Thorntown Comprehensive Plan
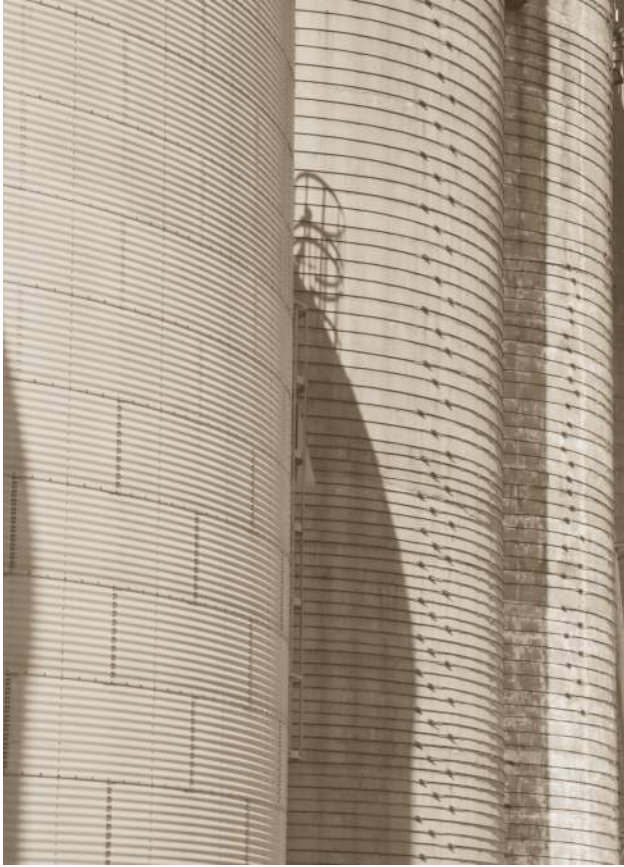
Table of Contents

Sugar Creek Historical Society's *Thorntown Heritage Museum*, April 2009

Close-up of the **Thorntown Grain** silos, March 2010

Table of Contents

List of Exhibits

Acknowledgements

Thorntown High School, class of 1902

Headstone of John Bush, a Confederate soldier who was killed trying to escape while a Union Army prisoner and was buried in the Old Thorntown Cemetery in 1863

Acknowledgements

Stakeholders:

Thorntown & Sugar Creek Township
Residents, business owners, property owners, churches and community organizations

Thorntown Town Council
Pat McPeak, President
Mike Hight, Councilman
Scott Johnson, Councilman
Gary Jones, Councilman
Martha Lewellen, Councilwoman
Tracy Vaughn, Town Clerk

Thorntown Area Plan Commission

**Thorntown Fire Department &
Sugar Creek Township Fire Department**

Thorntown Park Board

Thorntown Police Department

Thorntown Utility Board

Sugar Creek Township
Lora Thompson, Trustee

Thorntown Community Organization
Kelly Frank, Co-Chair
John Gillan, Co-Chair
Jeff Welty, Secretary
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**Sugar Creek Historical Society &
Thorntown Heritage Museum**

Thorntown Elementary School

Thorntown Kiwanis

Thorntown Lions Club

Thorntown Public Library

Western Boone Jr.-Sr. High School

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Introduction

"Welcome to Thorntown," March 2010

*Historic marker for the **Miami Cemetery**, March 2010*

Introduction

"If you fail to plan, you are planning to fail."

This old adage is well-known amongst planning professionals, and pretty well sums up the plight facing many communities across Indiana and the United States - in particular small, rural communities. If the community in which you live, work, play and shop does not adequately plan for its future, what may happen is that the community will not be able to adapt to changes nor be able to take advantage of opportunities which present themselves. Worse yet, the community may go into decline. Essential to the sustainment and revitalization of a community is the development of a comprehensive plan document (hereafter referred to as the **Plan**). Subsequently, it is the thoughtful implementation of this Plan which will promote appropriate development, economic prosperity, and improve the quality of life and general welfare within the community.

The term comprehensive planning is used to describe a process undertaken by communities, with the assistance of planning professionals, to develop broad policies and objectives which will serve to guide decision-making about the future growth and development of the community. As the word "comprehensive" implies, the planning process is very broad in its scope: addressing a wide variety of issues which can affect growth, development and economic prosperity; covering large geographic areas; and with a fairly long time horizon (typically 5 to 10 years).

Just as every community is unique, so are the elements taken into consideration during the comprehensive planning process. Generally speaking, comprehensive planning involves the assessment of a community's history, existing conditions and trends, with the primary areas of study being land use patterns, demographics, housing, transportation and infrastructure. For some communities, the comprehensive planning process may look at education, arts and culture, recreation, tourism, and governmental, institutional and/or social service facilities. Still other items which may be considered

are strategies for the identification, administration and conservation of natural resources, sites of historic importance and structures of historic and/or architectural significance.

What all comprehensive plans have in common is that the planning process is public and consensus-driven, with input solicited from the entire community: elected officials, business and property owners, community-based organizations, public and private institutions, and residents. Furthermore, comprehensive plans are created for the benefit of the entire community - not for a select few property owners or special interest groups. The greater good and general welfare of the community are of utmost importance.

Following a formal public hearing, the Plan is adopted by a resolution of the local government's legislative body. While the adopted Plan is itself not law, it will provide the framework for the development and implementation of zoning ordinances and other regulations which control and determine land use. Note, too, that the adopted Plan is intended to be a living document - not hidden away in a filing cabinet nor set on a shelf to gather dust - but used as a guidebook for decision making regarding the growth, development, quality of life and general welfare of the community, and which may be amended and adapted as circumstances warrant.

Successful implementation of the Plan requires that local governments involve, coordinate with and gain the support of local community organizations, business and property owners, institutions and regular citizens. This is especially true for smaller communities whose limited financial resources do not allow for full-time elected officials and staff. Another key to success can be summed up by the following maxim:

> *"Plan your work and work your plan."*

Planning & Zoning Mandate

Title 36, Article 7, Chapter 4 of the Indiana Code (**IC 36-7-4**), as enacted and amended by the Indiana General Assembly, gives to the legislative bodies of local communities the authority over planning and zoning within their jurisdiction. To this end, planning and zoning commissions may be established in order to "*improve the health, safety, convenience, and welfare of their citizens and to plan for the future development of their communities to the end:*

(1) that their highway [i.e. transportation] systems be carefully planned;
(2) that new communities grow only with adequate public way, utility, health, educational, and recreational facilities;
(3) that the needs of agriculture, forestry, industry, and business be recognized in future growth;
(4) that residential areas provide healthful surroundings for family life; and
(5) that the growth of a community is commensurate with and promotive of the efficient and economical use of public funds."

(**IC 36-7-4-201**)

Section 500 of Title 36, Article 7, Chapter 4 deals specifically with the preparation and content of comprehensive plans. The Indiana Code defines the purpose of a comprehensive plan to be:

> *"the promotion of public health, safety, morals, convenience, order, or the general welfare and for the sake of efficiency and economy in the process of development."*

(**IC 36-7-4-501**)

Further, this section sets out the minimum required content for a comprehensive plan, stating that it must contain "*at least the following elements:*

(1) A statement of objectives for the future development of the jurisdiction.
(2) A statement of policy for the land use development of the jurisdiction.

Thorntown Comprehensive Plan

The **Thorntown Community Organization** (**TCO**) was formed in December 2007 by a group of downtown business owners, community leaders and concerned citizens from Thorntown and Sugar Creek Township, for the purpose of investigating grant opportunities with the **Indiana Office of Community and Rural Affairs** (**IOCRA**). IOCRA was established by the Indiana General Assembly in 2005, and is one of five state agencies led by the Office of the Lieutenant Governor. The aim of **IOCRA** is to work with local, state and national partners to provide both capital and technical assistance to rural Indiana communities on economic development initiatives.

The initial focus of the **TCO** was on the revitalization of Thorntown's Main Street business district. During the process of investigating **IOCRA** programs and grants, however, it was determined that the first step should be the development of a comprehensive plan, which would more fully address the existing conditions and the future development of Thorntown. In addition, given the fact that Thorntown is the only incorporated town in Sugar Creek Township and the residents who live in the rural, unincorporated areas of the township are in every respect a part of the Thorntown community, the scope of the comprehensive plan was increased to encompass all of Sugar Creek Township.

In late winter 2009, the **TCO** contracted with Antia Carpenter to serve as the community's grant administrator. One of Anita's first tasks was to prepare and publish a formal solicitation of planning professionals, inviting them to submit proposals for the preparation of this comprehensive plan. Eleven applicants responded to the Request for Qualifications (RFQ), and three finalists were chosen to interview in April 2009. The planning team (hereafter referred to as the Team) selected by the **TCO** is led by **The Creighton Studios**, a Lebanon, Indiana architectural firm, in conjunction with the firms **Green3** (landscape architecture and planning), **Terra Site Development** (brownfield redevelopment, civil engineering and transportation planning) and **Whitaker Engineering** (water and wastewater engineering). Following the selection of the planning team, Anita prepared the grant application and in August 2009, **IOCRA** awarded to the Town of Thorntown a planning grant for the purposes of preparing this comprehensive plan.

Plan Jurisdiction

As previously stated, due to the close relationship between the Town of Thorntown and Sugar Creek Township, the Thorntown Comprehensive Plan is concerned with not just the land area contained within the town limits of Thorntown, but extends to all of Sugar Creek Township. In addition, the Plan takes into consideration portions of Washington Township, particularly along the State Route 47 corridor between U.S. 52 and Interstate 65. **Exhibit 1**, on the opposite page, identifies the Plan's jurisdiciton.

For the purposes of this Plan, the unincorporated area of the township is considered to be a part of Thorntown's extraterritorial jurisdiction. Further, references to the "Town of Thorntown," "Thorntown," and the "Plan Jurisdiction" are intended to encompass the corporate limits and the extraterritorial jurisdiction. If the intent is to identify one specific area - either the Town of Thorntown or the unincorporated area of Sugar Creek and Washington Township - the Plan uses the words "town limits," "corporate limits" and/or "extraterritorial jurisdiction."

Map of Thorntown Comprehensive Plan Jurisdiction

Map of Thorntown Comprehensive Plan Jurisdiction		
▬▬ Interstate Highway	─··─ County	▭ Comp. Plan Jurisdiction
▬▬ U.S. Highway	─···─ Township	
▬▬ State Highway	▬▬ Sugar Creek Twp.	
── County Roads	▭ Corporate Limits	
--- Future Road	∿ Creek / Legal Drain	▲ I-65 "Lebanon" Rest Area
┼┼┼ Rail Road	Lake	
── Keewasakee Trail	Gravel Pit	
--- Farm Heritage Trail	WWTP Lagoon	
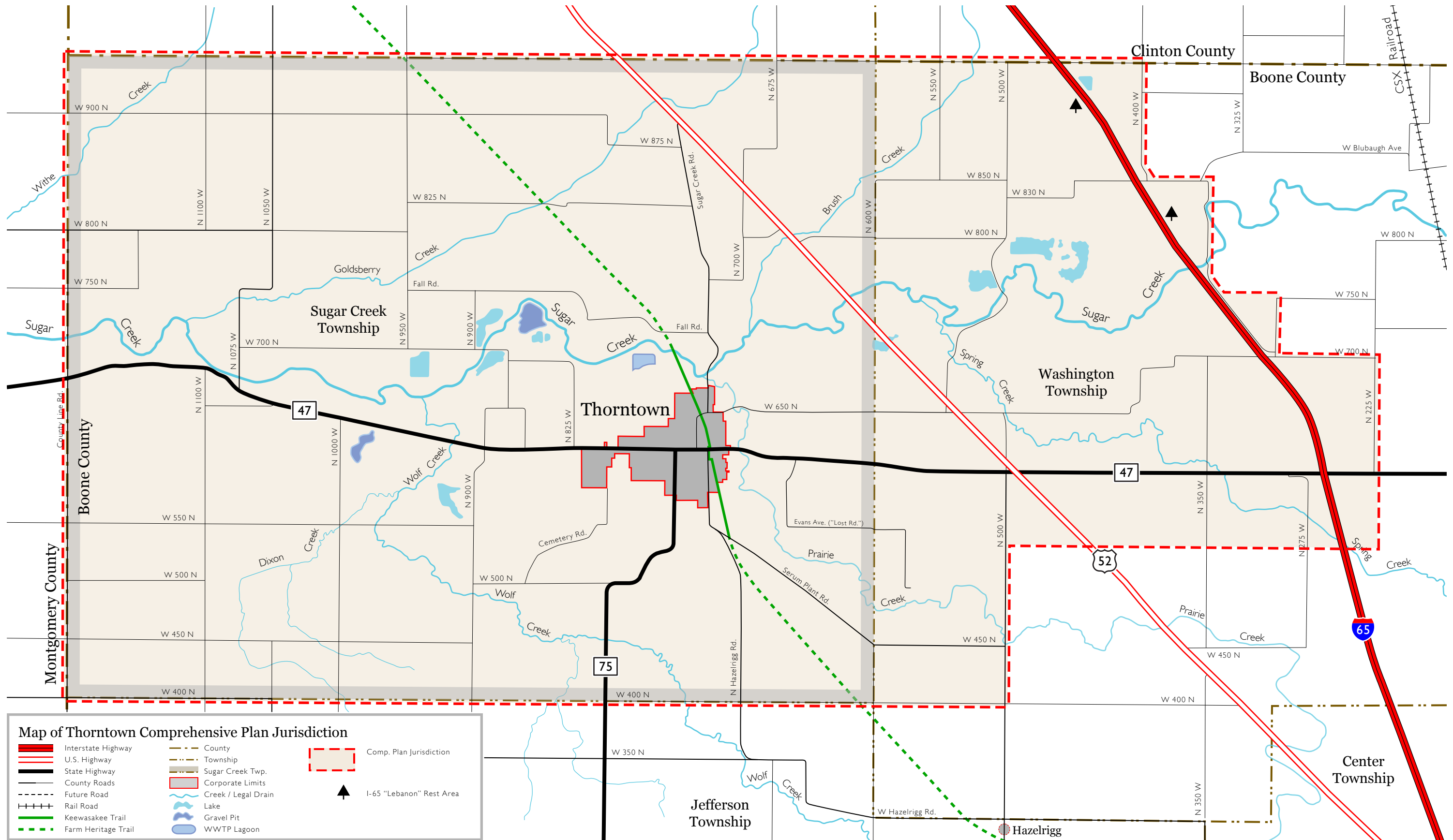
Map of Thorntown Comprehensive Plan Jurisdiction

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Community Portrait

Thorntown "Old Boys" Reunion, August 1904

Thorns of a Honey Locust tree

Community Portrait

The Town of Thorntown is located in the northwest corner of Boone County, Indiana, and is the only incorporated town in Sugar Creek Township. Thorntown is also just one of six incorporated towns and cities in Boone County, joining the Towns of **Advance**, **Jamestown**, **Ulen**, **Whitestown** and **Zionsville** and the City of **Lebanon**. Thorntown is the second oldest town in the county, and according to the 2000 Census was the county's third largest community with a population of 1,562, behind Lebanon and Zionsville.

The township's moniker comes from **Sugar Creek**, which flows east to west across the northern third of the county. In pioneer days it was known as "Sugar Tree Creek" for the abundant Sugar Maple trees growing along its banks. Today, Sugar Creek remains one of the most scenic waterways in Indiana and also is an invaluable watershed and wildlife habitat. Thorntown's place name is derived from the translation of the **Eel River Tribe of Miamis**' name for their village, *Kawiakiungi*, which stood on this spot between 1795 and 1828. In the Algonquian language of the Miamis, *Kawiakiungi* means "Place of Thorns" and their village was so named because of the Honey locust trees which still today grow along Sugar Creek and its tributaries within the township: **Prairie**, **Wolf**, **Dixon**, **Goldsberry** and **Brush Creeks**. These trees are also known as "thorny locusts" due to the large thorns which cover the trunks and branches - thorns large enough and hard enough that the Native American peoples and early settlers used them as nails!

The topography of Sugar Creek Township is gently undulating, with a mean elevation of 814' above sea level. The Town of Thorntown sits on what is in essence a plateau at an elevation of 856', just south and west of the confluence of Sugar and Prairie Creeks. Some of the most fertile, alluvial soils in Indiana are found in the area, due to the deposition of clays, silts and sands by the drainage and siltation of the Sugar Creek watershed. While most of the virgin hardwood forest has been removed to accommodate agricultural activities, there are stands

of new growth forest which dot the landscape - particularly along the margins of Sugar Creek and its tributaries. Of the Township's 21,516.8 acres (33.62 square miles), the great majority of it is dedicated to agricultural production, with corn and soybeans being the two principle crops.

Early History

Native American peoples - notably the **Potawatomi**, **Shawnee**, **Lenape** and **Miamis** - lived, hunted and traveled in and around the Thorntown / Sugar Creek Township area for generations before the first European explorers and fur traders entered the region in the early 1700's. In 1719 the first French and Indiana trading post was established in the vicinity, and in 1795, following the **Treaty of Greenville**, the Eel River Tribe of Miamis settled along Sugar Creek at the site of the present-day Town of Thorntown. Their village, *Kawiakiungi*, was situated near the intersection of two important trails - the **Fort Wayne Trace** and the **Great Trail**. The former ran between Vincennes, Indiana, where the French established a trading post in 1702, and Fort Wayne, Indiana, and the latter traveled from Fort Greenville, Ohio to Fort Dearborn, Illinois. The portion of the **Great Trail** between Thorntown (*Kawiakiungi)* and Strawtown - a Lenape village which was located approximately 7 miles north of Noblesville, Indiana - was known as the **Strawtown Trail**, and today **State Route 47** follows its path.

In 1818, representatives of the Miamis and the United States signed the **Treaty of St. Mary's**, ceding to the U.S. all the Miamis' territory south and east of the Wabash River (which encompasses nearly one third of the present day area of Indiana). This treaty also created several reservations for the Miamis, including the largest one which was known as the **Thorntown Indian Reservation** (see **Exhibit 5**). By 1828, following the **Treaty of Mississinwas** (signed in 1826), the Miamis relinquished their title to the land within this and the other reservations and moved to Miami lands near Logansport, Indiana.

Settlement & Development

It was in 1827-28, in conjunction with the **Treaty of Mississinwas**, that the first known pioneer family settled in the Thorntown area, when George Harness, his wife and their 12 children established their homestead and a trading post near the former Miami village of *Kawiakiungi*. In 1829, Cornelius Westfall purchased much of the land where Thorntown now sits for $4.00 per acre at the Federal Land Office in Crawfordsville, and on **April 10, 1830** he recorded the original plat for Thorntown. The new town consisted of 94 lots, measuring approximately 80' x 160' each, arranged in groups of 8 lots per block, for a total of 12 blocks. In addition, Mr. Westfall set aside two blocks, at the northeast corner of **Main** and **Market Streets**, for a town square (catty-corner from the location of Town Hall today). These blocks were neatly arranged into an orthogonal grid three rows high by four wide, with each block quartered by alleyways. The plat also called for broad streets, each with a 65' right-of-way, with the exception of two principal streets - **Main** and **Market** - which have a 100' right-of-way. The original plat is clearly evident in the 1878 property map of Thorntown (see **Exhibit 6**) and today is bounded on the north, south, east and west by **Church**, **Plum**, **Front** and **West Streets**.

The platting of Thorntown took place just ten days after the creation of Boone County by an act of the Indiana General Assembly on **April 1, 1830**, with the county being named "*in honor of Colonel Daniel Boone, the pioneer of the west.*" It is the 63rd of Indiana's 92 counties and was originally divided into eleven townships (Worth Township was not added until 1851), with Sugar Creek Township occupying the northwest corner. At its founding, Boone County had a population of **621**, "*Indians excepted,*" and just two platted towns - Jamestown and Thorntown. An exact count of the number of Native American peoples living within the newly formed county is unknown as they were not included in the 1830 census.

At its founding, the intent was for Thorntown to be the seat of the newly formed Boone County - thus

the two lots set aside for a town square - but in January 1832 the Indiana General Assembly passed a law requiring that the seat be located within 2 miles of the county's geographic center. And so this honor went to the then newly established Town of Lebanon, which was platted on May 1, 1832. With the plat of Jamestown having been recorded on March 10, 1830 in the recorder's office of Hendricks County (recall that at this date Boone County had not yet been created), Thorntown became the second town to be established within Boone County. However, Thorntown does have the distinction of being the first community in Boone County to have a U.S. Post Office, which was commissioned on May 17, 1830 in the log cabin of William Kenworthy.

For the first two decades of its existence, Thorntown grew modestly - as did the County - almost in defiance to the wilderness which the pioneer settlers found themselves in. Leander Crist wrote the following about these early years in his book "*The History of Boone County, Indiana*," which was published in 1914:

> *"The growth of the town at first was very slow and the difficulties of the early settlers were great; log huts were at first a luxury, and the town was surrounded with swamps and mosquitoes and forests,… while the country was infested with wolves, bear, deer, wild cat and numerous smaller species of wild beasts, with no roads save paths through the swampy wilderness, with no bridges across the streams, with few possible means of ingress and egress, with LaFayette and Connersville as the nearest towns, with few domestic animals and almost no markets for the products of the farm, one can gain some idea of the trials and vicissitudes of the early settlers, the men and women who subdued the forests and the laid the foundation for the present prosperous and happy homes."*

These early years were not without note, however, with the following noteworthy events:

- *the first pioneer child, a daughter, was born to* **Green Foster** *in 1831 (he was also one of the first constables elected)*

- *the first wedding was of* **John Pauley** *and* **Emily Sweeney** *in July 1832*
- *the first churches established in Thorntown were the* **Methodist Episcopal Church** *(1831 or 1832) and the* **Presbyterian Church** *(1833)*
- **C. H. Baldbridge** *opened Thorntown's first mercantile (general) store in 1832*
- *in 1834 favorite son* **Anson Mills** *was born on the family farm east of Town at the end of present-day Evans ("Lost") Road*
- *in 1835 the* **Society of Friends** *built a log cabin where the* **Sugar Plain Friends Church** *stands today, and in 1842 the* **Christian Church** *was organized in Thorntown*
- **Mary Westfall**, *the sister of Thorntown's founder Cornelius Westfall, was the first person buried in the* **(Old) Thorntown Cemetery** *in 1841*

Impact of Transportation

As previously noted, personal travel and the transportation of goods within Boone County and to and from the outside world was exceptionally difficult for many years due to the lack of roads and bridges. The historic **Strawtown Trail** and **Fort Wayne Trace** were little more than footpaths, suitable for walking or riding a horse, but not for a horse-drawn carriage or wagon. As roads within the Township were established, the abundance of gravel in and along Sugar Creek and its tributaries was very beneficial to their construction. By the 1900's nearly all of the Township's roads had been graded and graveled, and the creeks crossed by iron bridges of Pratt Through Truss or Pony Truss designs (see **Appendix B**). In the 1920's and 30's the Indiana State Highway Commission began the planning, construction and mapping of the first "highways" in Indiana, with the **1932 State Highway** map being the first time **State Road 47** is identified on a map. At this date, the only section of "paved" road was between Thorntown and Darlington, with the remainder being graveled.

It was the coming of the railroad in the 1850's which had the biggest impact on the advancement

and development of Boone County, its towns and for its residents. The railroad opened up new markets and trade by allowing for the freer import of goods and export of farm products and manufactured items. Furthermore, it expedited travel and communication, through the telegraph which paralleled the railroad tracks.

In 1852 the **Lafayette & Indianapolis Rail Road** (**L&IRR**) completed construction of the first railroad and telegraph lines to cross Boone County, with stations located in **Thorntown**, **Hazelrigg**, **Lebanon**, **Holmes**, **Whitestown** and **Zionsville**. The Thorntown depot was located south of Franklin Street, between Pearl and Front Streets, on the west side of the tracks, across from where the **Community Gardens** sit today. It was at the Thorntown station, on February 11, 1861, that President-elect **Abraham Lincoln** gave some brief remarks to the assembled crowd from the rear platform of the passenger car he was riding in, while on his way to Washington, D.C. Four years later, on May 1, 1865, the funeral train bearing President Lincoln's coffin passed through Thorntown again, this time at around 2:00 AM, on its way back to Springfield, Illinois.

The **L&IRR** was acquired by the **Cleveland, Cincinnati, Chicago & St. Louis Railway** (**CCC&StL**) in 1889. This railroad was commonly known as the "Big Four" because of the four namesake cities in which it had terminals. This event opened up the markets of Boone County even further with the extensive trackage in Illinois, Indiana, Ohio and Michigan and its terminals adjacent to major inland waterways: **Lake Erie** at Cleveland; the **Ohio River** at Cincinnati; **Lake Michigan** at Chicago; and the **Mississippi River** at St. Louis. Following a number of mergers and acquisitions during the 20th Century, this rail line ended up as part of the **Consolidated Rail Corporation** ("**Conrail**") in 1976. In 1985 the "Lebanon Secondary" branch, which ran from Lebanon to Altamont Switch (an unincorporated village just south of Lafayette) was abandoned and within a few years the track was removed. Today, the path of the **Keewasakee Trail**, and the partially complete **Farm Heritage Trail**, is built upon the old roadbed and eventually will reconnect Thorntown to Lafayette, Colfax, Lebanon, Whitestown and

Zionsville, and beyond, via a multi-purpose, multi-modal trail.

In 1905 the **Lebanon-Thorntown Traction Company** was established and constructed an interurban rail line parallel to the "Big Four" main line. The Thorntown terminus was located in the middle of Market Street, just south of its intersection with Main Street (see photo on **page 120**). Two "combines" - motorized passenger cars - ran the 10 mile route between Thorntown and Lebanon daily, providing connections to Indianapolis, Crawfordsville, Frankfort and Lafayette through a network of interurban railroads (see **Appendix C**). The interurban line ceased operations in 1926, due in part to the improvements to the county and state roads and to the increasing availability, reliability and ownership of automobiles.

Today, Thorntown sits at the intersection of two principal State highways, **State Roads 47** and **75**, and lies just a short distance west of **U.S. Route 52** (2.4 miles) and **Interstate 65** (4.7 miles). Located a bit further east, 6 miles from Thorntown, **SR 47** crosses the nearest main line railroad, the "Frankfort Secondary Subdivision" of **CSX Transportation**'s Great Lakes Division, which is headquartered in Indianapolis. This rail line runs between Frankfort and Clermont, just west of Indianapolis. Less than a mile east of the rail line, **SR 47** crosses **SR 39**, another primary state highway, which connects Lebanon and Frankfort. Travelling west from Thorntown, **SR 47** passes the small town of **Darlington** (9.5 miles) on its way to **Crawfordsville** (18.5 miles). There, one can board **Amtrak**'s "Hoosier State" which runs daily between Indianapolis and Chicago, or the "Cardinal" which travels three days a week between New York and Chicago, with stops in Indianapolis, Cincinnati, Washington, D.C., Baltimore and Philadelphia.

