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.

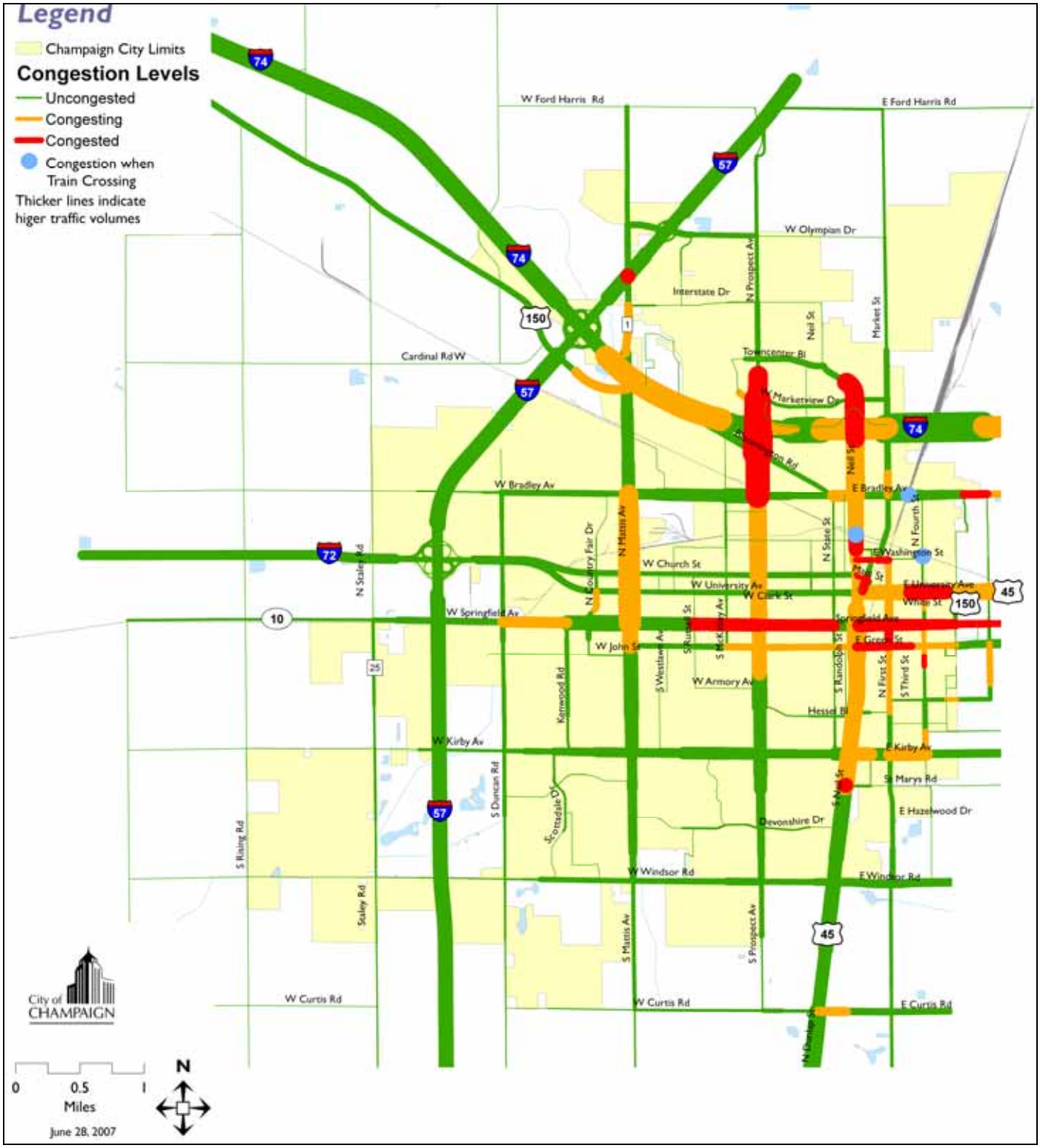
Growth is occurring within the City and region, and with that growth, traffic will also increase and will aggravate current congested areas and expand into areas not currently congested. As presented in Figure 3, traffic has grown significantly over the past 25 years. Whereas the amount of traffic growth 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:

