been waived and are constructed with "complete street" features such as sidewalks on both sides of the street, bike lanes or tails, or transit stops.

The proposed street standards for new development are presented in Figure 13. These standards are the same as the current City's code except for two recommended changes. The first is the current street standard requires 4-foot wide sidewalks for collectors through arterials. Five feet is the recommended standard as five feet will allow two persons walking together to pass a single person in the opposite direction. The second recommended change is to widen multi-use bicycle and pedestrian paths from eight to ten feet. Both of these changes have been made to the current street standards exhibit. In order to keep total right-of-way at the current standard, the additional width was taken from the landscaped parkways (area between curb and sidewalk). It should further be noted that as an option to the bicycle/pedestrian path on the four and 5-lane arterials, a 5-foot sidewalk and 5-foot bike lane could be considered on both sides of the street.

The key to these street standards is to build them as specified, and not waive the improvements.

## FIGURE 13: PROPOSED STREET STANDARDS FOR NEW DEVELOPMENT



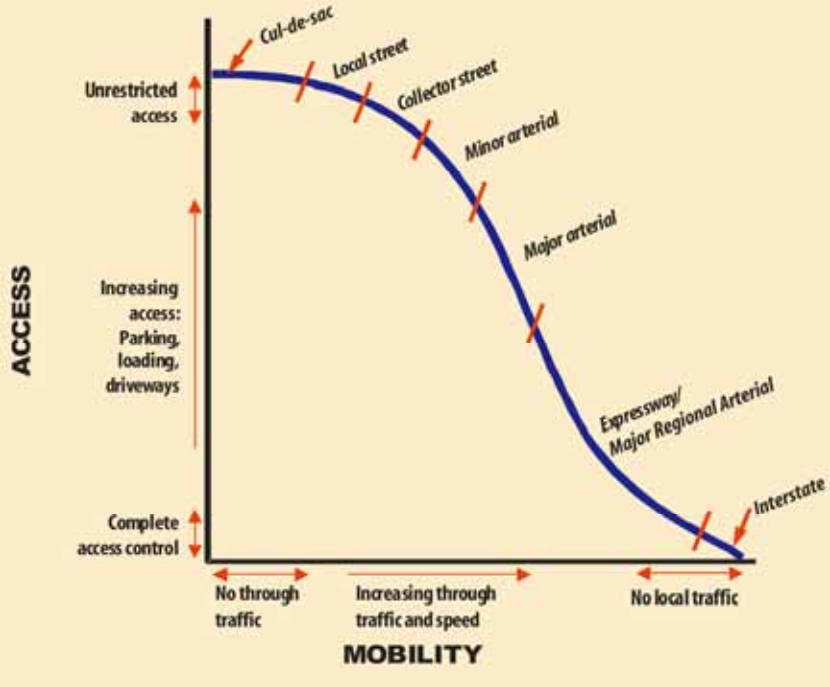
The implementation of a complete streets program that transitions rural roads to suburban and urban multi-modal roadways may require some flexibility with the current street standards. As an example, a rural roadway with new suburban and urban development should include the multi-modal aspects of complete streets, including adequate roadway widths for travel lanes, separated sidewalks or pathways, and some safe bicycle facility such as a bike lane, parallel pathways, or shoulder. Transit opportunities including transit pads and stops and pedestrian linkages should be provided at the time of new development.

As the transitioning area intensifies curb, gutter, landscaped parkway between travel lanes and sidewalks, and street lights should be added to ultimately provide for the complete streets standards specified in the City's current development code.

The implementation of a successful Complete Streets plan requires a systems approach and attention to details. The systems approach is that one can travel from point to point without loss of continuity. This requires coordination between jurisdictions such as the City and the Illinois Department of Transportation, which assures that a bicycle path or side walk is not terminated at key connections such as over or underpasses. Attention to detail for all modes of travel on a complete street should be incorporated as part of a checklist in any public roadway infrastructure design and approval.

## VISION

In the development of Champaign Moving Forward, a careful balance was sought identifying locations of nodes which could support higher density mixed-use retail, commercial, office, and residential development and the connections between neighborhoods and nodes. As a result, the Roadway Vision carefully considered various land use scenarios and the resulting impacts on the transportation system as a result of those scenarios. The 2030 Roadway Vision is based on the citizen preferred land use scenario of connected neighborhoods and nodes and the multi-modal complete streets that provide the connections.



## Roadway Classification

The roadway network is based on a range of different types of facilities with varying characteristics that, when combined, make up the roadway system. These facilities range from highways which serve high-speed, longer-distance trips, to local streets that are designed for lower speeds and shorter trip lengths.

Two important variables which define roadway function are mobility and access. Highways have full access control that allows vehicles to enter and exit only at interchange ramps since mobility is the primary function of a highway. Local streets, on the other hand, have numerous driveways and connections because their primary function is to provide local access to businesses and residences.

In the following discussions of each of the road classifications, the average daily traffic (ADT) for each classification is a general description only. The planned classifications for individual streets are provided on the functional classification map.

### Interstates and Highways

The highways in the Champaign area are on the Interstate Highway System. Highways provide for the high-speed movement of large volumes of traffic with a minimum of interference. This is accomplished through the use of access control, divided roadways, and grade-separated interchanges. Highways have the inherent characteristic of lower accident rates because of many built-in safety features such as comfortable alignment, easy grades, speed change lanes, adequate sight distance, and other geometric features that afford a continuous movement of traffic.

### Major Arterials

After interstates, arterials are the highest classification of streets. They provide the highest level of mobility at the highest speeds for the longest distances. Access is highly controlled with a limited number of intersections, medians with infrequent openings, and no direct parcel access, depending on use and geographic setting. Existing and future land uses adjacent to principal arterials shall be served by other network roadways, service roads and inter-parcel connections. Principal arterials are designed with traffic volume ranges between 15,000 and 35,000 vehicles ADT.

## Minor Arterials

Minor arterials are streets that currently serve higher-speed and higher-volume traffic over medium distances, or are anticipated to serve this kind of traffic within a twenty-five year period. Access is restricted through prescribed distances between intersections and limited direct parcel access. Minor arterials serve major traffic generators and link collector streets with the principal arterials. These streets have a design traffic volume of between 3,500 and 15,000 vehicles ADT. Corridor preservation for future minor arterials including rights-of-way, easements, setbacks, and access limitations shall be pursued through the land development process.

## Collectors

The collector street system serves intermediate and short-distance travel. Collectors provide a lower level of mobility than arterials at lower speeds. These streets connect local roads to arterials and have more direct access dependent on use and geographic setting. Traffic volumes on such facilities are lower than those found on arterial facilities. The design volume for these streets ranges from 1,000 to 3,500 ADT. The City's arterial street system typically occurs on a one-mile grid. Collectors should occur at the one-quarter mile to serve local development.

**Example of Collector Streets**


## Local Streets

This is the lowest classification of streets. Local streets provide a high level of access to abutting land but limited mobility. Local streets function primarily to serve local traffic circulation and land access. These streets customarily accommodate shorter trips, has lower traffic volumes, and lower speeds than do collectors and arterials. Streets where design year traffic volume will be between 0 and 1,000 vehicles per day are considered "low volume" local streets. Narrow local streets (lanes) may be used where the volume will be less than 250 ADT.

### Transportation Model

The transportation model is a tool to evaluate existing traffic conditions and to help estimate future needs. The model is a modified version of the model developed as part of the Champaign-Urbana Urban Area Transportation Study (CUUATS). It uses existing and forecast data based on the Champaign preferred land use scenario to estimate trips, travel patterns, and travel demand. Model results can be used to identify roadway capacity deficiencies.

The travel model requires data about the population, households, and employment of the region. This socioeconomic data is used to model travel demand and deficiencies. Travel characteristics are modeled for each household and employee based on household size and employment type. The model process uses estimates of household and employment data and the existing roadway network as input assumptions.

The model can produce reasonable results for several roadway network scenarios. The intent is to produce estimates of traffic demand for each roadway segment in the network. These traffic volumes are converted to levels of congestion. In this manner, roadway deficiencies can be identified and potential alternative solutions evaluated.

## 2030 Roadway Vision Plan

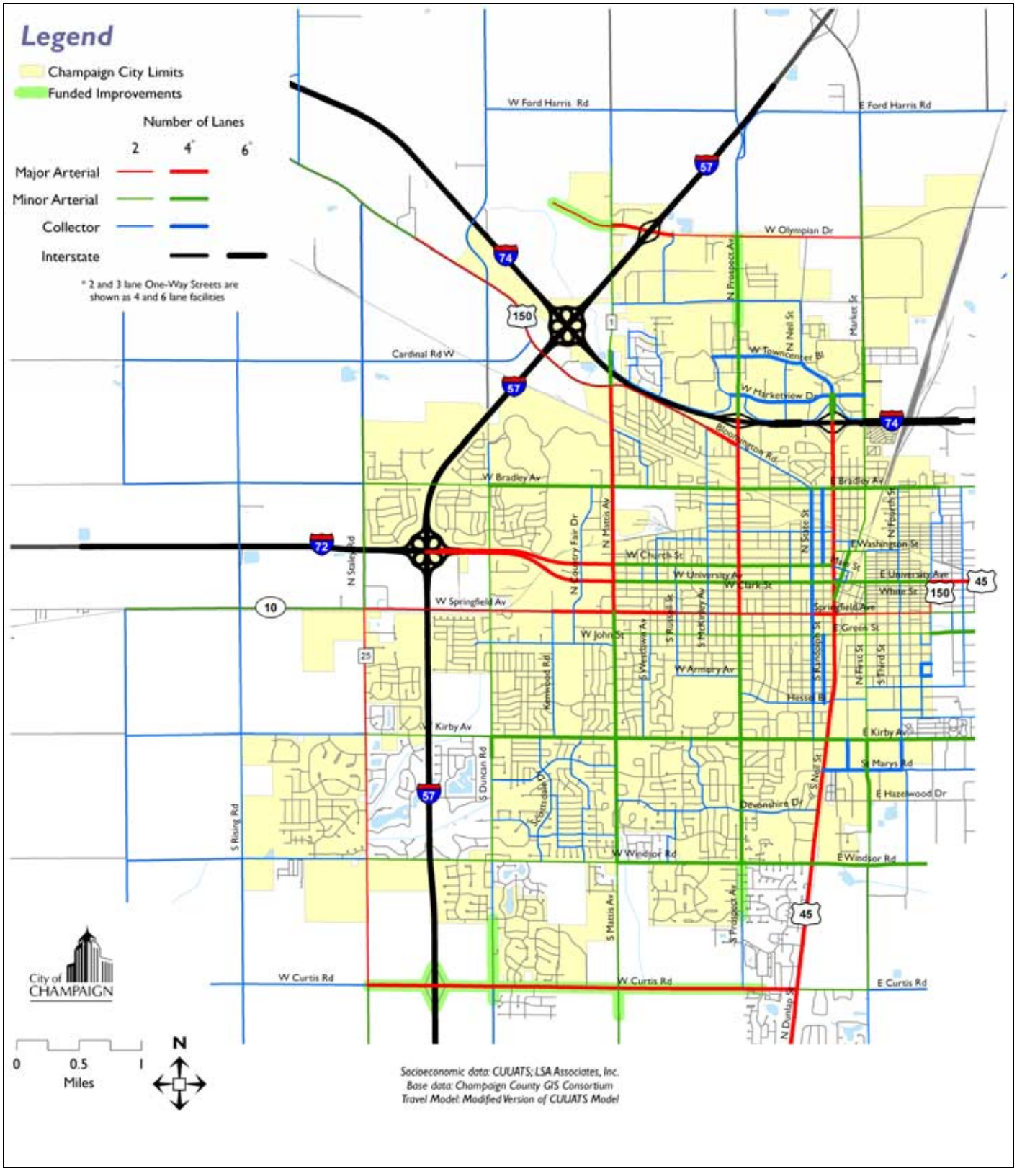
With projected 2030 population and employment growth, roadway deficiencies will continue. The process to develop a 2030 Roadway Vision to accommodate projected 2030 growth included the following steps:

1. **EXISTING + COMMITTED ROADWAY NETWORK:** The existing plus committed roadway network includes both the roadway network that exists today plus those improvements which have committed funding. This roadway network is presented in Figure 14. Committed improvements are highlighted to easily see what has been added.

2. **2030 DEFICIENCIES:** Utilizing the CUUATS regional travel model and the estimated dwelling units, retail employment, and non-retail employment resulting from the Connected Neighborhood and Nodes land use vision plan for 2030, a traffic model was performed to identify where traffic volumes will exceed the existing + committed roadway network capacities. This map also identifies those roadway deficiencies where urban development traffic is occurring on rural roadways. This deficiency map is presented in Figure 15.

3. **2030 ROADWAY VISION PLAN:** Based on the 2030 deficiencies analysis, improvements including widening of existing roadways to accommodate future traffic, upgrade of rural roads to accommodate urban development and travel, and new connections to provide access to new developing areas were identified and included in the plan. It should also be noted that this plan does not identify future collectors. As developments occur, it will be necessary to identify a system of collectors, which traverse from arterial to arterial, at the one-quarter mile increment. This collector roadway system is critical to the long term performance of the arterial street system. Similar to the grid system in the older portion of the City, the collector roadways provide internal opportunities for local traffic to travel in all direction to get to an arterial for longer trips, instead of having to first get onto an arterial and adding to the arterial traffic to circulate to a desired direction.