State Road 75 is one of just a few discontinuous state highways in Indiana, with its southern section beginning in Thorntown and travelling 37 miles south to its end at **US 40**, the old "**National Road**." The intersection of **SR 75** and **32** is 5.5 miles south of Thorntown, at the unincorporated hamlet of Dover. **SR 32** is a very busy east-west state highway (essentially a cut-off between **I-74** and **I-65**) that sees over 6,800 vehicles, including over 1,250 commercial

trucks, on average every day. The interchange of **SR 75** and **Interstate 74** is located 7.5 miles south of Dover, which is a total of 13 miles from Thorntown. Jamestown lies just 1.5 miles south of the **I-74** interchange at the junction of **SR 75** and **US 136**, near the southwestern corner of Boone County.

The ease of access to these state and federal highways offers the residents and businesses in - and visitors to - Thorntown and Sugar Creek Township many advantages, most especially the accessibility to the trappings of modern life all the while maintaining the slower pace of life afforded by the quiet, rural setting. Within a 35 mile radius are the communities of **Crawfordsville**, **Lafayette** and **West Lafayette**, **Frankfort**, **Noblesville**, **Westfield** and **Carmel**. Downtown **Indianapolis** lies less than 40 miles away, and the new **Weir Cook Terminal** at **Indianapolis International Airport** is less than 45 miles. Interestingly, Thorntown is nearly equidistant to the major metropolitan centers of Chicago, Cincinnati and Louisville, all of which are within a 150 mile (2 1/2 hour) drive. **Exhibit 2**, below, shows the location of Thorntown within the State of Indiana and relative to these three metropolitan areas, as well as its spot in the northwest corner of the Indianapolis Metropolitan Statistical Area (the eight counties which border Indianapolis/Marion County).

Regional Map

Priority on Education

The education of the children of the Town and Township was of great importance to the pioneer settlers, so much so that in 1834 the first Sabbath (i.e. Sunday) school was held and the first public school house - a simple log structure - was built, with **Jefferson Hillis** serving as the first school teacher. In 1855 the Methodist Episcopal church chartered the **Thorntown Academy** - a private, coeducational school - and built a fine, two story edifice on the northeast corner of Market and Bow Streets (see **page 108**), where the **Thorntown Post Office** now stands. The Academy was of such high renown that it earned Thorntown the nickname "the Athens of Boone County." **Thorntown High School** was established in 1868, and it served the community until 1974 when the junior and senior high schools were consolidated into the newly formed **Western Boone Jr. - Sr. High School**. By 1880 there were 10 one- and two-room school houses in Thorntown and Sugar Creek Township, and the enrollment in 1884 was 535 students. Some of these school houses still stand, having been repurposed as homes and even barns!

Today, Thorntown is home to the administrative offices of the **Western Boone County Community School Corporation**, which serves a student population of nearly 2,000 in two elementary schools and one combined junior-senior high school. The corporate boundary of the school system (shown in **Exhibit 3** on the opposite page) encompasses 225 square miles of rural land in six Boone County townships and in which there are only three towns - Advance, Jamestown and Thorntown. As Dr. Judi Hendrix, Superintendent, notes about the area:

> *"one can find only two blinking stop lights; one in the small town of Jamestown and the other at the intersection of two state highways (i.e. SR 32 and 75)."*

Thorntown is also home to **Thorntown Elementary School**, which in 2009 had an enrollment of almost

450 students in Kindergarten through 6th Grade. The school's students live in the Town of Thorntown and in Sugar Creek, Washington and Clinton Townships. Thorntown Elementary is a very well regarded school and has been a recipient of a **4 Star School Award** from the Indiana Department of Education. The other elementary school - **Granville Wells Elementary** - is located in Jamestown and had a 2009 enrollment of almost 550. The junior-senior high school - **Western Boone** (also known as "WeBo") - is located just east of the intersection of **SR 32** and **75** and had over 930 students in grades 7 through 12. Western Boone Jr.-Sr. High has been rated as a "Best Buy" by the Indiana Chamber of Commerce, has met the State's Adequate Yearly Progress requirements with 82% passing math and 76% passing English/Language Arts, and boasts a 92% graduation rate with 75% of graduates going on to college.
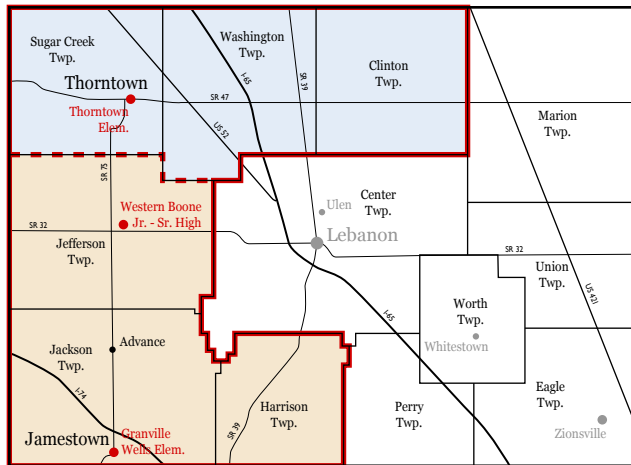
Map of Western Boone County Community School Corporation

Exhibit 3

Demography: 1900-2000

Note: With the 2010 U.S. Census currently in progress, and the resultant demographic information not yet published, the latest data incorporated into this Plan is from the 2000 census. As such, this "current" data is ten years old and may not accurately represent today's demographics. Preliminary estimates released in June by the U.S. Census Bureau indicate that Thorntown has grown by approximately 4.2% since 2000, to an estimated population on 1,627. The Town of Thorntown should endeavor to update the demographic information in this Plan as soon as the latest census data is available, which is due to be released in June 2011.

Between 1830 and 1900, Thorntown and Sugar Creek Township - as well as Boone County - witnessed tremendous population growth. Recall that at its founding, Boone County had a population of just 612. By 1900, the county had grown to 26,321, with Thorntown having 1,511 residents and Sugar Creek Township having 1,198. Also of note in 1900 is that Thorntown was the second largest town in the County, behind Lebanon. Thorntown would remain in second until the 1940 census, when it was surpassed by Zionsville.

Exhibit 4, on **page 25**, compares the total population data for the years 1900 through 2000, for Thorntown, Sugar Creek Township and the combined total for the Town and Township, with that of the towns of Advance, Jamestown, Lebanon, Ulen, Whitestown and Zionsville, and with the total, combined population for all of Boone County, for Indiana and for the United States. Also included are the populations for Washington and Clinton Townships, as Thorntown Elementary serves these areas. The last column in the chart, labeled "Δ" (delta), is the percent change in population from 1900 to 2000. No growth would have a value of 100, whereas positive growth has a value greater than 100 and negative growth has a value less than 100.

In sum, Thorntown's population has remained relatively stable in the 20th Century, beginning with the 1900 census at 1,511 and ending in 2000 with 1,562 - a change of 103.4%. The town saw a steady decrease in population from 1900 to 1940, but this

trend was reversed in 1950, and other than a slight dip in 1970, growth has been positive. The same, however, cannot be said of Sugar Creek Township, which has seen a gradual loss of population over the same 100 years - from 1,198 to 706. This result is likely due to both the decrease in the number of small, family farms and also to the smaller size of farm families. Before 1900 it was not uncommon for families to have a dozen children or more - *"many hands make light work"* so the saying goes - but with the industrial revolution came better farm equipment and motorized tractors, all of which made planting and harvesting easier and more efficient, requiring less manual labor and therefore less laborers. Clinton Township saw the same steady decline in population for the first half of the 20th century, but thereafter it has increased only slightly, while Washington Township experienced the decline and rebound in population similar to Thorntown.

Advance and Jamestown saw similar changes in their population between 1900 and 2000, whereas Lebanon and Zionsville have only experienced growth over the same time period. In regard to Lebanon, this is likely a natural outcome of its status as the county seat. Zionsville's population growth, particularly its "explosion" between 1970 and 2000, is as much the result of its geographic location and proximity to Indianapolis as anything else. Boone County's population in the past century also mimics the pattern of Thorntown: a steady decline between 1900 and 1940, and then measured growth up to 2000.

Refer to **Appendix D** for a summary of the key demographic data from the 2000 U.S. Census for Thorntown, Sugar Creek Township and Boone County, along with the supporting statistical information from the U.S. Census Bureau.

Thorntown Today

Today, Thorntown is a pleasant, bucolic small town with over 1,500 residents living within its corporate limits - an area encompassing 0.57 square miles or 364.8 acres. While the town may be a bit "rough around the edges" (or as some have noted it is a "diamond in the rough" that just needs some polishing) it is a community filled with friendly people who take great pride in Torntown's historic past and have great hope for its future.

The town is typical of many rural communities across Indiana, with its largely intact, historic "Main Street" business district surrounded by quiet residential neighborhoods with a mix of late 1800's Victorian homes, early 1900's cottages and bungalows, and single-level ranch homes built within the past 30 years. Five churches are sprinkled around the town, and the **U.S. Post Office** and **Thorntown Public Library** are just one block north of Main Street at the intersection of Bow and Market Streets. **Thorntown Elementary** and the offices of the **Western Boone County School Corporation** are located on Mills Street at the south edge of town, between SR 75 and the town's main park, **Tom Johnson Memorial Park**. **Lions Park** - home to numerous civic and social functions - lies north of Main Street between West and North Pearl Streets, and adjacent to the **Keewasakee Trail**. The **Town Hall** and offices of **Thorntown Utilities** are located on Main Street, just west of Market Street. In the Town Hall one will also find the **Thorntown Police Department** and the chambers of the **Town Council** and **Town Court**. **Exhibit 7**, on page **31**, shows the present corporate limits of Thorntown and identifies the town's existing cultural, educational, governmental and institutional facilities.

From the late 1790's when the Eel River Tribe of Miamis settled on the high ground above the confluence of Sugar and Prairie Creeks and French traders established a trading post on or near what is now Main Street, to the late 1870's and early 1900's when the majority of downtown Thorntown's extant commercial buildings were erected, and up to the present day, Thorntown has been and remains an

important center of economic, cultural, political and social activities in west central Indiana.

Every Fall, on the last full weekend in September, Thorntown plays host to the **"Festival of the Turning Leaves"** featuring live music, arts and crafts, a parade, and much more. In 2009 the **TCO** started up **"Park & Swap"** - a bimonthly event where people come to buy, sell and trade their wares (from arts and crafts, antiques, garage sale items to home grown produce) at **Lions Park** on Saturday mornings from May through September. This summer, the **Sugar Creek Historical Society** revived **"Founder's Week"** - a week-long chautauqua held in mid June celebrating the community's history and rural heritage through a series of educational, cultural and social events. The culmination of "Founder's Week" 2010 was the placement of an iron cross on the grave of John Bush, the only Confederate soldier buried in Boone County, by the **United Daughters of the Confederacy**. The **Sugar Creek Arts Center** (**SCAC**) was established in 2005 and is located in the historic E. R. Jaques and Co. building (a.k.a. the garment factory). This former factory has been converted into artist's studios, galleries and public event/meeting spaces. On the second Friday of each month, the SCAC holds its **"Culture at the Creek"** featuring special art exhibitions and occasional live musical performances, of both resident and visiting artists and musicians. The **Sugar Creek Historical Society**'s **Thorntown Heritage Museum**, located in a circa 1865 home at the corner of Main and Vine Streets, features many historic artifacts, furnishings, clothing, tools and memorabilia that have been collected from the area.

Today, the Main Street commercial district is anchored by four stalwart businesses - **Home National Bank**, **Stookey's**, **Railer's IGA Market** and **The Lost Frontier**. **Home National Bank** was founded in 1901 in Thorntown, and remains an honest-to-goodenss community bank to this day, offering both business and personal banking services. **Stookey's**, founded in 1975, is a true destination restaurant - known far and wide for its catfish, onion rings and steaks. It is so popular that some nights it can be difficult to find a parking spot on Main Street between Pearl and Market Streets. **Railer's IGA Market** is the only grocery and sundry store

in Thorntown, and **The Lost Frontier** is a family-owned restaurant that has been offering breakfast, lunch and dinner for over 15 years.

In late winter 2010, the newest enterprise to open on Main Street did so at the corner of Main and West Pearl, in the old Knights of Pythias lodge. **The Lincoln Stop Trading Post**, so named for President-elect Lincoln's brief stop at the Thorntown depot in 1860, features antiques, collectibles, and a small selection of hardware and tools. Around the corner to the north is the **Cottage on Pearl**, a turn-of-the-century worker's cottage that was refurbished in 2008 and now is home to **Art from the Heart Studio**, **Gun Dog Ranch Studios**, **Pan & Pantry** and **Pearl Street Coffee Roaster**. Other retail/service businesses on Main Street today include: the **Framed Wright** shop, featuring art, antiques and custom framing; **Sunsations** tanning; **Mel's World of Spirits and Wine**; **Chris Cuts** barber shop; and **Cynthia's Salon**.

Thorntown and Sugar Creek Township are also home to a number of industrial/manufacturing businesses, including: **U.S. Aggregates** which has one active sand and gravel quarry operation west of town on SR 47; **Stalcop**, a multi-national corporation that manufactures specialty cold-formed, precision machined metal components and sub-assemblies; **Enduron**, a manufacturer of machined metal parts, sub-assemblies and assemblies; and **Palmor Products**, located on Serum Plant Road, manufactures residential and commercial lawn-care equipment and accessories.

Unfortunately, almost half of Main Street's buildings can be classified as "underutilized" today - whether because of boarded up windows and unoccupied second floors, empty street-level storefronts, or simply the present use of the structure. Examples include almost the entire north side of Main Street, west of **Home National Bank**, where the upper floors are clearly unoccupied and the storefronts below either are not or do not appear to be "open for business." Other examples are the Main Street buildings that have been converted to apartments: the former **I.O.O.F. Lodge** west of Market Street and the **"1876"** building east of Market Street. While a mixed-use, live above - work below arrangement

can be a very desirable selling point to potential business owners or investors, the use of these street-level spaces for residential occupancy is less than ideal. Even the Town Hall may be considered "underutilized" given that the building is largely vacant and locked during the week because the town does not have any full-time employees to staff the offices of the Town.

One final example of "underutilization" of commercial properties on Main Street are the buildings on three of the four corners at the intersection of Main and West Pearl Streets. On the northeast corner sits **Ivan's Garage**, a 1900's service station that is full of automotive memorabilia, but which is an underutilized asset because it is not open to the public. On the southeast and southwest corners of this intersection are two former gas stations. The one on the southeast corner is currently a used car lot, while the one on the southwest corner is vacant. It is this structure that a number of people have suggested as an ideal location of a "Welcome Center" for Thorntown - a vision of which is rendered on the front cover of this report and also in **Exhibit 8**.

	1900	1910	1920	1930	1940	1950	1960	1970	1980	1990	2000	2010	Δ
Thorntown	1,511	1,508	1,432	1,325	1,226	1,380	1,486	1,399	1,468	1,506	1,562	?	**103.4**
Sugar Creek Township	1,198	991	938	878	747	748	746	712	720	725	706	?	**58.4**
Thorntown/Sugar Creek Twp.	2,709	2,499	2,370	2,203	1,973	2,128	2,232	2,111	2,188	2,231	2,268	?	**83.7**
Clinton Township	1,340	1,221	1,033	871	833	798	807	822	856	786	892	?	66.6
Washington Township	1,292	1,210	1,140	1,017	927	967	1,084	1,208	1,164	1,095	1,377	?	106.6
Advance	-	416	417	358	365	413	463	561	559	520	562	?	135.1
Jamestown	640	690	628	552	583	718	827	938	924	764	886	?	138.4
Lebanon	4,465	5,474	6,257	6,445	6,529	7,631	9,523	9,766	11,456	12,059	14,222	?	318.5
Ulen	-	-	-	74	99	83	130	138	193	50	123	?	166.2
Whitestown	-	-	-	-	-	550	613	569	497	476	471	?	85.6
Zionsville	765	840	957	1,131	1,314	1,536	1,822	1,857	3,948	5,281	8,775	?	1,147.1
Boone County	26,321	24,673	23,575	22,290	22,081	23,993	27,543	30,870	36,446	38,147	46,107	?	**175.2**
Indiana	2,516,462	2,700,876	2,930,390	3,238,503	3,427,796	3,934,224	4,662,498	5,195,392	5,490,224	5,544,159	6,080,485	?	**241.6**
United States	76,212,168	92,228,496	106,021,537	123,202,624	132,164,569	151,325,798	179,323,175	203,302,031	226,545,805	248,709,873	281,421,906	?	**369.3**

Legend:
- Thorntown
- Sugar Creek Township
- Jamestown
- Lebanon
- Whitestown
- Zionsville
- Boone County
- Indiana
- United States
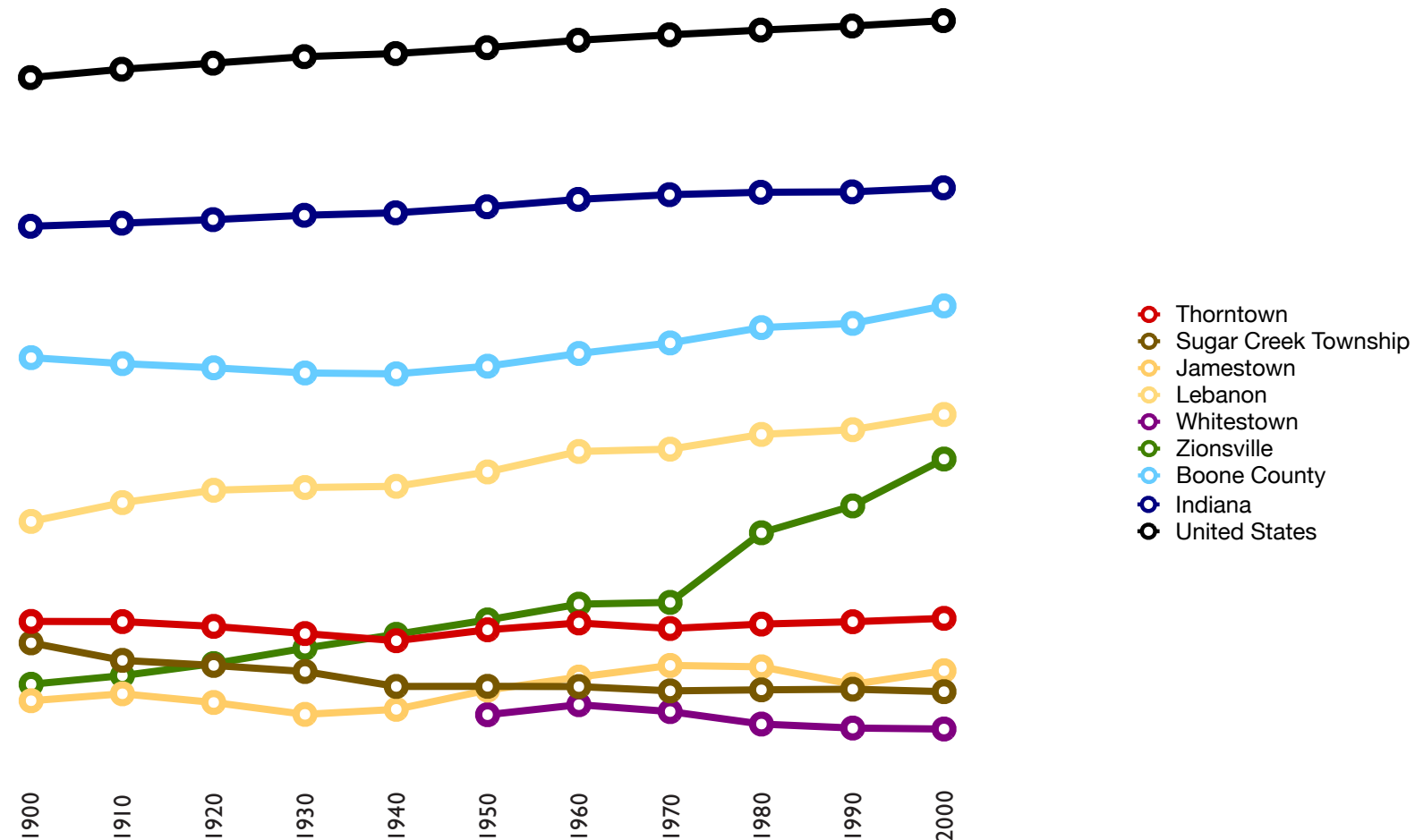
Comparative Analysis of U.S. Census population data: 1900 - 2000

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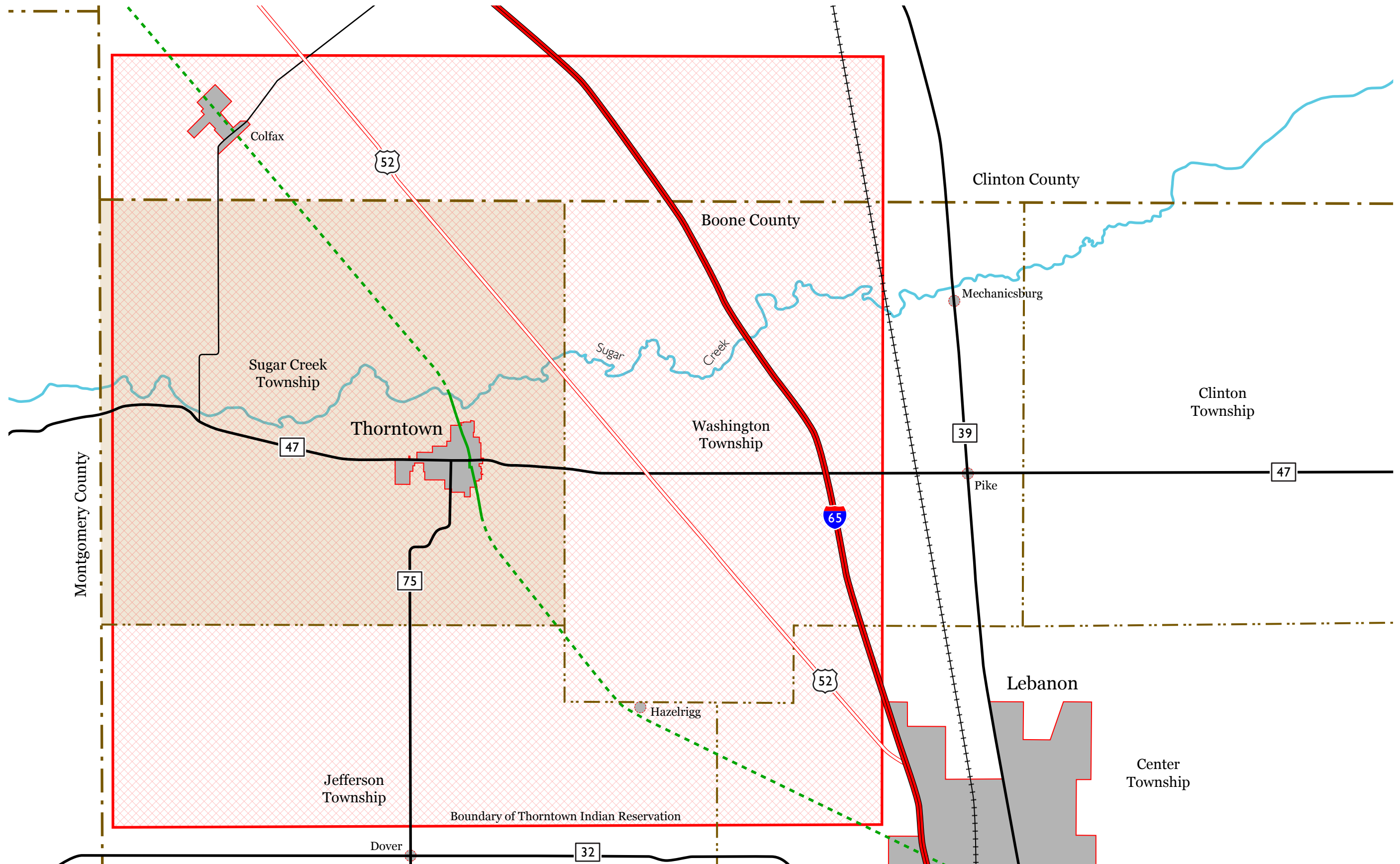
Map of the historic Thorntown Indiana Reservation

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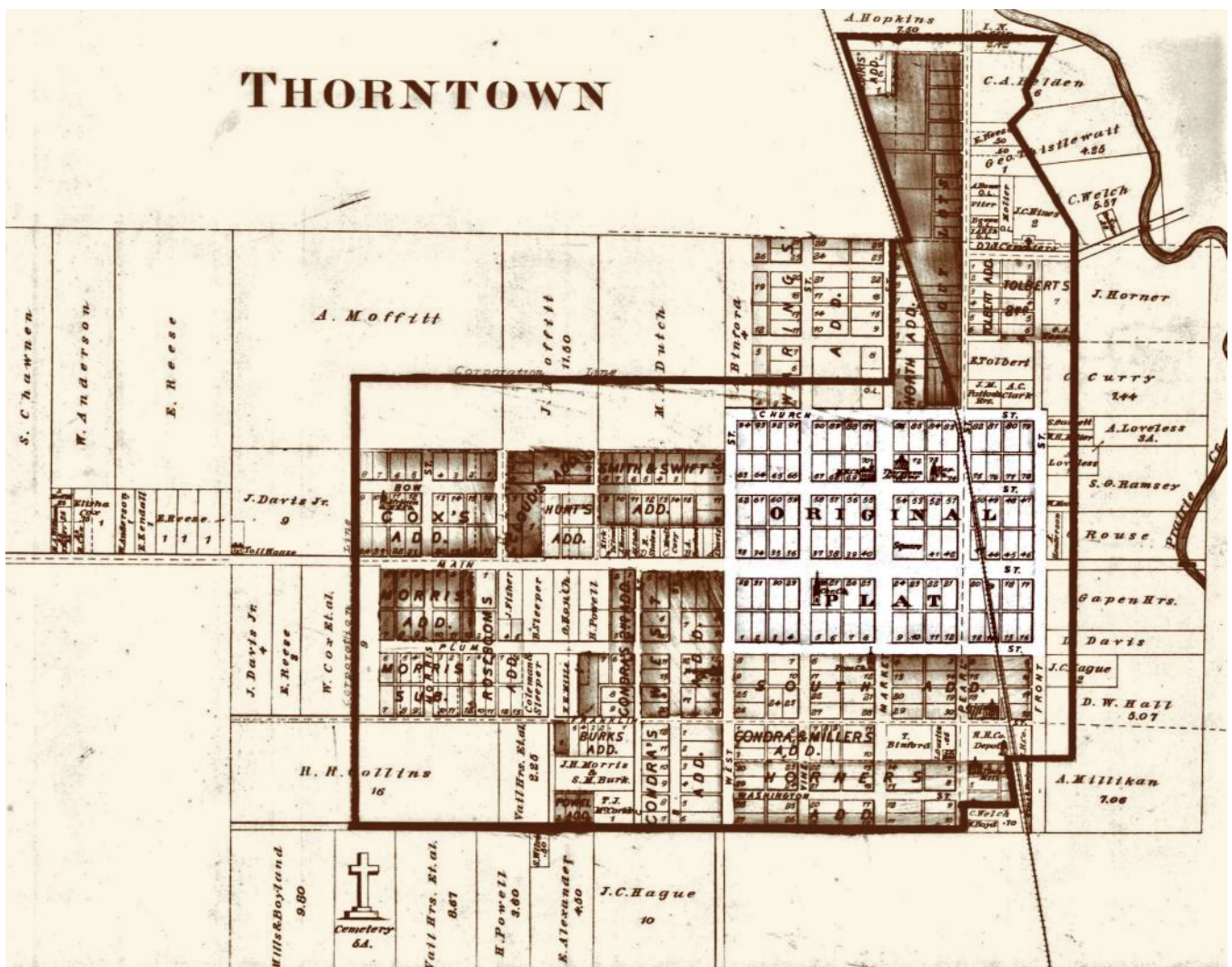
1878 Plat Map of Thorntown, with the original 1830 plat highlighted

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Community Input

Festival of the Turning Leaves, September 2009

Moore Grocery store, Thorntown, c. 1940

Community Input

Throughout the comprehensive planning process numerous opportunities were afforded to the stakeholders within the Plan's jurisdiction - elected officials, business owners, property owners, community-based organizations, public and private institutions, and residents of Thorntown and Sugar Creek Township - to give their input regarding the growth and development of their community, as well as to identify their likes and dislikes, their wishes and anything which may threaten the vitality of the community.