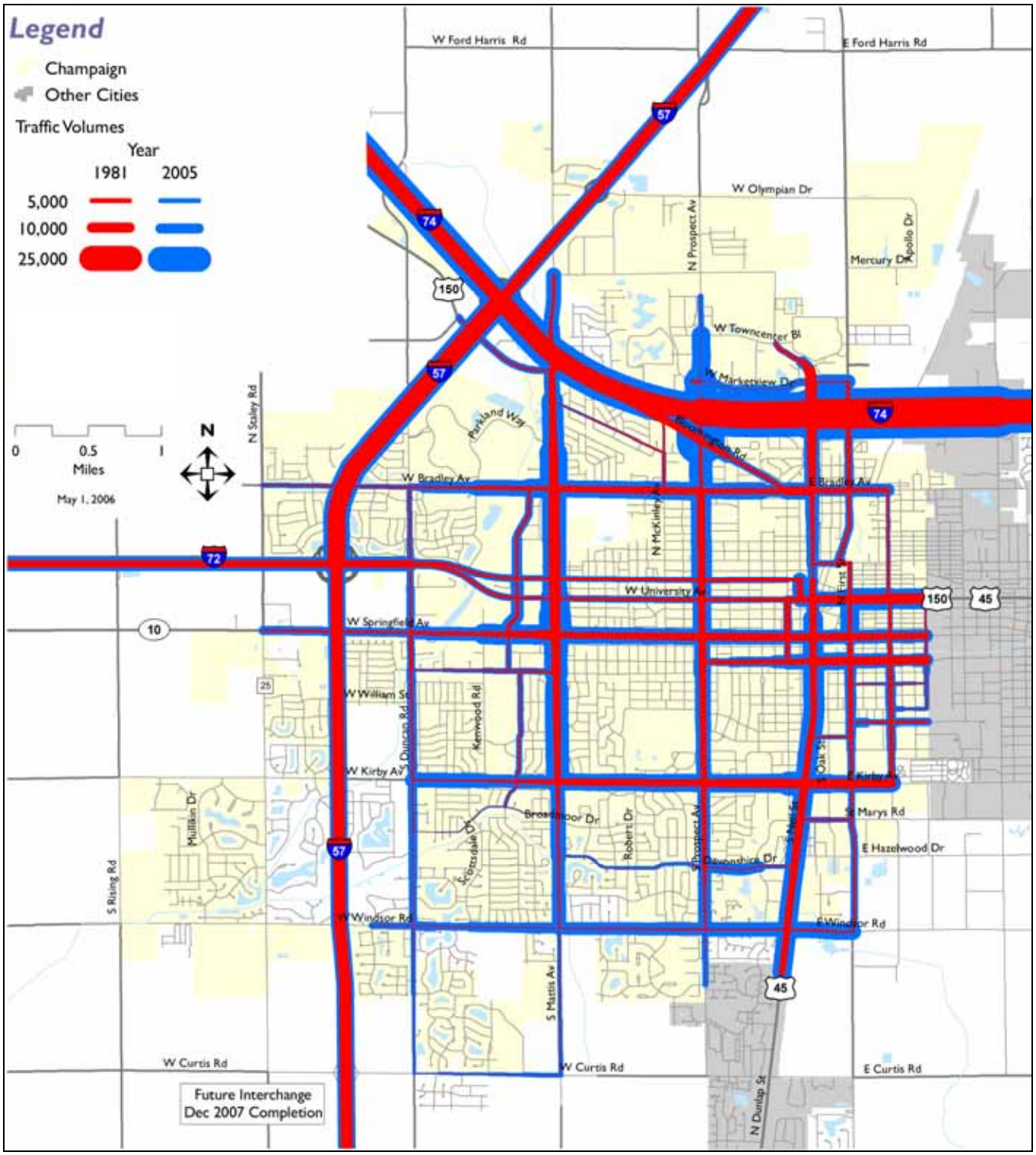
- **Uncongested (Level of Service A - C):** Corridors that generally operate in free-flow conditions, where the driver tends to be able to travel without undue delay except for typical traffic control operations, such as stop signs or traffic signals. During the peak hour, there might be some delay at 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.
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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

