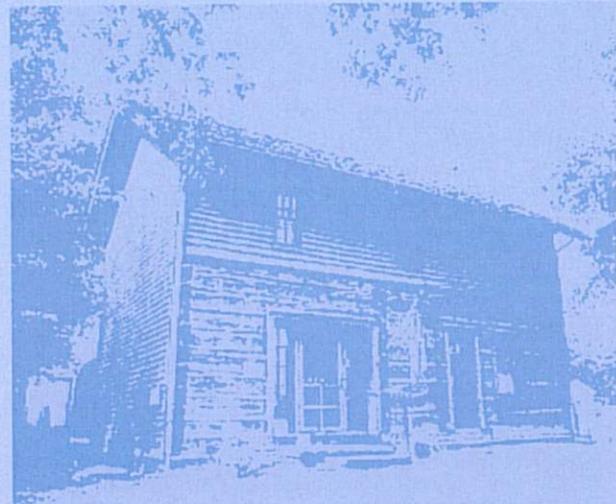
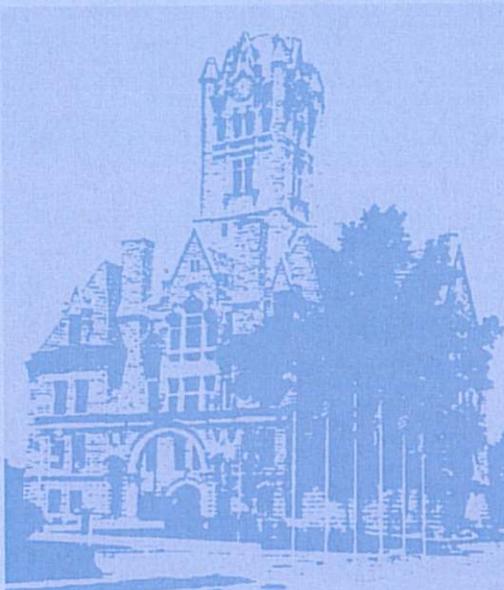
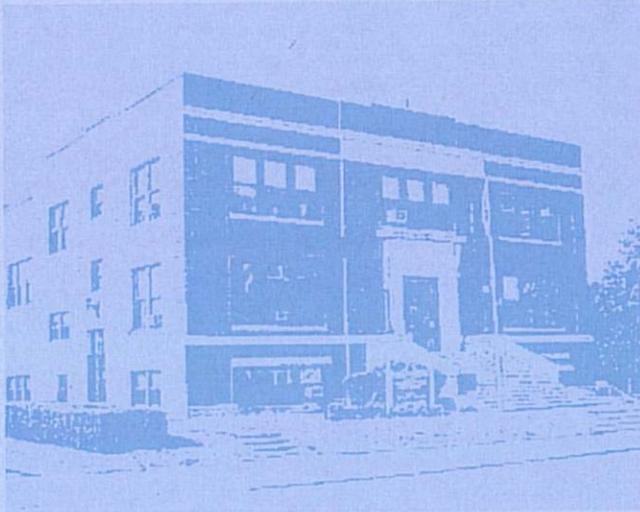


FINAL REPORT

SEPTEMBER 10, 2007

# CITY OF GREENFIELD THOROUGHFARE PLAN



A TRADITIONAL AMERICAN CITY

THE CORRADINO GROUP, INC.

# Table of Contents

1.	Introduction	1
2.	Thoroughfare Plan Overview	2
3.	Existing Transportation System	3
	Transportation System Overview of State Road Network	3
	Previously Prepared SR 9 Environmental Assessment (EA)/Corridor Study	3
	Transportation System Overview of Local Road Network	4
4.	Public Involvement	5
5.	Travel Demand Model	7
6.	Thoroughfare Plan	12
	Thoroughfare Classifications	12
	Design Element Recommendations	13
	Thoroughfare Plan Map	14
7.	Roadway Improvement Projects	15
	Project Summary Sheets	16

# 1. Introduction

This City of Greenfield Thoroughfare Plan Update, comprised of this report, is an update of the previous City of Greenfield Thoroughfare Plan Map dated October 22, 1999, and will be referred to from this point on as the Thoroughfare Plan. The Thoroughfare Plan is a long range planning tool that provides guidance to promote infrastructure development that accounts for the recommendations of the Greenfield Comprehensive Plan to provide for a better overall Greenfield transportation network. The Thoroughfare Plan consists of the following elements:

- A Thoroughfare Plan Map;
- A 2007, 2012 and 2017 travel demand model; and
- Information summary sheets for feasible individual roadway improvement projects identified during the development of the Thoroughfare Plan;

The following document explains process undertaken to develop the Thoroughfare Plan. Only improvements that will not infringe on the historic and unique layout of the city and improvements that support the overall direction of the Comprehensive Plan were considered. The plan study area is in the Greenfield Planning Area, from 200 West to 500 East, and from 400 North to 300 South.

## 2. Thoroughfare Plan Overview

One of the Action Items called for in the 2006 Greenfield Comprehensive Plan is the updating of the Greenfield Thoroughfare Plan. It is intended for the city to adopt this Thoroughfare Plan as part of the Comprehensive Plan, enabling it to be utilized during zoning-related activities including the city's plan review process. Both the Comprehensive Plan and the Thoroughfare Plan are long-range planning documents to be used by the city to implement good planning practices as areas develop. The plans should be reviewed and updated periodically.

The Greenfield Thoroughfare Plan is a planning tool used to regulate construction of new roadway facilities as well as the reconstruction of existing facilities. An important use of the Thoroughfare Plan is the recommendation of design standards for various roadway classifications, and in particular future required rights-of-way. This plan is critical in providing the needed right-of-way necessary for a roadway network that accommodates existing and future traffic, as well as the needs of the surrounding land uses.

## 3. Existing Transportation System

### Transportation System Overview of State Road Network

The City of Greenfield's downtown area is centered on the intersection of US 40 and SR 9. Much of the City's historical nature comes from its proximity to US 40, sometimes referred to as the National Road. US 40 remains an important transportation facility today; however, the construction of I-70 decades ago de-emphasized US 40 as a transportation route. I-70 parallels US 40 along the north side of Greenfield and carries a high percentage of truck traffic, as well as a majority of the long distance east-west trips through the area. US 40 primarily carries local and some regional traffic. The downtown Greenfield complex and the Eli Lilly and Company facility located on US 40, on the west side of Greenfield, are major destinations served by US 40.