## FIGURE 14: EXISTING + COMMITTED ROADWAY NETWORK



## FIGURE 15: 2030 DEFICIENCIES

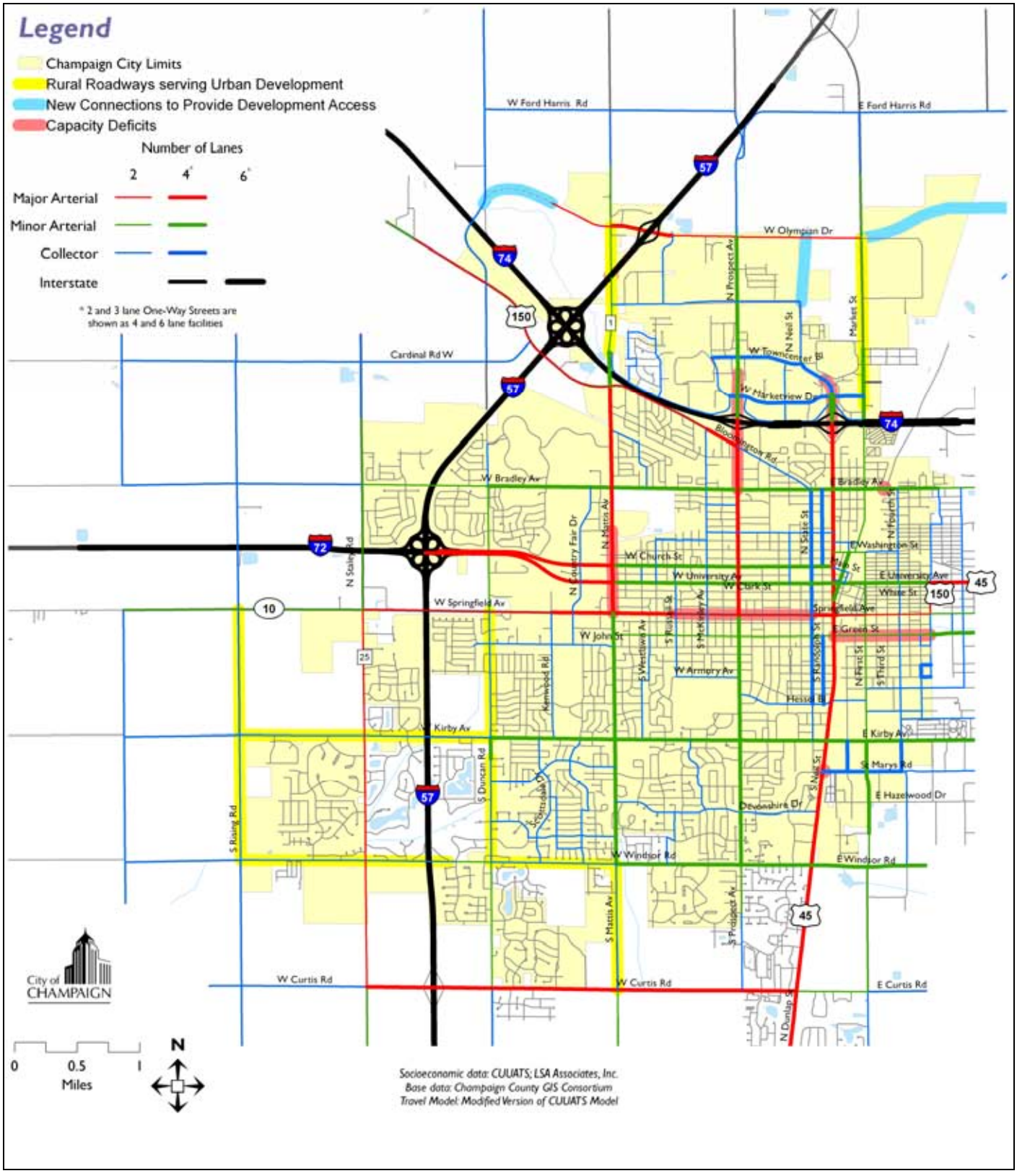


Figure 16, represents the 2030 Roadway Vision and improvements within Champaign. The map identifies both the functional classification of roadways and the number of proposed lanes. Roadways recommended for change beyond the existing plus committed network are highlighted.

It should be noted that new collector roads are schematically shown on the map. As development proposals are submitted, refinement of these collector roadways will need to be determined through the development review process including engineering design to determine precise alignments.

It should also be noted that there have and continue to be areas of congestion or constraint that do not have specific recommendations but will require further study. These include areas such as St. Mary's railroad under crossing, Prospect at I-74, Bradley overpass and the two lane portion of Springfield.

## Corridor Preservation Plan

Historically, long-range transportation plans have been developed for the 20 to 30-year timeframe. Given the length of time it takes to identify, design, fund, and construct some of the larger improvements, and the uncertainty of the rate and location of growth, the 20 to 30-year timeframe has proven to be too short for comprehensive transportation planning. A concept being included in long-range transportation plans throughout the United States is looking at an extended time horizon longer than 20 to 30 years, and creating a Corridor Preservation Plan. The objective of the Corridor Preservation Plan is to preserve the necessary right-of-way for future roadway improvements, maintain the desired character of the corridor, and fulfill the intended functional classification of each roadway.

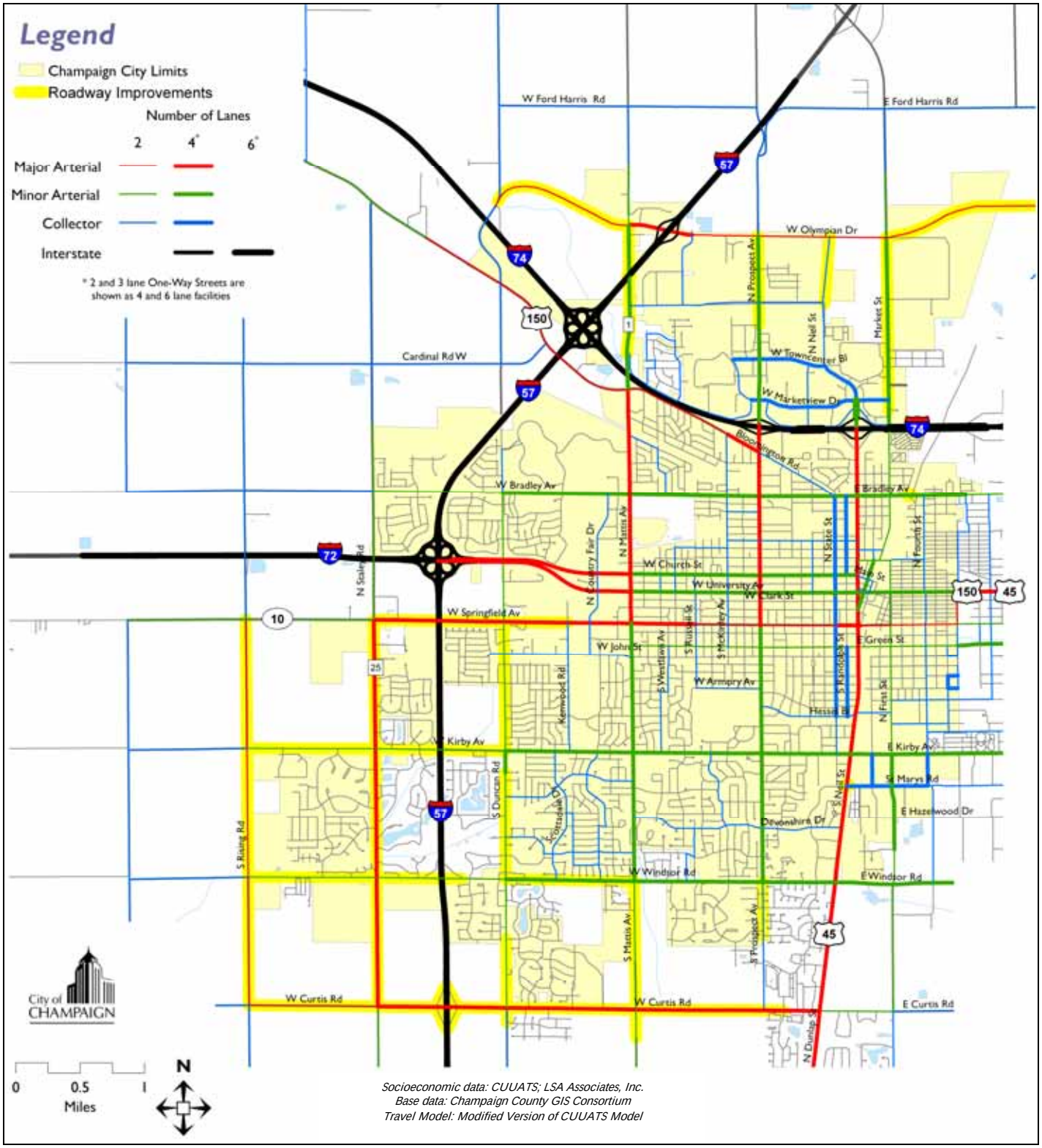
These corridors should be preserved and restricted from development and encroachments so that future improvements can be made in an efficient manner. This is done through the active process of:

- Identifying major corridors for future roadway improvements;
- Adopting access management requirements for the existing corridors that identify appropriate access point spacing;
- Identifying and securing access management standards for areas beyond the extent of existing urban development; and

### Complete Street on State Roads

Federal requirements for complete streets are required on all roads including IDOT state roads. Close cooperation with IDOT will be critical to assure that improvements on state highways, particularly at bridge and overpass locations, such as I-57 and Mattis are included in the 2030 Vision Plan. The overpasses and roads are needed to accommodate complete streets multi-modal travel. Current I-57 is a barrier to any crossing except by the automobile.

## FIGURE 16: 2030 ROADWAY PLAN




*Socioeconomic data: CUUATS; LSA Associates, Inc.*
*Base data: Champaign County GIS Consortium*
*Travel Model: Modified Version of CUUATS Model*

- Requiring building and development setbacks that preserve the relationship between the right-of-way and development so that future roadway improvements can be accommodated on the priority corridors.

The Post-2030 Roadway Plan map, shown in Figure 17, presents the recommendation for preserving right-of-way and defines access to accommodate the long-term transportation needs of Champaign. Given the difficulty in identifying what might actually occur in the Post-2030 timeframe the 2030 land use plan assumptions were extended an additional ±20 years beyond the 2030 Plan timeframe. Not all arterial and collector roads are shown on the map and many of the outlying collector roads are shown in approximate locations.

As development proposals are submitted, additional roadways will be determined through the development review process. Furthermore, the future corridor locations are approximate and engineering design will determine precise alignments. This map is intended to indicate where right-of-way should be preserved and where improvement setbacks will be required to provide flexibility in responding to actual development and growth as it occurs. The map does not imply that all of these facilities will be improved to the level indicated. If anticipated developments do not happen, then a given roadway recommendation may not be needed. Conversely, if development is greater than anticipated, then additional facilities may be needed.

## CONNECTED NEIGHBORHOODS AND NODES ROADWAY IMPROVEMENTS

The following provides a list of roadway considerations that should be incorporated into all multi-modal corridors. Although these considerations should be included in all arterial improvements, they are critically important for the multi-modal corridors.

### Capacity Improvements

As development occurs, the multi-modal corridors should be widened with curb gutter and sidewalk per the 2030 Roadway Vision Plan and current City of Champaign Street Standards.

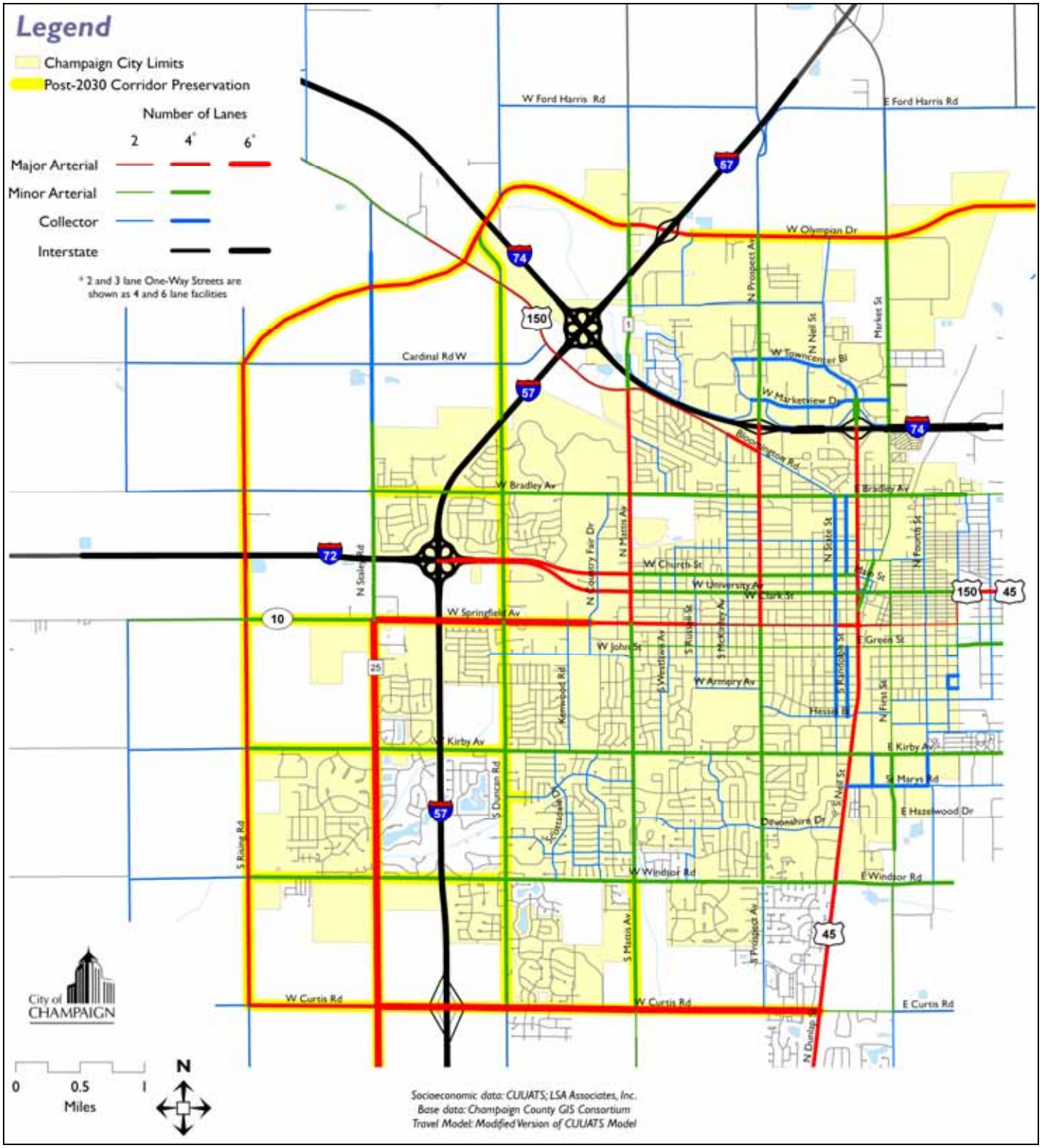
### Intelligent Transportation System (ITS) Infrastructure

Specific ITS applications that should be considered for the multi-modal transportation corridors include signal upgrades, signal interconnects, and preemption/priority control for transit and emergency vehicles.

### Transportation System Management (TSM)

Transportation System Management strategies include access management, intersection improvements, peak period curb-lane parking restrictions, and operational improvements. TSM also includes traffic signal coordination, interstate ramp meters, and incident management (crashes, construction, special events).

## FIGURE 17: CORRIDOR PRESERVATION PLAN



## Access Management Plan Strategies

Access management is the systematic control of the location, spacing, design, and operation of driveways, median openings, interchanges, and street connections to a roadway. The purpose of access management is to provide vehicular access to land development in a manner that preserves the safety and efficiency of the transportation system. Although developing a detailed access management plan is beyond the scope of this planning study, it is recommended that a corridor access management plan be developed for each of the multi-modal transportation corridors. The access management plan should be comprehensive so that a consistent approach is applied throughout the corridor. Elements of the access management plan should include:

- Driveway consolidation and establishment of minimum driveway spacing;
- Locating driveways away from intersections;
- Inter parcel access requirements;
- Construction of secondary roadway network and parallel access roads to provide access off of the multi-modal transportation corridor; and
- Integrating access management into other planning activities (such as land use plans, zoning and planning regulations, codes and standards).

## Road Maintenance

When providing maintenance and reconstructing existing roadways and bridges, it should be done in a manner that promotes complete streets, safety, increases efficiency, and minimizes lifetime costs. This is especially true for the existing arterial street bridges over Interstates 74 and 57.

## Physical Improvements as Part of Corridor Projects

As the Multi-Modal Corridors are improved or constructed, the following guidelines are recommended for consideration:

- Construct improvements to current design standards;
- Improve arterial intersections to serve future volumes (turn lanes);
- Provide acceleration/deceleration lanes in appropriate locations;
- Provide appropriate curb/gutter/sidewalk section on multi-modal corridors;
- Provide appropriate space and/or treatments for on-street bicyclists or separate trail;
- Provide applicable crosswalks markings and devices at locations with pedestrian activity;
- Install traffic signals as warranted; and
- Control arterial access per multi-modal corridor roadway function.