Prior to the grant award and within the first few months of the project's initiation, the Team met frequently with the TCO in order to familiarize themselves with the community as well as to set the tone and established the scope of the Plan. These early meetings were held either in the Thorntown Public Library or at The Cottage on Pearl. In the latter case, "regulars" were invited to join the conversations and allowed to give their input. In October 2009, the first of many small-group meetings were held with key stakeholders. At each meeting, the attendees were given an overview of the comprehensive planning process, followed by a solicitation of input. The first two meetings were with the two most active service organizations in the community, the **Kiwanis** and the **Lions Club**. Other key constituencies whose input during these small group meetings were particularly important to the development of this Plan include: members of the Town Council and staff of Thorntown Utilities; the staff of the Thorntown Public Library; and students, teachers and staff at Western Boone Jr.-Sr. High. In addition, the Team held two meetings with representatives of INDOT in the Crawfordsville District offices - one regarding the wastewater treatment plant at the I-65 "Lebanon" Rest Area and the other in regard to potential improvements to SR 47 and 75 within Thorntown's corporate limits. In all, over 60 individuals participated in these key stakeholder meetings, and their input was included in the SWOT analysis which is included herein.

The first of three public forums was held on **Friday**, **November 13**, from 6:00 to 9:00 PM, at the Sugar Creek Arts Center. This forum was held in conjunction with the SCAC's "Culture at the Creek" event. A questionnaire was prepared for this event, and members of the TCO and the planning team handed them out to people as they came. By the end of the evening, 14 surveys had been completed, although the actual number of attendees was certainly a bit higher than this. In addition, notes were taken of additional comments received, and these ultimately were included in the SWOT analysis.

The second public forum was held on **Friday**, **April 16**, also from 6:00 to 9:00 PM, during that month's "Culture at the Creek" gallery open house at the Sugar Creek Art Center. Following an introduction to the project and the process, the attendees were encouraged to share their likes and dislikes about the community, to identify what they think the community needs, and to express any concerns or threats they see to the growth and development of the community. The sign-in sheet records an attendance of 23, but a member of the TCO counted nearly 40 at one point during the forum.

The third and final public forum was held on **Wednesday**, **June 16**, from 7:00 to 9:30 PM, at the Sugar Plain Friends Church. This forum was one of the featured events during the revived "Founder's Week" chautauqua, and had an attendance of 13, plus 5 members of the planning team. The purpose of this final forum was to give the public a preview of the Comprehensive Plan and to solicit any final input. The forum opened with introductions of the Team and TCO members, a brief overview of the project, followed by the presentation of draft exhibits and sections from the Plan, an open question and answer period, and ended with an interactive activity regarding the preferred locations for certain functions, such as a new community center, park and recreation facilities, etc.

In total over 50 residents participated in the three public forums, and their input was invaluable to the preparation of this Plan.

SWOT Analysis

The input received from the key stakeholders and the public during the small-group meetings and the three public forums have been summarized and organized herein into the categories of Strengths, Weaknesses, Opportunities and Threats, and it is the analysis and thoughtful consideration of this information upon which the Plan was built.

Strengths:

- the friendly, small town atmosphere
- the people
- the rural character and slower pace of life
- dark night skies and clean air
- the history and heritage of the community
- the location, roughly halfway between Indianapolis and Lafayette with easy access to state and federal highways
- community assets include the **Sugar Creek Arts Center**, the **Sugar Creek Historical Society**, the **Thorntown Public Library**, and **Thorntown Elementary School**

Weaknesses:

- water and wastewater infrastructure is at or near capacity, which limits growth and development
- poor first impression - too many houses and commercial buildings in disrepair
- lax enforcement of zoning and nuisance ordinances
- lack of available commercial space for sale or lease
- lack of homes available for purchase
- poor condition of many public sidewalks and the lack of public walks in some parts of Town
- no public access to **Sugar Creek**
- not enough school crosswalks and no crosswalk where the **Keewasakee Trail** crosses **SR 47**
- lack of gateways into the community
- no local newspaper / limited internet connectivity leads to poor communication
- no community center

Opportunities:

- completion of the **Farm Heritage Trail** with its connections to the **Keewasakee Trail** and the potential opportunities for spin-off businesses, events and recreational activities
- recreational opportunities on and adjacent to **Sugar Creek**, including canoeing, fishing and hiking
- a public pool and/or splash park
- creation of gateways into the community
- enhancement of existing community events - **Art in the Park**, **Culture at the Creek**, **Park & Swap**, **4H**, the **County Fair** and **Open Show**, **Festival of the Turning Leaves**, and the **Garment Factory Reunion**
- revival of community events - the **Founder's Week** chautauqua
- development of new community events - the Community Gardens, a Barn Quilt tour and musical concerts / festivals
- clean up and dress up Main Street and the downtown business district with new benches, lamp posts, landscaping and planters, banners and signage, trash receptacles, etc.
- engage local youth in creation and distribution of community news via radio, video, print and/or the internet
- develop a vocational trades / basic skills program in conjunction with **Western Boone Jr.-Sr. High**, the **Sugar Creek Arts Center** and local employers
- collaborate with regional communities and counties to develop and market these communities to a wider audience - reach out to **Chambers of Commerce**, **Economic Development Corporations**, and **Convention and Visitor's Bureaus**
- new, complimentary business opportunities - a hardware store / general store, a pharmacy, a gas station, an antique shop, an old-fashioned ice cream parlor / soda fountain, a yarn / needle craft / sewing shop, and a bed and breakfast

Threats:

- loss of the local **Post Office**
- loss of **Thorntown Elementary School** due to consolidation
- loss of local employers, and thus jobs
- lack of careful planning and zoning could lead to fragmentation of the community if the focus of development - whether residential, commercial or both - is only on outlying areas
- lack of support for the implementation of this Plan by the public and/or elected officials, whether due to apathy, a sense of fatalism (things will never change as long as...) or both
- elimination of Township governments by an act of the General Assembly - control of these unincorporated areas would likely fall to the County governments

Public Hearing

The official Public Hearing for the Thorntown Comprehensive Plan, as required by the terms of the planning grant awarded to the Town of Thorntown by the Indiana Office of Community and Rural Affairs, was held on **Thursday**, **July 1**, **2010** at 7:00 PM in the community room of the **Thorntown Public Library**. Official notice of this hearing was published in the **Lebanon Reporter** ten days in advance of the meeting.

Conclusion

Based upon careful consideration of the input received from residents at the public forums and key stakeholders during the small group meetings, the demographic data collected, and the fieldwork and research done to assess and document both the history and the existing conditions of the community, the following arose as the key issues, ranked in order of importance, facing the community:

1. Community aesthetics
2. Economic development
3. Public infrastructure
4. Communications
5. Quality of life

Community aesthetics is not just about making a good first impression to visitors and potential new businesses and residents, although this is very important, but it is also a key factor in the psyche of the community and the pride and positive self-image the residents have about their hometown. In addition, aesthetics is not solely focused on the appearance of Main Street, but with the visual appeal of the entire community - including the gateways into Thorntown, the residential neighborhoods, and the streetscapes - and also the promotion of the community to the outside world.

Economic development addresses issues of growth and development, especially the revitalization of Thorntown's historic commercial core and surrounding residential neighborhoods. It also looks at the redevelopment of underutilized and/or brownfield properties (structures or vacant land). Further, economic development is intended to broaden the community's economic and tax base by attracting complimentary retail, professional and industrial businesses as well as to enhance tourism and recreational opportunities.

Public infrastructure is a key factor in economic development. Improvements to and expansion of water, wastewater and storm water infrastructure are critical to the growth and development of the community. Infrastructure is also concerned with the enhancement and maintenance of the streets, sidewalks and trails.

Communication has both external and internal components. The development of branding and promotional materials are largely for external consumption, with the intent of attracting visitors to shop, dine and play in the community, as well as to entice new residents and businesses into the community. Within the community, improvements are needed to foster communication between residents, businesses and local government about news and events.

Residents of Thorntown and Sugar Creek Township already enjoy a high quality of life - with a low cost of living, the friendly, small town atmosphere, low crime, first rate schools, clean air and dark skies, and ease of access to adjacent communities via the network of state and federal highways - but there is always room for improvement.

Following the **Community Vision** section, in which the vision for the future growth and development of Thorntown is addressed, are thirteen chapters which speak to these five issues, as well as others. Each chapter is organized around a structure consisting of: an introductory narrative; case studies, which highlight ways other communities have approached issues similar to those faced by Thorntown; goals and objectives, which provide actionable steps that the community can take to implement the Plan; exhibits; and resources, which identify sources for additional information and potential funding.

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Community Vision

Thorntown's Centennial, September 1930

Portrait of Brigidier General Anson Mills, c. 1910

Community Vision

Thorntown is today a pleasant, small town with over 1,500 citizens, surrounded by the gently rolling farmland of Sugar Creek Township that is home to another 700+ residents. The community is located at the intersection of two primary state highways and near two U.S. highways, which provides the residents and businesses in, and visitors travelling to, the community all the advantages of contemporary life while preserving the quiet, slower pace of life afforded by the bucolic setting. The community is populated with friendly, "salt of the earth" people who care deeply for their community, are very proud of its historic past and rural heritage, and who hold out hope for its future. The community is already a good place to live, work, play, and raise a family, with its low cost of living, good schools, amiable people, little crime, natural resources and amenities, and its prime location - attributes which also make it enticing to visitors and to employers. The numerous festivals, cultural events and the budding art scene are a boon to both its citizens and tourists.

Going forward, the community strongly desires to: retain its peaceful, pastoral character; revitalize the Town's historic commercial and residential core; enhance its cultural and recreational facilities and events; all the while planning, preparing and working toward the goal of making the community more economically stable and self-sufficient by attracting and retaining families, both young and old, and businesses - whether retail, professional services, industrial or agriculturally-related - and enhancing opportunities for tourism related ventures. The vision is, in essence, for a complete, sustainable and vibrant community - a place where families can truly live, work, play and shop.

Artist's Renderings

On the pages to follow are three artist's renderings which aim to capture the community's vision of Thorntown, and in particular a revitalized Main Street business district.

Exhibit 8 is a view from the intersection of Main and South Pearl Streets, looking southwest toward the old gas station next to **Framed Wright** and **Railer's IGA**. This vision imagines the gas station renovated and repurposed as a "Welcome Center" into the community - a place where visitors can pick up a map and get directions, or even buy a souvenir of their trip. The parking lot might also be used by local farmers to sell fresh produce and homemade goods.

Exhibit 9 is a view from the southwest corner of Main and Market Streets to the old **I.O.O.F. Lodge**. Note the suggested landscaping and hardscaping enhancements - the planting beds between the curb and sidewalk, the decorative street lamps with banners, and the marked crosswalk. The vision for the building façades includes the installation of new windows and doors (that match the masonry opening width and height), new awnings and shutters, window baskets, exterior lighting and signage.

Exhibit 10 is a vision of a revitalized Main Street, looking north from the roof of **Sunsations Tanning**. The inspiration for this rendering is a panoramic photograph taken during Thorntown's Centennial which was celebrated in the last full weekend of September in 1930. (Copies of the original photograph hang in the Thorntown Public Library and the Thorntown Heritage Museum.) In this view, note the landscape and hardscape enhancements along Main Street, particularly the addition of bump-outs at the crosswalks and at the alley, which are designed to reduce the distance across the right of way for pedestrians as well as to "protect" the angled parking spaces. Note, too, the large flagpole at the head of Lions Park. In photographs from the early 1900's, a tall flagpole and American flag can be seen.

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*A vision of the old gas station at the corner of Main and Pearl Streets, renovated and repurposed as a "**Welcome Center**" for Thorntown*

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*A vision of a restored **I.O.O.F. Block**, from the southwest corner of Main and Market Streets*

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A vision of a revitalized Main Street, looking north

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Land Use

Land Use

One of the key components common to all comprehensive planning projects is land use. This is nothing more than how a particular parcel of land is used. Proposed, or future, land use is therefore the best possible use of a piece of land in the future. It is important to note that land use is not the same as zoning. Land use planning is an element of zoning, but it does not have the force of law. Zoning ordinances are instituted by local governments to designate permitted land uses within mapped zones which segregate different types of land uses from each other. In addition, zoning ordinances typically go beyond just the particular use of a parcel of land, regulating the height of structures, the maximum footprint of a building and paving (lot coverage), the minimum setback distances of a building from the property lines, the minimum landscape requirements, and so forth.

It is the intent of this section of the Plan to serve as a guide to the future growth and development of the land within and outside the present corporate jurisdiction of the community, to promote the appropriate infill and redevelopment of underutilized property, and to proactively mitigate conflicting land uses. Further, this Plan promotes the growth, development and infill redevelopment within a **Compact Form** model. Also known as New Urbanism, Smart Growth or Traditional Neighborhood Development, compact form describes a pattern of land use which stresses the best use and the efficient, considered and responsible development of land. The opposite of compact form is sprawl. Communities which put into practice compact form planning and development are ultimately more walkable, have a higher quality of life, have higher property values and stable economic conditions, and have better, more efficient public services with lower tax rates.

Thorntown, like most Indiana towns platted in the 19th Century, was laid out with a compact form, having a regular grid of blocks and network of streets and alleyways (refer back to **Exhibit 6**). As Thorntown has grown over the past 180 years, it

*The historic **Colored Cemetery**, west of Thorntown, March 2010*

has largely maintained this pattern of development, with the exception of the largely residential addition west of **Cemetery Road** and south of **SR 47**, with its series of cul-de-sacs (see **Exhibit 7**).

Exhibits 12 and **14** show how the lands within the planning jurisdiction are currently used - with **Exhibit 12** looking at the entire jurisdiction and **14** focused on the land within and immediately adjacent to the present corporate limits of Thorntown. Note that in these two exhibits much, if not all, of the land use identified within Sugar Creek and Wasington Townships as "Ag - General" might be better classified as "Ag - Production" which is land used primarily for tradtitional farming practices, including the raising of livestock and crop production, but which can include low-density residential (one home per two or more acres, typically on well and septic) and other uses. The current **Boone County Zoning Ordinance**, as amended and dated October 16, 2009, does not include an "Ag - Production" land use classification, although the **Boone County Comprehensive Plan**, adopted earlier in 2009, does distinguish between these two agricultural uses.

The current zoning map for Sugar Creek Township, shown in **Exhibit 11** below, designates the areas north and east of Thorntown as R-2, Low Density Single Family and Two-Family Residential, which calls for a range of one house per 0.57 to 2 acres. This classification does not take into consideration development within a compact form pattern. Note, too, that this map does not contemplate the growth of Thorntown to the south along **SR 75**.

The proposed land use maps, **Exhibits 13** and **15**, look to maintain the pattern of compact form, especially with regard to growth to the south of Thorntown on either side of **SR 75** and to the north and east of **CR 825 West**. In regard to the land south of town, an area of approximately 450 acres is bounded by a series of proposed arterial streets which extend from and interconnect **Cemetery Road**, **CR 500 North**, **Hazelrigg Road** (**CR 700 West**) and **South Pearl Street**. Within the area immediately adjacent to the current corporate limits, the existing street grid is envisioned to extend south of Grant Street to the new arterial between Cemetery Road and South Pearl Street, creating
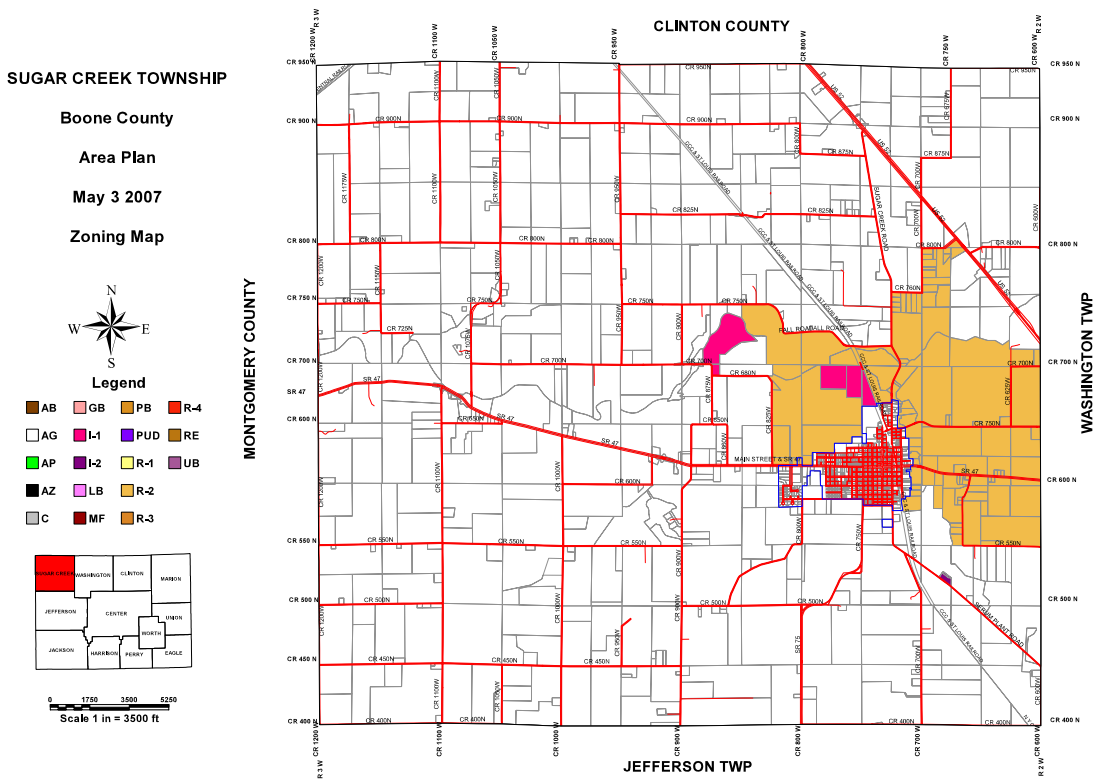
Current Zoning Map of Sugar Creek Township

20 blocks of **Residential - High**" and 4 blocks of "**Commercial**" land use. Note that "high density" residential is no more dense that the existing, historic residential areas in Thorntown, and may include one and two-family residences for a total of up to 200 homes. Also incorporated in this area is land set aside for parks and recreation, which could be the location of a splash park or an expansion of the athletic fields of **Thorntown Elementary** and/ or **Tom Johnson Memorial Park**, and land set aside for the future expansion of **Maple Lawn Cemetery**. To the south of this new east-west arterial lies an area of about 300 acres, divided into "**Residential - Medium**" (houses on lots ranging from 0.33 to 0.57 acres) and "**Residential - Low**" (1 house per 2 acres minimum) land uses. Within these two classifications an additional 135 to 350 homes could be built.

To the east and north of Thorntown, along **SR 47** and **Sugar Creek Road**, are two areas for potential low-density residential development. In the former case, two new north-south arterial road should be considered to connect **Evans Avenue** with **CR 650 North** - one at the intersection of Evans and SR 47 and the other running along the township line. Also of note within this area is the fact the **Thorntown United Methodist Church** has purchased property fronting SR 47 for their future building. Further to the east, at the intersections of **SR 47** with **US 52** and **I-65**, are areas identified for "Mixed Use" development. These areas may be a mix of retail, commercial and light industrial uses, and should be geared toward serving both local residents and travellers passing through. Also adjacent to the SR 47 and I-65 interchange are two areas in which low and/or medium residential development may occur. It should be noted that this I-65 interchange is one of the, if not the, very last interchanges to be developed in Indiana.

Exhibit 13 also distinguishes between "**Ag - Production**" and "**Ag - General**" uses within the two townships - the principal difference being that the general classification, while allowing agricultural activities to continue, is intended to serve as a buffer between more intensive agricultural activities (such as grazing and confined livestock operations) and less-intensive and/or sensitive land uses. Finally, this exhibit also identifies the riparian corridors along

Sugar Creek and its tributaries as land which should be set aside for conservation. Besides protecting the Sugar Creek watershed and its flora and fauna, these lands also have the potential to greatly enhance the recreational opportunities within the region through the creation of parks and trails, as well as providing access points to Sugar Creek and its tributaries for canoeing and fishing.

Exhibit 16 is a map of potential overlay districts within the corporate limits of Thorntown. An overlay district - such as the Meadowland Overlay District highlighted in the case study on the following page - is a special zoning designation which highlights a significant resource within a community. This may be a natural resource, such as a body of water or forest, or a man-made "area" with architectural, cultural or historical significance. The special district is "overlaid" on top of the existing land use and zoning ordinances, thereby supplementing these existing regulations. For Thorntown, there are three potential overlay districts within the town's corporate limits, the purpose of which is to enhance the character and development within these areas: the historic Main Street commercial district; the historic residential neighborhoods which surround the downtown core; and a district focused on the arts - in which galleries, studios and art-related enterprises may be located.

Case Study

Goals & Objectives

Meadowland Overlay District - *Warren, VT*

Summary

- Developers began subdividing prime farm land during a 1970's building boom.
- Traditional zoning drafted at that time failed to adequately protect these resources.
- Residents supported a law making a temporary agriculture district permanent.

When it became clear that old zoning ordinances were not adequate to protect the area's farm land, the Planning Commission inventoried all agricultural land (production and pasture) and created the "Meadowland Overlay District" to prevent development on farmland. The boundary covered 1,800 acres (approximately 7% of the Town). The district was reviewed and updated in 2001, and a large majority again approved the measure. The district serves two purposes: to keep the area rural and to preserve productive land for future generations. This case study demonstrates that the oft-stated goal of preserving farmland can be achieved.

Lessons Learned

- Municipalities must try new tools when monitoring reveals that the old ones are not achieving the community's goals.
- Adopting potentially contentious regulations on an interim basis can help locals get familiar with them before making the change permanent.

Goal 1:

Be proactive in the management and development of land.

Objectives:

1. *Promote growth of residential, commercial, recreation / conservation and other land uses outside of Thorntown's present corporate limits which maintain the compact form of the community.*

2. *Refer to the Thorntown Comprehensive Plan, in particular the Future Land Use exhibits, when assessing proposals for development or redevelopment.*

3. *Revise, use and enforce Thorntown's Zoning Ordinance and other ordinances which pertain to land use.*

4. *Develop and adopt policies for the annexation of land outside of Thorntown's corporate jurisdiction, incorporating language and provisions for non-remonstrance and the "right to farm."*

5. *Investigate options for expanding the jurisdiction of Thorntown's Zoning Ordinance beyond the current corporate limits.*

6. *Investigate options for consolidation of the Town and Township governments, in order to manage the growth and development of the land surrounding Thorntown.*

Goal 2:

Endeavor to alleviate conflicting land uses, both present and future.

Objectives:

1. *Expressly permit existing agricultural activities to continue unabated.*

2. *Develop, implement and enforce standards for the creation of buffer zones between residential and other sensitive land uses from commercial and industrial development or redevelopment.*

Goal 3:

Promote the appropriate infill and redevelopment of underutilized property (vacant land or structures) within Thorntown's corporate limits.

Objectives:

1. *Develop and offer incentives for the infill and/ or redevelopment of underutilized properties.*

2. *Revise, use and enforce Thorntown's Zoning Ordinance, and other ordinances which pertain to land use, to accomodate infill and redevelopment of vacant land or structures.*

Goal 4:

Identify, Map and Prioritize Network of Public Spaces and Facilities.

Objectives:

1. *Locate and map all indoor and outdoor public community facilities, and create a list of public programs, projects, etc. operated out of or being held in or at a public or community facility.*

2. *Prepare prioritized list of needed facilities and spaces.*

Goal 5:

Indentify and map specialty districts.