Greenfield's primary north-south transportation facility is SR 9. The significance of this route has grown dramatically since the construction of I-70, which spurred steady development along this corridor between the core of Greenfield and the interstate. The majority of Greenfield's commercial development is located along SR 9, between McKenzie Road and I-70, causing most residents that want to shop, dine, etc., to use SR 9. Greenfield's primary hospital is also a traffic generator located on SR 9. Traffic volumes on SR 9 are heavy, and compounding the congestion is the presence of a high percentage of truck traffic. A portion of the truck traffic is pass-through traffic with destinations such as Shelbyville, Anderson, or other destinations to be reached via I-70; however, Greenfield's large and growing industrial base, primarily along the I-70 corridor on the west side of SR 9, is the destination for a significant portion of truck traffic. There is currently no other suitable north-south alternative to the SR 9 corridor to handle the truck traffic through and within the Greenfield area.

### Previously Prepared SR 9 Environmental Assessment (EA)/Corridor Study

A final report, dated December 12, 2005, was prepared by the Indiana Department of Transportation's (INDOT's) consultant, Paul I. Cripe, Inc., per the guidelines of the streamlined environmental procedures for EA/Corridor Studies adopted by the Federal Highway Administration (FHWA) in 2002. These guidelines include provisions for community advisory committee (CAC), public, and regulatory agency involvement. The SR 9 EA/Corridor Study used then current data (1999) and forecasted data (2025) and established a need to improve the traffic capacity and the safety of the SR 9 corridor. Of particular concern was the large amount of truck traffic traveling the narrow section of SR 9 through the central business district (CBD) of downtown Greenfield and the densely populated urban area surrounding the CBD.

The study investigated four conceptual types of alternatives:

- "No Build" (i.e. non-State system improvements;
- Minor improvements to Existing SR 9;

- Major Improvements to Existing SR 9; and,
- Greenfield Bypass.

There were multiple variations for each conceptual alternative type. As seen on page 4 of the Executive Summary, the SR 9 EA/Corridor Study states that "... Based on the results of the screening and evaluation process, and the funding constraints put forth, there are no viable build alternatives within the state system ... the No Action alternative, no additional actions aside from existing committee (programmed) projects on either state or local roadway systems, is the recommended alternative." In essence, the SR 9 EA/Corridor Study found that improvements to existing SR 9, as well as a potential new SR 9 bypass project, were not feasible. Instead, this study commented that local improvements should be made to city streets to help alleviate the existing SR 9 congestion and limit future traffic growth on the SR 9 corridor.

The Greenfield Thoroughfare Plan incorporates the findings of the SR 9 EA/Corridor Study. The concept is to identify existing and proposed local corridors and spot locations that can be improved as stand-alone city-initiated or developer-assisted projects that will help overall traffic flow in the Greenfield area and minimize future traffic growth on the SR 9 corridor. All of the potential 2012 and 2017 projects identified in the Thoroughfare Plan help to alleviate existing congestion or minimize future traffic growth along the SR 9 corridor.

Truck traffic will continue to use SR 9, which is appropriate because it is a state facility built to state standards to be maintained by INDOT. This approach also fits nicely within the direction set forth in the Comprehensive Plan, which identifies areas of neighborhood commercial and mixed-use areas, away from SR 9 and within the neighborhoods. A travel demand model was developed as part of the Thoroughfare Plan in an attempt to approximate the impact of the various proposed local corridor and spot location improvements on the future traffic growth on the Greenfield network and the SR 9 corridor.

## Transportation System Overview of Local Road Network

The road network for Greenfield is established on a grid network. The downtown area and the neighborhoods surrounding the downtown are comprised of a tightly spaced grid with sidewalks present at most locations. Intersections are non-signalized, except at intersections with state routes. Davis Road is a primary east-west road located south of US 40. McKenzie Road runs east-west, approximately midway between US 40 and I-70 and provides a connection between the neighborhoods and schools on the east and west sides of Greenfield, as well as to the SR 9 corridor. New Road is an east-west facility that parallels I-70 to the south. New Road provides a connection from the east and west portions of Hancock County to I-70 and also provides a connection to the industrial areas along I-70. The Franklin Street/Fortville Pike corridor is a north-south facility that parallels SR 9 to the west and provides a connection from the north side of I-70 all the way to south of Greenfield. Apple Street is north-south corridor that connects Davis Road, south of US 40 to New Road, south of I-70, and primarily connects residential neighborhoods. Blue Road is another north-south corridor, east of Apple that connects US 40 to New Road.

## 4. Public Involvement

Public involvement has played a critical role in the development of the Greenfield Thoroughfare Plan. A steering committee was formed consisting of representation from the City of Greenfield (Department of Engineering and Planning, Street Department, Mayor's Office, and Police Department); Hancock County Engineer's Office; and the consultant. The goal of the steering committee was to provide insight into existing and future anticipated growth areas, traffic congestion locations, and potential roadway safety concern areas. The steering committee also was involved in soliciting public input at the public information meeting. Three steering committee meetings and one public information meeting were held.

**Steering Committee Meeting #1 (January 8, 2007):** The purpose of this meeting was to lay the groundwork for the project and to solicit initial input regarding transportation needs. The scope of the project, schedule, and project goals were discussed. The findings of the SR 9 EA/Corridor Study, dated December 12, 2005, were discussed. The steering committee also discussed current and future road improvement projects already in process. Other transportation issues such as congestion areas, crash areas, high truck areas, corridors, and coordination with the Comprehensive Plan were discussed.

**Steering Committee Meeting #2 (May 11, 2007):** The purpose of this meeting was to discuss the travel demand model being developed by the consultant and to begin identifying potential roadway improvement projects to be classified as either 2012 or 2017 projects. The steering committee discussed travel demand model methodology and the findings to date of the model. The benefits of the potential 2012 and 2017 roadway improvement projects were discussed. The steering committee also discussed the upcoming May 23, 2007 public information meeting and how best to advertise for it and structure the meeting to maximize public input.

