



TTRANSPORTATION

The existing character of Wayne, White River and Adams townships include farms, single owner businesses located along two-lane highways, small villages and single family homes on large lots. When these townships are more intensively developed, they are typically annexed into the nearest incorporated communities, where the type of development pattern has primarily been suburban, typified by single family homes at a density of about four dwelling units per acre. Many of these neighborhoods are inaccessible and are separated from other neighborhoods, shopping establishments, schools, churches, parks and work. Furthermore, internally, these neighborhoods often lack even sidewalks and other amenities that allow people to conveniently walk to their neighbor's homes.

Hamilton County's development has resulted in a shift from the bucolic setting of rural two-lane highways into four and six lane suburban highways. It is the goal of this document to give the townships of Wayne, White River and Adams an opportunity to grow as much as the market will allow. However, this growth should occur concurrently with sustainability and preservation of the existing rural character of the Hamilton County. The result will be to spend fewer dollars on transportation infrastructure and for residents to spend less time and money on transportation costs.

ALTERNATIVE LAND USE PLANS

Three land use alternatives were presented to Hamilton County residents in November and December 2004.

Alternative 1a

This development pattern continues the inefficient trends started since 1990. It continues to separate residential from other land uses and focuses shopping and business land uses in strip development along the most heavily traveled state highways and corridors. This land use pattern forces most trips to be taken by automobile, resulting in heavy traffic congestion. This congestion obligates additional infrastructure construction and maintenance on wider roadways.

With this development pattern, the cost to construct the four and six lane roadways defined within the Hamilton County Thoroughfare Plan within Wayne, White River and Adams townships would be \$825 million, excluding right of way acquisition or yearly maintenance.

Alternative 2a

This land use plan continues the current municipal growth patterns to a point, and then county development forms a ring of residential and mixed use development around the municipal development. This strategy essentially allows the current sprawling land use pattern and attempts then to transition to a more sustainable and less costly pattern within Wayne, White River and Adams townships. The mixed land uses along the major corridors supports alternative forms of transportation between developments and relates this higher density development to the adjacent residential land use, giving people the opportunity to walk to nearby shopping, schools, parks churches and work. Since significant portions of Adams and White River and the western portion of Wayne Township would remain with agricultural and estate home uses, new roadway infrastructure to support these areas would be minimal. The result would be focused roadway infrastructure development in more localized areas near the mixed use and residential development where it would be needed.

With this development pattern, the cost to construct the four and six lane roadways defined within the Hamilton County Thoroughfare Plan within Wayne, White River and Adams townships would be \$450 million, excluding right of way acquisition or yearly maintenance.

Alternative 3a

This village based land use plan has higher density development in smaller land areas, creating more opportunities to walk and use transit for primary means of travel. These villages provide an opportunity for people to live, work, shop, attend school, church and recreate all within close proximity to one another. This option, given higher degrees of density will allow greater

opportunities for transit, such as light rail or bus/shuttle transportation between the Villages.

With this development pattern, the cost to construct the four and six lane roadways defined within the Hamilton County Thoroughfare Plan within Wayne, White River and Adams townships would be \$450 million, excluding right of way acquisition, yearly maintenance or transit development.

Recommended Land Use Alternative

Based upon response from Hamilton County, we are proposing a land use plan that captures the strengths and realities of Alternative 1a, 2a and 3a.

With this development pattern, the cost to construct the four and six lane roadways defined within the Hamilton County Thoroughfare Plan within Wayne, White River and Adams townships would be \$500 million, excluding right of way acquisition, yearly maintenance or transit development.

TRAFFIC GENERATION AND COSTS

Many daily and peak hour trips will be generated by land use development of Hamilton County. However, the number of automobile trips can be reduced by the method of development. As we mentioned earlier, isolated development will force people to drive for almost all purposes. Mixed-use and walkable communities can reduce these trips by giving people the option to walk, use transit where feasible, and drive shorter distances.

The proposed land use plan establishes the amounts of developable land in Wayne, White River and Adams townships. Based on this land use plan, the following table indicates the total cost of this development with respect to travel by automobile. These costs are substantial and are the out of pocket cost of individual families making these trips on a daily and yearly basis. With the land use plan proposed for Hamilton County, it would be

expected that at least 20 percent of these trips could be reduced as shown in the Table 1. With this reduction, Hamilton County drivers could be expected to save \$1.6 million dollars each day, \$400 million dollars per year.