Objectives:

1. *Create a list of assets and resources to protect/ promote (this may include an arts location, a conservation area, a historic/cultural site or recreation feature, etc.).*

2. *Identify the type and number of special districts desired in and around town.*

3. *Engage consultant to prepare a district overlay plan and associated ordinances to apply in each district.*

Resources

- Sample ordinances in **Appendices H, I** and **J**
- **Boone County, IN:** current county-wide comprehensive plan, zoning maps and ordinances
  www.boonecounty.in.gov
- **Smart Growth Vermont,**
  www.smartgrowthvermont.org
- **American Planning Association: Indiana Chapter,**
  www.indianaplanning.org
- **Indiana Association of Cities and Towns,**
  www.citiesandtowns.org
- **Congress for the New Urbanism,**
  www.cnu.org
- **New Urbanism,**
  www.newurbanism.org
- **Center for Applied Transect Studies,**
  www.transect.org
- **SmartCode v9.2,**
  www.smartcodecentral.com
- **The Town Paper,**
  www.tndtownpaper.com
- **New Urban News,**
  www.newurbannews.com

Map of Sugar Creek Township & Vicinity

Land Use: Existing

Map Legend		
Interstate Highway	County	
U.S. Highway	Township	
State Highway	Sugar Creek Twp.	
County Roads	Corporate Limits	
Future Road	Creek / Legal Drain	
Rail Road	Lake	
Kewasakee Trail	Gravel Pit	
Farm Heritage Trail	WWTP Lagoon	

Land Use: Existing

- Ag - General
- Ag - Production
- Commercial
- Industrial - Light
- Industrial - Heavy
- Mixed Use
- Institutional
- Parks & Recreation
- Nature Preserve
- Conservation Area
- Cemetery
- Residential - Low
- Residential - Medium
- Residential - High

Map of Existing Land Use: Sugar Creek and Washington Townships

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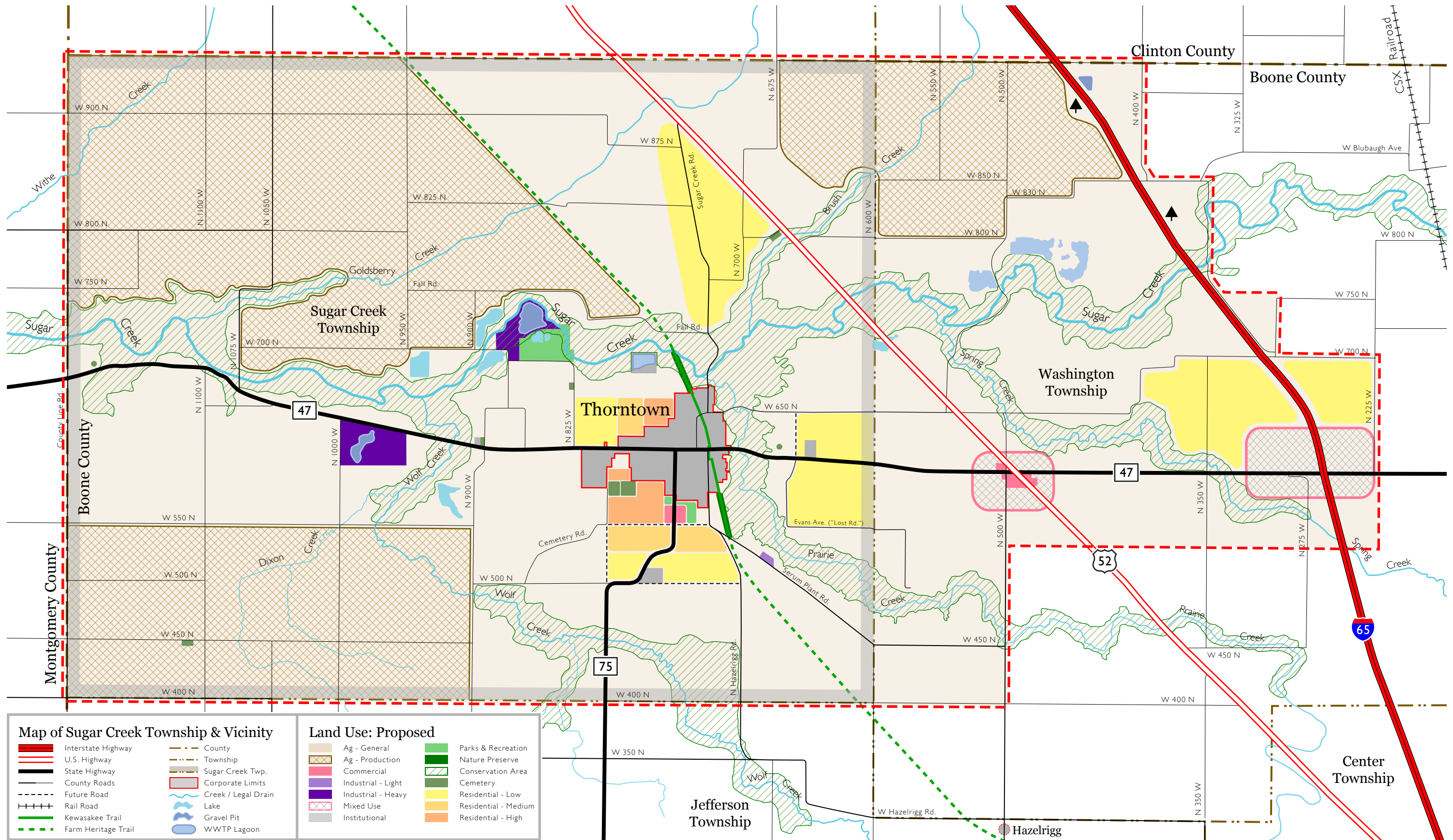
Map of Sugar Creek Township & Vicinity

▬▬	Interstate Highway	
▬▬	U.S. Highway	
▬▬	State Highway	
▬▬	County Roads	
- - -	Future Road	
+++	Rail Road	
▬▬	Kewasakee Trail	
▬ ▬ ▬	Farm Heritage Trail	
—·—·—	County	
—··—··—	Township	
▨	Sugar Creek Twp.	
▭	Corporate Limits	
∿	Creek / Legal Drain	
◯	Lake	
▨	Gravel Pit	
◯	WWTP Lagoon	

Land Use: Proposed

Ag - General	Parks & Recreation
Ag - Production	Nature Preserve
Commercial	Conservation Area
Industrial - Light	Cemetery
Industrial - Heavy	Residential - Low
Mixed Use	Residential - Medium
Institutional	Residential - High

Map of Proposed Land Use: Sugar Creek and Washington Townships

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Map of Thorntown & Vicinity

Map of Thorntown & Vicinity	
▬▬ Interstate Highway	▬·▬· County
▬▬ U.S. Highway	▬··▬·· Township
▬▬ State Highway	▨▨▨ Sugar Creek Twp.
▬▬ County Roads	▭ Corporate Limits
▭▭ Future Road	∿ Creek / Legal Drain
┼┼┼ Rail Road	∿ Lake
▬▬ Kewasakee Trail	∿ Gravel Pit
▪▪▪ Farm Heritage Trail	⬭ WWTP Lagoon

Land Use: Existing

Land Use: Existing	
Ag - General	Parks & Recreation
Ag - Production	Nature Preserve
Commercial	Conservation Area
Industrial - Light	Cemetery
Industrial - Heavy	Residential - Low
Mixed Use	Residential - Medium
Institutional	Residential - High

Thorntown

Map of Existing Land Use: Thorntown

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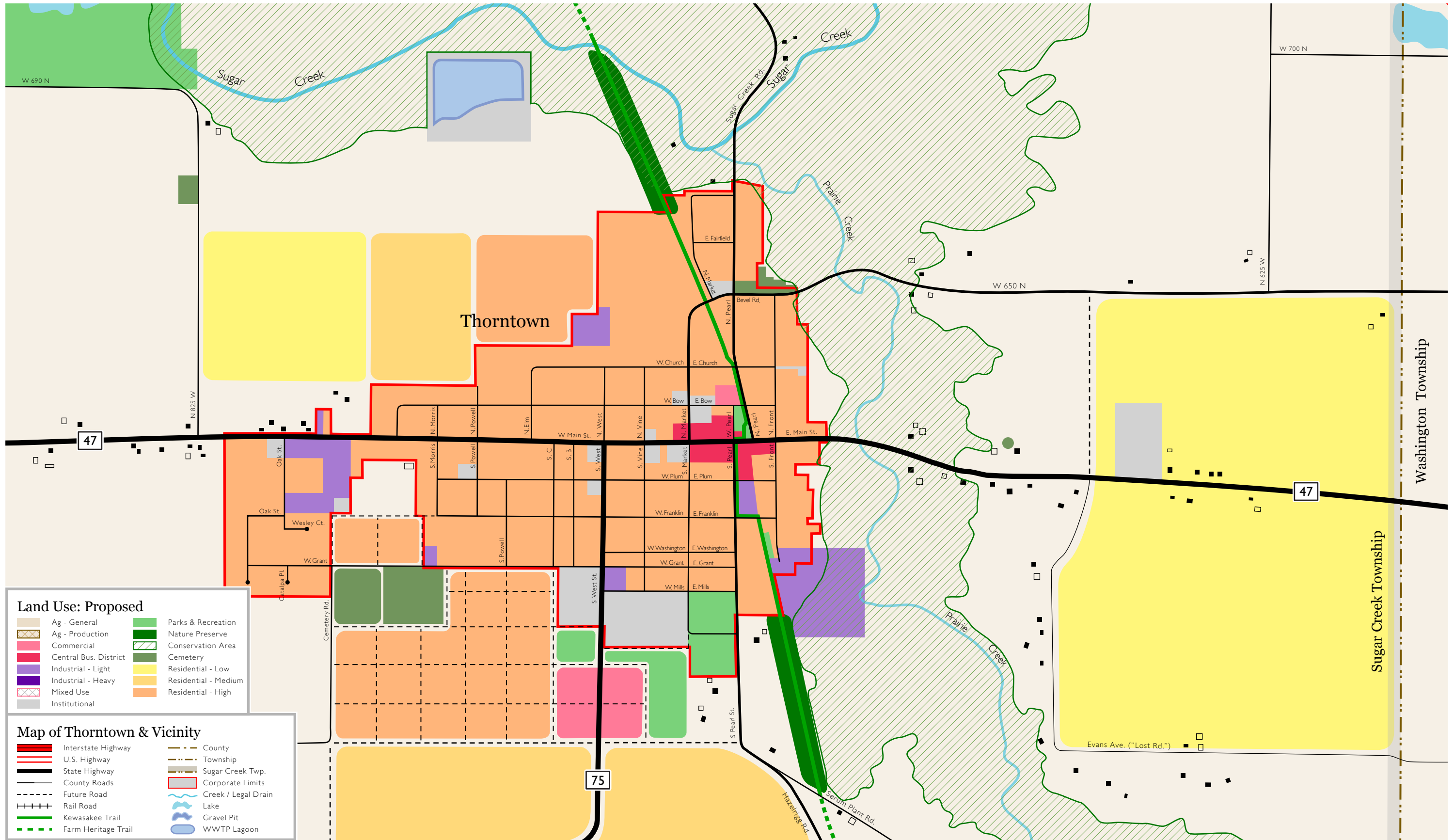
Thorntown

Map of Proposed Land Use: Thorntown

Land Use: Proposed

- Ag - General
- Ag - Production
- Commercial
- Central Bus. District
- Industrial - Light
- Industrial - Heavy
- Mixed Use
- Institutional
- Parks & Recreation
- Nature Preserve
- Conservation Area
- Cemetery
- Residential - Low
- Residential - Medium
- Residential - High

Map of Thorntown & Vicinity

- Interstate Highway
- U.S. Highway
- State Highway
- County Roads
- Future Road
- Rail Road
- Kewasakee Trail
- Farm Heritage Trail
- County
- Township
- Sugar Creek Twp.
- Corporate Limits
- Creek / Legal Drain
- Lake
- Gravel Pit
- WWTP Lagoon

Sugar Creek
Sugar Creek
Creek
Prairie Creek
Prairie Creek

Washington Township
Sugar Creek Township

W 700 N
W 690 N
W 650 N
N 625 W
N 825 W

E. Fairfield
Bevel Rd.
W. Church   E. Church
W. Bow   E. Bow
N. Morris
N. Powell
N. Elm
W. Main St.
N. West
N. Vine
N. Market
N. Pearl
N. Front
E. Main St.
S. Morris
S. Powell
S. C.
S. B.
S. West
S. Vine
S. Market
S. Pearl
S. Front
W. Plum   E. Plum
W. Franklin   E. Franklin
W. Washington   E. Washington
W. Grant   E. Grant
W. Mills   E. Mills
Oak St.
Wesley Ct.
Oak St.
W. Grant
Catalpa Pl.
Cemetery Rd.
S. Powell
S. West St.
S. Pearl St.
Germ Plant Rd.
Hazelrigg Rd.
Evans Ave. ("Lost Rd.")
Sugar Creek Rd.

47
47
75

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Map of Potential Overlay Districts in Thorntown

Thorntown

Historic Commercial

Arts

Historic Residential

Sugar Creek

Sugar Creek Rd.

Creek

Sugar

Prairie

Creek

E. Fairfield

N. Market

Bevel Rd.

N. Pearl

W. Church

W. Bow

E. Bow

N. Pearl

N. Front

E. Main St.

47

N. Morris

N. Powell

N. Elm

W Main St.

N. West

N. Vine

N. Market

W. Pearl

S. Pearl

S. Front

Oak St.

S. Morris

S. Powell

S. C

S. B

S. West

S. Vine

S. Market

W. Plum

E. Plum

Oak St.

Wesley Ct.

W. Franklin

E. Franklin

Catalpa Pl.

W. Grant

W. Washington

E. Washington

W. Grant

E. Grant

Cemetery Rd.

S West St.

W. Mills

E. Mills

S Pearl St.

Hazelrigg Rd.

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Main Street Revitalization
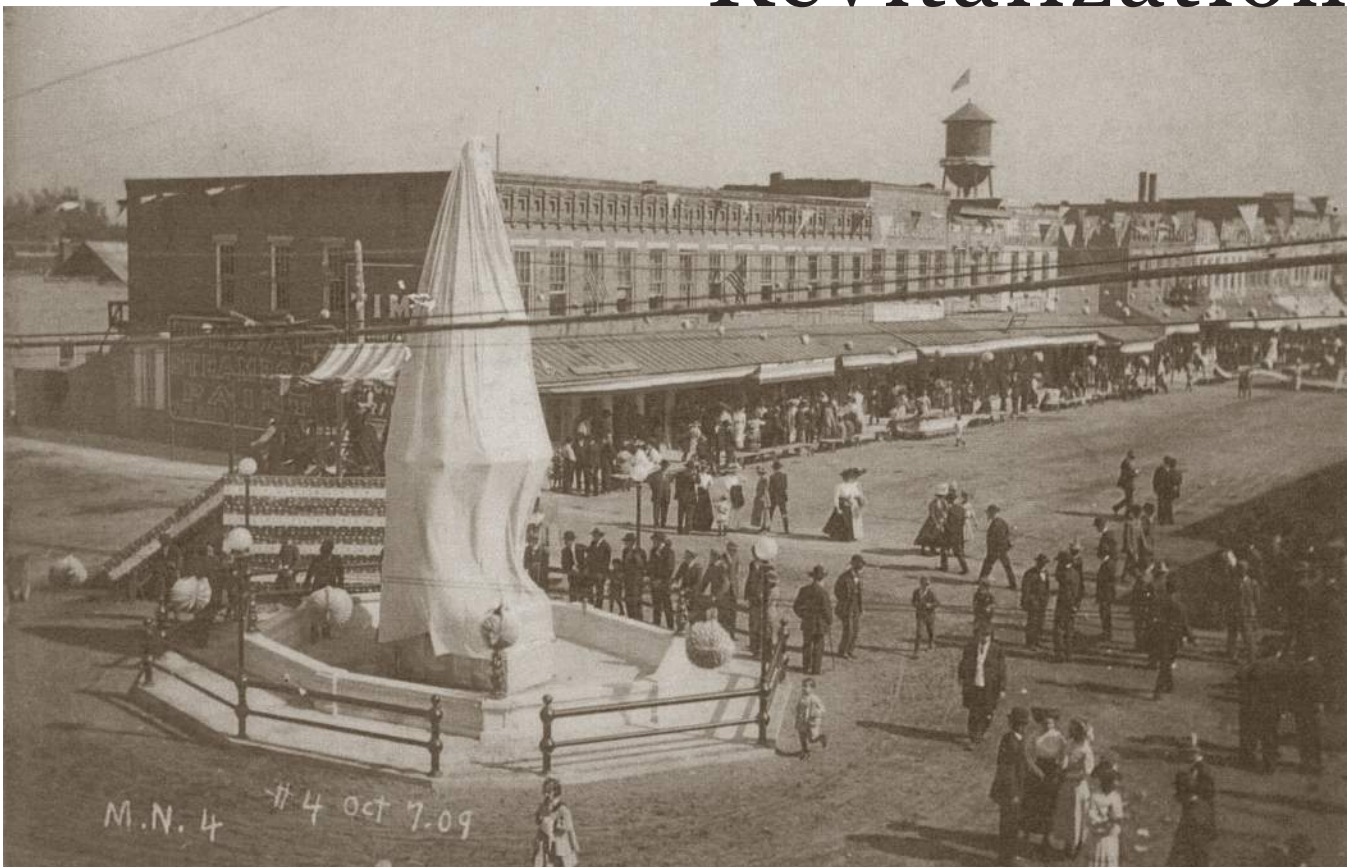
Dedication of the Mills Memorial Fountain, October 7, 1909

*Detail of the former **I.O.O.F. Lodge** façade, at the corner of Main and Market Streets in Thorntown, 2010*

Main Street Revitalization

The revitalization of Main Street is about more than just aesthetics, although this is certainly a very important factor. As noted in the **Community Profile** chapter, the empty storefronts, boarded-up second floor windows and general condition of some of the façades on Main Street leave the impression of a town in decline. However, the demographic trend of the past thirty years, as well as the successful start-up of several new businesses in the past two years, the steadfast presence of **Home National Bank**, **Stookey's**, **The Lost Frontier** and **Railer's IGA**, the vibrant art scene at the **Sugar Creek Arts Center,** the four-star rated **Thorntown Elementary School** and the many social and cultural events centered around **Lions Park**, the **Thorntown Public Library** and the **Thorntown Heritage Museum**, all point to a community that is on the way up. Getting this good news out to both residents and potential visitors is imperative.

For revitalization of Main Street to be successful, business owners, property owners, community leaders, residents, and elected officials must work together proactively and unselfishly toward the goals set forth herein. The overarching aim is to entice regional development and investment in the downtown core, in particular to make better use of those properties which are at present underutilized and to attract businesses that are complimentary to the existing mix of retailers, restaurants and service providers.

Thorntown should also endeavor to collaborate with state and county organizations who share a common vision and goal of economic development, such as the **Indiana Office of Rural and Community Affairs** (IOCRA), the **Boone County Chamber of Commerce** (Boone Chamber) and the **Boone County Economic Development Corporation** Boone County EDC). Further, Thorntown should reach-out to other Central Indiana communites which have or are in the process of undertaking Main Street revitalization programs, including the

Cities of Lafayette - West Lafayette, Lebanon, Noblesville and Portland. Three of these cities are participants in IOCRA's "Indiana Main Street" program: Lafayette - West Lafayette's is run by the **Greater Lafayette Chamber of Commerce**; Lebanon's is under the downtown merchant's association, **Lebanon Vitalization, Inc.**; and Noblesville's was initially part of city government but has since become an independent, not-for-profit organization called **Noblesville Main Street**. The Cities of Lafayette - West Lafayette, Noblesville and Porland have all successfully created historic districts and implemented façade grant programs to help offset a portion of the rehabilitation costs faced by property owners, whereas the City of Lebanon is at present considering the adoption of an ordinance to create a downtown historic district around the Boone County Courthouse square, and is looking into the extension of the city's **Tax Increment Financing** (TIF) district or the creation of a new **Economic Improvement District** (EID) as potential funding sources.

Goals & Objectives

Goal 1:

Preserve the historic fabric of Main Street.

Objectives:

1. Develop and implement common sense guidelines for the maintenance and restoration of historic structures.

2. Educate property owners and the community on the role historic preservation plays in the revitalization of Main Street

3. Consider alternative funding sources to assist property owners with maintenance and restoration projects, such as a façade grant program or creation of special Economic Improvement District.

4. Consider the creation of a historic preservation district to protect the historic fabric of Main Street and the establishment of a commission to administer such a district.

5. Ensure that infill and redevelopment projects adjacent to or in a historic structure are appropriate and contextually sensitive.

6. Modify and enforce zoning ordinances and maintenance requirements for vacant buildings and lots - publicize this information, educate the pubic and property owners, and enforce the standards uniformly.

Goal 2:

Promote the economic development of Main Street

Objectives:

1. Inventory exisiting commercial property and potential commercial properties (whether vacant or underutilized), and share this information with the Boone County EDC, Boone Chamber and commercial real estate brokers.

2. Work with business owners to better understand goods and services which are not presently available, and determine what types of businesses would be complementary to the existing mix of businesses.

3. Establish incentive programs - whether funded locally or through the State programs - to assist existing businesses and to attract new businesses.

4. Work with successful local businesses to create a small business incubator or a business apprenticeship / entrepreneur prorgam to assist start-up businesses.

5. Promote the infill and redevelopment of vacant or underutilized buildings and land.

6. Ensure that proposed business uses are compatible with and sensitive to the adjacent uses.

Resources

- U.S. Department of the Interior, National Park Service: Heritage Preservation Services
  www.nps.gov/hps
- National Trust for Historic Preservation
  www.preservationnation.org
- Indiana Office of Community and Rural Affairs
  www.in.gov/ocra
- Indiana Department of Natural Resources, Division of Preservation & Archaeology
  www.in.gov/dnr/historic
- Indiana Landmarks
  www.historiclandmarks.org
- Boone County Chamber of Commerce
  www.boonechamber.org
- Boone County Economic Development Corporation
  www.booneedc.org
- City of Lafayette, Indiana
  www.lafayette.in.gov
- City of Lebanon, Indiana
  www.cityoflebanon.org
- City of Noblesville, Indiana
  www.cityofnoblesville.org
- City of Portland, Indiana
  www.thecityofportland.net

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Streetscape

Main Street looking west, c. 1910

Centennial celebration on Main Street, September 1930

Streetscape

The town's general appearance is its veritable first impression. As such, it is important that the town put its best foot forward in order to command the attention of visitors and those passing through. It is in this initial relationship that Thorntown can build its audience. Moreover, an attractive, safe and comfortable appearance and atmosphere builds town pride. Increasing the activity in and positive regard for the town can help increase investment and visitation. These outcomes are bolstered by enhanced gateway points. Maybe these mark the onset of the historic commercial district; or perhaps they announce the town further out along the highway system. Either way, identifying the town is just as important as tidying it up.

Basic aesthetic choices for town improvements often include hardscape and landscape materials, and the first goal in this area addresses these elements. The 'hardscape' category includes items like benches, garbage cans and street lights, and it also addresses pavement options. Landscape materials address the plant palette. There are many ways that handmade elements - the work of local artists or craftsmen - can be used to "emboss" Thorntown's thumbprint on its streetscape. These types of elements are often cheaper than something out of a catalog and show more character, too.

As **Exhibit 17** shows, there are numerous points of entry into town. The third goal in this section begins the process of identifying which of those points is a priority in announcing the town's presence. **Exhibit 18** shows proposed improvements to the streetscape of Main Street, including bump-outs at the crosswalks and landscape beds.

Case Studies

A Sense of Place - *Enumclaw, WA*

Summary

• The decline of traditional livelihoods and status as bedroom community left this town with little downtown activity.
• A revitalized town center grounded and attracted new investment.
• The community-driven plan emphasized downtown history and character to galvanize support.

The **Downtown Enumclaw Streetscape Enhancement Project** focused on two priorities, and the project's enhancements in the town center have already spurred new business activity:

1. to create a value-added downtown environment in which infrastructure and interpretive public art are combined into a narrative of local history, culture and environment; and
2. to serve as a catalyst for private reinvestment and economic development while holding true to local values and heritage.

Lessons Learned

• Reversing the process of decline is long and difficult.
• Public involvement and dedication are crucial.
• Project consultants must be sensitive to place-making and small town values.

Reconstruction - *Greensburg, KS*

Summary

• In 2007, a tornado destroyed 90 percent of the City of Greensburg.
• Greensburg commissioned a plan to rebuild the town as a model green community.
• Due to significant rebuilding and funding hurdles, the plan designates priority projects that include Main Street and state highway intersections.

With a near-blank slate to begin with, the new comprehensive plan for the city includes a strong emphasis on sustainability. This emphasis carries through to large-scale issues, like reducing car-travel by promoting walkable streets, and small-scale issues, such as limiting irrigation and choosing low-environmental impact materials. The plan calls for a streetscape that deals with common small town issues: enhanced landscape and hardscape materials, gateways and signage. All of these elements support a strong economic recovery and continuous quality of life benefits.

Lessons Learned

• Sustainable solutions are both practical and rewarding.
• Public involvement and dedication are crucial.
• All aspects of the physical environment are important, from sidewalks to signage to street trees.

Goals & Objectives

Goal 1:

Improve Town Center Appearance (Hardscape).

Objectives:

1. Establish the area defined as "town center"

2. Develop design standards (design vocabulary) for town center aesthetics: lighting standards; paving types / specialty paving zones; awnings and signange; bike racks; etc.

3. Produce design guide illustrating aesthetic standards and promote implementation

4. Identify and implement one pilot project to improve appearance of town center

Goal 2:

Improve Town Center Appearance (Landscape).

Objectives:

1. Identify possible locations for landscape enhancements within town center district

2. Prepare and implement a landscape maintenance plan for the town center

3. Upgrade planters in town center and install seasonal plantings (i.e. summer, fall, holidays)

4. Conduct a tree inventory which covers the town center area

Goal 3:

Identify and enhance points of entry into town.

Objectives:

1. Identify priority gateway locations and secure usage rights from owner

2. Develop design for gateway feature / sign

3. Develop plan to maintain gateways based on final design

4. Install gateway feature marker at priority locations

5. Indentify priority destinations in community to be listed on wayfinding signs; identify locations for signs

6. Prepare design for wayfinding signs

7. Produce and install at least four wayfinding signs in and around town

Resources

- Safe Routes to School Grants, INDOT
- Transportation Enhancement Grant, INDOT
- Main Street and Hope VI Grants, HUD
- Rural Development Programs, USDA
- Tree City Program, The Arbor Day Foundation
- IDNR Division of Forestry Grants
- Tourism Development Grants, State Division of Tourism (Visit Indiana)
- Lower Midwest Community Tree Guide, USDA

The photo at right is an example of a gateway sign that contains all of the elements desired by Thorntown and as expressed by public input:

• a "Welcome to..." message
• a changeable message board highlighting community events
• space for the logos of local civic, fraternal and service organizations
• low maintenance landscaping
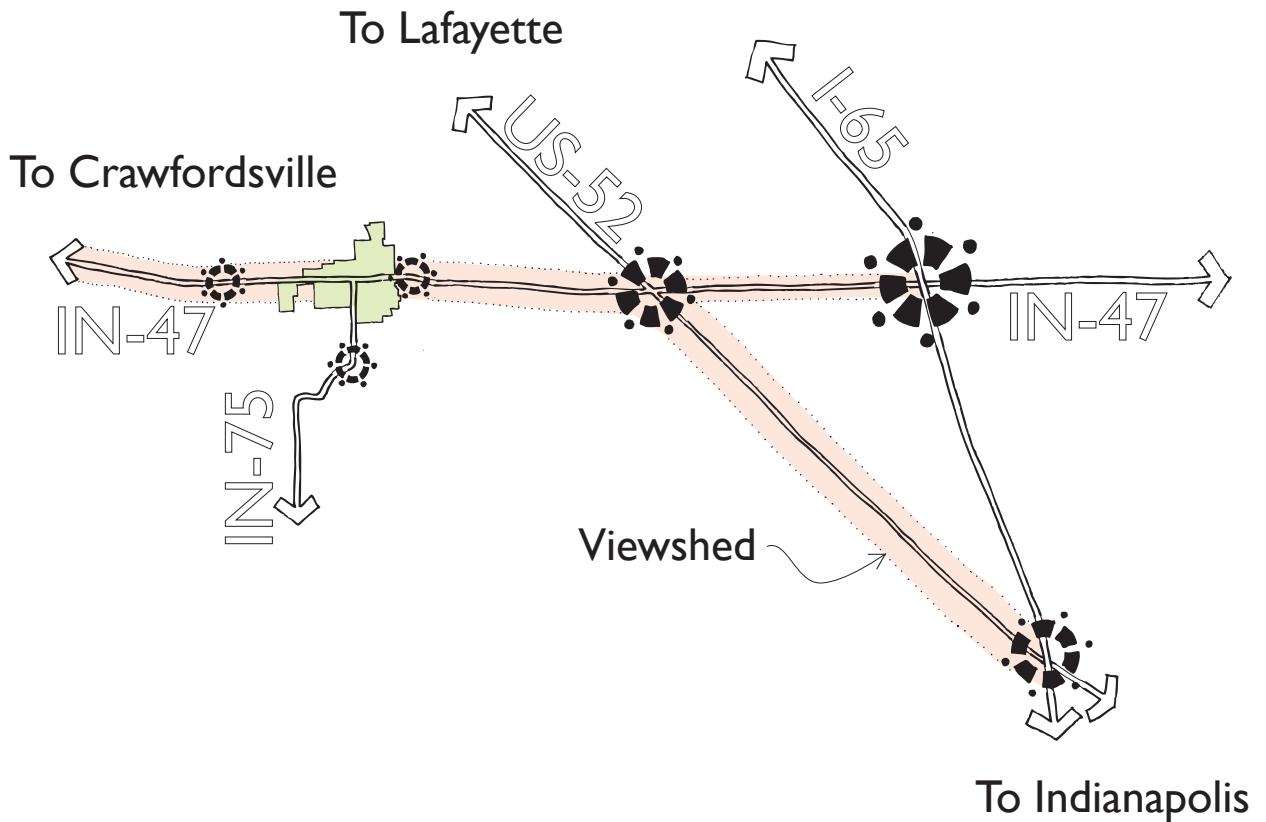
Diagrammatic Map of Potential Gateways and Viewsheds

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ENHANCE WALK
TO LIBRARY

MARKET ST.