**Public Information Meeting (May 23, 2007):** The goal of the meeting was to solicit public input regarding the project in general. An article was run in the local Greenfield newspaper, the *Daily Reporter*, ahead of time providing information about the meeting. An article was also run in the *Daily Reporter* the day after the meeting, highlighting key elements from the meeting and providing consultant contact information. The public information meeting had an "open house" format where team members were available to discuss the project one-on-one with attendees at the aerial exhibits for ½ hour. This was followed by a formal presentation by the consultant for 45 minutes, after which more one-on-one discussions with attendees were held. Input received at the public information was considered. A list of some of the comments, along with the final decision regarding each, follows:

- **Comment:** A roundabout should be considered at the Fortville Pike/New Road intersection.  
**Decision:** As documented in Chapter 7 of this report, a roundabout will be considered during the design phase of the possible improvement of this intersection.

- Comment: McKenzie Road should have three lanes east of SR 9 and four lanes west of SR 9. Decision: McKenzie Road is shown on the Thoroughfare Plan map as a secondary arterial; however, no immediate projects are identified to improve the McKenzie Road corridor due to cost constraints resulting from all of the existing curb cut compared to the benefit forecasted in the travel demand model. Some spot improvements at intersections are identified as projects, which will help overall flow on McKenzie Road.
- Comment: A connector should be considered between the Meridian/200N intersection and Fortville Pike south of I-70. Decision: Due to the existing development and the limited access right-of-way along Fortville Pike at this location, a connector was determined to not be feasible.
- Comment: The extension of Brandywine Parkway from McKenzie Road to McClarnon Drive was in the Thoroughfare Plan at one time and should be included again with this update. Decision: Travel demand modeling forecasts that providing this extension provides benefit to the overall Greenfield roadway network; therefore, it was placed back on the Thoroughfare Plan Map. It was not however, identified as one of the thirteen potential projects to be implemented in 2012 or 2017 because the existing floodplain presents design challenges that must be further investigated.

**Steering Committee Meeting #3 (July 11, 2007):** The purpose of this meeting was to discuss comments received at the May 23, 2007, public information meeting. The steering committee also discussed work completed to date on the project, as well as the desired Thoroughfare Plan.

## 5. Travel Demand Model

The City of Greenfield is just outside of the Indianapolis Metropolitan Planning Organization (IndyMPO) and could be incorporated into it in the future. The need for a small area transportation model of Greenfield was developed as part of the Thoroughfare Plan process to predict future year traffic, as well as the deficiencies of the current roadways.

The transportation model for the City of Greenfield is a network of roadways that include some local streets and all major streets in the study area and information on population and employment. The computer modeling software, *TransCAD*, was used to model the Greenfield area. The roadway network was modified from the roadway centerline files provided by the City of Greenfield. Data from the IndyMPO model, population projections from the Greenfield Comprehensive Plan, and traffic counts from the city were used to help estimate the existing traffic on the roadways and predict the future traffic as well. A detailed document of the traffic modeling will be included as a separate document available with the model.

A model was created for the years 2007 (existing), 2012 (design year) and 2017 (design year). The outputs of the transportation model are speed, time and volume on each roadway segment. Volume flow maps of each year were developed and are illustrated in the following figures. The year 2007 model includes no roadway improvements. The 2012 build and no-build scenarios and 2017 build and no-build scenarios are the short- and long-term year plans, respectively. The no-build scenario models future traffic on current roadways without any improvements. The build scenario models future traffic on a roadway network that includes improvements suggested by the deficiencies found in the study.

The model shows deficiencies on SR 9, as well as some city streets. The roadway improvements considered in the build scenarios are improvements that will help relieve traffic on the state routes. The identified roadway improvement projects are found in Chapter 7 of this report. Most of these projects were input into the build scenario models to forecast their impact; however, since traffic models are macro in nature and are not good at identifying the impacts of individual intersection improvements, traffic capacity analysis for individual intersections was performed using a separate micro analysis software, *Synchro/SimTraffic*.

The 2007 existing network identifies issues on several roadways (Figure 1). SR 9, US 40, McKenzie Road, Broadway Street, Franklin Street, and New Road area forecasted to carry significant traffic volumes. These corridors were then investigated to determine what roadway improvements could be made.

Projects for the year 2012 have the greatest impact on the SR 9 and McKenzie Road area. Figure 2 illustrates that the build scenario volumes are less than the no-build scenario. This is especially true in the shopping area to the north of the intersection of the proposed McClarnon Drive extension from Apple Street to SR 9. A western extension of McClarnon Drive from Broadway Street to Franklin Street was also added to help with new traffic created by the new school being built

northwest of the McKenzie Road/Franklin Street intersection. Improvements were also identified for the Fortville Pike/Franklin Street corridor from US 40 to New Road. An increase in volume along McKenzie Road, east of SR 9, resulted in the addition of projects to improve the McKenzie Road/Apple Street intersection. Volumes also increased in the Boyd Street/SR 9 area so an intersection improvement project was identified for that intersection. One final project that could prove to help the flow of traffic in the downtown area is the improvement to SR 9/US 40 intersection. Lack of available right-of-way prevents any widening, but changes to the existing traffic signal phasing and the intersection striping will be investigated as a stand alone project.

Projects for the year 2017 coupled with the major projects of 2012 have the greatest impact on SR 9. Figure 3 shows that the build scenario volumes are less than those values for the no-build scenario by several thousand vehicles per day. This occurs in the shopping area around the intersection where the McClarnon Drive extension from Apple to SR 9 was added in the 2012 model and where an extension of Brandywine Parkway from McKenzie Road to McClarnon Drive was added in the 2017 model. An improvement of the Apple Street corridor from McKenzie Road to New Road was included in the 2017 build scenario. An improvement of the Meridian Road corridor and an improvement of the McKenzie Road/Blue Road intersection are other projects that were included in the 2017 build scenario model.