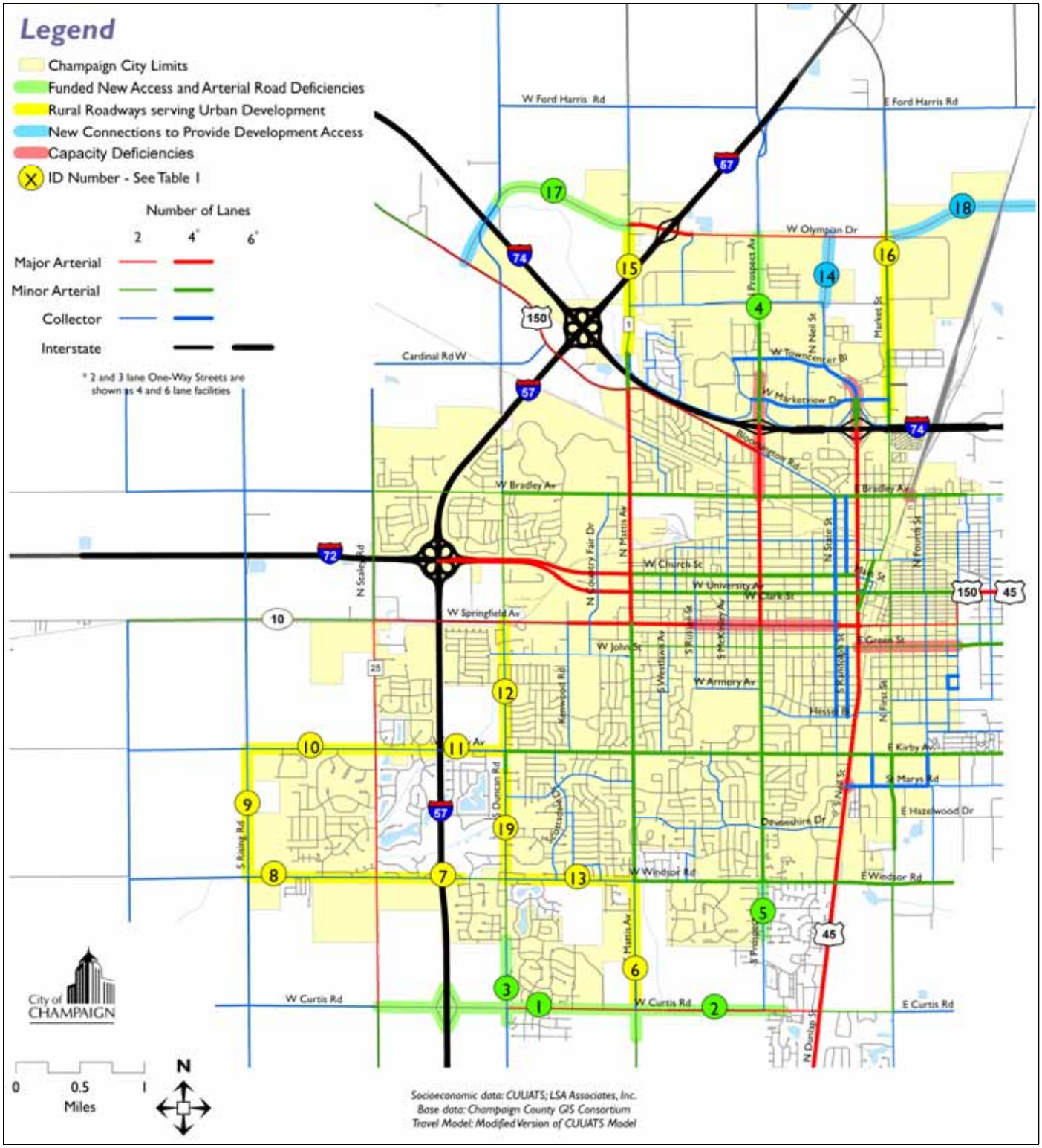


TABLE 1: ARTERIAL ROAD IMPROVEMENT DEFICIT

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 CU-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