PEARL ST.

TYPICAL STORMWATER BASIN
AND ROADWAY BUMP OUT

TYPICAL TREE IN
LANDSCAPE ISLAND

IMPROVED CROSSING
FOCAL POINT

TYPICAL 4' BIOSWALE

FHT CONTINUES

SHORTENED
CROSSING

SR 47

AMENTITY ZONE

8' WALKWAY

TOWN PLAZA SPACE

FARM HERITAGE TRAIL

PAVED PEDESTRIAN
BUMP OUT

REVISED PARKING LAYOUT

POSSIBLE
VISITORS CENTER
OR FARMERS MARKET
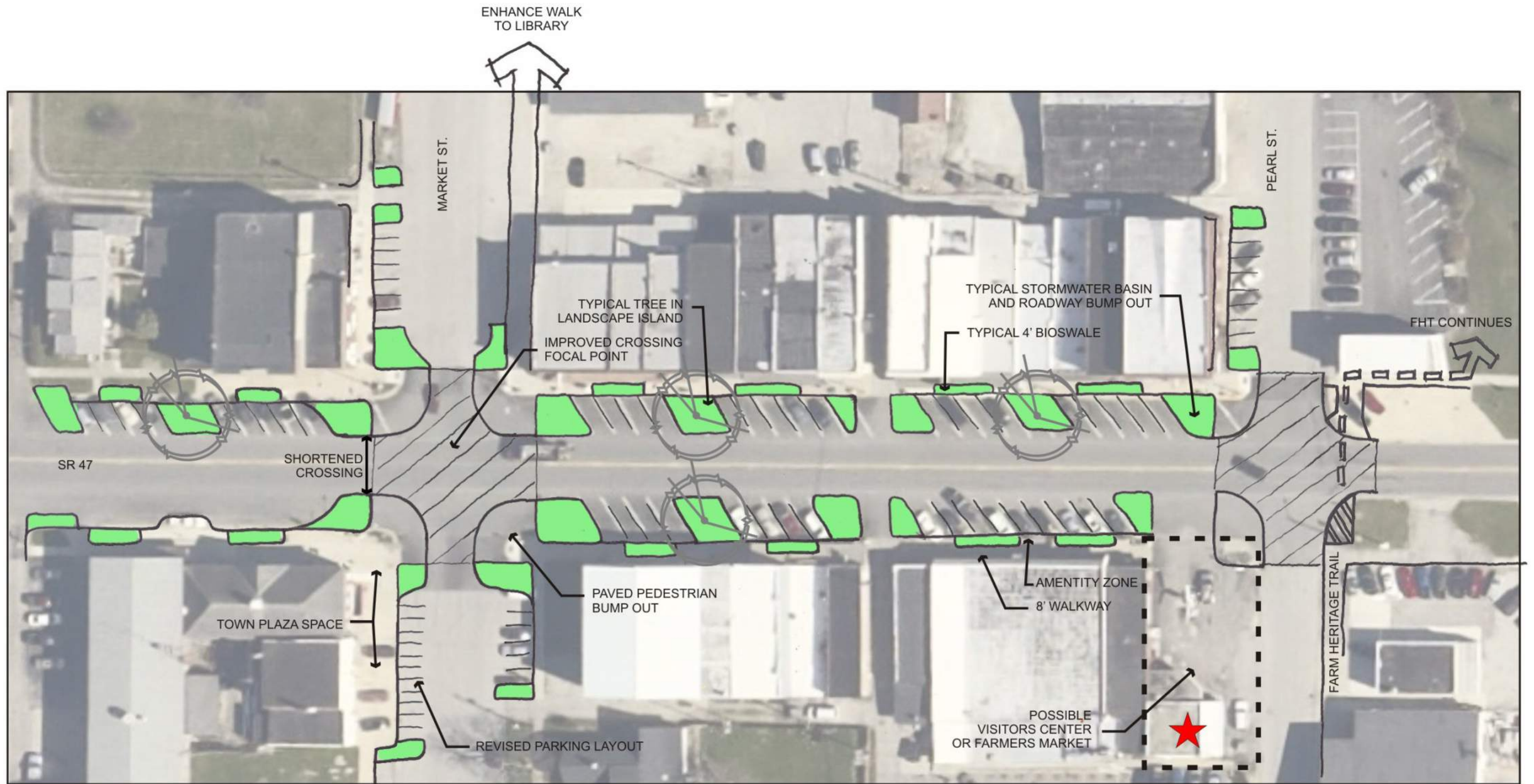
Proposed Streetscape Improvements to Main Street

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Branding
& Promotion

Eaton Chevrolet sign, **Thorntown Heritage Museum***, June 2010*

Branding
& Promotion

Creating a brand and promotional materials will allow the Town to reach beyond its borders and tell new audiences what's in store for them in the northwest corner of Boone County. Even more than landscaping and streetscape aesthetics, branding and promotion introduces the town to would-be visitors - because it reaches them before they reach you. Branding allows Thorntown to set the stage and spread the word regarding the Town's assets. Creating a familiar brand helps visitors navigate an unfamiliar area, which goes a long way in building comfort and a good relationship. Branding materials can highlight strengths that might be overlooked by locals and, as a result, leave them underappreciated or under-promoted. Brand identity is essential to pushing the community's image and a vision forward.

The object of the first goal is to put the "Thorntown Way" on paper. Once this is accomplished, the town will possess the means to project its identity, state its purpose, and own its products. It can thus become a "known" entity. This process works in concert with gateway planning in particular and streetscape design in general. It will also play a role in a number of goals found elsewhere in the plan. See **Exhibit 19** for suggestions of branding elements for Thorntown, plus the logo for the Thorntown Community Organization, the design of which is based upon the old Thorntown depot sign.

The intent of the second goal is to make Thorntown a destination. This builds Thorntown's brand and expand its purpose, contributing to its social, cultural and economic foundation at the same time.

Case Studies

## Branding - *Pensacola, FL*

Summary

- Pensacola's economy, downtown, and reputation lagged behind comparable communities.
- The branding process culminated in an initiative in which six adjectives describing the city and its ambitions were printed on 45,000 colored, dot-shaped magnets, allowing citizens to interact with and influence their city's branding.

The community's branding consultant began by evaluating the city's strengths and weaknesses against a pre-generated list of 36 "great city" attributes. Then they read every bit of published material about the city, consulted with every imaginable user and looked at competing cities to identify existing niches and gaps in the region. After taking all of this information to local residents, Pensacola settled on a single concept which encapsulated the town's identity. Perhaps more importantly, the process engaged Pensacola's citizenry and spurred new development and tourism initiatives. In addition, the research generated during the process indicated what areas future development should focus on in order to maximize results.

Lessons Learned

- Intense public involvement resulted in significant buy-in to the branding concept.
- The concept could be extended to a wide range of uses and applications.
- Public involvement itself can be one of the most potent results of a well-executed planning process.

Promotion - *Underwood, ND*
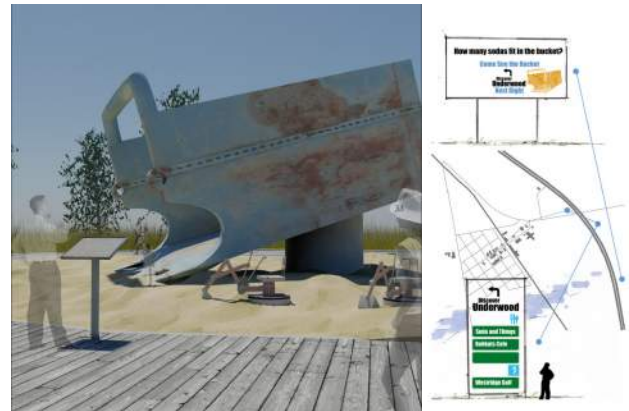
Summary

- U.S. Highway 83 pulled traffic and development away from the old town center.
- The project outlined a strategy based on industrial heritage to pull traffic back to town.
- Public/private partnerships can build on local resources and identify catalysts for seed projects while at the same time building momentum for community support.

Imagining a Way Forward, The Plan proposes seed projects to effect foundational changes to a town in decline. These projects include building a graphic brand presence at a truck stop near the old town center to create curiosity about the town's history and current amenities. Coupled with efforts to create a more pedestrian-friendly Main Street, the result is to grab passers-by and bring them into town to experience local offerings.

Lessons Learned

- Spatial planning is key to revitalization.
- Focusing redevelopment efforts on the historic core delivers ample benefits.
- People are the foundation of positive efforts.

Goals & Objectives

Goal 1:

Brand Thorntown.

Objectives:

1. *Create a committee to coordinate and produce brand development and associated marketing materials.*

2. *Adopt a town slogan: "**On the Way**" could be used as a starting point. This slogan, put forward by Kelly Frank of the TCO, carries a double meaning. The first addresses the perception that Thorntown is not close, or "on the way," to any place one might be headed; the other suggests the opposite - that Thorntown is up-and-coming, a destination in the making.*

3. *Develop and adpot a town logo for marketing purposes.*

4. *Develop and produce a set of branding materials (e.g. stationary, business cards, etc.) in both hard and digital formats.*

Goal 2:

Promote Thorntown's special events and activities.

Objectives:

1. *Contact Boone County website administrator and request Thorntown's website and TCO website be added to the Links tab*

2. *Assemble digital library of town images to be used in town promotional publications*

3. *Develop Thorntown fact sheet, Thorntown history narrative or graphic timeline*

4. *Identify target markets for promotion of town and prepare a list of promotion contacts for each target*

5. *Create graphic map of Thorntown features, assets and destinations, including list of businesses and service organizations*

6. *Create an outline for an annual promotional campaign*

7. *Implement a marketing campaign in at least one target market*

Resources

- Indiana Division of Tourism (Visit Indiana)
- Marketing aid through the Indiana Chamber of Commerce
- Main Street program: National Trust for Historic Preservation
- Hope VI Main Street program: U.S. Department of Housing and Urban Development
- Chambers of Commerce
- Boone County Economic Development Corporation

THORNTOWN

Community Organization

Above is the new logo for the Thorntown Community Organization, and is based upon the historic sign which was on the Thorntown depot and which today is in a private collection with other railroad memoribilia.

To the left is a logo concept inspired by the 1909 and 1936 Texas Oil Company (Texaco) logo, and incorporates the "one the way" slogan which has been bandied about.

Below is a concept for a banner or print advertisement. It incorporates a slogan as well as the descriptors Arts, Heritage and Life.

THORNTOWN

On the way... since 1830

THORNTOWN

WE'RE ON THE WAY

Arts

·

Heritage

·

Life
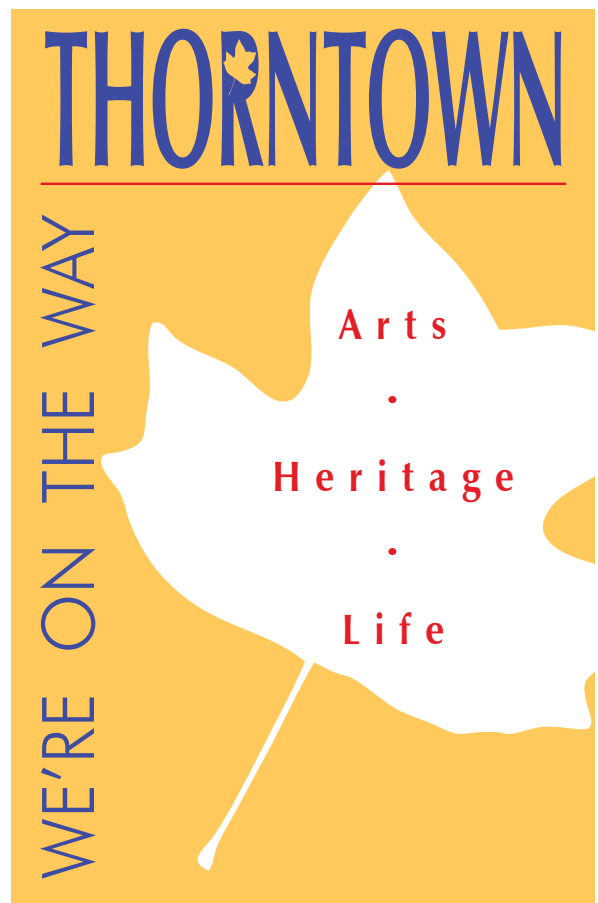
Branding and Promotion concepts

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Sustainability

*"Park & Swap" at **Lions Park**, July 2009*

*Recycling dumpsters behind the **Sugar Creek Arts Center**, March 2010*

Sustainability

Sustainability for Thorntown means reducing costs and improving the quality of life in and around the town. Reducing energy costs and waste, reducing demand on costly infrastructure and extending the life of existing facilities - much of this through education and awareness - is critical. Addressing natural resource protection and habitat issues is also important. Being sensitive to environmental impacts and opportunities contributes greatly to creating a healthy town environment. Air and water quality will improve, as will the look and feel of the town. Thorntown should promote a land-management strategy intended to restore community health, reduce flooding, and protect the quality of natural resources and agricultural sustainability.

Improving the town's function and impact on the landscape and area resources is urgent and ongoing. Low Impact Development (LID) guidelines offer solutions to some standard development problems. These development standards were created to help communities reduce stormwater runoff and improve the overall quality of watershed resources. LID concepts can also be extended to energy and waste initiatives that similarly reduce the town's costs and resource impacts. **Appendix K** is an LID design guide for creating a rain garden.

The first goal here addresses biodiversity and community health. The region around Thorntown and Boone County once hosted a greater biodiversity, which means a greater range of plants and animals formed the area's ecosystem. Much of this was disrupted when the land was cleared for agriculture. Restoring some level of this former wildlife habitat not only invites species back, but it also improves the town's health and appearance.

The second goal looks at capturing Sugar Creek as an asset and ensuring a clean stream system and water supply for the township. Building awareness of the watershed as a system and the role stormwater plays in the health of that system is a critical component. **Exhibit 20** shows landscape features designed to capture and infiltrate stormwater, one type of

measure Thorntown could pursue.

Thorntown can be an area leader by implementing small measures that sharply reduce water consumption. This helps conserve water resources and reduce costs. The third goal addresses these issues.

The fourth goal represents a simple step for Thorntown to reduce costs and make a statement about its role in resource conservation and pollution prevention. Clean air and lower bills are ideas anyone can support.

Goal five looks at your garbage. The remaining life at the three facilities that currently accept garbage from Thorntown is in the best case just over 24 years and just over 12 years at the most stressed facility. There are many reasons to reduce, reuse and recycle: cut down on landfill material, reduce resource consumption and save money.

Case Studies

Habitat Certification - *Falls Church City, VA*

Summary

- A multi-year effort initiated by the city to gain habitat certification through the **National Wildlife Federation** (NWF).
- The overall goal is to restore a balanced ecology to the city.
- The program includes an effort to educate residents and business owners.

Residents in the city raised concerns that biodiversity continued to decrease in the area due to habitat destruction. This was significant not only because of impacts to wildlife but due to possible impacts on water quality, air quality and other factors. One of these was potential floodplain enlargement caused by the increasing proportion of impervious surfaces such as parking lots and roads. The city formed a diverse team of professionals and citizens who met regularly to chart the city's fulfillment of NWF standards. These standards require addressing certain types of properties and range in content from education measures to communication and administration.

Lessons Learned

- Widespread community buy-in was critical to success of the project.
- The project team must be dedicated and have both professional and personal interest in the project in order to steer it over the course of several years.

Green Streets - *West Union, IA*
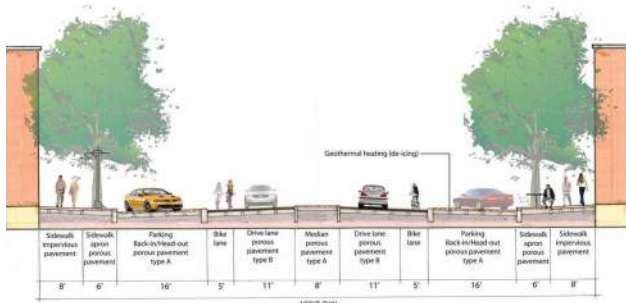
Summary

- A small agriculture community joined with the state development office to pursue the Green Communities program.
- The program addresses alternative transportation, welcoming streets and treating water as a valuable resource.
- The program serves as a model for downtown revitalization and a demonstration of measures to enrich community.

This project began with a rigorous public input process. The plan recommendations included an Art Walk, a Performance Pavilion on the historic Courthouse lawn, and geothermal heating of hardscapes. Other proposals include permeable pavement, green roof systems, rain gardens, a harvested rain water system and solar powered lighting. The plan intends to create safer, inviting spaces; encourage alternative transportation; promote physical activity; create opportunities for socialization; and provide an authentic experience that promotes economic development. Residents will benefit from a variety of quality of life improvements and economic benefits that accrue from the completion of this program.

Lessons Learned

- Community input must be analyzed to determine a consensus and a resulting clear vision.
- Green solutions make a better community.
- When cars do not dominate the planning process, the result is a better and wealthier community.

Green Neighborhoods - *Seattle, WA*

Summary

- A mixed-use/mixed-income neighborhood built on former crime-ridden land.
- Development has a strong focus on watershed protection.
- The neighborhood acts as small town by supporting amenities such as a library, retail space, a health clinic and housing units for asthma sufferers.

The High Point Neighborhood has won numerous awards for its social, environmental and economic sustainability efforts. The development replaced a dilapidated neighborhood, doubling that neighborhood's size but reducing the amount of energy and resources consumed by residents. With a focus on connectivity for pedestrians, mixed uses, parks and gardens and retaining housing for low income residents, the development's value has steadily increased. The housing stock is split 50/50 between rental and owner-occupied units, and owner-occupied units are selling at around 50% over the median housing cost in the area.

Lessons Learned

- All socio-economic groups deserve healthy living environments and access to the same resources.
- Sustainable development attracts residents and investment, continually increasing in value.
- Mixed-use and Mixed-income development provide significant quality of life benefits to residents and existing neighbors.

Goals & Objectives

Goal 1:

Seek Community Habitat Designation.

Objectives:

1. *Obtain information on becoming a wildlife habitat community from Indiana Wildlife Foundation and define requirements for Thorntown to obtain certification.*

2. *Obtain preprinted information on limiting use of lawn chemicals and other common pesticides and distribute to property owners.*

3. *Identify locations for native grass/forb demonstration site to use as an educational model for promoting turf reduction to local residents.*

4. *Install one or more demonstration plots using native plants in place of turf.*

Goal 2:

Improve awareness and education of stormwater and watershed issues.

Objectives:

1. *Engage a series of speakers to give presentations to locals on watershed education and the benefits of porous paving, native landscaping, stormwater capture, etc.*

2. *Start a rain barrel campaign and host at least 2 workshops demonstrating how to use and construct rain barrels.*

3. *Identify a site to install a demonstration project that can illustrate one process of reducing runoff (see **Apendix K**).*

Goal 3:

Improve water conservation and reduce consumption.

Objectives:

1. *Audit/inventory all existing public and community facilities to identify opportunities for installation of water saving fixtures and features; estimate costs.*

2. *Conduct fundraising campaign to fund installation of low-flow fixtures in one public or community building each year; post recognition sign on each upgraded facility.*

3. *Work with local schools and conservation clubs to develop a youth-sponsored and promoted "conserve water" program targeted at tracking and reducing water consumption and waste at home.*

Goal 4:

Improve energy efficiency and energy use awareness.

Objectives:

1. *Conduct energy audit of Town facilities to identify energy use levels and possible areas of efficiency improvement.*

2. *Prepare energy efficiency plan outlining the cost/benefit of proposed improvements; submit to town council or other governing bodies for adoption and follow-up implementation by all.*

3. *Identify three easy, simple energy efficient measures targeted at local home/property owners, i.e. convert light bulbs, and create an incentive/assistance program to promote implementation throughout community.*

4. *Post energy audit, information and activity on website for easy access and to promote ongoing efforts.*

Goal 5:

Reduce waste and increase recycling and reuse.

Objectives:

1. *Investigate current level and type of recycling in area and determine best option to meet Thorntown's current and future demand.*

2. *Install recycling bins/containers next to all trash cans in town and organize pick up program for collection.*

3. *Create a community compost site to handle yard waste, Christmas trees, grass clippings, etc.*

4. *Work with school to develop school-wide recycling program and recycling center.*

Resources

- National Wildlife Foundation
- LID Design Manual,
  www.lowimpactdevelopment.org
- American Society of Landscape Architects
- The Freecycle Network,
  www.freecycle.org &
  groups.yahoo.com/group/Lebanon_INfreecycle/
- Sustainable Site Initiative
- Lady Bird Johnson Wildflower Center,
  www.wildflower.org

Examples of Sustainable Landscape Features

Opposite page:

A portrait of James Riley, taken c. 1890. Mr. Riley was a Thorntown farmer and corn breeder who developed a number of varieties in the late 1800s through the process of selection (as opposed to cross-hybridization), including the two shown - "Riley's Favorite" and "Boone County White." The latter was at one time one of the most common varieties of white corn grown in the United States, and heirloom seeds of it are still available for purchase today.

Local Agriculture
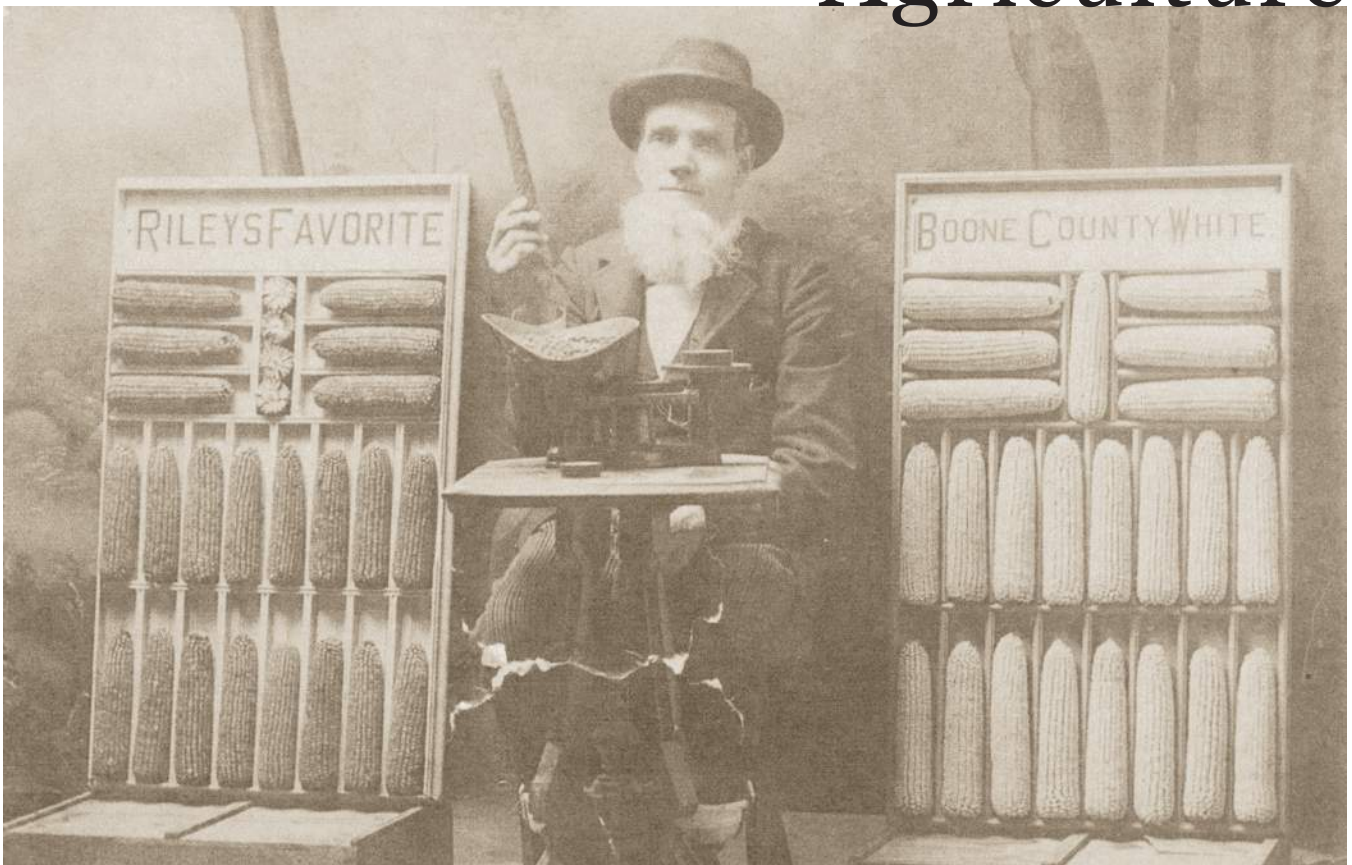
James Riley of Thorntown, c. 1890

Local Agriculture

Fresh, local produce at Thorntown's "Park & Swap," July 2009

Census data indicates that while the number of individual farms increased from 2002-2007, many sectors saw a decline in farm numbers. One cause of this disparity is that most of the new farms are small operations typified by less acreage and fewer sales. Inside this data is an emerging trend broadcast in documentary movies and best-selling books—the local foods movement. Called by many names, the local foods movement represents an opportunity for Thorntown's agricultural heritage to renew its purpose and play a large role in defining the town's identity.

The strategies outlined here engage youth and create new opportunities for local food production in and around Thorntown. They also feed off of the work done to brand the town, build its recreation offerings, and contribute to efforts to create a tourist destination. Successes here build capacity for larger operations and more operators.

It is important to note that alternative farming arrangements are not considered a panacea for rural economic woes. However, recent analyses of contemporary economic development strategies do point to "multifunctional" agriculture, "livable landscapes", high-value, branded foods as an essential sector of business development in rural areas. Not only does this approach build on local skill sets, but it also attracts younger generations who often find more opportunities closer to urban centers. These concepts are not foreign to the area: the National Resources Conservation Service notes that within the multi-county region of the Sugar Creek watershed, land owners have implemented over 30,700 acres of No-Till farming practices, approximately 53,000 feet of upland buffers, and just under 400 acres of aquatic buffers. Additionally, more than 8400 acres of wildlife habitat has been enhanced or established and approximately 300 acres of forestry practices have been implemented.

Case Studies

Farmer-Grocer Collaboration - *Fairbury, IL*

Summary

- The project is a collaboration between local farmers and a locally-owned grocery.
- Sales are split 80/20 between the farmers and the store.
- Sales and participating farmers have grown each year since inception, often doubling.