Table 1 – The Cost of Automobile Use

Trip Purpose	Daily Trips	Average Drive Distance (1)	Cost per Mile (2)	Cost per Day	Cost per Year
Shopping/School/Social	700,000	6 miles	\$0.88	\$ 3.7 million	\$ 924 million
Work	250,000	20 miles	\$0.88	\$ 4.4 million	\$ 1.1 billion
Total				\$8.1 million	\$ 2.0 billion
20 Percent Reduction					
Shopping/School/Social	560,000	6 miles	\$0.88	\$ 3.0 million	\$ 739 million
Work	200,000	20 miles	\$0.88	\$3.5 million	\$ 880 million
Total				\$6.5 million	\$ 1.6 billion

- (1) Both Directions of Travel
- (2) US Department of Commerce

Many families in the Hamilton County spend about 20% of their income on transportation and these costs are rising as gasoline prices increase. Table 2 shows how that money is spent. Table 3 shows that a Hamilton County family could save \$5,680 per year if they could satisfy only one shopping/ school or social trip and one work trip each day by walking or biking. This includes children walking to school, a husband being able to walk to his office located in the Village downtown, a wife walking to the dry cleaner located on the nearby corner or a teenager walking to his job down the street. If a family were able to satisfy 90% of all their trips without using an automobile, the savings per year could be \$20,000.

Table 2 – Household Transportation Cost

Trip Purpose	Daily Trips	Average Drive Distance (1)	Cost per Mile (2)	Cost per Day	Cost per Year
Shopping/School/Social	7	6 miles	\$0.88	\$ 36.96	\$ 9,240
Work	3	20 miles	\$0.88	\$ 52.80	\$ 13,200
Total				\$ 89.76	\$ 22,400
20 Percent Reduction					
Shopping/School/Social	6	6 miles	\$0.88	\$ 31.68	\$ 7,920
Work	2	20 miles	\$0.88	\$ 35.20	\$ 8,800
Total				\$ 66.88	\$ 16,720

- (1) Both Directions of Travel
- (2) US Department of Commerce

Wayne, White River and Adams townships are expected to have about 35,000 households when fully developed. If 5% of those households could save \$20,000 per year, that would equate to a yearly savings of \$35 million dollars. This would be disposable income that could be put back into local economy for purposes other than transportation.

TRANSPORTATION AND LAND USE COORDINATION

The land uses created to accommodate where we live, work and recreate are directly related to how we travel between these locations. The topics of land use and transportation traditionally have been discussed, researched, and implemented as separate topics. It is now recognized that because of their interconnectedness, land use and transportation must be addressed concurrently. As Hamilton County continues to grow into the 21st century, it will be especially important that its townships and municipalities coordinate their land use and transportation planning with the following efforts:

- Implement land use based transportation planning in cooperation with local and regional agencies.
- Establish a traffic monitoring and supply/capacity system for all developments in the county.
- Establish traffic impact policies within the County, establishing traffic impact criteria for development.
- Coordinate the Hamilton County Comprehensive Land Use Plan with the Hamilton County Thoroughfare Plan to develop a transportation system based on land use.
- Create Context Sensitive Design Guidelines for the County roadway corridors taking into account the rural character of Hamilton County.
- Provide leadership and information to employers in methods to achieve higher vehicle occupancy averages as mandated by federal regulations.
- Work with regional transit providers to improve county public transit services, including bus services to railroad stations, regional bus service, as well as development of bus rapid transit and/or light rail transit and commuter rail service.
- Require that all development proposals comply with right-of-way dedications per adopted county policy.
- Plan and develop safe bike and pedestrian paths to serve daily transportation and recreation needs in conjunction with new or existing development, roads, and transit facilities.
- Improve the county and state limited access roadways by developing and adopting intergovernmental agreements with municipalities and protecting and improving safe access.
- Promote safe, compatible development near airports and encourage noise easements, land use, and other compatibility controls.