## Roadway Policies and Actions

During the course of development of Champaign Moving Forward, several policies were prepared in response to the issues, concerns, and suggestions raised by the public with regard to the roadway system. These policies serve to guide the City's implementation of the roadway component of the TMP. Through these policies and actions, the City will:

**Policies**

RP-1. Coordinate regional travel issues and plans with, IDOT, CUUATS, Urbana, Champaign County, Savoy, and the University of Illinois.

RP-2. Reduce impacts to the arterial street system by requiring new development to provide internal circulation and connections between developments using collectors.

RP-3. Adhere to Complete Streets roadway standards and requirements and not waive development requirements.

**Actions**

RA-1. Identify a program where development pays its fair share of roadway improvements based on a nexus between new traffic and impacts.

RA-2. Modify current street standards to Complete Streets which integrates automobile, transit, bicycle, and pedestrian multi-modal facilities.

RA-3. Update codes and standards to require multi-modal transportation assessments for all new proposed developments which address connections, access, and mobility for auto, transit, bicycle, and pedestrian modes.

# CHAPTER 5: TRANSIT VISION

## INTRO

Public transportation, or transit, plays a significant role in the City of Champaign's multi-modal transportation system. Champaign is served by the Champaign-Urbana Mass Transit District (MTD). Transit provides transportation choice for the City of Champaign and improves the quality of life for its residents. Increased transit usage benefits congestion, the environment, and health for users that walk to and from their transit stops.

MTD currently provides approximately 700 hours of transit service per day with 76 peak buses and generates an average of almost 37,220 average daily boardings with a productivity of 52.8 passengers per revenue hour. This is exemplary productivity for any transit system. In comparing CUMTD to five other areas with similar residential population and major university enrollment utilizing 2005 National Transit Database information, CUMTD has an average of 55.8 annual boardings per capita, almost double the peer average of 28 annual boardings per capita. At the University of Illinois, there is heavy utilization by students, averaging 246 annual boardings per university student, compared to the peer average of 122.6 annual boardings per university student.

The MTD transit system within the City of Champaign provides excellent service to the downtown and the University of Illinois through a system of radial routes that join at key transit centers. Getting from one outlying area to another often requires a user to first go to the central transit hub and transfer to an alternate route to get to one's destination.

## ISSUES

Several issues were identified as part of the transit system analysis. Not surprisingly, most of them focused on growth and the changing development patterns toward outlying dispersed growth. They include:

- Identifying mixed-use development opportunities that can create a series of nodes to support transit throughout the City;
- Looking at opportunities for redevelopment associated with transit service;
- Locating park and ride locations;
- The need to change current routing to accommodate new growth in the community, and adjust the local bus routes over time to provide a communitywide transit system that is efficient and timely.

- Providing infrastructure that is interconnected with all modes to create a more seamless transportation system.
- Identifying additional opportunities to connect Champaign with other communities;
- Funding additional service; and
- Providing consistent service, good connections, and system reliability.
- Impact of the Southwest transit district.

## TRANSIT VISION PLAN

Primary transit service within the Champaign area is provided by the Champaign-Urbana Mass Transit District (MTD). MTD is currently preparing a Mobility Implementation Plan (MIP) which will develop a long range transit plan. Whereas the ultimate responsibility for transit is MTD, one of the objectives of the land use concept plan of connected neighborhoods and nodes is to provide the density and connections to support higher frequency transit service.

The City of Champaign's Transit Vision Plan, shown in Figure 18, is designed to support the City's Connected Neighborhoods and Nodes, Land Use and Transportation Vision Plan, and the MTD's Mobility Implementation Plan. This plan incorporates the mixed-use higher density development nodes that could support higher frequency transit. As party of the MTD MIP process, additional transit elements will be added such as locations for park and ride facilities, and identification of express route services.

Several changes will be necessary to support the implementation of the MTD's Mobility Plan. Among them are the re-orientation of the local bus service to provide local circulation and connections to activity centers, the planning and design of these centers and connecting corridors, and multi-modal integration between automobile, transit, bicycle, and pedestrian.

## CONNECTED NEIGHBORHOODS AND NODES TRANSIT IMPROVEMENTS

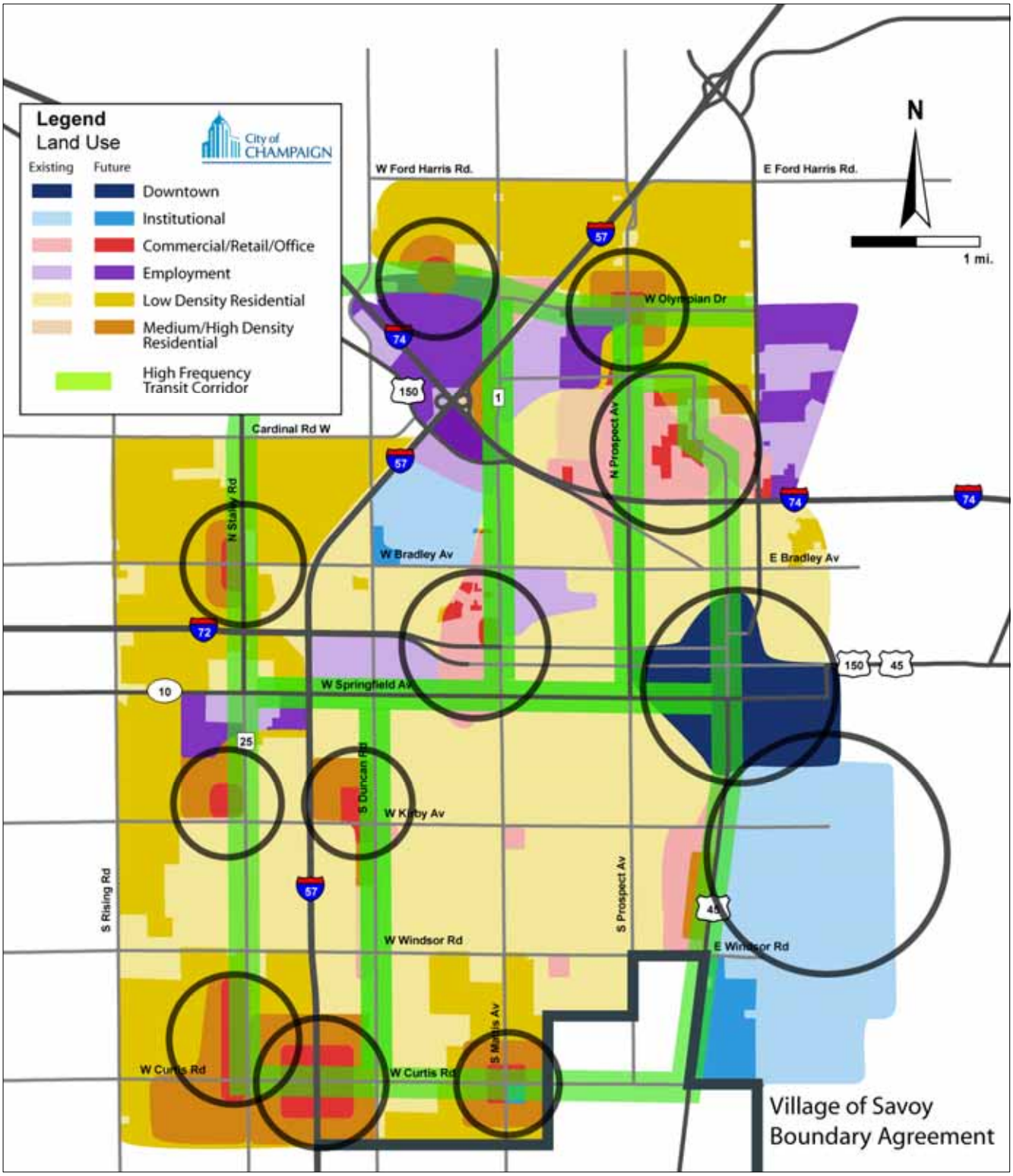
The following provides a list of transit improvements and features that should be implemented into all nodes and multi-modal corridors.

### Transit Requirements for Development Nodes

In order for future node development to support transit, the node design shall include:

- A transit stop or station prominently located near the center of the node for both visibility, efficiency, and as a statement regarding the importance of transit.

## FIGURE 18: TRANSIT VISION PLAN




*Source: LSA Associates, Inc.*
*October 24, 2007*

- The transit stop/station should have at a minimum shelter, benches, lighting, trash receptacles, and real time transit arrival information.
- Intermodal connections:
    - Automobile drop-off and/or Park-n-Ride;
    - An integrated sidewalk system with the development node and transit stop/station; and
    - Bicycle path/lane connections and secure bicycle storage/lockers.

## Transit Service Frequency Targets for Nodes and Multimodal Corridors

Transit frequency is important for choice riders that make decisions as to whether to drive or take transit. If the service is infrequent, the choice is usually toward the automobile. As transit frequency increases, then the user may choose transit because of increased availability. The following table identifies the minimum frequency of transit service that should be targeted for Nodes and Multi-Modal Corridors.

| Nodes and Multi-Modal Corridors | Transit Service Frequency (Transit Vehicles Per Hour) |
|---|---|
| Established High Density Node and Corridor | 6 or greater |
| Emerging Node and Corridor | 4 or greater |
| Starting Node and Corridor | 2 or greater |

## Transit Travel Times

Transit travel time must be reduced in the multimodal transportation corridors in order for transit to be competitive with the automobile. One option to reduce transit ravel times is through exclusive bus travel lanes that are not impacted by congestion. This concept, referred to as Bus Rapid Transit (BRT), has not been proposed for any of the multimodal transportation corridors. However, to improve transit operations, queue jumper lanes are recommended when the opportunity exists along the multi-modal corridors. Queue jumper lanes are separate travel lanes that allow buses to pass queued traffic at intersections. Queue jumper lanes are often used in tandem with bus signal priority to allow buses to advance through intersections and improve route travel times.

## Transit Stops and Amenities

Although nearly all bus stops for CUMTD are marked with signage, the types of stops and amenities offered at bus stops vary greatly. In general, transit stop improvements and amenities should be based on patron demand. These improvements include installation of proper signage and paved pads, benches, covered shelters over the paved pads, landscaping, route/schedule information, trash receptacles and bicycle racks. In addition, all improvements shall be in compliance with the American Disability Act (ADA).

Note that areas planned as “nodes”, should include an even higher level of transit amenities which may include transit centers with real time route information, potential park and ride facilities, as well as structures that allow for transit operations and land uses that serve a commuting population. This is especially true for Country Fair.

## Site Transit Stops in Safe Locations

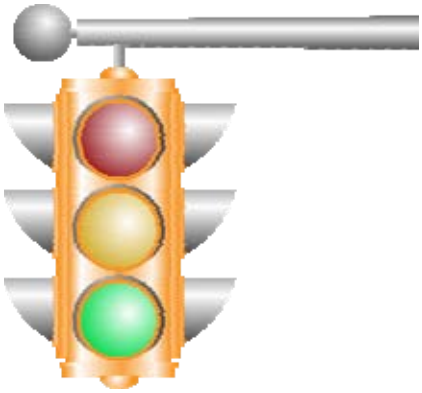

Examine existing and proposed transit stop locations to ensure they provide pedestrian and bicyclist access and are in safe locations. Locate transit stops to be in close proximity to pedestrian/ bicycle crossings.

## Transit Facilities and Services

- Implement security and safety features at transit stations, park-n-ride lots, and on vehicles;
- Make modifications to bus routes per changing ridership demands;
- Implement timed-transfer points throughout the system; and
- Provide pedestrian and bicycle connections between transit facilities and adjacent neighborhoods and developments.

## Transit ITS Infrastructure

As indicated in the roadway recommendations, a number of ITS applications are recommended for the multi-modal transportation corridors. Specific transit ITS applications include:



- Traffic signal preemption/priority control;
- Implement/operate transit security features at park-n-ride lots/stations and on transit vehicles;
- Disseminate real-time transit vehicle arrival/departure information to transit patrons at park-n-ride lots/stations and key transfer points at nodes; and
- Compile real-time parking space occupancy at park-n-rides.

## Transit Policies and Actions

**Policies**

TP-1. Coordinate with MTD to identify strategies for providing transit to targeted development nodes from their MIP study.

TP-2. Work with MTD to recognize additional opportunities to grow the local bus system (e.g., increased frequency and coverage) and to identify corridors where transit-oriented developments would be desired.

TP-3. Coordinate site design and multi-modal access with MTD and include in City's standards and codes.

TP-4. Emphasize transit oriented design in new development at key nodes, especially at the Curtis Road interchange, at Country Fair and on Olympian Drive.

**Actions**

TA-1. Modify the City's Land Use Plan toward higher-density, mixed-use, transit-supportive land uses node at locations such as downtown and mixed-use centers.

TA-2. Modify standards and codes to require pedestrian and bicycle connections to bus stops, park and ride lots, and transit stations.

TA-3. Modify standards and codes to require new development provide street connectivity and facility design that supports transit.

## Travel Demand Management

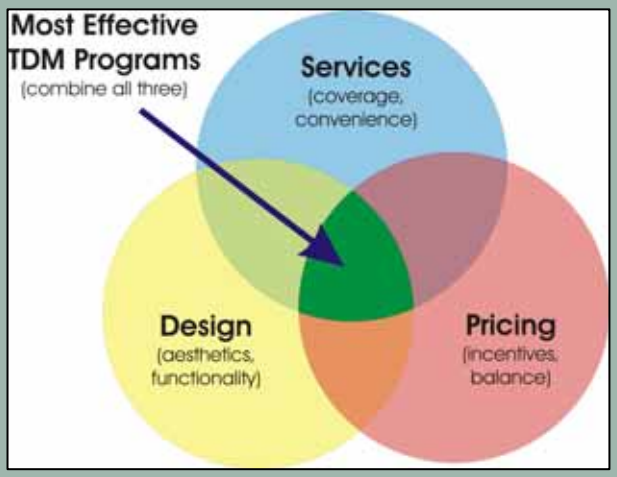
Travel Demand Management (TDM) is a general term for programs that result in a more efficient use of transportation resources. They aim to influence the demand for travel rather then focusing on the provision of transportation facilities. TDM programs can include numerous strategies that can be described in three basic categories:

- Increasing vehicle occupancy,
- Switching to alternative travel modes, and
- Affecting the time or decision to make a trip.

Each of these categories requires the modification of behavior on the part of the traveler. Increasing vehicle occupancy typically includes carpool or vanpool programs combined with ride-matching services. Parking supply and pricing strategies can also influence ridesharing activities.

Switching travelers to alternative transportation modes typically involves the increased provision of facilities and services, including bikeways, trails, sidewalks, and transit. Previous chapters in Champaign Moving Forward discuss support for alternative modes provided by the City and MTD. Land use changes can also influence alternative mode use, such as increased densities, mixed-uses, and transit oriented developments supported by the City of Champaign and MTD.

Other strategies affect the demand for travel, such as telecommuting programs, shifting work hours so commutes occur outside of rush hour, compressing work weeks, flextime, and others.




## What are the Travel Demand Management Policies?

- Prepare and distribute information about transit routes, bicycle facilities, and opportunities for carpools to local businesses, schools, and the general public through the City's website, "smart trip kits," and other ways.
- Plan bike and pedestrian routes, review maximum parking requirements, and plan transit oriented developments.
- Identify and support transportation coordinators at major employers, develop feasible goals for trip reductions, and develop codes to be flexible to support TDM activities.
- Work with transportation providers and federal and state agencies to plan and implement appropriate TDM measures.
- Establish resources to implement TDM programs.
- Identify and support opportunities for a local circulator shuttle system to connect retail centers, employers, and other activity centers.
- Modify codes and ordinances to include maximum parking standards.