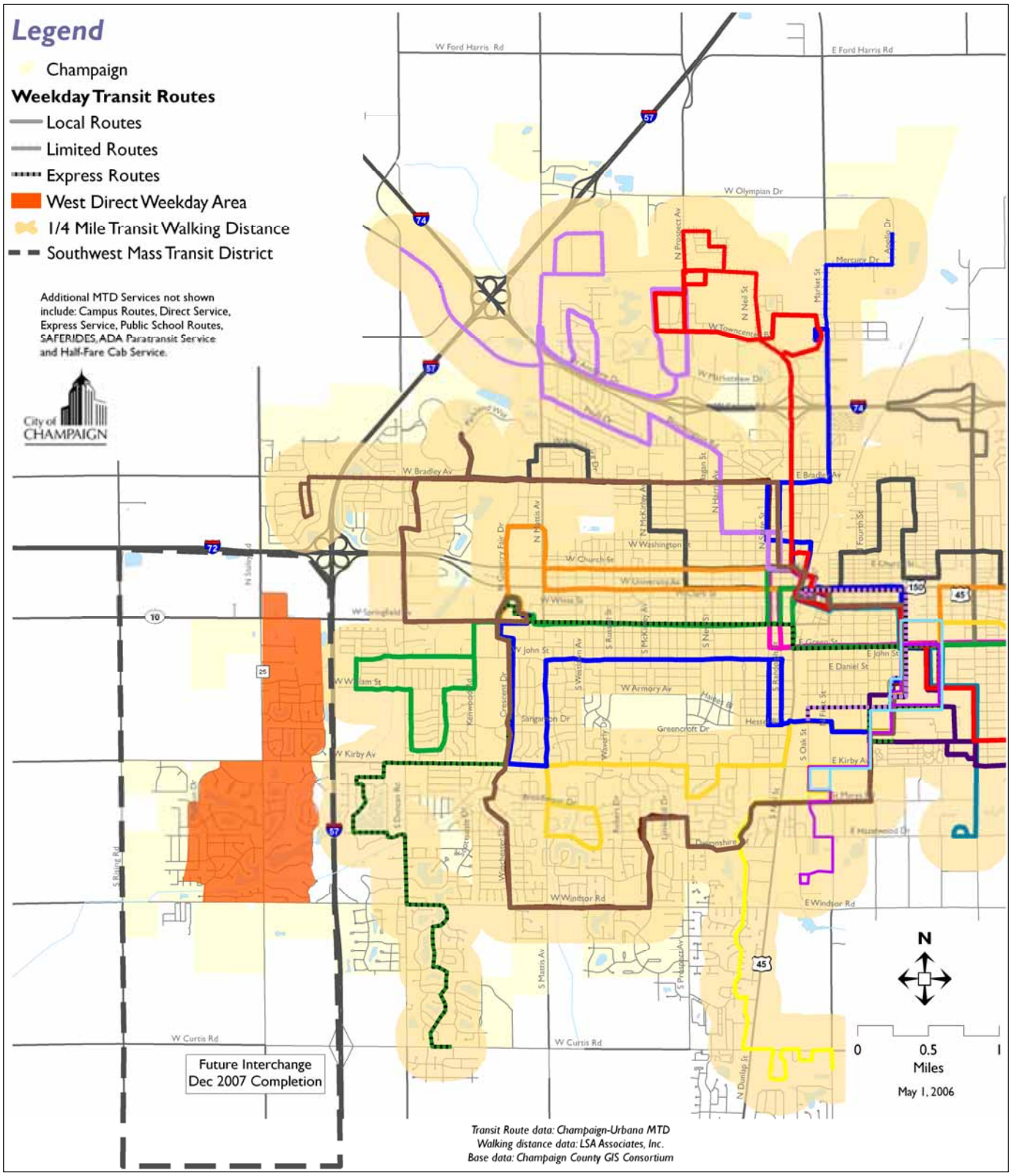
With extensive service from all parts of the City to downtown and the University of Illinois, transit service is good and ridership is relatively high for downtown and University trips.