- Offer a range of travel modes to access housing, jobs, shopping, recreation and civic uses essential to the daily life of residents.
- Size and arrange communities to limit travel distance to access basic necessities of living.
- Create a well-connected transportation system providing direct and interesting paths for pedestrians and bicyclists and organizing land uses so that they can be properly served by transit
- Organize the regional network of urban communities around a regional system of transit rather than freeways by taking advantage of the strengths of the existing public transit infrastructure.
- Locate regional institutions and activity centers within major urban centers accessible to the regional transit network.
- Design transportation facilities to complement and support community character and identity.
- Coordinate all land use planning with transportation planning. Limit growth as much as possible to nodal development locations with mixed land use practices.
- Subdivision site design should utilize a traditional or modified grid roadway network as opposed to a limited access street network. The grid network has been shown to provide drivers more travel options, thus reducing roadway congestion on one or a few larger roadway. Additionally, this type of design is more pedestrian and bicycle friendly as it allows them direct paths from one place to another.

Source: Kane County Illinois 2030 Land Resource Management Plan, October 12, 2004

TRAVEL TO WORK

According to the Year 2000 US Census, 93.6% of Hamilton County residents who commute to and from work do so by automobile with a

mean travel time at 25.3 minutes. Many of these commutes are to the I-465 corridor and into the City of Indianapolis. Longer commutes translate into increased road congestion, lost retail spending and associated tax revenue, and reduced worker productivity. The following are opportunities to mitigate these patterns by offering commuter based programs as incentives for business attraction and retention.

- Business incentives for companies that offer telecommuting
- Alternative work schedules
- Employee incentives for van and car pooling
- Park and ride facilities
- Parking management and employee incentives for walking and biking.

Source: A Commuter Patterns Study prepared for Kane County, Illinois April 2002.

BIKING AND WALKING

Hamilton County adopted an *Alternative Transportation System Plan* in 1995. This plan sought to integrate alternative transportation planning into the existing county wide Thoroughfare Plan. Local communities have placed many of the components of the Plan, with additions of their own, into their community alternative transportation plans.

Based on the *Alternative Transportation System Plan* Hamilton County has begun to construct an integrated system of trails. The best example is The Monon Trail in the Carmel/Clay area of the county, which connects important business, cultural and recreational points of interest.

Walking and biking are becoming more popular not only for recreation but as an alternative form of transportation. Therefore, the pedestrian and bike system must be designed for persons of all ages and abilities with barrier free accessibility linking buildings, parking, paths, sidewalks, employment, and recreation. All developments must contribute in some fashion to alternative forms of transportation.

Walking and biking is the most basic and healthful form of transportation and is in the best interest of all citizens physically, economically, and environmentally. When children walk to school they are more healthful and independent. Reduced school bus use means school systems can use funds for other purposes. When trips by cars are reduced, it helps the environment. This same logic holds by locating retail, jobs and recreation within walking distance from homes, as studies have shown that most people will typically walk up to 1/2 mile from their home if paths are convenient and direct. Therefore, as land use development occurs, a good rule of thumb would be to draw 1/2 mile circles around developments to see if there are other land use opportunities such as schools, parks and shopping to support them. It is important that the update to the Thoroughfare Plan enhance and refine the current system of alternative transportation forms and more closely integrate it with land use development and connectivity of land use activity.

The following are requirements for walking and bicycling:

- Facilitate the advancement, refinement and full implementation of the Hamilton County *Alternative Transportation System Plan*.
- *Alternative Transportation System Plan* will specifically address and promote alternative forms of transportation. This will include mapping, Bicycle Level of Service (BLOS) and the Federal Highway Administrations Bicycle Compatibility Index (BCI) to quantify the relative bike friendliness of roadways, a best practices guide, arterial crossings, way-finding and signage, and potential funding sources for bicycle and pedestrian projects.
- The Hamilton County Engineering Department should construct paths on roadways and within right-of-ways designated within the *Alternative Transportation System Plan*.
- Each land use development, regardless of size, must be integrated directly into the *Alternative Transportation System Plan*.
- Each development must have sidewalks on both sides of the roadway unless site constraints prohibit their installation or an alternative trail system is provided.
- Integrate an equestrian component into the current *Alternative*

Transportation System Plan.

- Fully integrate the Hamilton County *Alternative Transportation System Plan* into the Hamilton County *Thoroughfare Plan*.
- Promote connectivity of the Hamilton County *Alternative Transportation System Plan* with plans of the local communities.