# CHAPTER 6: BICYCLE VISION

## INTRO

The bicycle network is an important component of a balanced transportation system. Bicycling can be a healthy alternative to the automobile for many trips. It can also play a role in helping to reduce traffic congestion, improve air quality, and enhance the quality of life in the City.

Currently, the bicycle network is virtually non-existent within the City of Champaign. However, with modest improvement efforts to the grid street system, the adequate street width and level terrain provide a framework to reintroduce a system of new trails, designation of on-street bicycle lanes, improvements to existing facilities, and enhanced integration of the bicycle network with the rest of the multi-modal transportation system. Constructing new arterials based on complete street standards will further provide the framework for implementing a system of integrated bikeways.

### BIKE ROUTES, LANES, AND PATHS - HOW ARE THEY DIFFERENT?

***Bikeway*** - A general term for any street or trail which in some manner is specifically designated for bicycle travel, regardless of whether such facilities are designed for the exclusive use of bicycles or are to be shared with other transportation modes.

***Trails/Paths*** - This is a bikeway that is physically separated from motor vehicle traffic by open space or a barrier and is either within the road right-of-way or within an independent right-of-way. These are also referred to as a shared-use or multi-use paths or recreation trails.

***Bicycle Lane*** - This is a bikeway on a portion of a street that has been designated by striping, signage, and pavement markings for the preferential or exclusive use of bicycles.

***Bicycle Route*** - A segment of a system of roadways signed for the shared use of automobiles and bicyclists without striping or pavement markings.

## ISSUES

Several issues were identified as the bicycle system was developed.

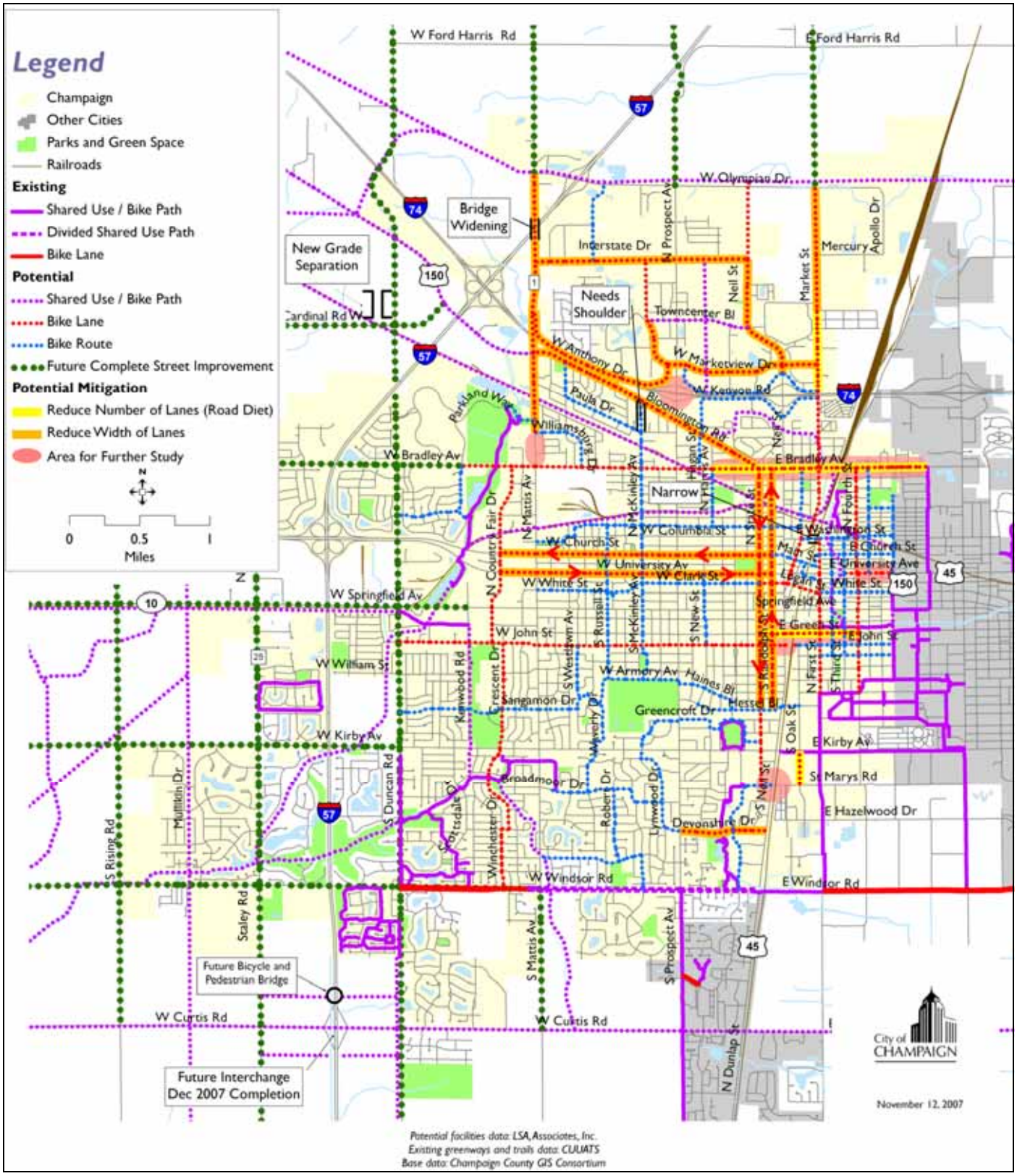
- What is the existing system of bike trails, lanes, and routes?
- How can the on- and off-street bicycle facilities be better connected with each other and the rest of the transportation system?
- Where is secure bike parking necessary?

## BICYCLE VISION PLAN

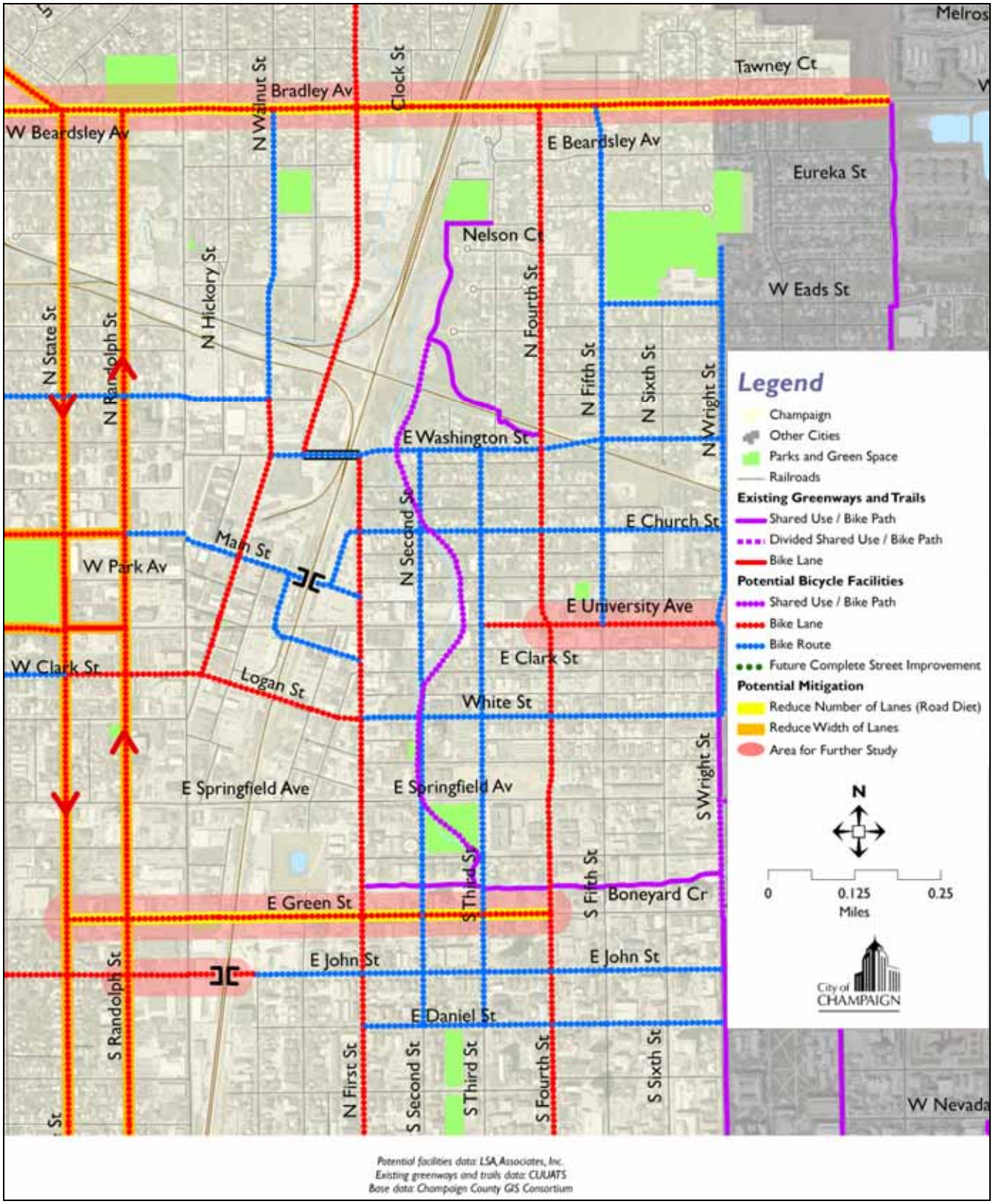
The Bicycle Vision is contained in Figure 19, which shows the existing bicycle network and planned facilities. An expanded view of the downtown area is presented in Figure 20. The development of the Bicycle Plan came from three basic efforts. These included:

1. **HISTORIC CITY BICYCLE MAPS:** Historically, the City of Champaign had a major bicycle route system. Maps of those historic bike routes are an important starting point for identifying a bicycle plan for the City.

## FIGURE 19: BICYCLE VISION PLAN



## FIGURE 20: BICYCLE VISION PLAN: DOWNTOWN AREA



2. **FIELD INVENTORY:** Utilizing the historic City bicycle maps, each route was driven to determine the potential of reintroducing bike lanes or routes to the City street system. In areas where problems resulted through change, alternative routes were sought.

3. **CITY OF CHAMPAIGN TRAILS PLAN:** As part of an independent work effort, the City is in process of developing a Trails Plan. The two separate efforts were very similar and collaboration between the two efforts rectified differences.

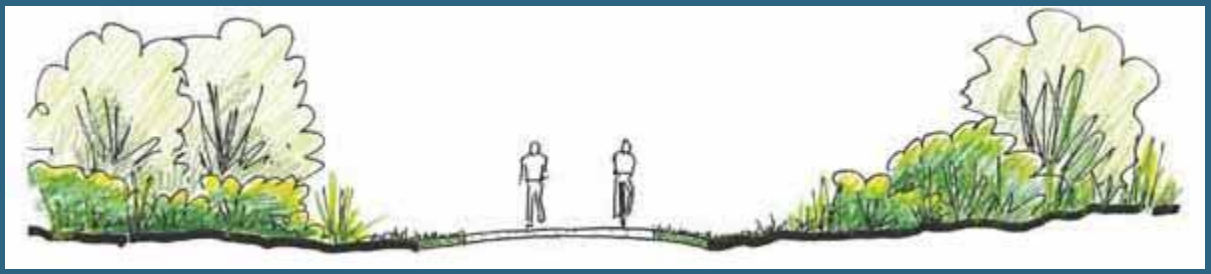
## Bicycle Vision Plan Elements

The bicycle vision is to provide for a seamless, comprehensive network to encourage bicycling. While bicyclists can ride on any City street, a system of designated bicycle paths, routes, and lanes are proposed to identify those roads that are best suited for bicycles. The American Association of State Highway Officials (AASHTO) guidelines for bikeway design delineate three different types of bikeway facilities.

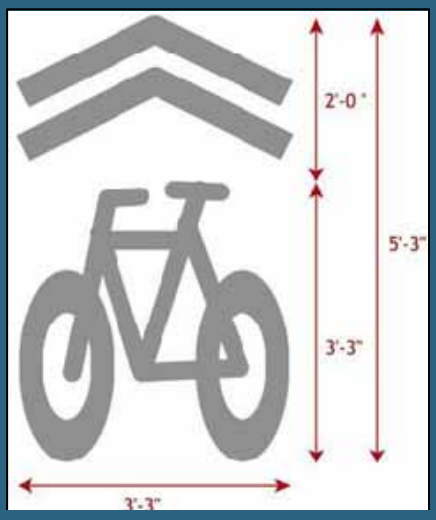
- **BICYCLE PATHS OR SHARED USE PATHS** include separated pathways along major arterials and portions of the multi-use trail system. While these facilities provide the safety of a separated facility, intersections with roadways and the multiple crossing of driveways and entrances provides the potential for conflict with motor vehicles, and increases the likelihood of accidents. Also, the presence of pedestrians on trails increases the likelihood of conflicts with bicyclists. Bicycle paths require a minimum 10-foot width and preferably a 12-foot width for high activity areas with four feet clear on either side of the trail. The City of Champaign Street Standards requires an 8-foot shared bicycle and pedestrian path on either side of four and five lane arterials.

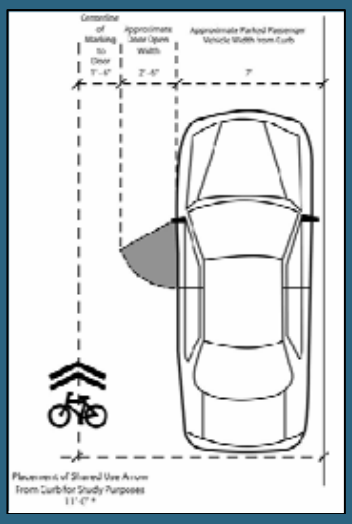
### Off-Street Shared Use Paths

Off-street bikeways consist mostly of shared use paths that are shared with pedestrians, in-line skaters, and others. Shared Use Paths are used primarily for recreation, but also provide an off-street transportation system for non-motorized uses. Ideally a shared use path should be 12 feet wide (10-foot minimum) paved with concrete or asphalt. A four-foot soft shoulder should be provided on either side of the trail consisting of crushed gravel or mowed grass.



### Shared Lane Use Designation "Sharrow"



Sharrows are becoming a popular form of striping bike routes on lower volume roadways that are shared by automobile and bicyclist. Sharrows are proposed for bike routes in Champaign. Benefits of Sharrows include:

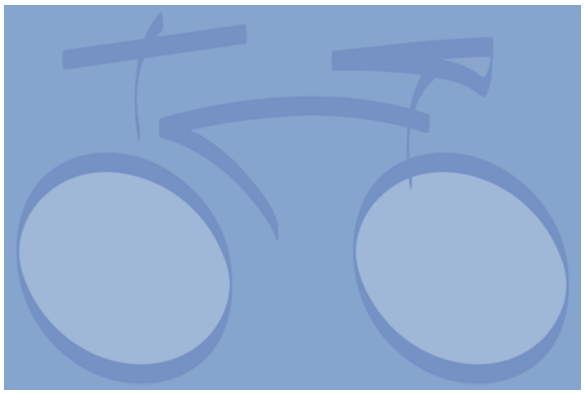
- Encourage motorists to be more aware of bicycles.
- Increase the distance between bicyclists and parked cars.
- Increase the distance between bicyclists and passing vehicles.
- Reduce the number of sidewalk riders.
- Significantly reduce the number of wrong-way riders.