This "indoor farmers' market" began as a partnership between several local direct-market producers. At the store, the farmers are responsible for stocking products, while the store provides shelf space, advertising and barcodes for the products. The number of farmers participating in this project grew from three to over 16 in only three years and their sales more than doubled each year in the first three years of the project. The farmers created a formalized business structure, **Stewards of the Land LLC**, which allows them to market and sell their products as a single business entity. The structure also facilitates the relationship between the grocery store and the farmers and organizes opportunities for the farmers to take their produce to additional marketplaces. Residents gain improved access to fresh, local produce, the store profits, and the farmers gain a superior marketplace for their wares.

Lessons Learned

- Key elements include entrepreneurial farmers, energetic leaders, a cohesive community, an independent grocer and supportive officials.
- A long success horizon, good location and invested consumers - they need to know about and want your product.

Agri-Tourism - *Traders Point Creamery, Zionsville, IN*

Summary

- Grass-fed cows, organic creamery:
  "We milk it. We make it. We serve it."
- The farm has a weekly market for local producers and a restaurant based on local products.
- A farm store, a dairy bar and national distribution.

Raising between 175-200 Brown Swiss cows on a 350 acre organic farm, **Traders Point Creamery** epitomizes the successful agri-tourism business. The farm offers a variety of reasons to visit, including tours and meals, and creates a genuine farm experience for visitors. They can follow chickens in the historic barn or watch cows be milked in a modern facility, and then finish the day shopping in the store and eating in the restaurant or dairy bar.

The mission of **Traders Point Creamery** is to:
- *Farm in harmony with the land and the animals.*
- *Produce the most nutritious and healthful products possible.*
- *Encourage education of farming and nutrition.*
- *Promote a community of local food and sustainable farming, reconnecting farmers & consumers.*

Lessons Learned

- The full-service farm creates reasons to visit and spend money.
- Off-site sales expand the brand and profits.
- Significant promotional efforts resulted in national brand recognition and a steady flow of tourists.

Goals & Objectives

Goal 1:

Develop appreciation and awareness of local food production and consumption in Thorntown.

Objectives:

1. Identify/inventory local producers.

2. Secure local farmer's market location.

3. Develop a local food calendar of events.

4. Organize an annual public 'Harvest Dinner' as a showcase for local production/preparation.

Goal 2:

Engage Youth in local food production, distribution and promotion.

Objectives:

1. Identify current programs: FFA, 4H.

2. Develop local food mentor program to connect interested youth with area producers.

3. Plan and develop a Youth Distribution Network for a home delivery service for local produce/ products.

4. Develop a youth outreach to youth program to promote local food appreciation and awareness.

Goal 3:

Expand access to local food.

Objectives:

1. Identify gaps and shortages in current supply; production tracking and inventory.

2. Organize and manage weekly farmer's market.

3. Advertize availability in vicinity (website, e-newsletter, local bulletins, etc.).

Goal 4:

Develop 'Thorntown Way' in agri-tourism market.

Objectives:

1. Distribute information to network of advocates/ regional partners.

2. Brand all local products and services with consistent identity (reusable sacks, etc.).

Resources

- United States Department of Agriculture, Agricultural Marketing Service
  www.ams.usda.gov
- Indiana Department of Agriculture
  www.in.gov/isda
  www.in.gov/apps/ISDA_FarmersMarket
- Purdue University Cooperative Extension Service
  www.ces.purdue.edu
- American Farmland Trust
  www.farmland.org
- The Stewards of the Land, LLC
  www.thestewardsoftheland.com
- University of Illinois Extension
  web.extension.illinois.edu/agritourism
  web.extension.illinois.edu/dsi/research.cfm
- Traders Point Creamery
  www.traderspointcreamery.com
- Fair Oaks Farm
  www.fofarms.com
- Historic Lafayette Farmers Market
  www.lafayettefarmersmarket.com
- Farmers' Market of Lebanon
  www.farmersmarketoflebanon.org
- Local Harvest
  www.localharvest.org

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Conservation & Recreation

Thorntown Eagles baseball team, 1906

Keewasakee Trail bridge over Serum Plant Road, June 2010

Conservation & Recreation

The Indiana Statewide Outdoor Recreation Plan (see **Appendix M**) identifies Boone County as being critically deficient in outdoor recreation opportunities with less than 55 acres per 1000 persons. Boone County is in a 25 county region that forms a band across central Indiana that is classified as deficient in terms of outdoor recreational facilities and opportunities. This illustrates a great demand and also a great potential market for outdoor recreation opportunities in and around Thorntown. **Exhibit 21** shows possible locations for expanding outdoor recreation opportunities.

Resource conservation is important and provides a wide range of environmental and potential economic benefits. Two primary environmental concerns in Boone County and beyond are water quality and natural habitat. The creation of two new wetland conservation areas by the State totaling over 68,000 acres - one of which is located downstream in the Sugar Creek and Wabash River floodplain - indicates that the time is right for stream protection initiatives and "green" stormwater management solutions.

Conserving natural resources, building habitat and creating more recreation opportunities will benefit Thorntown. Increased revenue from recreation-oriented visitors and increased attractiveness to young families looking to settle in a scenic small town are just a few of these potential benefits. Improving the health of the Sugar Creek watershed will reduce flood potential, increase the quality of fish, wildlife and botanic resources and improve water quality. The conservation of agricultural land is important to retaining the area's history and heritage, and also benefits the natural environment. Thorntown and Sugar Creek Township have a rich farming heritage and conservation easements are powerful voluntary tools that can protect agricultural, historic and natural resource assets in perpetuity.

The construction of the **Keewasakee Trail** and the **Farm Heritage Trail**, which meet in Thorntown, are major accomplishments for the community, and set the stage for a 40+ mile corridor for bikes and pedestrians that will run from Zionsville to Lafayette. Recreational trails provide a broad range of health benefits and carry the potential for a variety of educational experiences and business opportunities. Other existing facilities, however, fall short of town needs. Additional park space could serve larger and more diverse populations and provide services currently lacking. Athletic fields are one example, but a skate park, children's splash park or modern playground facility could also have a positive impact on the town. A living history museum could be integrated with outdoor activities and a naturalized riparian area to maximize its relationship with the town and visitors. Developing a master plan for the parks is an effective tool for detailing the community's recreational needs.

Case Studies

Agricultural Easements - *Dunn, WI*

Summary

- The **Purchase of Development Rights** (**PDR**) program is a voluntary farmland protection method that also compensates landowners.
- Residents ratify funding measures and purchase decisions.
- The program has protected 2,064 acres to date.

One of the only agriculture easement programs in the Midwest, the **PDR** program builds on a strong local desire to preserve the rural/farm lifestyle. The preservation of environmental, archaeological, scenic, historic and cultural resources are additional program goals. The township collaborates closely with a countywide land trust in co-holding and monitoring **PDR** easements. Dunn has been successful in obtaining state support for individual easements because of their habitat and open space values. In return for a relatively modest investment, this community has guaranteed the preservation of critical and beautiful land resources for all generations to come.

Lessons Learned

- A traditional land use plan was not adequate.
- The **PDR** program protects resources in growing community.
- Voters approved a tax hike to fund the project.

Watershed Protection *- Lake County. IL*

Summary

- The watershed plan covers a 27 square mile region, containing sensitive and rare ecosystems and valuable Lake Michigan shoreline.
- The plan has a multi-level focus including flood-related issues and education in order to protect watershed resources.

The project area includes the Kellogg Creek and Dead River watersheds in northeastern Lake County. This region drains into Lake Michigan and is host to unique natural communities and resources. These watersheds help maintain water quality and quantity where it enters the critical Great Lakes. The area is important as habitat for aquatic species and contains a 3,000 acre nature preserve and a National Natural Landmark: 6 miles of undeveloped shoreline and 66 acres of wetlands which are home to many rare plants. The planning process included regular public workshops adressing topics such as water quality improvement, stream and wetland restoration, flood damage reduction, green infrastructure and open space planning, natural resource protection and enhancement, and education.

Lessons Learned

- Water resources are essential to a community's health.

Goals & Objectives

Goal 1:

Expand recreation opportunities associated with Sugar Creek.

Objectives:

1. *Approach the Indiana Division of Fish and Wildlife to request a public access site/boat launch to be constructed on Sugar Creek to serve Thorntown residents and visitors.*

2. *Establish a Sugar Creek scenic bike route linked to the Farm Heritage Trail and Old Mill Run Park; sign and mark the final route.*

Goal 2:

Protect riparian resources.

Objectives:

1. *Formalize local conservation club to lead conservation efforts and spearhead coordination with other conservation groups and efforts.*

2. *Host a meeting with other regional conservation groups and agencies to discuss priorities. Generate a Thorntown conservation priority list based on meeting results.*

3. *Complete one conservation demonstration or pilot project on priority list every two years.*

Goal 3:

Protect local agricultural and landscape heritage.

Objectives:

1. *Map location of all local, state and national historic sites, including heritage farms and agricultural landscapes.*

2. *Identify agricultural preservation district limits and map preliminary overlay district boundary. Prepare narrative description of purpose of district and present to town council for approval to present to county commissioners.*

3. *Prepare a master plan for a living history museum to promote local heritage.*

Goal 4:

Expand recreational opportunities in the Town and Township.

Objectives:

1. *Coordinate with the Friends of Boone County Trails, Indians Trails and others on maintenance and expansion of the Farm Heritage Trail north of Thorntown.*

2. *Prepare a master plan for parks, per INDR standards, indentifying desired facilities and preferred locations.*

3. *Plan for and construct a new children's playground.*

Resources

- Indiana Department of Natural Resources
- Indiana Department of Environmental Management, watershed protection guides
- Indiana Office of Community and Rural Affairs
- The Nature Conservancy
- Indiana Wildlife Federation
- Natural Resources Conservation Service
- Boone County Soil and Water Conservation District
- Indiana Native Plant and Wildflower Society
- Isaac Walton League
- Indiana Lake and River Enhancement program
- Hoosier Riverkeeper/Riverwatch program
- Friends of Sugar Creek
- Friends of Boone County Trails
- Indiana Trails
- Greenways Foundation
- KaBOOM!
  www.kaboom.org

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1   Cemetery
2   Location of New Fire Station
3   Potential Location for New Park/Splash Park
4   School
5   Park
6   Historical Museum
7   Town Hall
8   Church for potential reuse as Senior Center
9   Post Office
10   Library
11   Health Center
12   Lion's Club Park - Potential location for a New Community Center
13   Sugar Creek Art Center
14   Potential Location for a Skate Park/Youth Center
15   Historic Cemetery
16   Potential Site for a Living History Center/Park
17   Potential New Park
18   Potential Site for a Conservation Farm/Park
19   Potential New Park

Keewasakee
Trail

Prairie Creek

IN-47

IN-75

Improved Intersections

Potential Bicycle/Pedestrian Routes

14 15

16

17

8 9 11

10

6 12

7

13

18

19

1

2 4 5

3

Farm
Heritage
Trail
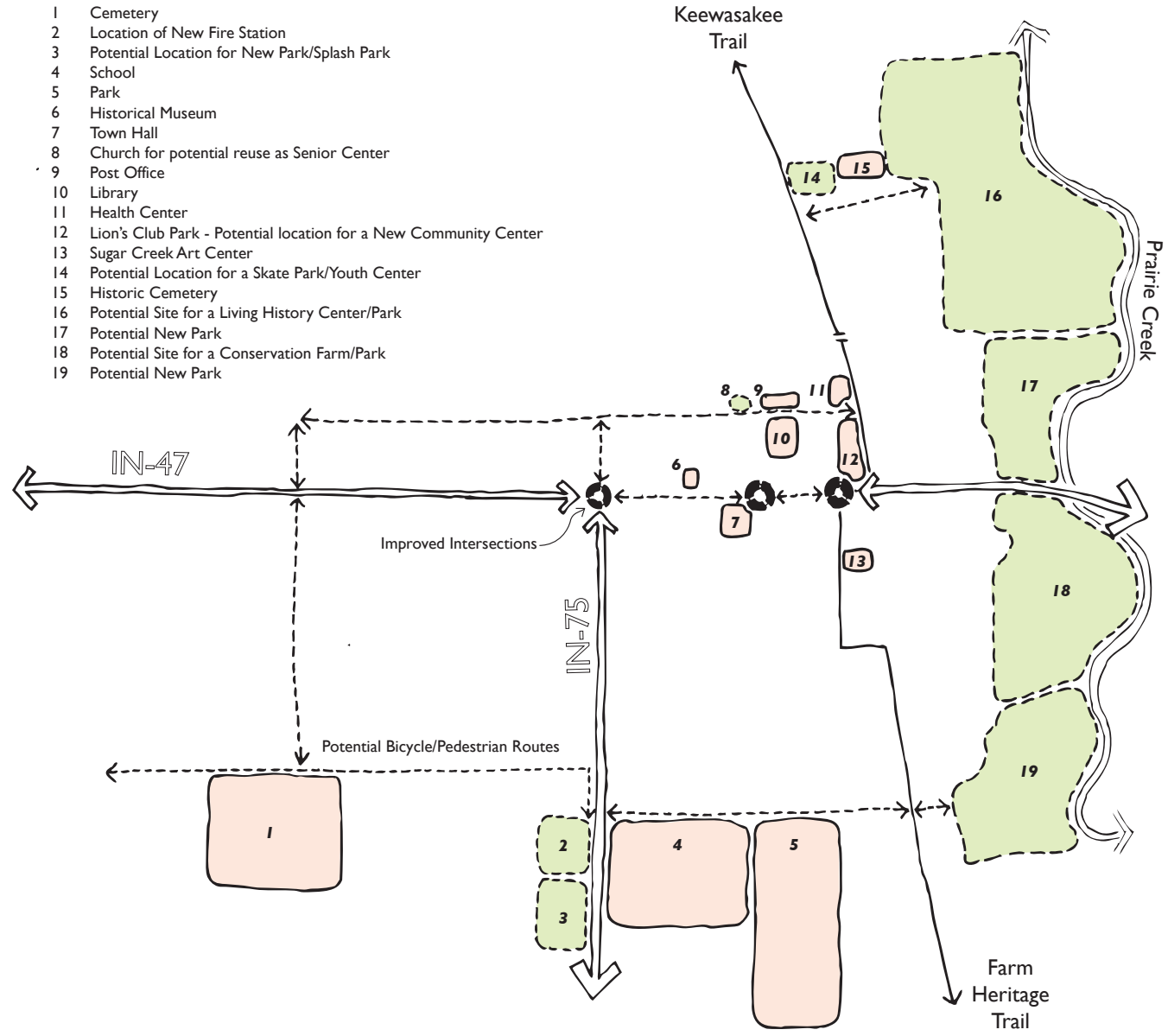
Map of Proposed Recreation Areas

US-52

Brush Creek

I-65

Spring Creek

Morrison Creek

Sugar Creek

Sugar Creek

IN-47

Wolf Creek

Prairie Creek

Deer Creek

Buffer
Zone

Flood
Zone

Waterway

100'-
200'

IN-75

Conservation
Agriculture/
Low-impact
Development

No
Development

Dixon Creek
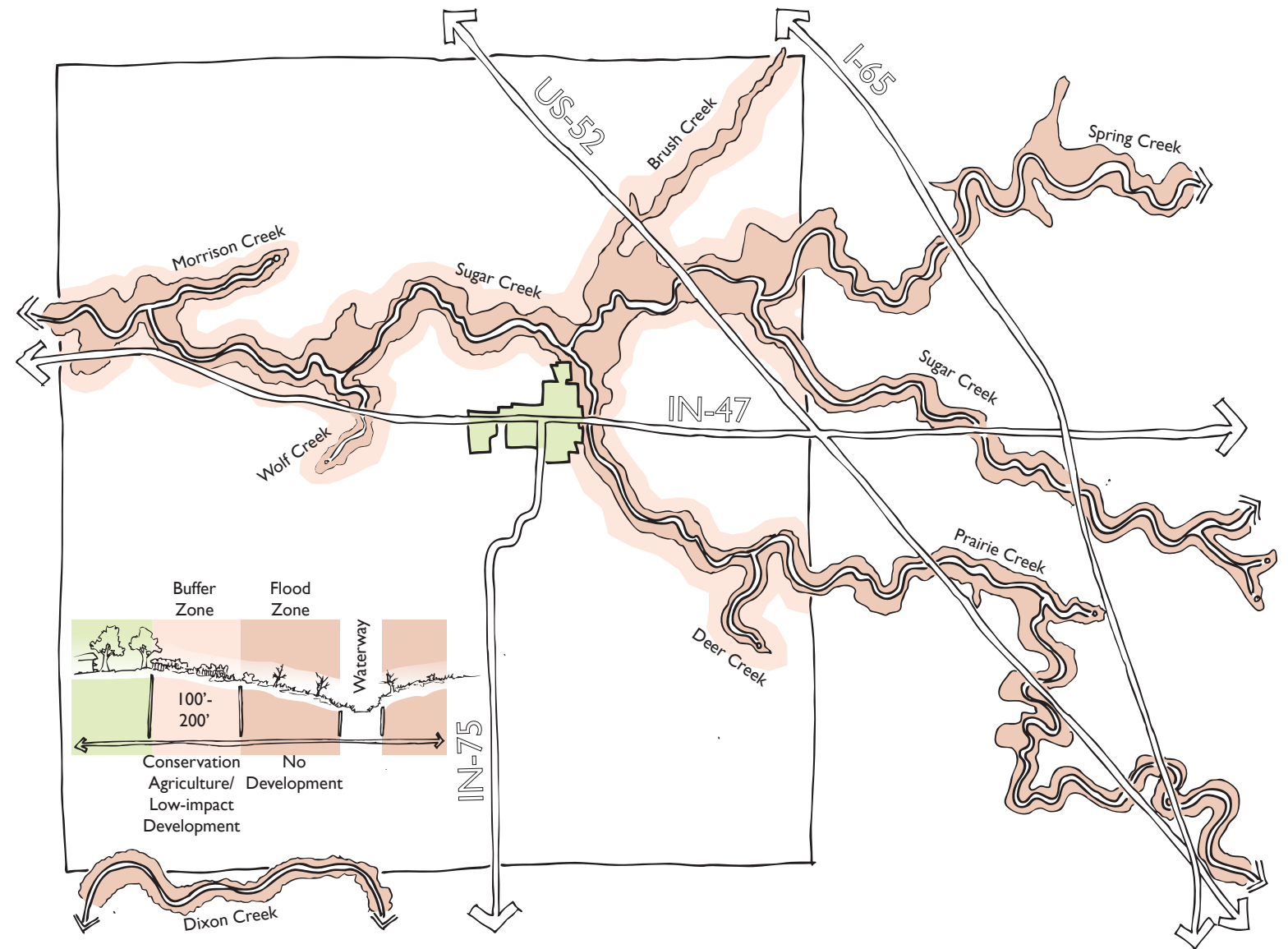
Map of Proposed Conservation Areas

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Arts &
Education

Sugar Creek Arts Center, July 2010

*Students and faculty of **Thorntown Academy**, c. 1870*

Arts & Education

The **Sugar Creek Art Center** has already demonstrated Thorntown's strong interest in the arts. Extending the reach of the arts in Thorntown will impact a number of areas addressed in this report: it can add to successes in promoting local foods; it can embellish a bike tour route and gateways into town; it can bring new energy to town.

A significant impact of an expanded role for the arts is the impact it can have on youth education. Children who have a rich experience with the arts will grow up with an awareness of and an appreciation for what the arts can do for the life of an individual and the life of a town.

Increasing the role of the arts helps to activate the community and involve individuals in town causes. The enthusiasm derived from an active arts community can create advocates who contribute to other areas of town improvements. And the arts can create activities and destinations that bring the community out. An active and engaged community is vibrant and appealing, and these qualities reverberate beyond simple borders.

Case Studies

Artist Relocation Program - *Paducah, KY*

Summary

- The **Artist Relocation Program** was started in 2000 and is now a national model in art-based economic development.
- Paducah offers a range of financial and zoning incentives to attract artists.
- Relocation incentives have attracted more than 70 artists from around the country.

The **Lowertown Arts District**, and Paducah itself, are marketed nationally as an arts center in order to broaden their prospective audience. **Lowerton** is dual-zoned to support both commercial and residential use, which allows artists to concentrate their investment on a studio/gallery space that doubles as a residence. Local backers offer 100% financing for purchase and rehabilitation of existing structures or construction of a new structure in the arts district. Vacant lots are free for new construction as they become available, and the City will pay up to $2500 for architectural services or other professional fees to support investment within the district.

Lessons Learned

- Local leaders must buy in to the concept of the community as a thriving arts center in order for a program like this to succeed.

Kohler Arts/Industry Program - *Kohler, WI*

Summary

- The **Kohler Co.** invites internationally-recognized artists to work with their employees in the company's pottery shops and iron foundry.
- Local craftsmen and visiting artists mutually benefit from the close working relationship.
- The program often results in industrial designs for innovative new products, which end up in use by consumers as "functional art" in their homes and places of business.

The **Arts/Industry** program is administered by the **John Michael Kohler Arts Center** (Sheboygan, WI) wherein artists work side-by-side with **Kohler** craftsmen during long-term residencies. Artists have access to industrial technology for projects of their own choosing, and the resulting artworks are displayed on the corporate campus and in its buildings, within the Village of Kohler, and in the galleries of the **Arts Center**. The value in merging arts and industry is evident in the way that the artists inspire the industrial craftsmen in their everyday work.

Lessons Learned

- Working with artists inspires local craftsmen in their everyday work.
- The fruits of the relationship enhance the community at large.

Arcadia Arts Initiative - *Arcadia, IN*

Autumnfest 2009

Summary

- The initiative creates a thriving and diverse arts and crafts community of practitioners and educators.
- The initiative ties into the community's historic character and cultural heritage.
- The initiative uses a local trail to extend visibility and grow its audience.

The **Arcadia Arts Initiative** program is designed to "*bring together existing and new artist/astisans into a community of teaching, collaboration and sharing... to promote successful individual artists/artisans, to encourage the teaching of their creative art and craft form to others and to contribute to the growth and development of historic downtown Arcadia, Indiana.*" Teaching space is subsidized, marketing and promotions are cooperative, and public events help build public support. The result is a community renowned for its art and art-based tourism. In turn, art enriches the lives of local residents and bolsters the economy.

Lessons Learned

- Build upon local traditions and strengths.
- Combine initiative with additional events and amenities, like a trail that can link to other arts communities or events.

Big Thought - *Dallas, TX*

Summary

- The programs increase community access to art education, both in and out of school.
- The programs use residents and employees to tailor specific opportunities to specific neighborhoods and communities.
- The programs connect artists with residents, students and teachers in community centers and classrooms.

Big Thought is an art education organization which uses a two-pronged approach to bring art education to the people of Dallas, Texas. First, to increase art education in schools, they collaborate with teachers, principals, government officials and outside artists to increase arts funding and to bring teaching artists and performances into the classroom. Second, to increase art education in the community, **Big Thought** connects available artists with community centers that can host art programs. When possible, the artist chosen is tailored to the existing interests of the local residents. Another program involves youth and parent ambassador teams brainstorming, investigating, and facilitating new art programs in their communities. **Big Thought**'s programs are a good example of how to take advantage of art resources currently in the community to foster appreciation of and support for the arts.

Lessons Learned

- Deliver art education through schools and also directly to the community.
- Utilize existing community resources to spread art appreciation throughout the community.

Goals & Objectives

Goal 1:

Make art more visible in local culture.

Objectives:

1. Prepare a public art policy for Thorntown to guide development of artist selection, commission and installation of public art throughout community (see **Appendices N** and **O**).

2. Create Public Art committee to coordinate a public art installation (temporary or permanent) by Founder's Week 2011.

3. Develop list of local artists and art organizations (within 50 miles).

4. Identify area for a mural promoting local art and culture and commission local artist(s) to install.

5. Host an outdoor art fair to tie into at least one other town event (a weekly market, Festival of Turning Leaves, etc.).

6. Develop a poster, flyer and digital announcement to promote the art fair.

Goal 2:

Create an artist in residence program.

Objectives:

1. Identify facilities willing to support art-related activity as part of an artist-in-residence program.

2. Identify resources available to attract/support visiting artists (room & board, stipends, etc.) and draft an artist-in-residence program outline.

3. Identify deliverables for resident artist: classes, installations, etc.

4. Develop promotional material for the program and identify audience for promotion.

Goal 3:

Involve youth in Town's art initiatives and culture.

Objectives:

1. Develop an after-school workshop program for school-aged kids working with the Sugar Creek Art Center and the local art teachers at WEBO schools.

2. Develop a summer camp for school-aged children to learn from local and/or visiting artists and to produce temporary public art displays.

3. Photo-document all art education activities to use in promotion and fundraising efforts.

4. Create an annual traveling exhibit of student art collected from after-school and summer programs to display at various public and community locations and events.

Goal 3:

Create public education/awareness campaign.

Objectives:

1. *Develop evening adult art education series in conjunction with a major arts-related town event (this could include art history lectures, demonstrations, instruction, etc.).*

2. *Produce a series of 2D/3D art promotion signs to place in key areas and post around town prior to one arts-related town event (think serial highway signs).*

Resources

- Art Education Association of Indiana (AEAI),
  www.aeai.org
- Indiana Arts Commission,
  www.in.gov/arts/
- Arcadia Arts Initiative,
  www.arcadiainarts.com
- Artist Relocation Program, Paducah, KY
  www.paducaharts.com

Regional Partnerships & Local Leadership

Thorntown Public Library, July 2010

Regional Partnerships & Local Leadership

Sugar Plain Friends Church, *March 2010*

Recent reports have noted that the success of rural towns lies in their ability to create regional partners that share assets, skill sets, economic profiles and other defining features (refer to **Appendix P**). These regional entities are more capable of leveraging their political capital for access to resources to get results. This model promotes entrepreneurship and innovation - the wave of the future. Thorntown's assets and resources must be identified and understood for the town to successfully engage regional partners. This is a "bottom-up" approach that requires locals to be proactive and work together to promote the success of the region along with their individual communities.

Strong leadership is vital. Regional partnering involves bridging political boundaries and working collaboratively with the county development boards, the local chamber of commerce, etc. to bring about quick action and decision making. Developing a strong leader for regional networking will allow Thorntown to make consistent progress on the mission of this plan.

Case Studies

Regional Competitiveness Project - *Minnesota*
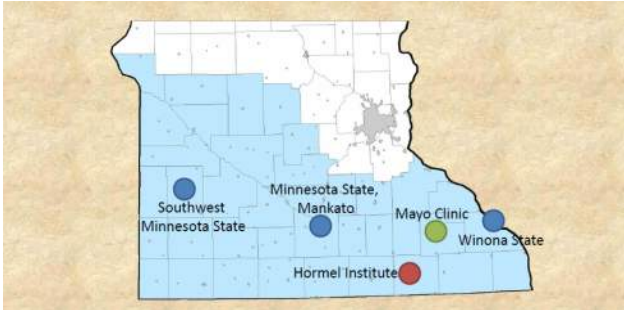
Summary

- A regional partnership of businesses, non-profits, and governments located in 38 southern Minnesota counties.
- Round table discussions and statistics were used to find strengths.
- A regional strategy was decided on that took advantage of local strengths and rallied around a few large, outstanding firms.