Figure 2

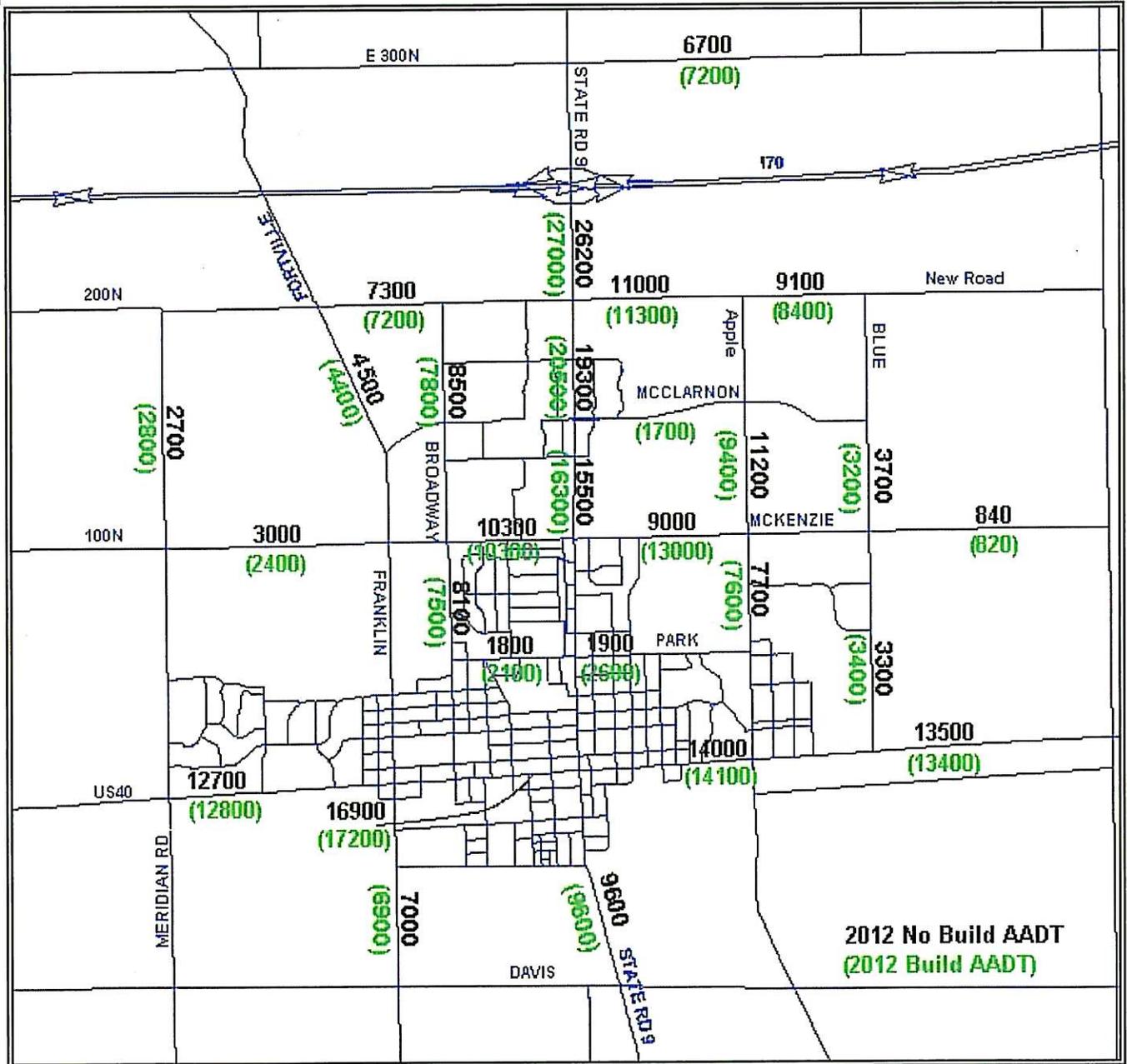
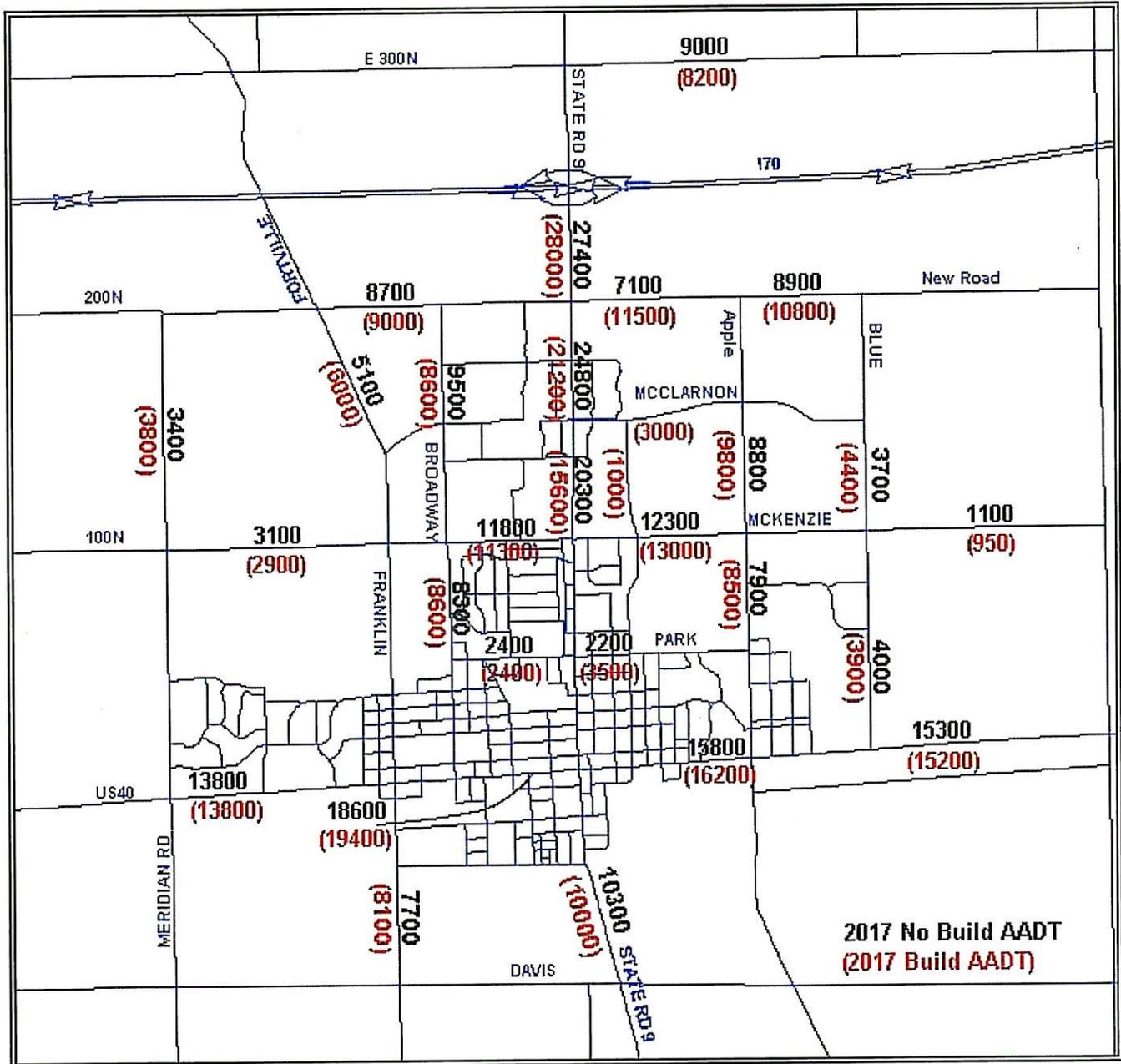