- **BICYCLE LANES** are portions of streets that are dedicated to the exclusive use of bicycles and are marked with white lanes on the pavement. Bicycle lanes are located on streets that have sufficient width and preferred by bicycle commuters. The dedicated lane decreases the chance of one travel mode being slowed by the other and provides a clear lane for the bicyclist. Bike lanes do, however, restrict the cyclist to a relatively narrow section of the roadway and channels them to the far right of through traffic, posing a potential hazard for turning movements of both bicyclists and motor vehicles. Standard bicycle lane widths should be six feet; five feet is the minimum width adjacent to curbs and four feet is the minimum width when no curb exists.

  There are a number of both two-way and one-way arterial streets in the City of Champaign that are wide enough to accommodate bike lanes. In certain cases, sufficient width could exist with the narrowing of through lanes. This narrowing would still provide the capacity requirements for the automobile and would calm the traffic through reduced travel speeds.

- **ON-STREET BICYCLE ROUTES/WIDE SHOULDERS** are streets or segments of streets that bicyclists share with motor vehicles. In general, designated routes have lower traffic volumes and are sufficiently wide for drivers and bicyclists to share. Most routes are located on secondary or minor streets that parallel busier, major routes. Many of the routes will be marked with special signs including the use of Sharrows. Numerous commuting bicyclists prefer on-street, non-striped routes where room is provided on the outside travel lane for both bicyclist and motor vehicles, that does not restrict the bicyclist to one part of the roadway.

## BICYCLE NETWORKS



Establishing a vision of how bicycling fits into the overall transportation system of a community or region is important in developing a safe and enjoyable bicycle network. Identifying appropriate bicycle routes requires recognition of various user needs and abilities, and analysis of traffic operations and design factors of individual roadways.

Less experienced bicyclists prefer to ride on neighborhood streets or designated bicycle facilities. Experienced bicyclists should be anticipated on roadways where bicycles are not excluded by statute or regulation, regardless of functional classification. Safe accommodation of all bicyclists is best accomplished by creating a comprehensive and continuous bicycle and pedestrian network in built-up areas in order to enhance the safety and travel comfort of users.

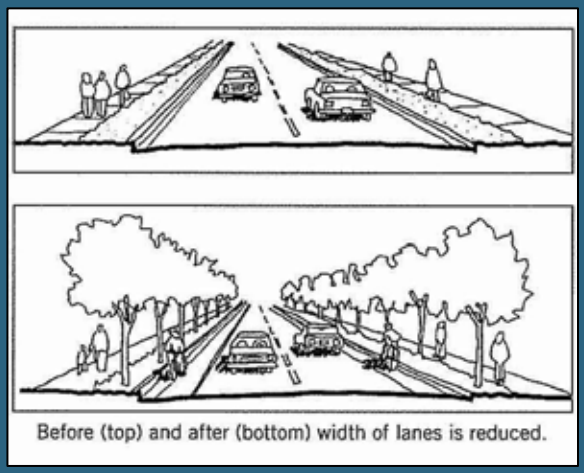
## BICYCLE FACILITIES AND COMPLETE STREETS

Constructing new roadways or improving existing ones based on the proposed complete street standards will help implement a system of bicycle improvements. Adhering to the complete streets standards within the City of Champaign is the responsibility of the City of Champaign and the Illinois Department of Transportation.

Currently, there are state facilities which cross I-57 where the existing bridges are dangerous and significantly restrict bicycle and pedestrian travel. It is critical to the overall Bicycle Vision that these I-57 overcrossings be replaced and includes bicycle lanes and pedestrian sidewalks.

## Techniques for Facilitating Bicycle Use

Bicycles are vehicles and need to be safely accommodated on our streets and roadways. Over half of all bicycle-motor vehicle crashes occur at or near intersections or other jurisdictions. Improvements at these locations have the potential to significantly increase safety. Specialized intersection markings that may help bicyclists and motorists safely navigate through intersections and use of innovative techniques are gaining more prominence in some communities.



Before (top) and after (bottom) width of lanes is reduced.

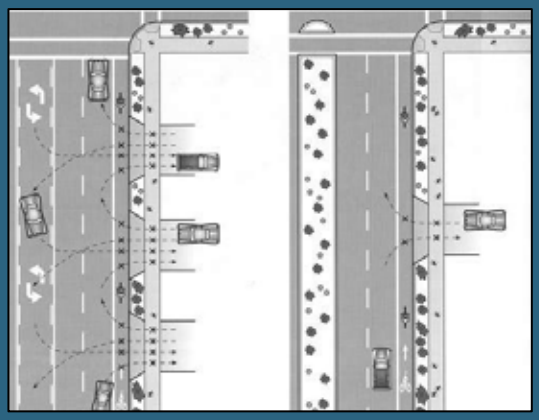
### Roadway Narrowing (Road Diet)

Roadway narrowings or "Road Diet" is a term used to describe the process of reducing the width of existing travel lanes or reducing the number of travel lanes on a given roadway. Road diets are often conversions of four-lane undivided roads into three lanes, two through lanes, and a center turn lane (i.e., Green Street through Campustown). The fourth lane may be converted to bicycle lanes, sidewalks, and/or on-street parking. Road diets have been shown to improve mobility and access for all travel modes, enhance safety by reducing vehicle speeds, and to promote economic vitality for the community. A variety of reconfigurations are possible for lane number reductions depending on the current configuration, user needs, and potential operational and safety outcomes.


Along with lane elimination, roadway lane narrowing may also help to reduce vehicle speeds and enhance movement and safety for pedestrians and bicyclists. Lane narrowing is best used where motor vehicle speeds are low. Lane width reduction can be achieved in several different ways:

- **Lane widths** can be reduced to 10 or 10.5 feet and excess pavement striped with a bicycle lane or shoulder.
- **Excess lane width** can be reallocated to parking, bike lanes, and/or pedestrian space.
- **The street and lanes** can be physically narrowed by extending the curb for wider sidewalks and landscaped buffers or by adding a raised median.

## Techniques for Facilitating Bicycle Use



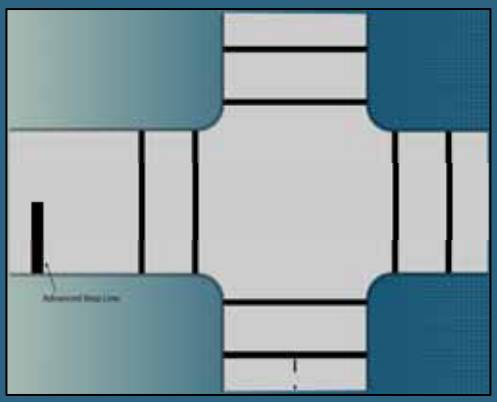
### Access Management/Driveway Improvements

Managing the number, spacing, access, directional flow, and other aspects of driveway and side street connections protects those traveling along the roadway from conflicts with those entering/ leaving the roadway. Access management includes such measures as limiting the number or establishing minimum spacing between driveways; providing for right-in, right-out only movements; restricting turns to certain intersections; and using non-traversable medians to manage left- and U-turn movements.

Driveway design affects sight distance for both motorists and bicyclists accessing roadways, as well as the speed and care with which drivers enter or leave the roadway. Right-angle connections are best for visibility of approaching traffic, as well as slowing the turning speed for vehicles exiting or entering the roadway. Tighter turn radii at driveways, as well as ramps to sidewalk level, also slow vehicles speeds.

### Advance Stop Line/Bike Box

The objectives of the advance bike box are to improve the visibility of bicyclists at intersections and to enable them to correctly position themselves for turning movements during the red signal phase by allowing them to proceed to the front of the queue. A bicycle lane leading up to a bike box is located between the motor vehicle stop line and the crosswalk. The bike box should be 12 to 14 feet deep. To increase its effectiveness, a bicycle stencil should be placed in the bicycle box and a contrasting surface color is strongly recommended for the box and the approaching bicycle lane. Instructional signs and separate bicyclists signal heads can be installed in conjunction with the bicycle box.



### Signs


As the Champaign bicycle plan evolves, a consistent system of bicycle way finding signs that identify clear routes from origin to destination should be developed and implemented. In addition, a sign system for off-street paths that integrates a variety of information such as maps, distances, etiquette, and regulations should be developed and implemented. A variety of signs are available to alert motorists to the presence of bicycles in the traffic stream and to inform bicyclists.

## SUPPORT FACILITIES AND PROGRAMS

### Parking and Storage

Secure bicycle parking should be provided at convenient locations. Inadequate bicycle parking facilities and fear of theft are major deterrents to bicycle transportation. A sufficient supply of effective bicycle parking requires a properly designed rack in an appropriate location for the type of use.

Racks should be highly visible so bicyclists can spot them immediately when they arrive from the street. A visible location also discourages theft and vandalism. Adequate lighting and surveillance is essential for the security of the bicycles and the users. Bicycle racks and lockers must be well anchored to the ground to avoid vandalism and theft.

Adequate clearance is required around racks to give bicyclists room to maneuver, and to prevent conflicts with pedestrians or parked cars. Racks should not block access to building entrances or fire hydrants.

Bicycle facilities should be designed in accordance with Chapter 2 of the AASHTO Guide. Bicycle parking may be provided in floor, wall or ceiling mounted racks.

Bicycle parking facilities should meet these requirements:

- Holds the bicycle frame, not just a wheel;
- Can be used with a U-shaped shackle lock;
- Accommodates a wide range of bicycle sizes, wheel sizes and types;
- Is covered with material that will not chip the paint of a bicycle that leans against it; and
- Does not have hazards, such as sharp edges.

There are many types of bicycle racks and lockers available. Some are suitable for certain situations but not others, and some designs are unsuitable anywhere. There are two general categories of bicycle parking requirements:

- **LONG-TERM** parking is needed where bicycles will be left for hours at a time. It requires a high degree of security and weather protection, with well-designed racks in covered areas, lockers, storage rooms, or fenced areas with restricted access.

- **SHORT-TERM** parking is needed where bicycles will be left for short stops. It requires a high degree of convenience (as close to destinations as possible). At least some short-term bicycle parking should be protected from the weather (a portion can be unprotected, since demand tends to increase during dry weather). This can use an existing overhang or covered walkway, a special covering, weatherproof outdoor bicycle lockers, or an indoor storage area.

Table 2 provides a guideline for providing parking spaces per land use category for new development or property which requires a change of use permit.

### TABLE 2: RECOMMENDED MINIMUM BICYCLE PARKING REQUIREMENTS

| Type of Establishment | Minimum Number of Bicycle Parking Spaces |
|---|---|
| **Primary or Secondary School** | 10% of the number of students, plus 3% of the number of employees. |
| **College or University Classrooms** | 6% of the number of students, plus 3% of the number of employees. |
| **Commercial – Retail or Office** | One space per 3,000 sq. ft. of commercial space or 5-10% of the number of automobile spaces. |
| **Sport and Recreation Center** | 10-20% of the number of automobile spaces. |
| **Movie Theater or Restaurant** | 5-10% of the number of automobile spaces. |
| **Industrial** | 2-5% of the number of automobile spaces. |
| **Multi-Unit Housing** | 1 space per 1-2 apartments. |
| **Public Transit Stations** | Varies, depending on usage. |

*Source: LSA Associates, Inc.*

## Bicycle Personal Facilities

Along with secure and convenient bike parking and transit access, another prerequisite for encouraging bicycle commuting is facilities for bicyclists to shower, change clothes, or otherwise "freshen up" once they arrive at the workplace. Ideally, such facilities will be located on or very near the worksite premises and will also include lockers for storing clothing and personal items. Some creative options might be to partner with other nearby businesses to provide facilities or make arrangements with a nearby health club to allow bicyclists to use its facilities for a nominal fee.

## Maps and Wayfinding

Even great bikeways can be well-kept secrets if the average rider can't find them. Although there are several bikeway maps published at a regular basis for the CU area, there is a need for more comprehensive, widely available maps, especially for visitors. Some bicyclists would like to see maps that more accurately depict terrain and difficulty.

Once on a bikeway, proper signs are needed to direct bicyclists. Particularly in the case of on-street routes, bicyclists may follow Bike Route signs for awhile only to find they end abruptly or don't indicate which way to go at an intersection.


On-street route signs are not just for bicyclists; they should also serve to notify motorists to watch out for bicycles. However, many of the route signs are not easy to see from a car. In addition to signs designating bicycle routes, "Share the Road" signs directed at motorists should be placed along high traffic routes.

A well-designed bike map is typically in high demand and can serve many functions. In addition to showing the best route for getting places, bike maps often contain information or advertising for a variety of resources including a calendar of bike events, location of bike shops, points of interest in the community, laws and local ordinances pertaining to bicycles, and safety tips for the rider and motor vehicle driver. Thus, a good bike map can be a tool for promoting bicycling as well as for educating and informing riders and motorists.

Wayfinding pertains to direction signs, distance markers, posted maps, information kiosks, and other aides for getting people places.

## The 4 E's

Facilities are only one of several elements essential to building a successful bicycle and pedestrian planning transportation system. With bicycle and pedestrian safety education and training encouraging walking and bicycling, and enforcing the rules of the road as they pertain to bicyclists, pedestrians, and motorists should be combined with facilities development to form a comprehensive approach to bicycle and pedestrian use. The 4 E's - Engineering, Education, Enforcement, and Encouragement are important elements for implementing a comprehensive bicycle system.

- **ENGINEERING.** An adequate bicycle system is one that allows users with varying abilities to safely and efficiently travel from origin to destination. Bicycle facilities include on-street facilities such as bike lanes, bike routes, low-volume roads and roads with adequate shoulders, and off-street facilities such paths, bridges, overpasses, and underpasses.

- **EDUCATION.** Education of the public is the most important element in reducing bicyclists and pedestrian injuries, reducing hostility between the various transportation modes, ensuring that the law is obeyed, and facilities are properly designed and built. Bicyclists, pedestrians, and motorists need safety education. Police officers need education regarding the manner in which to enforce bicycle and pedestrian laws, and engineers and planners need facility design education.

- **ENFORCEMENT.** Enforcement goes hand in hand with education. Education is not effective if there is not enforcement to back it up. Therefore, it is important to enforce the rights and responsibilities of all modes of transportation by ticketing motorized and non-motorized transportation users alike. Bicyclists and pedestrians should be expected to be ticketed for traffic offenses the same as motorists.

- **ENCOURAGEMENT.** Encouraging cycling and walking can help mitigate air pollution and traffic congestion, as well as promote healthier, friendlier communities. One-way trips of five miles or less are often suitable for bicycling. Often bicyclists are willing to travel even farther distances for commuting trips or recreation. Shorter trips are often suitable for walking. Providing safe, well-designed and maintained facilities encourages bicycling and walking. Annual events, such as Bike Month or Bike to Work Day promote bicycling and walking through events and media attention. These events are designed to celebrate non-motorized transportation, encourage people to bicycle or walk, build awareness through safety campaigns in the media, and institutionalize bicycling and walking as viable modes of transportation.