The **Southern Minnesota Competitiveness Project** is led by a local financial institution and two philanthropic foundations, and involves numerous regional partners - businesses, non-profits, and governmental entities. The **Center for Regional Competitiveness** at the **University of Missouri** was hired to help them develop a regional competitiveness plan. After analyzing data and getting local input, a strategy formed that centered on several globally-competitive firms in the region. By focusing regional efforts in certain industries, the region becomes an extraordinarily attractive location for firms in those industries to relocate or form. In turn, this can stem and reverse the decades-long trend of slow decline that has troubled the region.

Lessons Learned

- Individual outstanding businesses can form a basis for a strategic plan for the future.
- Often, finding the right group of partners requires some flexibility.

RiverLands Project - *Illinois, Iowa & Wisconsin*
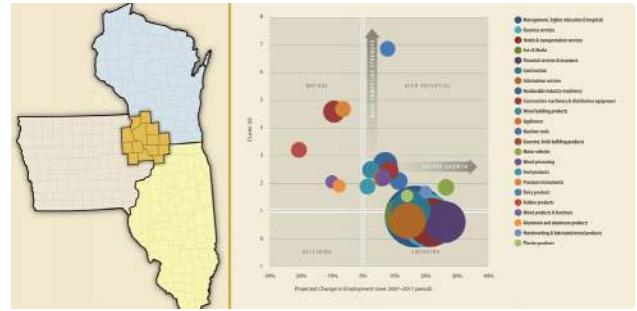
Summary

- A regional partnership of 14 counties in Illinois, Iowa and Wisconsin, with perceived similarities, held round table discussions and analyzed statistics to discover regional strengths.
- A cluster analysis was performed to determine industries that the region has a competitive advantage in due to clustering of firms.
- Five industries were selected as focus areas.

The **Rural Policy Research Institute** (**RUPRI**), based in the **University of Missouri**, worked with regional leaders to form a robust regional partnership that extends beyond state and county borders. The region has suffered from slowly declining incomes and a flight of youth in the last 20 years. The leadership team analyzed the region's economic pillars and strengths using statistics and gathered local input through round table discussions. The team performed a cluster analysis to determine which areas held the greatest potential for future growth. To do this they looked for intersections of two factors: industries expected to grow, and industries where they had an above-average concentration of firms and workers. The process resulted in the identification of five areas on which to focus development.

Lessons Learned

- Local input is necessary to supplement statistics.
- Locally-owned enterprises provide significant advantages in revitalization efforts.
- Regions that specialize can increase their economic strength.

Goals & Objectives

Goal 1:

Identify regional partners who share assets and profile characteristics with Thorntown.

Objectives:

1. Make contact with the Purdue Center for Rural Development and arrange for speaker to visit to share knowledge and understanding of this existing effort.

2. Develop list of top 10 town assets and entrepreneurial/innovation opportunities to serve as basis for determining regional partnerships and marketing opportunities.

3. Create an introduction letter with background on regional partnership strategy and a partnership invitation; identify economic development leaders in 10 other communities the in region and mail invitation to partner.

4. Schedule a meeting of regional partners with a facilitation "coach" or consultant to establish preliminary annual work plan for implementation by all partners, including Thorntown.

Goal 2:

Identify and develop local leaders and a network of advocates.

Objectives:

1. Identify list of community leaders to serve on leadership board.

2. Identify leadership training opportunities for leadership board and initiate at least 2 training events/sessions.

3. Hold quarterly leadership roundtable with leadership board to discuss opportunities and needs.

4. Pursue a grant to fund a town development office to spearhead business development, retention and recruitment and other regional promotion activities.

Resources

- United States Department of Agriculture, Rural Development
  www.rurdev.usda.gov/home.html
- Indiana Office of Community and Rural Affairs
  www.in.gov/ocra
- Purdue University, Department of Agricultural Economics, Center for Rural Development
  www.agecon.purdue.edu/crd/
- Boone County Chamber of Commerce
  www.boonechamber.org
- Boone County Convention and Visitor's Bureau
  www.boonecvb.org
- Boone County Economic Development Corporation
  www.booneedc.org
- Community Foundation of Boone County
  www.communityfoundationbc.org
- Rural Policy Research Institute - Center for Regional Competitiveness
  www.rupri.org/regionalcomp.php

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Transportation

"Big Four" Railroad Depot, Thorntown, c. 1920

Lebanon-Thorntown Traction Co. interurban car, sitting at the terminus in front of Town Hall, on Market Street, c. 1910

Transportation

Thorntown's economic and community development future depends on its ability to maximize its transportation assets from functional, safety, aesthetic, and maintenance perspectives. Even as recently as the beginning of this century, "transportation" writ large, with respect to a community like Thorntown focused almost exclusively on motorized - car and truck - alternatives. Increasingly, however, federal, state and local transportation initiatives now contemplate multiple modes of transportation which, in the case of Thorntown, also include pedestrian and non-motorized (i.e. bicycle) modes. This is significant to the creation of this Plan as it presents new opportunities; recognition by state and local transportation authorities that maintaining and creating community character, developing an enhanced sense of place, being identified as a healthy, livable and walkable community, and maximizing economic and community development are all acceptable or even desired by-products of, or components to, traditional transportation planning.

Thorntown has a unique set of current transportation assets. It is bisected east to west by Indiana **State Road 47** (**SR 47**), which provides a main arterial route from **Interstate 65**, which is only 4.7 miles to the east. **State Road 75** (**SR 75**) originates in the approximate center of the town's corporate limits, providing another major transportation artery to and from the south. Both state roads fall under the jurisdiction of the **Indiana Department of Transportation** (INDOT), which positively impacts the town as the maintenance of both is the responsibility of INDOT.

With these positives, however, also come potential challenges that necessitate the inclusion of a transportation goal in this Plan. The first of these is the lack of direct town control over the form and function of **SR 47** and **75**. Immediate by-products of this lack of control include the town's inability to directly impact the following: traffic throughput, speed and safety, pedestrian and bicycle access, and aesthetics.

Goals & Objectives

Goal 1:

Enhance traffic flow through Thorntown to achieve positive by-product outcomes.

Objectives:

1. *Identify and complete a formal study of vehicular and pedestrian patterns / issues.*
   a. *Obtain and formally study recent data to identify town traffic volumes, including passenger vehicles and large trucks.*

   b. *Obtain and formally study recent data to identify high-risk / accident locations.*

   c. *Identify and formally study locations with inadequate geometry or traffic control devices (i.e. the intersection of SR 47 and 75).*

   d. *Identify and formally study pedestrian and bicycle patterns.*

   e. *Indentify extisting local and regional transportation services and potential riders.*

2. *Identify vehicular traffic calming, alternative routing and intersection enhancement options.*
   a. *Identify local perceptions of vehicular traffic speed and safety.*

   b. *Study conceptual feasibility of and impacts from upgrades to the intersection of SR 47 and 75 relative to large truck traffic.*

   c. *Study conceptual feasibility of and impacts from the creation of a traffic roundabout or traffic circle at the intersection of SR 47 (Main Street) and Market Street.*

   d. *Study conceptual feasibility of and impacts from upgrades to the intersection of SR 47 (Main Street) and the Kewasakee Trail.*

3. *Develop a transportation infrastructure plan to attract and retain businesses, residents and visitors.*
   a. *Provide convenient and safe on-street parking*

   • *Study and determine impacts of provision of bumpouts and fresh pavement markings and signage to delineate parking*
   • *Study and determine adequate parking capacity for current and future Main Street business use*

   b. *Provide a walkable downtown area*

   • *Identify missing sidewalk linkages and condition of existing surfaces*
   • *Identify safety adequacy of pedestrian crossings*
   • *Identify impacts to pedestrian and bicycle activity resulting from Objective #2*

   c. *Permit / Approval issues*

   • *Anticipate planning and coordination needed for improvements to SR 47 and 75 that require INDOT approval*
   • *Anticipate planning and coordination needed for improvements to County Roads that require County approval*

   d. *Local pavement asset management*

   • *Create and institute a field and office protocol to investigate, track and budget for the future maintenance of paved surfaces under Town jurisdiction.*

Exhibits

Exhibit 22 on the following page, illustrates the current vehicular transportation assets in Thorntown, notably the location of **SR 47** and **75**, and other key intersections within the town's corporate boundary.

To prepare the recommendations provided above, some of which are also identified in **Exhibit 22**, the Team met with district representatives of INDOT. Notes summarizing the key discussion topics from that meeting are included in **Appendix Q**. INDOT representatives confirmed the town's inability to acquire local control over **SR 47**, insofar as such control transfer requires the state route to begin or terminate within the corporate limits of Thorntown. The Team also notably confirmed with INDOT that **SR 47** and **75** are not considered as "high-traffic" routes (exceeding 5,000 vehicles per day), that the creation of a traffic roundabout or circle at the intersection of **SR 47** (**Main Street**) and **Market Street** would require justification as a "traffic need" to be state-funded and would need to meet INDOT design criteria regardless of funding source, and that federal **Transportation Enhancement** (**TE**) funding could potentially be appropriate for funding enhancements.

Separate from information gathered in the meeting with INDOT representatives, the Team also obtained specific traffic count data for **SR 47** and **75**, and these counts are illustrated on **Exhibit 22**. Cursory field observations of the intersections of SR 47 and 75, SR 47 (Main St.) and Market Street, and SR 47 (Main St.) and the Keewasakee Trail provide the basis for the identification of these three intersections as recommended study/enhancement locations. Public input received during the planning process, as well as in response to **Exhibit 22**, validated local opinion that vehicular traffic volumes on **SR 47** and **75** are perceived qualitatively to be high, albeit seasonal, and that the three intersections identified are appropriate for study with regard to enhancements.

Lastly, based upon the Team's meeting with INDOT and knowledge of available funding sources, it is our opinion that roundabouts or traffic circles should be explored further at the intersections of **SR 47 / Main Street** and **Market** and **Pearl Streets**. **Exhibit 23** shows a concept of what a roundabout at Main and Market Streets might look like. A roundabout would serve the primary purpose of claming traffic - that is, to slow it down - but also would serve as a focal point for a monument or fountain, which in turn could become a signature feature of Thorntown's streetscape and something which could enhance tourism.

Resources

As expected with costly infrastructure enhancements, funding sources are highly specific, competitive, and jurisdictional. While funding identified for activities related to this Plan's objectives are primarily from federal sources, they are state administered. These funding resources include the:

- Federal Transportation (**TE**) program
- Federal Highway Safety Improvement Program (**HSIP**)
- Federal Safe Routes to School (**SRTS**) program
- Federal Community Development Block Grant (**CDBG**) - **Community Focus Funds** (**CFF**) program

In addition to these federally-sourced funding options, the State of Indiana's **Downtown Enhancement Grant** (**DEG**) program also provides potential funding that, while likely tangential to true transportation enhancements, focus on community-based planning, marketing and revitalization activities. Additional transportation funding information may be found at:

- **U.S. Department of Transportation, Federal Highway Administration**
- **U.S. Department of Housing and Urban Development, Office of Community Planning and Development**
- **Indiana Department of Transportation**
- **Indiana Office of Community and Rural Affairs**

COUNTY ROAD 825 W

KEEWASAKEE TRAIL

Intersection Enhancements
"Truck Traffic/Pedestrian
Safety"

Intersection Enhancements
"Roundabout/Pedestrian
Safety"

STATE ROAD 47   "MAIN STREET"

900 ADT
50 Trucks

2720 ADT
50 Trucks

4220 ADT
290 Trucks

1830 ADT
70 Trucks

Bike Trail Crossing

STATE ROAD 75

S. VINE STREET

S. MARKET STREET

S. PEARL STREET

S. FRONT STREET
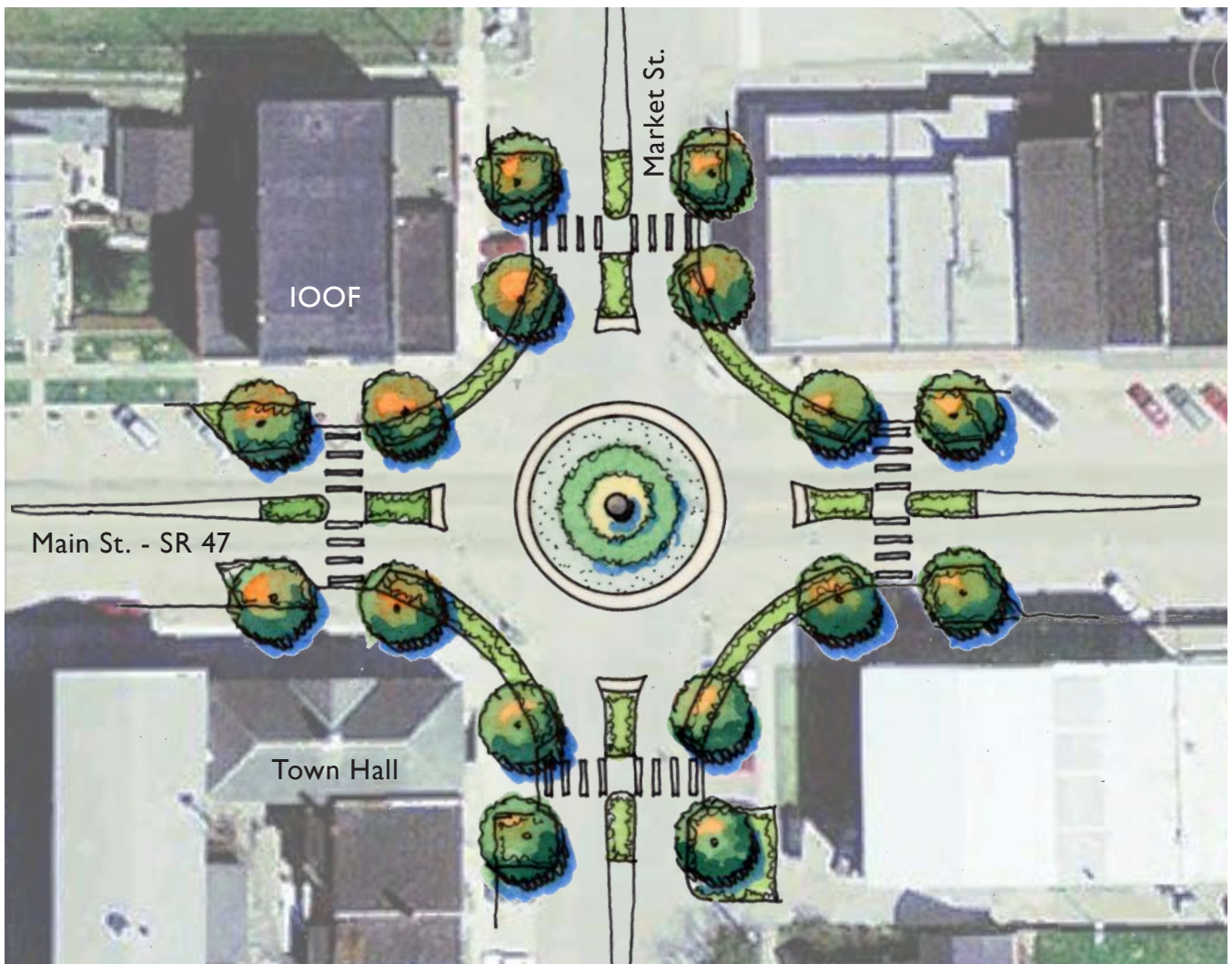
1370 ADT
76 Trucks
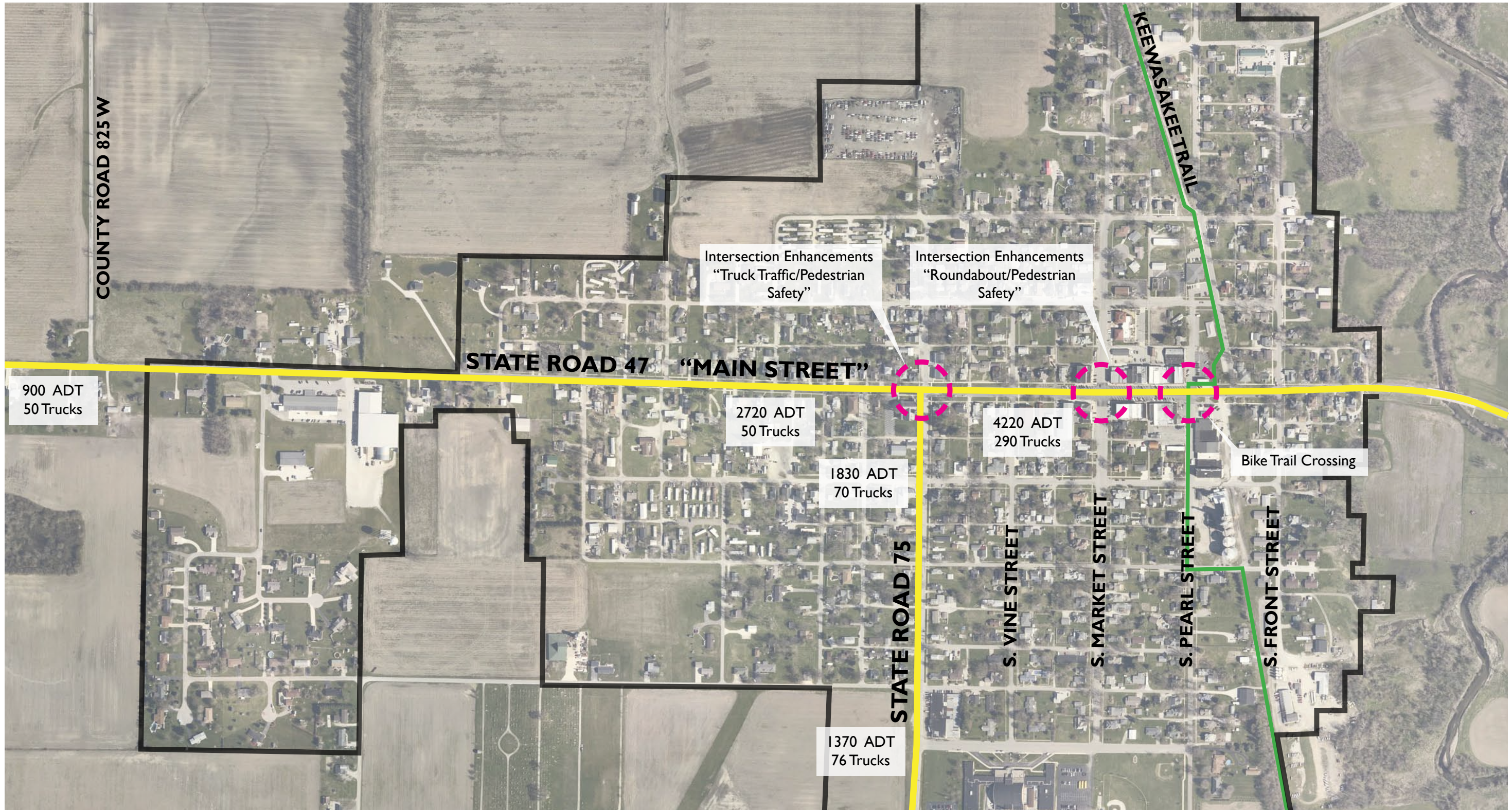
Transportation Map

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Civil War Monument in right-of-way: Olcott, NY

A roundabout with a fountain Carmel, IN

*Roundabout Concept at the intersection of **Main** and **Market Streets***

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Brownfield Redevelopment

Old gas station on Main Street, May 2010

Old laundry business in Thorntown, June 2010

Brownfield Redevelopment

The word "brownfield" describes a type of property found in Thorntown, throughout Indiana, and across the United States. "Brownfield Redevelopment" describes a related activity or concept, with both the term and concept having come into existence within only the last twenty years. Despite their relative newness, both the word and concept are increasingly well understood and are vital components of long-term community vitality.

A brownfield is formally defined as: "*real property, the expansion, redevelopment, or reuse of which may be complicated by the presence or potential presence of a hazardous substance, pollutant, or contaminant.*" More generally, a brownfield site is property that does not respond to typical real estate market forces because its past use has, or is thought to have, resulted in environmental contamination. Brownfield sites exist in all sizes - fractions of an acre to large sprawling complexes - and past uses of brownfield sites are also highly varied. Historic brownfield site uses range from old corner gas stations, to former "Main Street" dry cleaners, to previous small engine repair or metal-working shops, to abandoned trash dumps, to heavy industry manufacturing facilities.

Common threads that connect all potential brownfield sites in local communities like Thorntown include: their negative effects on adjacent property values, typical blighted aesthetic, dilution of job opportunities at prime commercial business locations, decreased tax revenue generation, and of course, possible threats to human health and the environment. It is often acknowledged that a lack of focus on identifying, prioritizing, investigating, remediating when necessary, and redeveloping brownfield sites also adds continued pressure to convert and develop agricultural land or greenspace, thus depleting a sometimes finite local resource.

The fact that Thorntown has not historically been a location base of heavy industry or manufacturing suggests that the community would not be considered as a place with significant brownfields challenges. However, one of Thorntown's perceived assets – its small size – gives significance to addressing any and all potential brownfield sites in the community – regardless of their size or nature. Accordingly, the inclusion of a brownfields redevelopment goal in the Thorntown Comprehensive Plan is an important component with respect to future economic and community development expectations.

Case Studies

Former Gas Stations - *Fall Creek Place*

Brownfield redevelopment opportunities need not be large to provide excellent community and economic development benefits. An example of this fact includes two former gas stations at the intersection of 25th and Delaware Streets in the Fall Creek Place residential area of Indianapolis. Successfully investigated, remediated, and redeveloped, these brownfield sites are now the location of a vibrant mixed-use project that is a text-book example of a "live-work" development. With storefront retail use of the lower level and loft style condominiums on the upper levels, this project is an example of unique and sustainable "infill" redevelopment.

As brownfield sites due to their former use as gas stations, federal and local investigation and remediation funding was accessed by the City of Indianapolis and state technical assistance was obtained through the Indiana Brownfields Program. Additional private sector financial investment for environmental cleanup was also provided from the project developer. Prior to redevelopment, a total of seven underground storage tanks, 1,900 gallons of liquid petroleum, and 101 tons of contaminated soil were removed from the sites.

This redevelopment success story is a prime example of how the hard work of local officials and the leveraging of federal, state, local, and private funds can help transform a neighborhood.

Former Essex Wire Factory - *Ligonier, IN*

The redevelopment of the former Essex Wire facility in Ligonier demonstrates how the actual process of redeveloping a brownfield site can incorporate environmentally sustainable principles in addition to the sustainable outcomes inherent in the cleanup process.

This four-acre site in northern Indiana housed a three-story manufacturing facility built in approximately 1846. The site – slated for future reuse as a riverside park and possibly a future fire station – first had to be cleared of structures, and the disposition of demolition debris provided an excellent sustainability opportunity. Through the salvage of bricks and wooden support beams, only an estimated 5 to 10% of the site's structures will be landfilled. A few key project statistics include:

- 100 tons of reusable material per week - sold
- 1.6 million bricks - sold and reused at:
    a historic church
    a light house on the Great Lakes
    multi-million dollar homes in six states
- Broken brick - utilized as landscaping material
- Oak posts - reused by furniture manufacturers across the U.S.
- Unusable wood - mulched instead of discarded
- 300 tons of steel, copper, aluminum, brass and other metals - recycled

Federal, state, and local funds were leveraged for the project, including investigation, asbestos removal, and demolition costs. State technical assistance has also been a valuable resource for the project.

Goals & Objectives

Goal

Improve local capacity to redevelop local brownfield sites.

Objectives:

1. *Increase local awareness of brownfield redevelopment concepts by:*

    a. *requesting technical outreach and conceptual information exchange from State of Indiana government assistance programs and/or qualified private consultants; and*

    b. *engaging local stakeholders and long-term residents in a dialog about the opportunities of brownfield redevelopment for economic and community development progress.*

2. *Inventory, prioritize and investigate environmental conditions of highly ranked browfield locations by:*

    a. *using local historic knowledge about the past use(s) of sites and publicly available environmental database information, complete an inventory of potential brownfield sites;*

    b. *prioritizing inventoried locations of potential sites to reflect locations that have the greatest redevelopment opportunity with respect to the desires of local elected officials and potential private sector stakeholders; and*

    c. *seek state or federal funding financial assistance to investigate possible environmental contamination at highly prioritized inventory locations.*

3. *Use legal liability leverage and financial or technical incentives available to local governments to redevelop brownfield sites through public / private partnerships:*

    a. *For highly ranked sites with confirmed contamination, seek remediation performance by current property owners and/or responsible parties, where known.*

    b. *For highly ranked sites with confirmed contamination whose current owners and/or responsible parties cannot self-fund cleanup, use local government channels as a conduit for remediation grants or low-interest loan funding.*

Exhibits

Exhibit 24, on the opposite page, illustrates the locations of several potential brownfield redevelopment opportunities within the corporate limits of Thorntown. The sole information source used to create this preliminary inventory was a publicly available database maintained by the **Indiana Department of Environmental Management** (**IDEM**). This database reflects many of the sites with a Thorntown postal address where uses of the sites have resulted in an interaction with the IDEM (i.e. a reported spill or release, a complaint, a permit filing, an inspection, etc.). By generally applying the definition of a brownfield to the approximate 57 sites holding a Thorntown address, and by further reviewing specific information about the IDEM interaction, the resulting list includes sites where a reported release or spill was not identified in the database or supporting documents as definitely resolved.

This initial analysis and the resulting potential brownfield opportunity locations illustrated in **Exhibit 24** are significant for several reasons. First, it easily illustrates the potential presence of

multiple brownfield redevelopment opportunities in Thorntown. Second, it represents a highly conceptual and preliminary application of just one of the above-named objectives. Lastly, since this analysis in no way confirms the actual current contamination status at any of the sites - which can only be confirmed through additional records review, site inspection, or physical soil or groundwater sampling – it underscores the need for the implementation of a brownfield redevelopment strategy that will lead to a greater understanding of potential local brownfield sites.

Resources

Technical and general educational resources are available to Thorntown through the **Indiana Brownfields Program** which is administered by the **Indiana Finance Authority** (**IFA**). The Indiana Brownfields Program, the purpose of which is the promotion of environmental stewardship and economic development, has multiple funding programs – many of which are available directly to or through Thorntown as a local government entity. These funding options take the form of grants to inventory and investigate potential brownfield locations, as well as grants and low-interest loans to remediate identified contamination. Similarly, the **United States Environmental Protection Agency** (**USEPA**) offers comparable funding analogs. Many of the multiple state and federal funding options are application-based with varied deadlines and are competive in nature.