Figure 3



## 6. Thoroughfare Plan

### Thoroughfare Classifications

The Thoroughfare Plan identifies an overall transportation network consisting of various roadway classifications. Each classification type is intended to serve a different purpose. A brief description of the classifications follows:

- Interstate: High speed, fully access controlled, divided facilities with grade separations and access only via interchanges, maintained by INDOT. The function is high speed movement of traffic within and through the study area, in particular long trips.
- Primary Arterial: Typically state routes carrying larger volumes with a high percentage of regional trips. Mobility is the primary function rather than accessibility.
- Secondary Arterial: Typically the higher end local routes carrying significant traffic volumes. Carry a good mix of regional and local trips. Function is a balance of mobility and accessibility with the purpose of connecting collectors to primary arterials.
- Collector: Typically connect local roads to arterials. Carry less volume than secondary arterials and provide more access to adjacent land uses.
- Parkway: The concept of the parkway designates a future ring corridor around Greenfield through primarily undeveloped areas to serve as a relatively free flow potential bypass to SR 9 and/or US 40. Access points are to be minimized and the corridor should receive aesthetic considerations such as landscaping. A pedestrian pathway is to parallel the parkway. More information regarding parkways can be found in the Comprehensive Plan.

Access control is an important factor in the mobility of a roadway facility. For facilities with a high desired level of flow, such as parkways and arterials, the number of access points should be carefully planned for and controlled. Any new development along a primary arterial shall incorporate a frontage road or rear access drive as described in the *City of Greenfield Public Improvement Design Standards and Specifications Manual*. Local roads tend to serve neighborhoods and provide a high level of accessibility while providing a low level of flow. Connectors tend to balance mobility and access, by providing connections between the local roads and the parkways or arterials. Curb cuts should be minimized on collectors as feasible.

The Comprehensive Plan discusses greenways and pedestrian paths in detail. Pedestrian travel in many locations is a viable alternative to vehicular travel, and the need for pedestrian facilities is anticipated to increase as neighborhood commercial areas are established in various locations as planned for in the Comprehensive Plan. All new and existing roadway facilities being improved upon will receive sidewalks or multi-use paths on each side. A paved pedestrian path is preferred along certain corridors as identified in the Comprehensive Plan. In some cases, paved pedestrian

paths could be provided along roadway facilities not specifically identified in the Comprehensive Plan, depending on how the area develops in the field. Aside from pedestrian facilities along roadways, there are multiple potential greenway routes identified in the Comprehensive Plan following drainage-ways and a former rail line. Providing future connections between the pedestrian facilities associated with roadway improvements to these other types of pedestrian facilities will provide a more viable pedestrian network and increase overall usage.

## Design Element Recommendations

Table 1 identifies design element recommendations for different types of roadway classifications. These are recommendations only, and exact requirements will be determined on an individual case basis. Local streets are defined by local ordinance and design standards.

	Primary Arterial	Secondary Arterial	Collector	Parkway
Right-of-Way	Variable*	80'	60'	120'
Median	Desired – paved or grass	optional	Optional	Yes – non-paved (preferred)
Pedestrians	Two 8' paved paths or 5' sidewalks	Two 8' paved paths or 5' sidewalks	Two 8' paved paths or 5' sidewalks	Two 10' paved paths