## Maintenance

Broken glass and debris tend to accumulate near curbs where bicyclists ride, resulting in flat tires and accidents. Certain streets become mud-covered after rain, making the riding surface hazardous, while others are prone to icy conditions. Painted lanes delineating bike routes wear off over time and are no longer usable without proper upkeep. During the winter months, snow either gets plowed onto the right-most edge of the roadway (which forces bicyclists to ride father left) or off the roadway and onto the sidewalks.

Consistent upkeep and maintenance of bikeways should be top priority. On-street routes need to be regularly swept of debris. Bike lane lines should be repainted at least as regularly as those on the rest of the street. Weather-related obstacles such as ice and mud cannot be eliminated, but can be minimized through good design practices. Bikeway segments that regularly have these problems should be identified and corrected when and where it is possible. It is recommended that all paths that are part of the bicycle system be paved.

## Development Requirements

As future developments occur, it will be critical to implement Complete Streets standards and require land development integration with the bicycle network. This will require modifications to the City of Champaign's development review requirements and codes to be successful.

## CONNECTED NEIGHBORHOODS AND NODES BICYCLE IMPROVEMENTS

The Bicycle Vision Plan presented in Figure 19 is for a system of bicycle improvements that will create a network to get to all parts of the City. Many of these improvements are along the multi-modal corridors. Others are along parallel streets adjacent to or near the multi-modal corridors.

Because of the importance of the future development nodes, the bicycle facility connections to these nodes and the multi-modal corridors should be given a priority for implementation.

It is also important to not have gaps in the system, as even one short stretch of missing bike lane or multi-use trail can result in a no bike trip condition.

The final recommendation is to think bicycle. When designing improvements for a multi-modal corridor or for any street, think about how a bicyclist would use this facility. Think about safety or how to approach and cross a major arterial. Think about how a bicyclist gets to the corridor and think about what a bicyclist does with his bike when he gets to his destination.

### Bicycle Policies and Actions

**Policies**

BP-1. Coordinate local bicycle improvements with the planning and construction of the regional trail system.

BP-2. Identify locations where lanes can be eliminated or reduced in order to create bike lanes.

BP-3. Increase the use of Sharrows and other education opportunities to identify facilities, connections, directions, etc. and to enhance bicycle use and safety.

BP-4. When resurfacing streets, incorporate striping for bicycle facilities as identified on the Bicycle Vision Plan map.

**Actions**

BA-1. Develop an early implementation action plan to do some quick striping projects to get a bicycle network started. The action plan should identify logical bike lanes and Sharrow projects that can be done now.

BA-2. Revise standards and codes for new development to require on and off street bicycle facilities to connect with City Bike Vision Plan.

BA-3. Launch a bicycle network campaign to introduce a comprehensive bicycle network.

BA-4. Complete at least one east-west and one north-south bicycle facility that traverses the City as a priority for completion of the system.

BA-5. Modify standards and codes to require bicycle facilities and secure bicycle storage for non-residential and multi-family development projects.

# CHAPTER 7: PEDESTRIAN VISION

## INTRO

Virtually every trip we make involves a pedestrian component – whether it be walking between a building and an automobile or bus, parking a bike and walking to a destination, or simply walking between home and the corner store. Walking is an essential part of our daily activities and the pedestrian network of sidewalks, trails, crosswalks, and paths is an important element of a multi-modal transportation system.


In addition to serving basic traveling needs, the pedestrian system can enhance the character of our community. For example, amenities such as wide sidewalks, good lighting, benches and planters (i.e., street furniture), distinctive street crossings, and curb extensions make Champaign's downtown a unique, inviting place.

Walking is fundamental to an urban area's efficient ground transportation system. In order to elevate the pedestrian travel mode in the transportation network, special pedestrian districts have been designated, each with different needs and investment levels. The pedestrian districts specified in the long-range transportation plan provide a focus for investment for this affordable and healthy travel mode.

## ISSUES

Several issues were identified as part of the pedestrian system analysis. They include:

- Enhancing street crossing safety;
- Accessibility for all populations;
- Completing the pedestrian system along City arterials;
- Provide a system of pedestrian connections from residential areas without sidewalks; and
- Modifying the City's development review process, codes, and standards to increase pedestrian opportunities.

## PEDESTRIAN VISION PLAN

Ideally, it would be desirable to be able to walk everywhere within the City of Champaign with a system of integrated sidewalks, pathways, and safe street crossings. Implementation of complete streets as depicted in the City's street standards will go a long ways in providing this pedestrian network in new development areas, however adding sidewalks on the miles and miles of arterials, collectors and local streets is not financially possible in existing neighborhoods and nodes.

Therefore, the Pedestrian Vision has two primary objectives. The first is to set policy that all new developments and arterials be constructed with complete street standards that include sidewalks. This objective if met, will cap the existing pedestrian deficiency so that it does not become worse. The second objective is to target where pedestrian improvements should be made. Obviously pedestrian safety, such as safe routes to schools is critically important. Targeting pedestrian improvements to areas with the highest probability of pedestrian activity is also important. To this end, the Pedestrian Vision map highlights nodes and connectors within the City which have the greatest potential for pedestrian activity, and hence the greatest investment.

### Elements of a Quality Pedestrian Network

Since its introduction in the 1960's, traffic engineers have used a computational method for evaluating the street and roadway system, referred to as Level of Service. Although there is no universal way to evaluate the pedestrian network, there are five pedestrian characteristics that affect pedestrian mobility.

- **Directness**: Making a decision to walk is highly correlated to distance and how long it takes to walk. If the sidewalk network is direct and minimizes the travel time, a person is much more likely to walk than if the route is circuitous and adds length and time to the trip. Directness is the measure of distance between destinations including home, transit stops, schools, parks, commercial areas, or activity areas. The grid street pattern has traditionally been recognized as the ideal system.

- **Continuity**: If there is not a continuous pedestrian network between point A and B, and a pedestrian would have to walk in the street in an unsafe condition, the pedestrian trip is typically not made. Continuity is measured by the completeness of the sidewalk/walkway system and by identifying whether gaps exists. Other aspects of continuity is whether there are sidewalks along one or both sides of the street and whether there exists an overall continuity of sidewalk that provides a line of sight from block to block. As an example, if a street has the continuity of a continuous sidewalk network that is separated by a landscaped parkway, that continuity is broken with a block or segment where an attached sidewalk might be placed.

- **Street Crossings**: The Achilles heel of the pedestrian system are the intersections where pedestrians must cross. This is the area where the pedestrian must interface with automobiles, which can result in safety concerns. As streets get wider and carry higher volumes of traffic, potential use by pedestrians are avoided as safety becomes a concern. There are many factors that affect the pedestrians real and perceived comfort and safety for crossing the street including number and width of travel lanes, travel speeds, and traffic volumes. These concerns can be off-set with traffic control, crosswalks and ramps and intersection design such as curb radius and pedestrian street lighting.

- **Visual Interest and Amenities**: Pedestrians often choose to walk or not depending on the quality of the environment. Areas that are pleasing and appealing with activities along the route are used much more than areas that are stark and uninviting. To promote pedestrian activity in nodes and use of transit, the pedestrian system needs to have an appealing visual quality with basic amenities.

- **Security**: Pedestrians require a sense of security, both through visual line of sight with others and separation from vehicles. They also require well-lighted pathways and sidewalks for night use.

As presented in the Pedestrian Vision, Figure 21, are three categories of pedestrian districts, downtown, community and neighborhood, and multi-modal connectors between these pedestrian districts and from neighborhoods and the pedestrian district. The character of these pedestrian districts varies somewhat by type as described as follows. These pedestrian districts and multi-modal connectors complement the land use plan with nodes and connections.

Walkable distance, and hence district size, are extended by appropriate facilities, frequency of interest, and environmental quality. Density and diversity of land uses and proximity of interrelated pedestrian destinations, closely clustered within a quarter-mile or greater walkable radius, support the concept of a pedestrian district and the development of one or more transit facilities to serve it. A viable pedestrian district has sufficient user population density and walkable proximity of destination to create a high-level of pedestrian activity. A pedestrian district land use, spatial characteristics, and its alternative transportation facilities provide incentives that encourage walking and bicycling as the transportation modes of choice for trips within the district and transit as a significant mode to and from the district. All corridors within a pedestrian district contribute towards a closely coupled network of connectivity to provide balanced access and movement to an array of destinations.

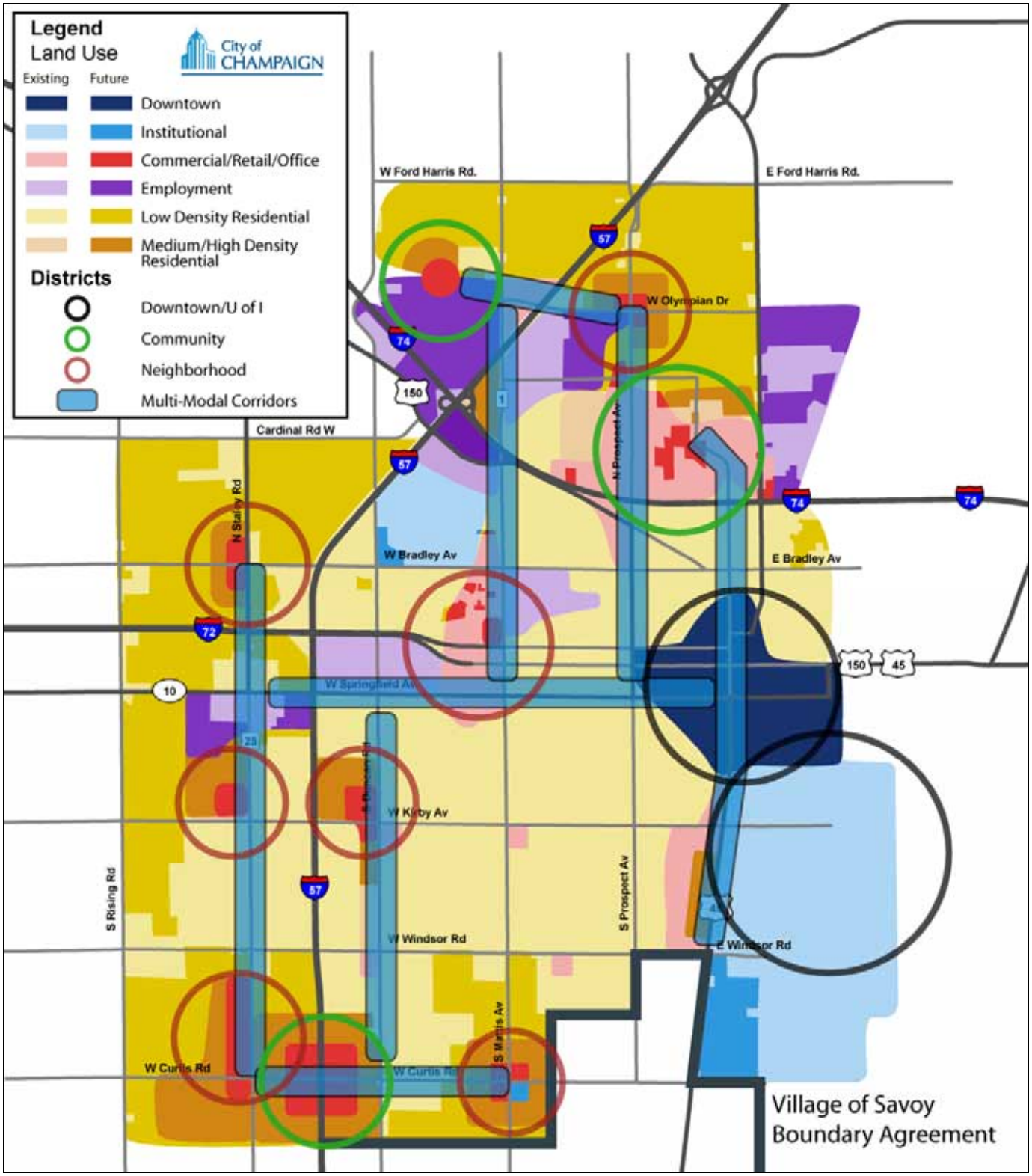
## Downtown Pedestrian District

The Downtown Pedestrian District is characterized by dense, and close-coupled mix of land uses including commercial, retail, cultural, hospitality, governmental, educational, institutional, a strong residential component, and remainder historic industrial uses that are often adapted to a more urban center uses. This mix and density of uses creates the economic and user population base imperative for multi-modal transportation and walkability. The district is bounded and bisected by several multi-modal corridors, where transit and pedestrian activity are prevalent. A healthy and vital Downtown Pedestrian District has extended hours and weekend pedestrian presence based on quality of life characteristics achieved through a rich mix of land uses and a walkable environment.

***Characteristics:***

- Short blocks and grid network.
- Transit center and hub for Citywide transit connections.
- Convergence of two or more multi-modal corridors and regional inter-modal transportation hub.
- Slower vehicular traffic.
- Sense of identify throughout the district.
- Programmable community gathering space available for public use.
- Region's most valuable real estate.

## FIGURE 21: PEDESTRIAN DISTRICTS




*Source: LSA Associates, Inc.*
*October 24, 2007*

- Building design and site development that considers the needs of pedestrians, bicyclists and transit users first in terms of form, function and aesthetics.
- Inclusion of government institutions and services to support retail and commercial destinations.
- First floor uses that generate foot traffic 18 hours a day and visual interest to passerby.
- Residential base that generates 24-hour activity.

## Community Pedestrian District

The Community Pedestrian District is an area characterized by a dense clustering of various types of destinations and activities. This district is typically characterized by ground floor uses which are regional and community commercial retail, entertainment, and hospitality. Contiguous or adjacent dense residential development is served by, and economically supports, the non-residential land uses. Its residential population proximity justifies optimization of pedestrian facilities, links to the regional multi-modal transportation network, and is supported by a larger demographic including the automobile user. Newer town center and lifestyle center developments, with adjacent residences, are also considered Mixed-use Development Pedestrian Districts. A visible pedestrian presence enhances the social appeal of the district and its economic viability.

***Characteristics:***

- Centrally accessible transit.
- At least one multi-modal corridor through or along one edge.
- Slower vehicle traffic.
- Sense of identity throughout the district.
- Building design and site development that considers the needs of pedestrians, bicyclists, and transit users first in terms of aesthetics, form and function.

## Neighborhood Pedestrian District

A Neighborhood Pedestrian District serves core residential areas. Typically, a Neighborhood Pedestrian District serves the adjacent neighborhood and becomes the neighborhood node for daily shopping, services, and entertainment. The Neighborhood Pedestrian District is a popular walking and biking area, with either a multi-use paths or bike routes and collector sidewalks connecting the neighborhood with the node.

***Characteristics:***

- Direct walking/bicycle connections from adjacent neighborhoods to commercial retail and services.

- Centrally located transit stop/station.
- Slower vehicle traffic.
- Sense of neighborhood identity.
- Multi-modal site design.
- Neighborhood commercial uses with mix of services, office, and higher density residential.

## CONNECTED NEIGHBORHOODS AND NODES PEDESTRIAN IMPROVEMENTS

The following provides a list of pedestrian improvements and features that should be implemented in all nodes and multi-modal corridors.

### Sidewalks and Street Lighting

5-foot pedestrian sidewalks and street lighting are proposed for all multi-modal corridors and nodes on both sides of the street per the City of Champaign's Proposed Street Standards. The landscaped pedestrian buffer zone between travel stream and pedestrian sidewalk should be provided for all corridors. This recommendation is to provide better and safer conditions for pedestrians using these corridors.