The transit service by CU-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: CU-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 CU-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 CU-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 CU-MTD 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.

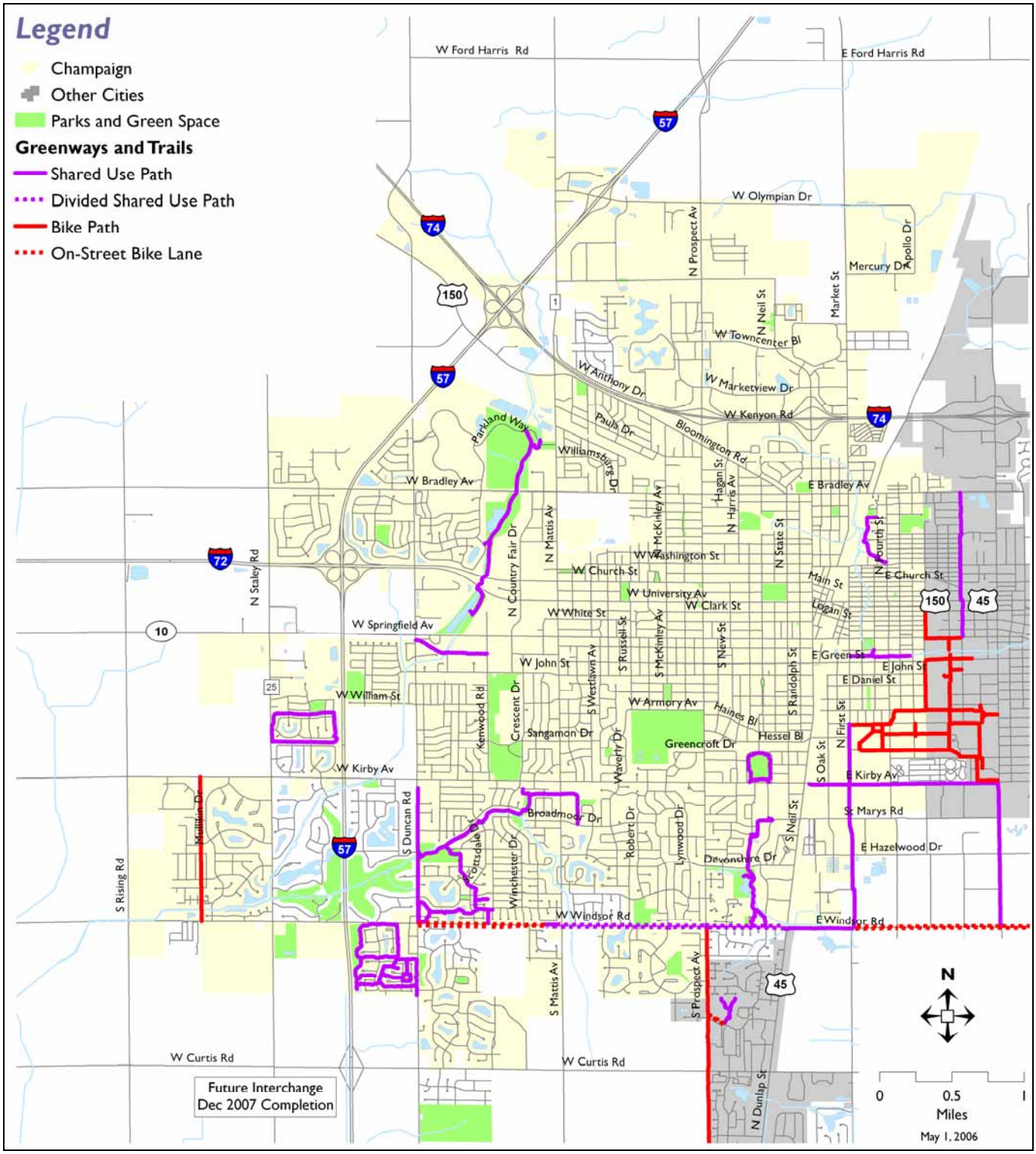
BICYCLE

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.