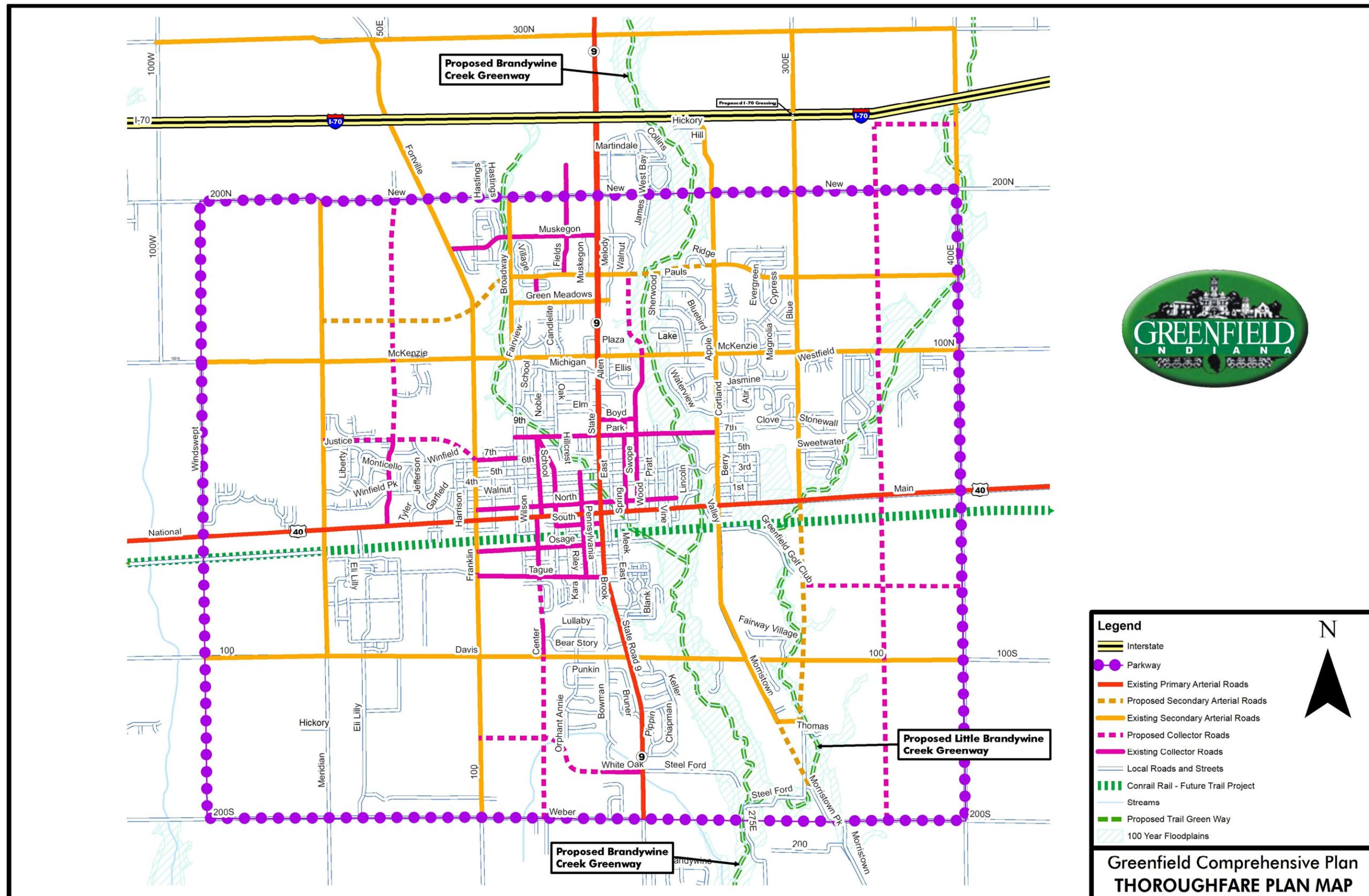
\* per INDOT requirements

## Thoroughfare Plan Map

Since the Thoroughfare Plan is a long-range planning document, additional emphasis is put on undeveloped areas which are likely to experience growth in future years. Roadways in established urban areas of Greenfield typically do not have the existing access control or available right-of-way to make future widening or roadway reconfiguration improvements feasible. Furthermore, as the previously completed INDOT SR 9 EA/Corridor Study found, there are no feasible solutions to improve the existing SR 9 corridor through the city. This realization supports the concept of promoting improvements to local corridors that will draw traffic and minimize future growth of traffic on SR 9. It is especially critical to have a good network of corridors, instead of just SR 9 and US 40, in the case of special events such as the Riley Festival or in the case of emergency.

In the more undeveloped rural areas, attempts should be made to replicate the through grid network at ½-mile intervals. Figure 4 represents the official Thoroughfare Plan map. Future links, as indicated by dashed lines, represent a general location only. As development occurs in these areas, the precise location of these new links will be identified.

Figure 4



## 7. Roadway Improvement Projects

As part of the Thoroughfare Plan process, a number of proposed roadway improvement projects, illustrated in the following pages, have been identified. The travel demand modeling discussed in Chapter 5 of this report, indicates that each of these improvements positively impacts the overall Greenfield roadway network performance, and in particular helps to alleviate existing congestion along SR 9 or to minimize future traffic growth along the SR 9 corridor.

Projects were divided into either 2012 or 2017 plan years. Precise details for each improvement have not been identified but will be identified early in the design phase for each project. Estimated costs are for the current year (2007) and are very preliminary in nature, to be used for planning purposes only. It was the intent of this process to identify feasible projects that provide the most benefit to the network for a reasonable cost.

# City of Greenfield Thoroughfare Plan

## McKenzie Road and Apple Street Intersection Improvement

Project Ranking: 1

Plan Year: 2012

Estimated Cost: \$700,000



### Project Location

The intersection of McKenzie Road and Apple Street on the northeast side of Greenfield, approximately one mile east of SR 9 and one mile north of US 40.

### Project Summary

The intersection of McKenzie Road and Apple Street has a consistent flow of vehicular traffic. The intersection is currently signed as a four-way stop, with no turn lanes. The stop condition on Apple Street impedes flow for this north-south corridor which provides an alternative route to SR 9. Various options could be pursued. The possibility of providing a roundabout should be investigated, but with the existing right-of-way constraints, it is not possible to determine if one is feasible without detailed survey information. Another option is to provide a traffic signal for this intersection. Since right-of-way constraints make it difficult to provide three-lane approaches (left, thru, and right), it may be necessary to only provide the two-lane approaches (left and combined thru/right). This configuration could be constructed to accommodate a four-way stop until a signal is installed at a future date, if budget is a concern.



# City of Greenfield Thoroughfare Plan

## McKenzie Road and Franklin Street Intersection Project Location

Project Ranking: 2

Plan Year: 2012

Estimated Cost: \$600,000



### Project Location

This intersection of McKenzie Road and Franklin Street, northwest side of Greenfield approximately one mile west of SR 9 and one mile north of US 40.

### Project Summary

The intersection of McKenzie Road and Franklin Street has a consistent flow of vehicle traffic. The intersection is currently signed as a four-way stop, with one turn lane for the northbound to eastbound movement. The stop condition on Franklin Street impedes flow for this north-south corridor which provides an alternative route to SR 9. A traffic signal or roundabout is recommended for this intersection. The northwest and southwest quadrants are currently open and agricultural. The southeast and northeast quadrants are developed, but it appears that right-of-way can be acquired on all quadrants; therefore, a full compliment of turn lanes is recommended. If right-of-way acquisition becomes a challenge, the intersection improvement can be shifted slightly to the west. Special care must be taken to insure the intersection improvement accommodates traffic to and from the existing roundabout at Broadway and McKenzie, located a few thousand feet to the east. Preliminary traffic capacity analysis indicates this can be accomplished.