Trees and other landscaping should be incorporated wherever possible to add shade, separate the pedestrian and vehicular realms, and increase pedestrian safety by lowering curbside vehicular speeds. Streetscapes and other pedestrian paths should be adequately linked to transit access points, open spaces, and entrances to retail and commercial establishments.

### Pedestrian Crossings

Crosswalks at major intersections with signals should provide pedestrian pushbuttons and pedestrian count down signal heads. Pedestrian activated flashing pedestrian crosswalks signs and markings should be installed along the multi-modal transportation corridors at locations of school crossings, transit stops, parks and high pedestrian demand areas. Pedestrian crossing should be provided at a minimum of one per every quarter of a mile along the multi-modal corridor and one every 1/8 mile (660 feet) with nodes. These crossing may occur at mid-block locations. Design should include use of refuge islands, medians, pork chop islands and intersection islands. Crosswalk design shall meet Americans with Disability Act (ADA) guidelines.

### Consolidate Driveways and Adopt Shared Parking Requirements

Frequent driveways cause problems for pedestrians and bicyclists as well as motorists. Consolidate driveways to improve safety and accessibility. Implement shared parking requirements to provide a better pedestrian-scaled environment.

## Provide Pedestrian Scale Lighting and Furnishings

Provide pedestrian scale lighting and site furnishings like benches, trash receptacles and bicycle parking at appropriate locations.

## Include Pedestrian Circulation Requirements in Land Use Regulations

Ensure that land use regulations include specifications to provide safe pedestrian access to existing and proposed building entrances and activity centers.

## Develop Pedestrian Rest Areas

Develop standard rest areas or plazas for pedestrians within nodes and along multi-modal corridors.

## Provide Pedestrian and Bicycle Signage

Install different types of signage (way finding, location maps and bilingual) where applicable in order to improve pedestrian and bicycle access and safety.

## Develop Educational Programs

Develop educational programs on pedestrian and bicycle safety and regulations.

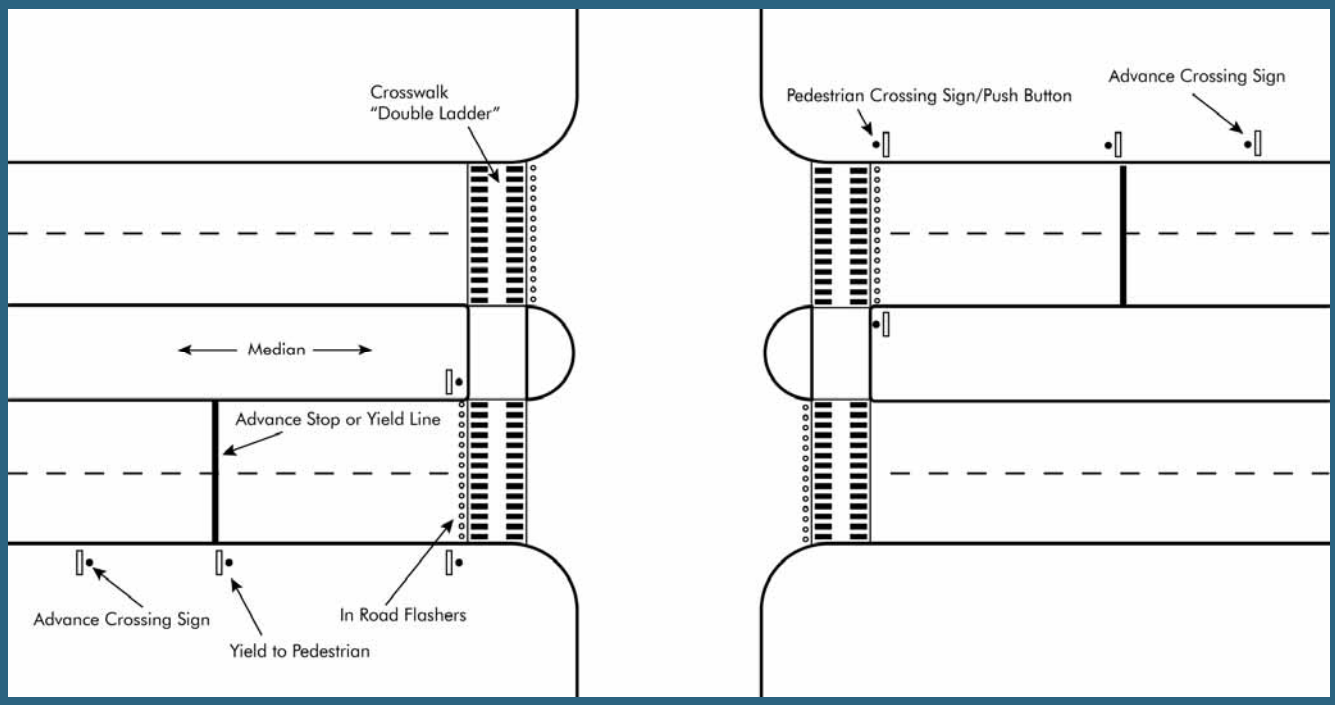
## Provide Enforcement

Establish and enhance the enforcement of pedestrian, bicycle and vehicular laws and safety.

## Pedestrian Crossing Treatment at Unsignalized Intersections and Mid-Block Crossings

Along many of the City's arterials, such as Mattis, Prospect, Kirby, Winsor Road and Curtis, it is difficult for a pedestrian or bicyclist to cross these high speed roadways with increasing traffic. Whereas pedestrian and bicyclist can cross at signalized intersections, the long distances between signalized intersections make it impractical for a pedestrian that want to cross in between these intersections. Installing signals at strategic locations might seem practical to provide safe crossings, except signals should only be installed when warranted based on the Federal Highway Administration (FHA) Manual on Uniform Traffic Control Devices Signal Warrants. Adding new signals to a corridor can also impact the overall traffic flow along the corridor, reduce capacity and create congestion.

This concern of safe pedestrian and bicycle arterial crossings is occurring throughout the United States. Many jurisdictions are implementing other traffic control solutions to address this need. The following provides a low cost option for improving pedestrian and bicycle arterial crossings based on a pedestrian yield crossing sign and striping with a pedestrian activated flashing indicator. This concept is presented in the graphic below.




The design includes a flashing yield to pedestrian sign, street markings and a refuge median island that provides convenience and safety for pedestrians. It breaks up a busy two-way street into two separate one-way streets.

**There are a number of arterials in the City of Champaign that could benefit from a pedestrian crossing similar to the design above. Examples include the bicycle path where it crosses Mattis south of Kirby or Mattis at Broadmore.**

## Pedestrian Policies and Actions

**Policies**

PP-1. Identify needed pedestrian improvements in pedestrian districts and focus resources for improvements.

PP-2. Continue to identify and complete missing segments of the sidewalk system on the City's existing arterial streets.

PP-3. Elevate the pedestrian travel mode in the community with increased education and signage identifying pedestrian rights and enhancing safety.

PP-4. Implement the University District Streetscape Master Plan.

PP-5. Improve downtown intersections to improve pedestrian safety by incorporating bump-outs and enhanced pedestrian crosswalk facilities.

**Actions**

PA-1. Modify standards and codes for new developments to include pedestrian access to activities within the site, to transit stops near the site, and sidewalks along streets bordering the site.

PA-2. Coordinate with CUMTD to incorporate changes in standards and codes to integrate sidewalks into the site design which provide pedestrian connections to transit stations and to bus stops.

PA-3. Implement safe street crossing improvements for crucial intersections.

PA-4. Incorporate a safe pedestrian crossing checklist when proposing intersection widenings.

# CHAPTER 8: IMPLEMENTATION OF THE PLAN

Champaign Moving Forward is the first comprehensive plan for transportation the City has undertaken in over 15 years. It builds on the efforts of current planning and on-going efforts with neighboring jurisdictions, Champaign County, CUUATS, the University of Illinois, and CUMTD and integrates all travel modes and plans into a single plan.

Champaign Moving Forward also provides input to the much larger planning effort of the City's Land Use Plan. Relationships between transportation and land use are identified in this Plan, and will be refined and implemented further as part of the Land Use Plan update.

## RECOMMENDED POLICIES AND ACTIONS

Although Champaign Moving Forward provides a long-range 2030 and Post-2030 vision for the City's transportation system, planning is an on-going process that must evolve to meet the needs of Champaign's residents as the City changes with regard to demographics, regional travel, environment, funding, and other factors. As a result, Champaign Moving Forward like other City plans, standards, and codes must be monitored and updated periodically. The Champaign Moving Forward transportation policies are presented in Table 3.

### TABLE 3: CHAMPAIGN MOVING FORWARD POLICIES

| Chapter | | Policy Descriptions |
|---|---|---|
| **Roadway** | RP-1 | Coordinate regional travel issues and plans with, IDOT, CUUATS, Urbana, Champaign County, Savoy, and the University of Illinois. |
| | RP-2 | Reduce impacts to the arterial street system by requiring new development to provide internal circulation and connections between developments using collectors at ¼ mile intervals. |
| | RP-3 | Adhere to Complete Streets roadway standards and requirements and not waive development requirements. |
| **Transit** | TP-1 | Coordinate with MTD to identify strategies for providing transit to targeted development nodes from their MIP study. |
| | TP-2 | Work with MTD to recognize additional opportunities to grow the local bus system (e.g., increased frequency and coverage) and to identify corridors where transit-oriented developments would be desired. |
| | TP-3 | Coordinate site design and multi-modal access with MTD and include in City's standards and codes. |
| | TP-4 | Emphasize transit oriented design in new development at key nodes, especially at the Curtis Road interchange, at Country Fair and on Olympian Drive. |

| Chapter | | Policy Descriptions |
|---|---|---|
| **Bicycle** | BP-1 | Coordinate local bicycle improvements with the planning and construction of the regional trail system. |
| | BP-2 | Identify locations where vehicle lanes can be eliminated or reduced in order to create bike lanes. |
| | BP-3 | Increase the use of Sharrows and other education opportunities to identify facilities, connections, directions, etc. and to enhance bicycle use and safety. |
| | BP-4 | When resurfacing streets, incorporate striping for bicycle facilities as identified on the Bicycle Vision Plan map. |
| **Pedestrian** | PP-1 | Identify needed pedestrian improvements in pedestrian districts and focus resources for improvements. |
| | PP-2 | Continue to identify and complete missing segments of the sidewalk system on the City's existing arterial streets |
| | PP-3 | Elevate the pedestrian travel mode in the community with increased education and signage identifying pedestrian rights and enhancing safety. |
| | PP-4 | Implement the University District Streetscape Master Plan. |
| | PP-5 | Improve downtown intersections to improve pedestrian safety by incorporating bump-outs and enhanced pedestrian crosswalk facilities. |

While the recommendations and policies of Champaign Moving Forward are necessary to achieve the transportation vision and goals, the actions are definable objectives to achieve. Table 4 presents the recommended Champaign Moving Forward actions. These actions should be achieved within five years of adoption of this Plan.

## TRANSPORTATION IMPROVEMENT IMPLEMENTATION

Implementing the transportation improvements in Champaign Moving Forward can be a complex process due to the many transportation providers involved with planning, funding, and constructing projects. IDOT will lead efforts to implement projects on the state and federal highway system, such as the I-57 Curtis Interchange and will be involved in other projects such as improvements at Prospect and I- 74. Champaign County has a stake in improving county roads in and around the City. Finally, several projects will include private sector funding.

Those projects that will be funded in part or entirely with City funds or impact fees will be brought through the Capital Improvement Program (CIP) process periodically as appropriate. The CIP is a City planning document that identifies capital infrastructure improvements scheduled for the next five years. The CIP process allows for projects to be coordinated between departments and with other agencies. It is meant to help citizens and the City Council focus on the general direction in which the City is developing in the short-term and can be amended as necessary to reflect current priorities. The CIP process assures that new projects coincide with the City's adopted master plans and related policies and includes operating and maintenance costs for on-going budget items.

## TABLE 4: CHAMPAIGN MOVING FORWARD ACTIONS

| Chapter | | Action Descriptions |
|---|---|---|
| **Roadway** | RA-1 | Identify a program where development pays its fair share of roadway improvements based on a nexus between new traffic and impacts. |
| | RA-2 | Modify current street standards to Complete Streets which integrates automobile, transit, bicycle, and pedestrian multi-modal facilities. |
| | RA-3 | Update codes and standards to require multi-modal transportation assessments for all new proposed developments which address connections, access, and mobility for auto, transit, bicycle, and pedestrian modes. |
| **Transit** | TA-1 | Modify the City's Land Use Plan toward higher-density, mixed-use, transit-supportive land uses node at locations such as downtown and mixed-use centers. |
| | TA-2 | Modify standards and codes to require pedestrian and bicycle connections to bus stops, park and ride lots, and transit stations. |
| | TA-3 | Modify standards and codes to require new development provide street connectivity and facility design that supports transit. |
| **Bicycle** | BA-1 | Develop an early implementation action plan to do some quick striping projects to get a bicycle network started. The action plan should identify logical bike lanes and Sharrow projects that can be done now. |
| | BA-2 | Revise standards and codes for new development to require on and off street bicycle facilities to connect with City Bike Vision Plan. |
| | BA-3 | Launch a bicycle network campaign to introduce a comprehensive bicycle network. |
| | BA-4 | Complete at least one east-west and one north-south bicycle facility that traverses the City as a priority for completion of the system. |
| | BA-5 | Modify standards and codes to require bicycle facilities and secure bicycle storage for non-residential and multi-family development projects. |
| **Pedestrian** | PA-1 | Modify standards and codes for new developments to include pedestrian access to activities within the site, to transit stops near the site, and sidewalks along streets bordering the site. |
| | PA-2 | Coordinate with CUMTD to incorporate changes in standards and codes to integrate sidewalks into the site design which provide pedestrian connections to transit stations and to bus stops. |
| | PA-3 | Implement safe street crossing improvements for crucial intersections. |
| | PA-4 | Incorporate a safe pedestrian crossing checklist when proposing intersection widenings. |

Projects that are eligible for federal or state transportation programs selected by CUUATS, serving as the Metropolitan Planning Organization (MPO) for the Champaign region, will be submitted for funding consideration accordingly. These programs include the Surface Transportation Program (STP), the Congestion Mitigation and Air Quality Improvement Program (CMAQ), Transportation Enhancements, and others. On a periodic basis, CUUATS issues a Call for Projects in order to evaluate projects and program funds for specific funding programs. Local governments, including Champaign, then submit detailed information and make local funding commitments (usually 20%) in order to attempt to obtain federal funding for their project. With significant reductions in state and federal funding for capacity improvements, this opportunity will be less than the past.

## ARTERIAL STREET FUNDING

The success of Champaign Moving Forward is contingent on having adequate revenues to construct the complete streets arterial roadway improvements that serve cars, buses, bicycles, and pedestrians. With the lack of sufficient transportation revenues from the federal, state and City, additional local funding sources will be required.

The total arterial roadway needs are presented in Figure 22. As indicated on this map, there are 28 roadway or overcrossing improvements necessary to accommodate 2030 growth.

These 28 projects are listed in Table 5. Improvements currently needed to address existing deficiencies are projects 1 to 19. Projects 21 to 28 are required for future development.

The estimated total project costs, City of Champaign costs, and the amount unfunded are identified for each project. As indicated in this table, the current City of Champaign transportation improvements is approximately $56 million. About $10 million of these improvements have funding with an estimated existing unfunded amount of $42.5 million.