TRANSIT SYSTEM

Many residents of this area commute both within the county and also to locations outside the county, especially to Indianapolis and along the I-465 Corridor. Hamilton County should promote Express Bus Service and Bus Rapid Transit as a viable form of transportation. Hamilton County should investigate the feasibility of full utilization on the rail line between Noblesville and Downtown Indianapolis and investigate possible station location along this corridor.

Transit Planning

In 2004, the Central Indiana Regional Transportation Authority (CIRTA) was established by ordinance through the City of Indianapolis, with subsequent support by resolution from all of the surrounding counties and largest municipalities. This Authority has been given the task of developing a nine county transit system including Boone, Hamilton, Madison, Hendricks, Hancock, Morgan, Johnson, Marion, and Shelby counties.

The Authority recently finalized and adopted a regional strategic plan including the study and implementation of public transit transportation system including a fixed guideway system. The Authority is currently studying the degree of development density and what types of mixed use development would be appropriate and needed around a fixed guideway transit line.

This study is to be completed by the end of 2007. It is hoped that this

study will be incorporated into the local comprehensive and land use plans of all nine counties and their local communities. The initial fixed guideway system corridor is centered on the old Nickel Plate Railroad Line running from Indianapolis thru Fishers to Noblesville, Indiana; actual alignment studies will be under way in 2007.

Express Bus

Express bus serves areas of higher density development or locations where many travelers converge, and then ride the bus to a single location or locations, such as downtown Indianapolis or employment centers along the I-465 corridor. A disadvantage of express bus is that it is limited to the same traffic congestion to which drivers are exposed, unless dedicated bus lanes are built. The advantages include fewer vehicles, elimination of driver stress, reduced air pollution, and a better use of traveler's time and transportation dollars. The requirements of express bus are:

- High density development
- Areas where many people converge to use the express bus
- Long commutes

Bus Rapid Transit

Bus Rapid Transit (BRT) takes the express bus concept and adds the important dimension of designating specific corridors for only buses and other high occupancy vehicles (HOV). This investment in single purpose lanes pays for itself in reduced traffic congestion on the road system. Over time, this singular lane can pay for itself in both reduced travel time and decreased pollution and in actual dollars when HOV users pay for the system with fares (in bus) and tolls (in auto). This system has been proven financially feasible with private/public ownership consortiums in southern California and other parts of the country where the tolls are increased or decreased based on the amount of traffic congestion on the road system, allowing the roadway to actually pay for itself by users in a free market fashion.

The additional advantage of BRT is the multi-functionality of buses that either travel very fast in the designated lanes and then switch over to a para-transit function, providing more local service near the destination. A disadvantage of BRT is that on a per passenger per mile basis, bus transit is generally a less efficient user of energy and emits more pollution than rail service. Additionally, traveling by bus continues to have an image problem in the U.S. Requirements of Bus Rapid Transit are:

- Medium to high density development
- Designated lanes within roadway corridors

RUSTIC ROADS

Purpose

A Rustic Roads program will allow Hamilton County to preserve existing roadways that showcase the area's outstanding natural and manmade features. A Rustic Roads program will help preserve and protect the existing scenic beauty of the area that is located adjacent to existing roadways.

Definition

In order to qualify for the Rustic Road program, the roadways must satisfy a few requirements. The road must carry a low volume of vehicular traffic, offer open views of the area's natural and manmade features, and not have any planned improvements that would affect the existing characteristics that would make it a rustic road. The speed limit of the rustic road should be 45 - 55 mph. Special signage should be provided to officially designate rustic roads. A Rustic Roads Board/Committee should be formed in order to judge each application.

Some of the features that would qualify a roadway for the Rustic Roads program include:

Natural Features

- Expansive views that overlook nature
- Unique land situations (land forms, ravines, narrow valleys)
- Water
- Forests/Woods
- Native flowers, shrubbery, or other types of vegetation
- Autumn color
- Historical buildings or structures
- Railroads
- Landscapes



Manmade Features

- Churches, old cemeteries
- Farmsteads
- Architecturally and/or historically significant buildings
- Monuments, memorials, or statues
- Historical Markers
- Automobile club guideposts
- Railroad and accessory features
- Roadway pavement, drainage, bridges, tunnels or other features
- Local activity centers such as farm supply stores, village stores, inns, mills, factories or institutions.

Source: Kane County Illinois 2030 Land Resource Management Plan, October 12, 2004