# City of Greenfield Thoroughfare Plan

## McClarnon Drive Extension East

Project Ranking: 3

Plan Year: 2012

Estimated Cost: \$2,000,000



### Project Location

The extension of McClarnon Drive on the northeast side of Greenfield from the retail area east of SR 9 to Apple Street.

### Project Summary

The extension of McClarnon on the east side of SR 9 will make a connection between the shopping on SR 9 and Apple Street. This extension would also help serve the schools and subdivisions on the east side of SR 9. There are only a few east-west connectors across Brandywine Creek. The extension of McClarnon on the west side, would make a clean east-west corridor. This would be a two-lane facility with sidewalks and bike paths and connections to adjacent neighborhoods. Existing right-of-way is platted for the extension through the existing large-lot subdivision west of Apple Street. The existing roads in this subdivision will be connected into McClarnon. A passing blister is recommended for southbound Apple at McClarnon to accommodate the existing passing blister on the northbound side. Another passing blister is recommended for the existing subdivision stub street connection, immediately east of Brandywine Creek. The McClarnon extension will require significant environmental study to analyze impacts to the Brandywine floodplain and natural area.



# City of Greenfield Thoroughfare Plan

## Boyd Avenue and SR 9 Intersection Improvement

Project Ranking: 4

Plan Year: 2012

Estimated Cost: \$300,000



### Project Location

The intersection of Boyd Avenue and SR 9, approximately ¾ mile north of US 40.

### Project Summary

The signalized intersection of Boyd Avenue and SR 9 currently experiences heavy traffic flow. Backups on the westbound and eastbound approaches are common. The hospital is located in the northeast quadrant of the intersection, and with the proposed hospital expansion project, congestion at the intersection is anticipated to increase. The existing intersection is signalized, with curbs, sidewalks, and buried utilities. Right-of-way is tight in all four quadrants, and it appears that additional right-of-way cannot be acquired in the northwest, southwest, or southeast quadrants. It is recommended to widen the westbound approach to provide a left, thru, and right-turn lane. The eastbound approach is currently striped as a wide two-lane facility. If width permits, this single lane eastbound approach should be re-striped to provide a separate left and shared thru/right lane. The signal must be modified to accommodate these improvements, and the pole in the northeast quadrant may need to be relocated.



# City of Greenfield Thoroughfare Plan

## Fortville Pike and New Road Intersection Improvement

Project Ranking: 5

Plan Year: 2012

Estimated Cost: \$800,000



### Project Location

The intersection of Fortville Pike and New Road, northwest side of Greenfield

### Project Summary

The intersection of Fortville Pike and New Road carries truck traffic to and from the industrial area south of I-70 and west of SR 9. This truck traffic is anticipated to increase as industrial development grows along the north and south sides of the I-70 corridor, west of Greenfield. The north leg of the intersection is skewed to the northwest and has a bridge over I-70. Some turn lanes exist at the intersection, and there are currently stop signs at the New Road approaches only. Sight distance is an issue because of the skew. Speeds on New Road are higher than the typical Greenfield intersection increasing the potential for increased crash severity, especially with the two-way stop condition. Westbound to southbound turning vehicles must find gaps in the southbound free flow traffic, and this can be challenging during peak periods. Improving the intersection by signalization or a roundabout will help the safety of the intersection and also control the speed on Fortville Pike and help the truck traffic on New Road. The area is open and right-of-way can be acquired; therefore, for a signalized intersection, a full compliment of turn lanes is recommended. If a roundabout is provided, a large internal radius is recommended to better accommodate truck traffic. There is a retention pond in the northeast corner that should be avoided.



# City of Greenfield Thoroughfare Plan

## US 40 and SR 9 Intersection Improvement

Project Ranking: 6

Plan Year: 2012

Estimated Cost: \$200,000



### Project Location

The intersection of US 40 and SR 9, in the heart of downtown Greenfield.

### Project Summary

The signalized intersection of US 40 and SR 9 has a heavy flow of vehicle traffic turning from West US 40 onto SR 9 North as well as the opposing movement from North SR 9 to West US 40. Heavy trucks use this route frequently. Improvements to the intersection could be done by split phasing the signals and dropping turn lanes on US 40 to create turning space for trucks turning to and from SR 9. This will create better spacing for the trucks and also give the heavy traffic flow, in all directions, time to move through the intersection with out being impeded by the other direction.



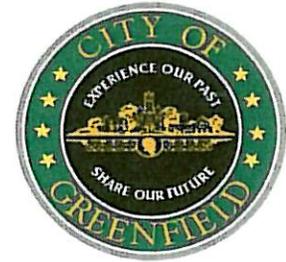
# City of Greenfield Thoroughfare Plan

## Fortville Pike/Franklin Street Widening and Shoulder Improvements

Project Ranking: 7

Plan Year: 2012

Estimated Cost: \$600,000

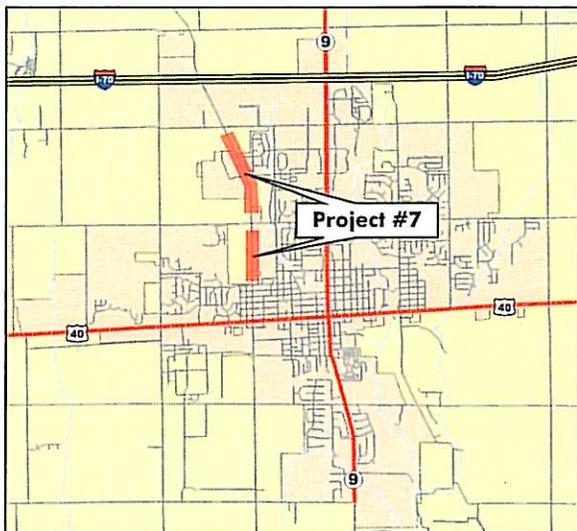


### Project Location

This project is located on the west side of Greenfield along the Fortville/Franklin corridor, approximately one mile west of SR 9, from the entrance to the Greenfield High School baseball field north of 7th Street to New Road.