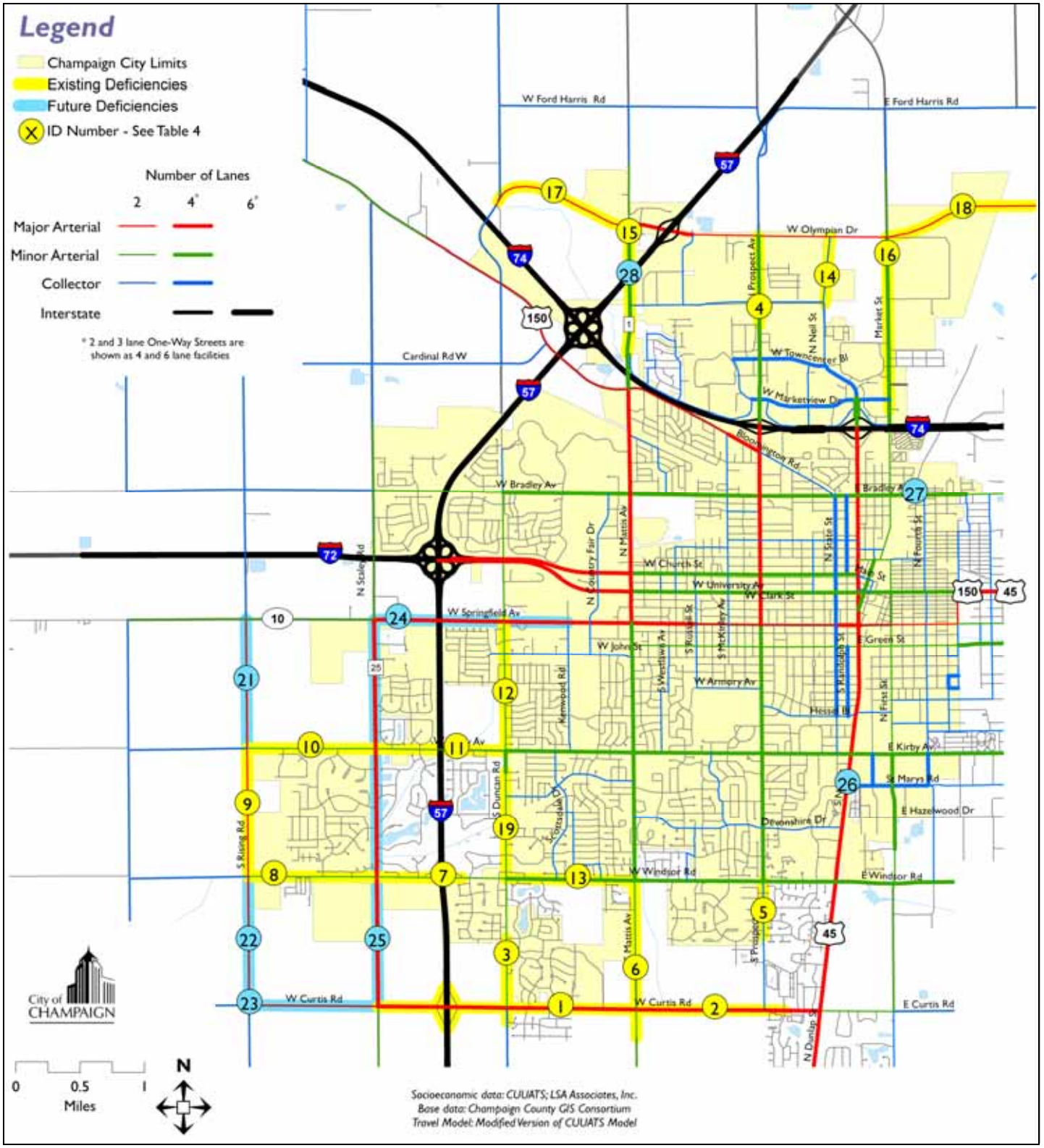
Future arterial improvements are an additional $34 million. The total existing and future arterial costs, which are unfunded, is approximately $76 million.

### Existing Deficiencies Funding Options

There are three general options available for local transportation funding for existing deficiencies, as depicted in Table 6. Each option has revenue generation benefits and each has drawbacks. As an example, based on preliminary estimates, it would take a 0.30 percent sales tax over 10 years to fund the current transportation deficiencies. If this sales tax were imposed, the City of Champaign may be at a disadvantage when compared to other City's sales that do not have the higher sales tax.

A local Champaign County Motor Fuel Tax might be an option where all residents in the County would pay equally, and the revenues collected would go back to the point of origin or be distributed on a per person basis. The revenue from this tax might not be adequate to address all of the existing transportation needs.

## FIGURE 22: 2030 ARTERIAL ROADWAY NEEDS



## TABLE 5: 2030 ARTERIAL ROAD IMPROVEMENT DEFICITS

| ID | Street Name | West / North Limit | East / South Limit | Necessary Improvements | Est. Total Project Cost | City of Champaign Cost | Un-Funded Amount ($M) |
|---|---|---|---|---|---|---|---|
| 1 | Curtis Rd. | Duncan | Wynstone | Widen to 4 Lanes plus Center Turn Lane | 7.48 | 2.97 | |
| 2 | Curtis Rd. | Wynstone | Wesley | Widen to 4 Lanes | 15.40 | 2.74 | |
| 3 | Duncan Rd. | Meadows West | Curtis | Improve to suburban/urban standards | 2.20 | 2.20 | |
| 4 | Prospect Ave. | Olympian | Interstate | Widen to 4 Lanes | 2.20 | 1.70 | |
| 5 | Prospect Ave. | Windsor | Savoy Limit | Improve to suburban/urban standards | 1.00 | 1.00 | |
| 6 | Mattis Ave. | Windsor | Curtis | Improve to suburban/urban standards | 2.50 | 2.50 | 2.50 |
| 7 | Windsor Rd. | Staley | I-57 | Improve to suburban/urban standards | 1.25 | 1.25 | 1.25 |
| 8 | Windsor Rd. | Rising | Staley | Improve to suburban/urban standards | 2.50 | 2.50 | 2.50 |
| 9 | Rising Rd. | Kirby | Windsor | Improve to suburban/urban standards | 2.50 | 2.50 | 2.50 |
| 10 | Kirby Ave. | Rising | Staley | Improve to suburban/urban standards | 2.50 | 2.50 | 2.50 |
| 11 | Kirby Ave. | Staley | Duncan | Improve to suburban/urban standards | 2.50 | 2.50 | 2.50 |
| 12 | Duncan Rd. | Springfield | Kirby | Improve to suburban/urban standards | 2.50 | 2.50 | 2.50 |
| 13 | Windsor Rd. | Duncan | Mattis | Widen to 4 Lanes | 4.80 | 4.80 | 4.80 |
| 14 | Neil St. | Olympian | Interstate | Improve to suburban/urban standards | 1.25 | 1.25 | 1.25 |
| 15 | Mattis Ave. | Olympian | Anthony | Widen to 4 Lanes | 4.50 | 4.50 | 4.50 |
| 16 | Market St. | Olympian | Marketview | Widen to 4 Lanes | 5.60 | 5.60 | 5.60 |
| 17 | Olympian Dr. | Duncan Rd. | Mattis | New 2 Lane Arterial | 8.90 | 8.90 | 6.40 |
| 18 | Olympian Dr. | Apollo | Lincoln | Improve to suburban/urban standards, bridge over CN RR. | 15.50 | 1.70 | 1.70 |
| 19 | Duncan Rd. | Windsor | Watterson | Improve to suburban/urban standards | 2.00 | 2.00 | 2.00 |
| **Total Costs (Existing Deficiencies)** | | | | | **87.08** | **55.61** | **42.50** |
| 21 | Rising Rd. | Kirby Ave. | Springfield Av | Improve to major arterial (shoulders, ditche | 1.25 | 1.25 | 1.25 |
| 22 | Rising Rd. | Windsor Rd. | Curtis Rd. | Improve to major arterial (shoulders, ditche | 1.25 | 1.25 | 1.25 |
| 23 | Curtis Rd. | Rising Rd. | Staley Rd. | Improve to major arterial (shoulders, ditche | 1.25 | 1.25 | 1.25 |
| 24 | Springfield Ave | Staley Rd. | Kenwood Rd. | Widen from 2 to 4 lanes | 6.75 | 6.75 | 6.75 |
| 25 | Staley Rd | Springfield Ave | Curtis Rd. | Widen from 2 to 4 lanes | 13.50 | 13.50 | 13.50 |
| 26 | Bradeley Ave. | Railroad Overpass | | Improve Overpass | 2.50 | 2.50 | 2.50 |
| 27 | St. Marys | Railroad Underpass | | Improve Overpass | 2.50 | 2.50 | 2.50 |
| 28 | Mattis Ave. | Freeway Overpass | | Rebuild/Widen Overpass | 5.00 | 5.00 | 5.00 |
| **Total Costs (Future Deficiencies)** | | | | | **34.00** | **34.00** | **34.00** |
| **Total Costs** | | | | | **121.08** | **89.61** | **76.50** |

## Funding Future Arterial Improvements

Transportation improvement funding for future needs can similarly use the funding methods above, however most jurisdictions have found that it is difficult to have existing residents to fund transportation improvements for future development. Therefore, some form of new development fair share funding, based on a nexus of development impacts is more appropriate.

As indicated in Table 7, there are two general approaches for funding new transportation improvements, some form of a transportation impact fee or district funding.

Key to implementing any transportation impact fee is that there exist a nexus between new development impact and the improvements needed to accommodate this growth. A jurisdiction cannot charge new development to pay for existing deficiencies. A nexus based on a comprehensive transportation planning effort, such as the Champaign Moving Forward, which correlates the future need compared to future development.

## TABLE 6: OPTIONS AVAILABLE FOR LOCAL TRANSPORTATION FUNDING

| | Funding Method | Who Pays | Advantages & Disadvantages |
|---|---|---|---|
| Existing Needs | Property Tax | Property Owners (may be passed on to renters/ tenants) | The property tax increase for transportation capital improvements, operations and maintenance would be imposed on the basis of assessed real estate values. There is a weak connection between assessed values and the need for transportation. Visitors do not pay property taxes in a direct way. |
| | Sales Tax | Consumers, including both Residents and Visitors | Sales tax can produce a significant and predictable revenue stream. This tax is also imposed on visitors and travelers who purchase retail goods and stay in local lodging. If implemented only in the City of Champaign, retail sales might shift to competitor locations outside the City limits. |
| | Motor Fuel Tax | All Motor Vehicle Drivers | Motor Vehicle Fuel Tax would be applicable for projects that correct existing deficiencies and for the City share of projects partially funded by new development. This tax might also be appropriate to finance improvements that facilitate a shift to alternative modes. Users of gasoline and special fuels ultimately pay this. Residents, visitors and businesses would all pay the tax. The tax would particularly impact businesses in the delivery business. If implemented only in the City of Champaign, users might travel outside the city to purchase motor vehicle fuel. |

*Source: FHWA 2006*

### TABLE 7: APPROACHES FOR FUNDING NEW TRANSPORTATION IMPROVEMENTS

| | Funding Method | Who Pays | Advantages & Disadvantages |
|---|---|---|---|
| Future Needs | Development Excise Tax (Transportation Impact Fees) | Developers and New Home Purchases | Development Excise Tax or transportation impact fee are tools appropriate for improvements that are attributable to new growth. This tool may be particularly appropriate for missing segments of arterials or collectors. This is a cost savings tool from the municipal perspective since it transfers financing burden to new development. |
| | Special Improvement District (SID) | Local Businesses and Property Owners | Special improvement districts are typically used for financing smaller transportation projects which benefit a defined area. Special improvement districts may acquire, construct and install streets, parking facilities and drainage improvements. Payment is from properties included within the special improvement district. These districts may impose property taxes, fees, or charges. Taxes and fees are structured to generate sufficient revenues to pay for district programs and facilities. |

*Source: FHWA 2006*

A common approach to addressing future development funding of impacts is through a transportation impact fee where each new development pays for a fair share of the total future transportation needs. This could be on a per unit basis, such as dwelling unit or square foot for non-residential, or on a per trip basis.

As indicated, the total additional costs for improvements required to mitigate future development traffic is $34 million. Based on the trip generation estimate from the regional travel model, forecast growth within the City of Champaign will generate approximately 211,000 daily trips. This would equate to approximately $161 per trip. Given that the typical single-family generates 10 trips per day; the transportation impact fee would be $1,600 per dwelling unit.

## RECOMMENDED CHANGES TO CODES AND STANDARDS

### New Development Pedestrian Impact Analysis

Require all proposed developments to conduct a transit, pedestrian, bicycle, and impact analysis that addresses directness, continuity, street crossings, visual interest and amenities, and security.

## Pedestrian Assessment for New Streets

The City of Champaign and Illinois Department of Transportation (IDOT) should provide transit, bicycle, and pedestrian improvements per the City's complete streets standards and to conduct a pedestrian I-57 overpass and bicycle crossing assessment for all proposed major roadway widenings that add additional through and/or additional turn lanes to determine the impact of the proposed roadway improvement on pedestrian and bicycle mobility and transit access, and identify mitigation to offset pedestrian impact.

IDOT overpasses of I-57 and I-74 are in particular need of pedestrian and bicycle crossings. These expressways already create a barrier for pedestrians and bicycles, but not being able to cross this barrier at intersecting arterials is very problematic in achieving a balanced multi-modal transportation system.

## Pedestrian Connectivity Requirements

The City should update the City's codes and standards to improve pedestrian and bicycle connectivity for new developments. These pedestrian connectivity recommendations include:

- Provide pedestrian and bicycle connections between subdivisions.
- Provide direct and non-circuitous pedestrian and bicycle connections between residential developments and destinations including, but not limited to transit, schools, parks, retail, employment and public uses.
- Commercial office and retail projects shall provide an onsite system of pedestrian walkways and bike routes that provide direct pedestrian and bicycle access from the front door to perimeter streets, adjacent developments and existing or planned transit stops.

## Site Design Standards

The City should update the City's codes and standards to require new developments to provide pedestrian connections and mobility within the development and to destinations outside the development.

## Pedestrian Standard Variance

Because retrofitting existing arterials and neighborhood streets to complete street standards is often impractical and not affordable, flexibility to current design standards should be considered, provided the intent of the Complete Streets objectives are met. An example might be construction of sidewalks without curb and gutters.

# GLOSSARY

| | |
|---|---|
| ADA | Americans with Disabilities |
| ADT | Average Daily Traffic |
| CCRPC | Champaign County Regional Planning Commission |
| CIP | Capital Improvement Program |
| CMAQ | Congestion Mitigation and Air Quality Improvement Program |
| CUMTD | Champaign-Urbana Mass Transit District |
| CUUATS | Champaign-Urbana Urban Area Transportation Study |
| FHWA | Federal Highway Administration |
| IDOT | Illinois Department of Transportation |
| ITE | Institute of Transportation Engineers |
| LOS | Level of Service |
| LRTP | Long Range Transportation Plan |
| MFT | Motor Vehicle Tax |
| MIP | Mobility Implementation Plan |
| MPO | Metropolitan Planning Organization |
| MTD | Metropolitan Transit District |
| SID | Special Improvement District |
| STP | Surface Transportation Program |
| TDM | Transportation Demand Management |
| TMA | Transportation Management Association |
| TMO | Transportation Management Organizations |
| TMP | Transportation Master Plan |