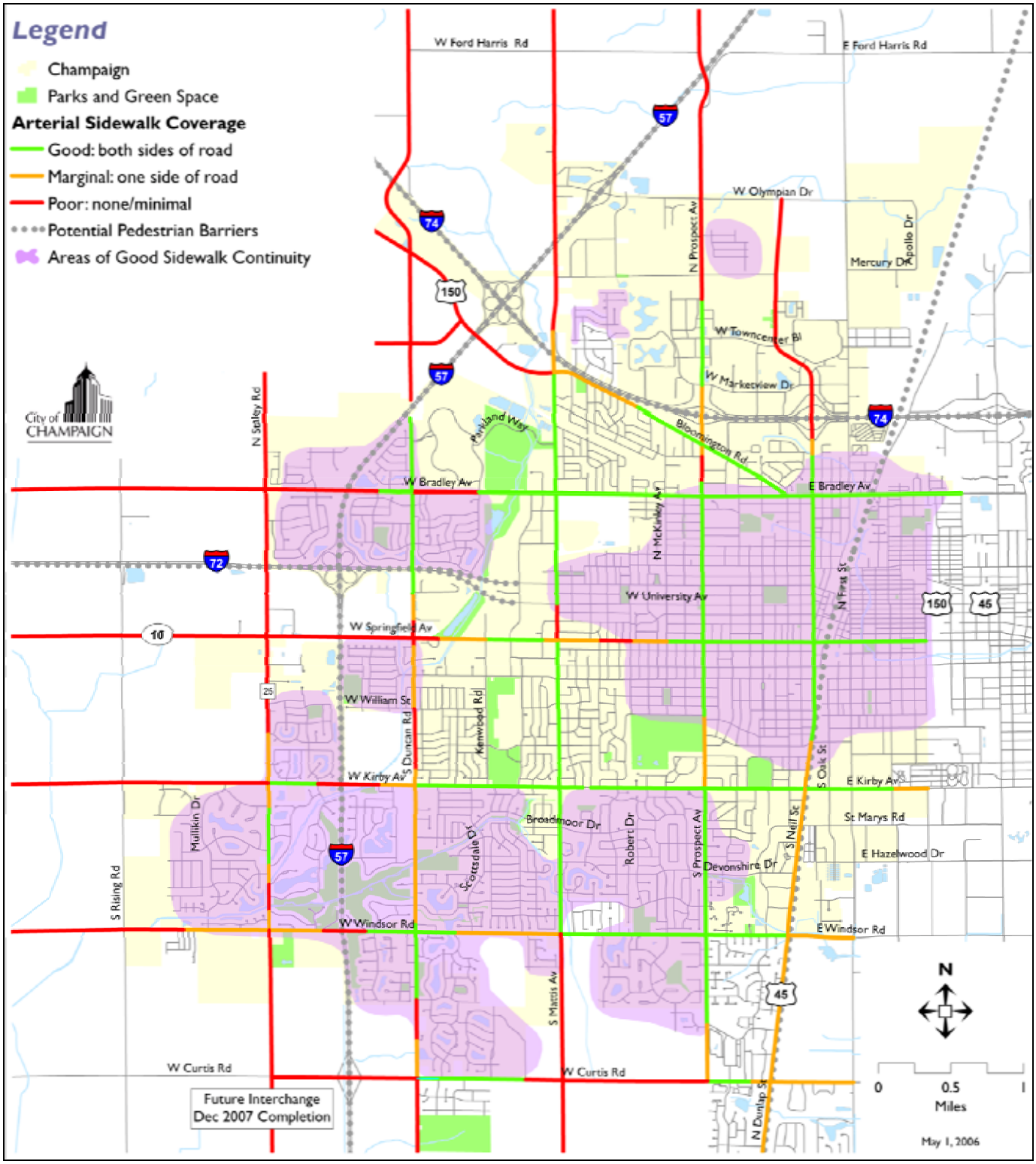
50's to 60's Development Areas

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

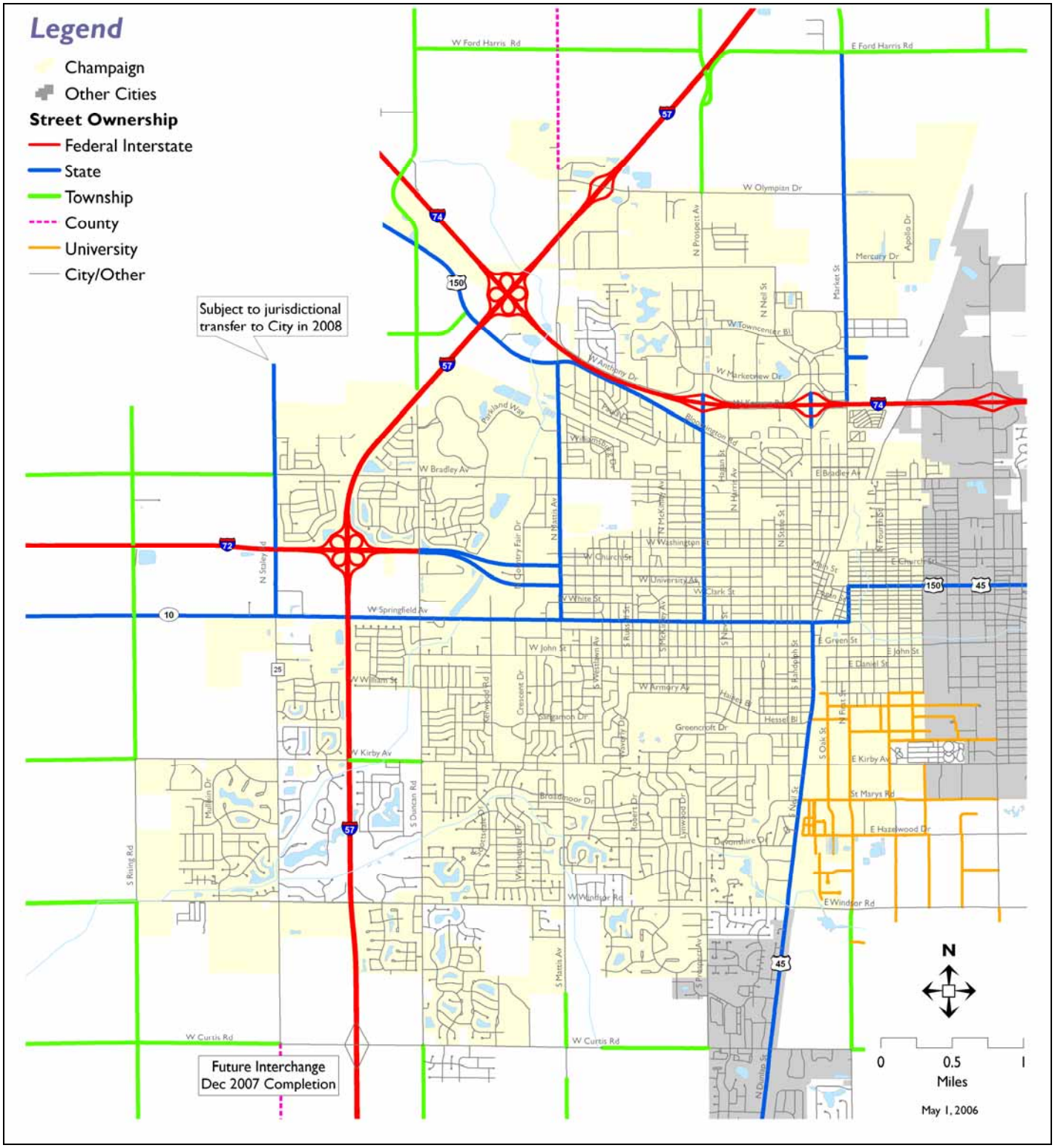
The ability to generate adequate funding to correct existing deficiencies and mitigate future impacts will be critical for providing needed long-term transportation improvements.

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



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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.