### Project Summary

The goal of this project is to improve the capacity of this north-south corridor, which is an alternative to SR 9. Two 12-foot lanes, with six-foot paved shoulders should be provided throughout. The project excludes the improvements at the Fortville/New and Franklin/McKenzie intersections, which are covered under separate projects. The project calls for the smoothing out of the curve where Fortville and Franklin meet. It also calls for an intersection improvement at the future McClarnon extension, which will become the entrance to the new Middle School, with the school corporation planning to construct the McClarnon extension to their western property line by 2012. A full compliment of turn lanes should be provided on the north and south approaches to this intersection, since the school is a traffic generator, especially at peak periods. A traffic signal should be considered at this location. Some of this work will be done by others as part of the school project. The project also calls for a passing blister at the back entrance to the high school softball and track facilities.



# City of Greenfield Thoroughfare Plan

## Franklin Street Improvements from US 40 to North of 7th Street

Project Ranking: 8

Plan Year: 2012

Estimated Cost: \$450,000



### Project Location

The corridor of Franklin Street on the west side of Greenfield, approximately one mile west of SR 9, from US 40 to north of 7th Street.

### Project Summary

This area is a fully developed, mature neighborhood. The road network is in a grid pattern. The existing road is approximately 32 feet wide with roll curb on each side. An offset sidewalk exists along the west edge and an integral curb and walk exists along the east. There is stop control along all of the local road approaches to Franklin, with four-way stops at two of the intersections. The goal of the project is to provide a free flow facility for this north-south corridor. The section of Franklin Street, south of US 40 is currently being designed for improvements. Improving the remainder for the Franklin corridor, north of US 40 will provide an alternative to SR 9 for north south traffic. It is recommended to replace the two four-way stops with stop control for the east-west approaches only. Lack of existing right-of-way and the presence of electrical and water utilities along the western curb line prevent widening of the existing road. The existing road should be restriped to a three-lane section with a continuous two-way left-turn lane, if the existing width permits. If not, the existing two-lane facility should remain. No modifications are proposed to the US 40 approach.



# City of Greenfield Thoroughfare Plan

## Meridian Road Corridor Improvements

Project Ranking: 9

Plan Year: 2017

Estimated Cost: \$1,600,000



### Project Location

This is the corridor of Meridian Road from US 40 to New Road, west of downtown Greenfield.

### Project Summary

The existing Meridian Road is a narrow two-lane corridor with four-way stops at local cross streets. For the most part, the area is open and right-of-way can be acquired for improvements. This project will accommodate future growth on the west side of Greenfield. It is recommended to provide two 12-foot lanes with six-foot paved shoulders along Meridian Road. Turn lanes are proposed for the intersections with McKenzie Road.



# City of Greenfield Thoroughfare Plan

## McClarnon Drive Extension West

Project Ranking: 10

Plan Year: 2012

Estimated Cost: \$1,200,000



### Project Location

The extension of McClarnon Drive on the northwest side of Greenfield from Broadway to Franklin Street/Fortville Pike.

### Project Summary

The extension of McClarnon on the west side of Broadway will make a connection between the shopping on SR 9 and Fortville Pike. This intersection would also help serve the new school that is being built on the west side of Fortville Pike. Adding this roadway will be one of the few extensions to SR 9 from the west and along with the addition of McClarnon on the east side would make a clean east-west corridor across Greenfield. This is recommended as a two-lane facility. The existing area is undeveloped and consists of woods surrounded by an agricultural field. There is a small drainage way, running north-south along the west side of Broadway that will need to be crossed, likely a bridge. It is not known at this time if the wooded lot contains wetlands, but if it does, the proposed alignment can be adjusted to minimize impacts. The McClarnon extension will curve to the southwest toward the point where Franklin and Fortville meet. A left, thru, and right lane are recommended for the westbound approach to this intersection. Future Middle School plans indicate that the school corporation will construct the McClarnon extension to their western property line by 2012.



# City of Greenfield Thoroughfare Plan

## Apple Street and New Road Intersection Improvement

Project Ranking: 11

Plan Year: 2017

Estimated Cost: \$600,000



### Project Location

This is the intersection of Apple Street and New Road, northeast of downtown Greenfield.

### Project Summary

The intersection is currently signed as a four-way stop, with one turn lane for the eastbound to southbound movement. The north leg of the intersection serves only a few residences. There is a significant volume of east-west traffic on New Road at this location providing access between the I-70/SR 9 interchange and the eastern portions of Hancock County. The southwest and northeast quadrants are currently undeveloped and open while the northwest and southeast quadrants have individual residential lots with access directly onto the road. The majority of northbound traffic approaching the intersection heads westbound on New Road. Turn lane improvements are recommended at this intersection. The eastbound and southbound approaches are recommended to remain as is. It is recommended to provide a left and a shared thru/right lane for the northbound approach and westbound approaches. Widening can occur in the southwest and northeast quadrants to avoid right-of-way acquisition.



## City of Greenfield Thoroughfare Plan

### Apple Street Corridor Improvements from McKenzie Road to New Road

Project Ranking: 12

Plan Year: 2017

Estimated Cost: \$1,000,000



#### Project Location

The Apple Street corridor on the northeast side of Greenfield from approximately one mile to two miles north of US 40.

#### Project Summary

The corridor is a two-lane facility with no shoulders and many subdivision entrances. The consistent flow of vehicle traffic and large number of access points leads to possible improvements such as providing passing blisters and turn lanes for the entrances to existing residential subdivisions. This will provide a free-flow corridor to help Apple serve as a north-south alternative to SR 9.



# City of Greenfield Thoroughfare Plan

## McKenzie Road and Blue Road Intersection Improvement

Project Ranking: 13

Plan Year: 2017

Estimated Cost: \$300,000



### Project Location

The intersection of McKenzie Road and Blue Road on the northeast side of Greenfield, approximately two miles east of SR 9 and one mile north of US 40.

### Project Summary

The intersection is currently signed as a four-way stop, with no turn lanes. The stop condition on Blue Road impedes flow for this north-south corridor which provides an alternative route to SR 9. A traffic signal or roundabout is recommended for this intersection. The southeast quadrant is currently open and agricultural. The remaining quadrants are developed as residential. Newer subdivisions exist in the southwest and northeast quadrants. It appears that right-of-way can be acquired; therefore, if a traffic signal is provided, a full compliment of turn lanes is recommended. If a roundabout is provided, the location of the roundabout can be shifted toward the southeast to minimize right-of-way impacts to the other three quadrants. Preliminary traffic capacity analysis indicates this can be accomplished.