Additional brownfield redevelopment funding information may be found at:

- www.epa.gov/brownfields/
- www.in.gov/ifa/brownfields/

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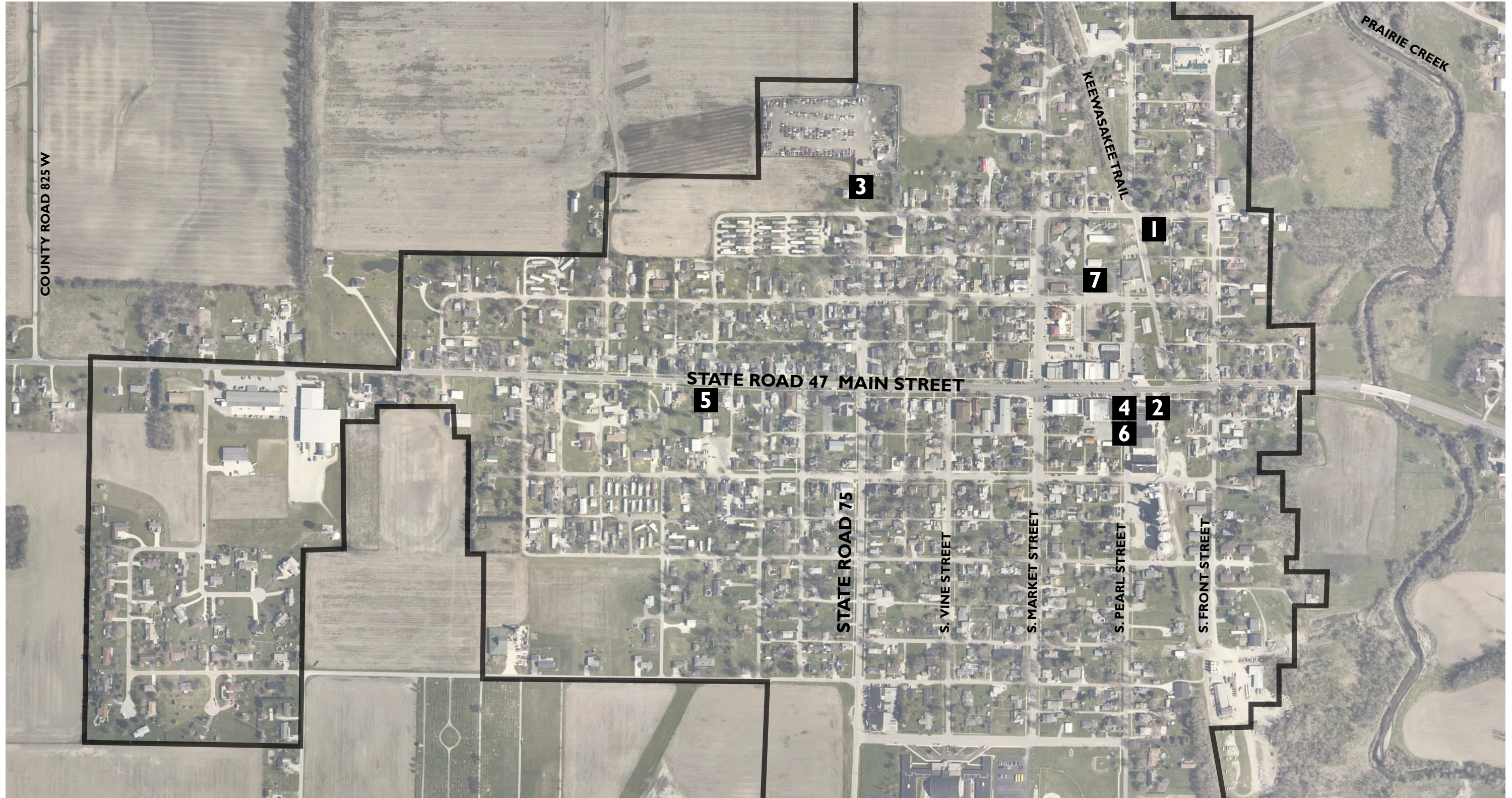
PRAIRIE CREEK

COUNTY ROAD 825 W

KEEWASAKEE TRAIL

3

1

7

STATE ROAD 47 MAIN STREET

5

4 **2**

6

STATE ROAD 75

S. VINE STREET

S. MARKET STREET

S. PEARL STREET

S. FRONT STREET

Map of Potential Brownfield Redevelopment Opportunities

1 208 E. Church St. **3** 300 W. Church St. **5** 605 W. Main St. **7** 115 E. Bow St.

2 200 E. Main St. **4** 100 S. Pearl St. **6** 118 S. Pearl St.

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Stormwater & Flood Management

Sugar Creek swollen with summer rains, July 2010

Bridge collapse, east of Thorntown, c. 1940

Stormwater & Flood Management

The long range task of providing continued water and wastewater (sanitary) utility services to Thorntown residents is an important component of the Thorntown Comprehensive Plan. Drinking water that is clean and abundant, and wastewater (sewer) service that is efficient and affordable, are basic expectations of current and future Thorntown residents. Not to be forgotten, however, is Thorntown's third type of municipal utility service - stormwater management.

An assessment conducted during the preparation of this Plan suggests that stormwater collection in Thorntown can be characterized as a lower priority utility service in comparison to water and wastewater service. On a purely geographic basis, the system of underground stormwater collection assets is not as widespread as current water and wastewater assets are, and notable areas within the town's corporate limits do not appear to provide any stormwater collection infrastructure at all – either underground or aboveground, such as detention or retention facilities. This is not uncommon in municipalities of Thorntown's size and age where underground stormwater collection may have been installed only recently during times of residential development growth, or perhaps in response to persistent localized drainage problems where sheet flow (i.e. un-sewered) drainage is insufficient. Nevertheless, it should be noted that widespread stormwater collection infrastructure can provide a positive impact on property values and can also be a proactive investment to increase the attractiveness of the town as a development target.

Another important factor to note is that stormwater control is not just about collection, since obviously stormwater is conveyed and discharged somewhere else. One of Thorntown's significant geographic assets is its close proximity to Sugar and Prairie Creeks. Prairie Creek is located just east of the incorporated boundary of Thorntown and flows

north into Sugar Creek. The town's stormwater runoff impacts the two watersheds associated with these water bodies, as well as the watershed associated with Wolf Creek.

Recognizing the larger geographic impacts of Thorntown's stormwater - and fully addressing local stormwater control and drainage issues - includes more than just a focus on an adequate underground storm sewer network. Thorntown's residents are best served by a Comprehensive Plan that includes a larger and more robust stormwater management strategy. A forward-looking stormwater management strategy will not only provide the means to focus on hard assets, but it will also provide the basis for integrating local control over many other aspects of life, work, and recreation in Thorntown including: natural resource protection, property value enhancement, sustainable development and lifestyle promotion, proactive development and construction responsiveness, and aesthetic improvements.

In regard to flood management, the current Flood Insurance Rate Map (FIRM) issued by the National Flood Insurance Program (NFIP) of the Federal Emergency Management Agency (FEMA) indicates that the area surrounding the corporate limit of Thorntown is part of FIRM Community Panel 1800110005B. However, the land within the corporate limit of Thorntown are unmapped. The areas east, west, north and south of the corporate limits are a zone C which is defined as an area of minimal flooding. The area adjacent to the very northeastern part of the corporate limit are identified as zones A4 and A5, which are areas of 100 year flooding and in which the base flood elevations and flood hazard factors are determined. The base flood elevation in this area ranges from approximately 814 to 817 feet above sea level. The Flood Insurance Rate Map is currently being updated for Boone County and a preliminary map (18011C0038E) is available for review.

Goals & Objectives

Goal 1:

Develop and institute a robust Stormwater Management Plan.

Objectives:

1. *Update existing subsurface stormwater system records.*
   a. *Using geopositioning technology, identify and update the dated and potentially inaccurate documentation of existing assests.*

   b. *Assess the field conditions of existing subsurface assets to ascertain needed upgrades or repairs.*

2. *Evaluate the capacity of existing stormwater collection measures.*
   a. *Perform engineering modeling to determine the sufficiency of current stormwater measures (subsurface collection and sheet flow) and evaluate the same against existing and projected future growth service area needs.*

   b. *Perform engineering analysis of the existing subsurface stormwater collection assets as to size, location and interfaces and compare to output from modeling efforts.*

3. *Conduct cost modeling to determine funding requirements for identified improvements needed.*

4. *Develop a measured and community-specific Stormwater Management Plan.*
   a. *Identify relevant and applicable components of Boone County's stormwater management statute(s) and modify for local implementation.*

b. *In consultation with Boone County staff and staff resources at the Indiana Department of Environmental Management (IDEM), develop and implement a technical manual outlining requirements and proceedures enforceable by local ordinance.*

Goal 2:

Follow-up with FEMA and the Indiana Department of Natural Resources (IDNR) on the update of the FIRM.

Objective:

1. *Once update of FIRM is obtained, evaluate the impact on the area.*

Resources

Should stormwater infrastructure needs be identified, either to address current needs or in response to the projected future growth of the community, Indiana's **Community Focus Fund** (**CFF**) is noted as the most relevant and likely source for financial assistance. The **CFF** is federally sourced under the **Community Development Block Grant** (**CDBG**) program and is distributed statewide to non-entitlement communities like Thorntown under the oversight of the **Indiana Office of Community and Rural Affairs** (**IOCRA**). As with other potentially expensive infrastructure funding projects considered by IOCRA, competition for limited CFF assistance is competitive.

Technical resources regarding flood management can be had through Boone County, the Indiana Department of Natural Resources and the Federal Emergency Management Agency.

SUGAR CREEK

Sugar Creek
Watershed

PRAIRIE CREEK

COUNTY ROAD 625 W

STATE ROAD 47 MAIN STREET

STATE ROAD 75

S. VINE STREET

S. MARKET STREET

S. PEARL STREET

S. FRONT STREET

Prairie Creek
Watershed

Wolf Creek
Watershed
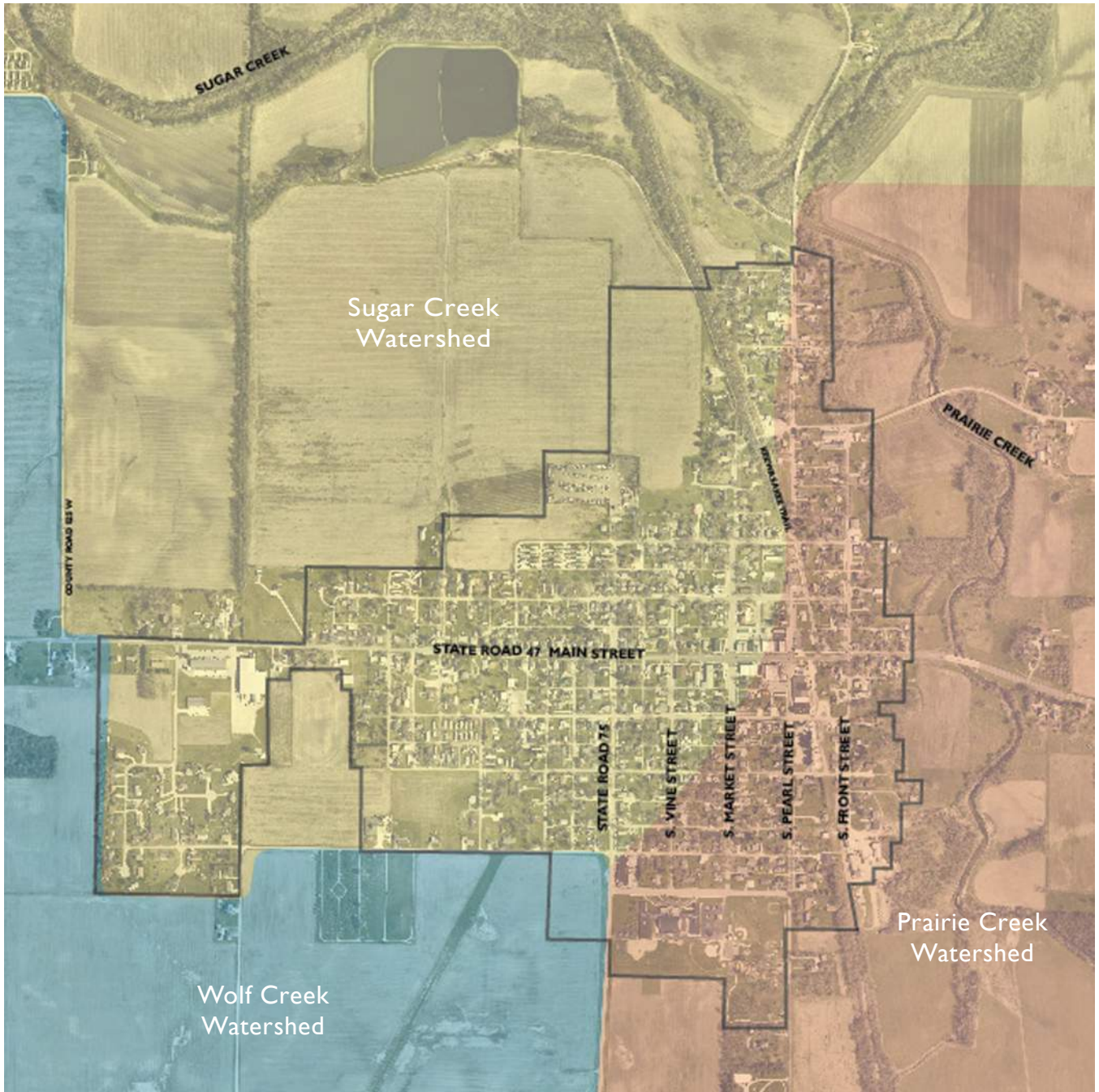
Map of watersheds adjacent to Thorntown

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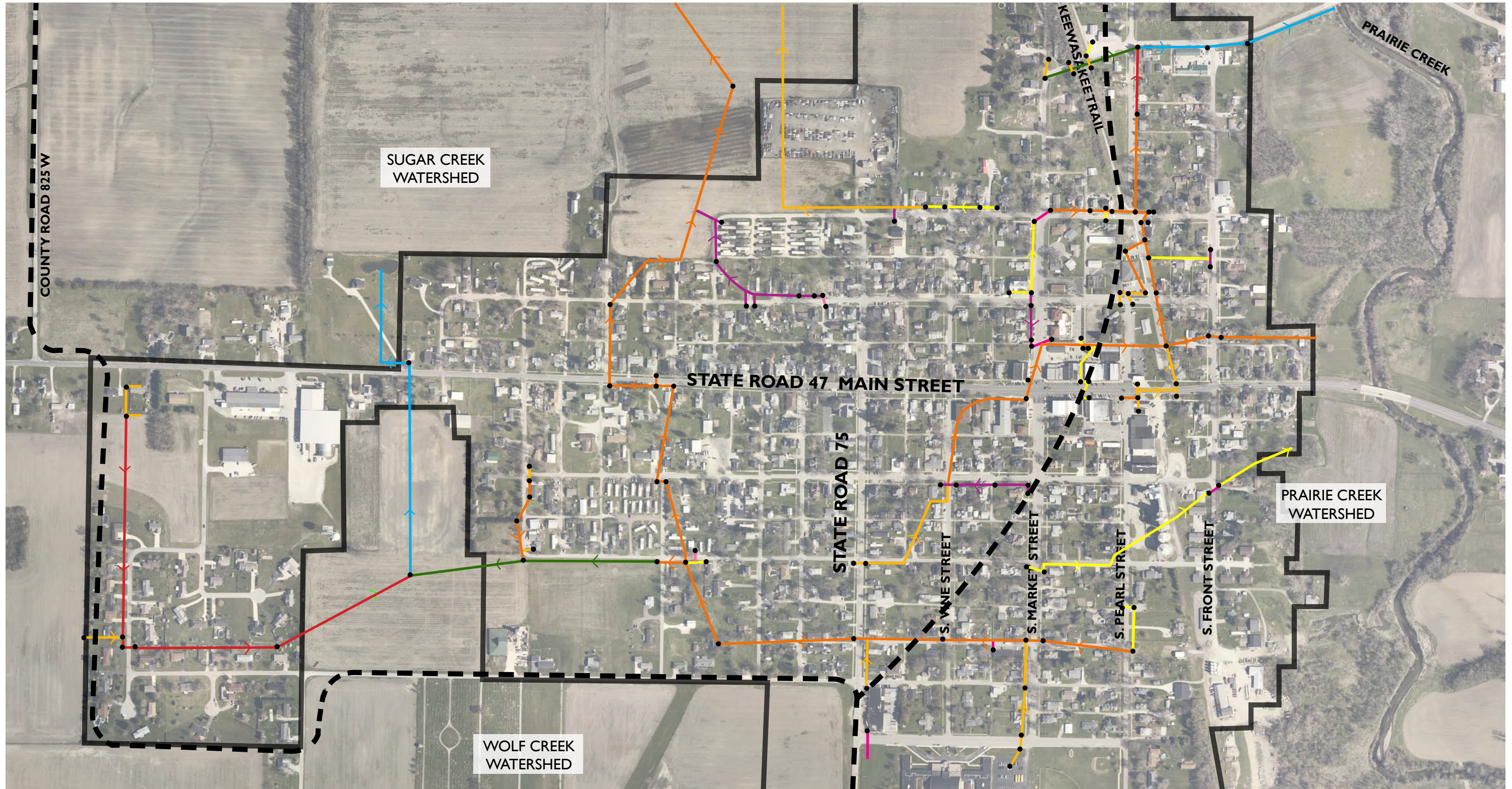
Map of Existing Stormwater Infrastructure and Watershedss

SUGAR CREEK WATERSHED

WOLF CREEK WATERSHED

PRAIRIE CREEK WATERSHED

PRAIRIE CREEK

COUNTY ROAD 825 W

STATE ROAD 47 MAIN STREET

STATE ROAD 75

KEEWASAKEE TRAIL

S. VINE STREET

S. MARKET STREET

S. PEARL STREET

S. FRONT STREET

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Wastewater & Water Infrastructure
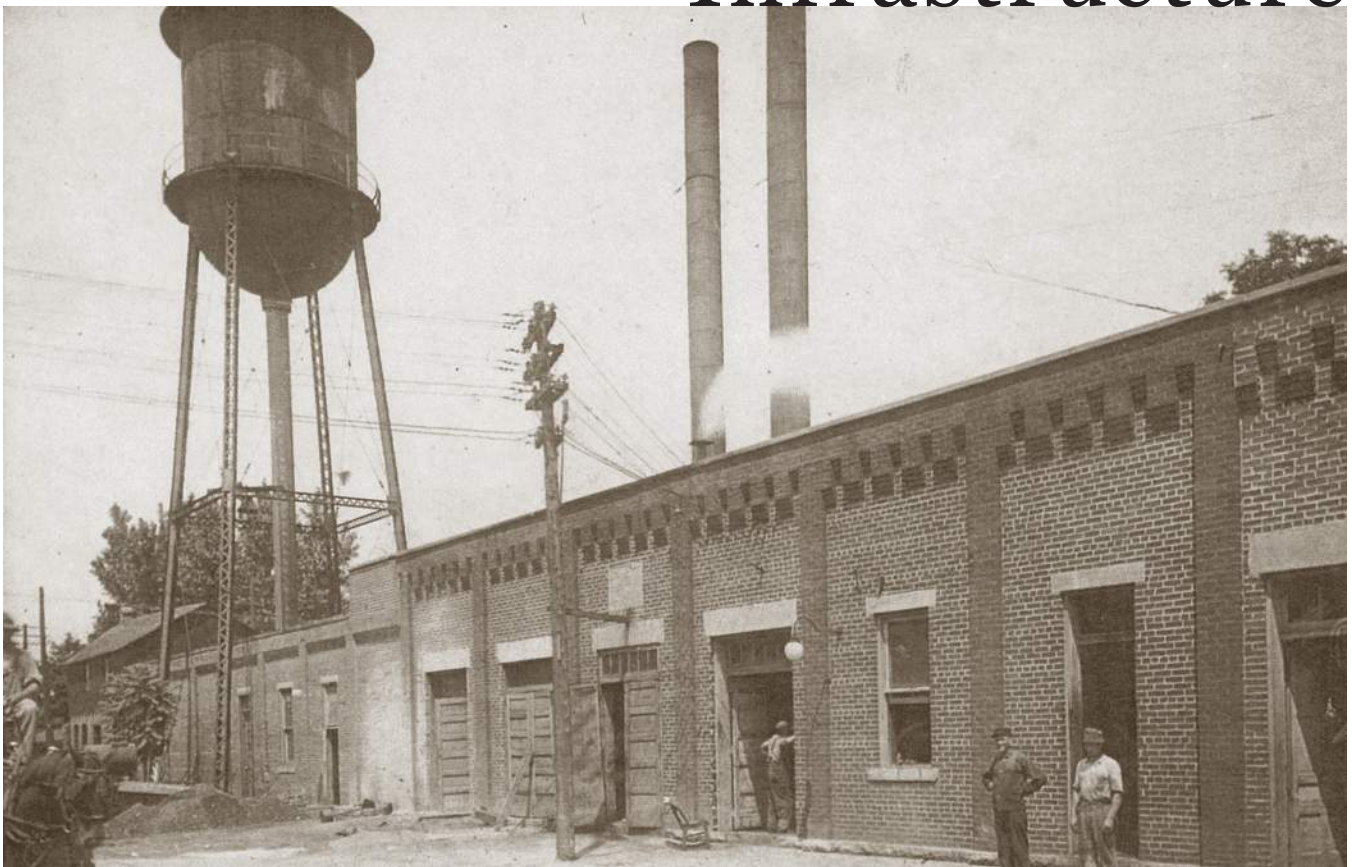
Thorntown waterworks, c. 1910

Mills Memorial Fountain in Main Street, looking east, c. 1910

Wastewater & Water Infrastructure

Utilities are often the life blood of a community and enable the community to serve existing customers and promote sound growth. Growth requires utilities to maintain and expand utility infrastructure. Funding utility infrastructure can be challenging and neglecting infrastructure creates tremendous long-term liabilities for existing users and almost no opportunities to attract growth to the community. Utilities with larger and growing customer bases have lower and more stable utility rates over the long term than utilities with static or smaller customer bases. Therefore, communities need utility growth to maintain current infrastructure and to stabilize rates without neglecting existing facilities. Communities and utilities benefit from a growing and financially solid customer base in other ways. As annexation takes place, tax revenues also increase. The growing tax base allows communities to fund other important projects unrelated to utilities. Fire and police stations needed to support development can be funded through increased tax revenues.

The Water and Wastewater Infrastructure Master Plan prepared for the Town of Thorntown by Ladd Engineering, Inc. in September 2006 (copies of which are kept in Town Hall and the Thorntown Public Library) and hereafter referred to as the **2006 WWI Master Plan**, identified the following funding sources for infrastructure:

- **State Revolving Loan Fund**;
- **Rural Development**;
- **Indiana Office of Community and Rural Affairs, Community Focus Funds**;
- **Small Tribal Assistance Grant**,
- **Economic Development Administration**;
- **Availability Fees**;
- **Economic Development Income Tax**; and
- **Tax Incremental Financing**.

Development and growth are specifically excluded from funding by several agencies. Only the last

four sources listed above are used for funding utilities to support growth. Availability fees and tax incremental financing have often been used for funding infrastructure for growth and can be controlled at the local level.

Growth in central Indiana has occurred along major thoroughfares where utilities are present. Thorntown's current utility master plan reaches to the US 52 corridor at SR 47. However, one of the most strategic locations for development is at the intersection of SR 47 and I-65. No utilities are provided at that location at present. It is not surprising that development has moved to interchanges north and south of SR 47 along I-65 where utilities are available. The distance from the SR 47 and I-65 intersection and the connections to the Thorntown system is approximately 4.5 miles. It would likely take several million dollars to extend Thorntown utilities eastward to reach that intersection. There is another alternative. The intersection can be served by satellite facilities located near SR 47 and I-65 in partnership with development. The City of Plainfield, Western Hancock Utilities, Clay Township Regional Waste District in Hamilton County, Whitestown and others have created partnerships with development to grow their utilities. Plainfield's situation was much like Thorntown's is today.

Plainfield worked in partnership with the Indiana Department of Transportation (INDOT) to provide wastewater service to development through satellite facilities. The I-70 Plainfield rest area was owned by INDOT had excess treatment plant capacity. Plainfield took over the ownership and operation of the wastewater facility from INDOT. INDOT became a customer as did the development. The development paid availability fees and constructed a lift station and a force main to the facility, which Plainfield also took possession of. Growth at the Plainfield interchange on I-70 has been explosive over the past 15 years. Growth still continues, in spite of the current economic climate.

There are several reasons for Thorntown to consider being the utility service provider at the SR 47 and I-65 interchange:

1. The intersection has the potential to be the economic engine for the town as interchanges have for several communities in central Indiana.

2. INDOT is willing to discuss creating a partnership which could allow Thorntown to first access and then create water supply and wastewater treatment for the area. This would allow development to occur in a growth location where development could afford to construct a lift station and force main.

3. Thorntown would still be able to retain its unique, small community environment while increasing its customer base. Providing utilities for the interchange creates a commercial and retail area that serves the interstate, which is distant from its existing town environment. For example, older portions of Plainfield have retained their small town appeal while the bustling commercial and retail areas thrive on its east side.

4. Some utility or community will serve this interchange eventually. It would seem to be in Thorntown's best interests to control its own destiny by providing services to the interchange to serve as the gateway from I-65 into Thorntown.

5. There is no reason to try to provide expensive utility connections with the existing town facilities right now. For example, Plainfield and Whitestown both are served by two wastewater treatment plants. Plainfield has multiple water treatment facilities. The best approach would be to create a separate utility service zone for the interchange. The town can let economic development dictate a future connection to a single wastewater treatment facility when and if it is needed. Costs can best be controlled through creation of separate zones of service.

Thorntown can choose not pursue being the provider of utility service to the SR 47 and I-65 interchange. The interchange will remain as it is for a time until some other entity chooses to initiate development. Annexation of the area by Thorntown to obtain tax income will be much more difficult when the town is not providing utility service.

The **2006 WWI Master Plan** addressed the Town's needs for expanding and improving its water and wastewater infrastructure for the existing service area and the US 52 and SR 47 area. Portions of the report's findings and exhibits were cited and/ or included as part of this report if they were applicable. Details have been added for the SR 47 and I-65 area.

The following sections address specific wastewater and water infrastructure needs and how they relate to the economic development and growth of Thorntown. The wastewater section discusses the option to construct a new WWTP at its current location and the option to locate a new WWTP on the east side of town. The potential acquisition of an INDOT rest area WWTP to spur economic development at the SR 47 and I-65 interchange is discussed further.

The water section discusses the construction of a new WTP at its current location, a new WTP at a yet-to-be determined location based on the supply source, and improvements to the existing water distribution system that are needed for growth to occur including the construction of new elevated water tanks.

Wastewater Infrastructure

Option A: Construct New WWTP in Current Location

The existing WWTP site is 24 acres located on the north side of Thorntown adjacent to Sugar Creek (**Exhibits 27** and **31**). The existing WWTP was constructed in 1960 and consists of a 16-acre stabilization lagoon. There have been several National Pollutant Discharge Elimination System (NPDES) Permit violations in the recent past, consisting of exceeding the ammonia-nitrogen limits. It is not unusual for lagoon systems to have difficulties meeting the ammonia-nitrogen limits in the cold weather months. A more traditional

WWTP, such as the Aero-Mod or Sanitaire equipment mentioned in the **2006 WWI Master Plan**, are extended aeration plants that are more suitable for mitigating these concerns. There are other systems that are effective and should be investigated. There is space available to construct a new extended aeration system on the current site (**Exhibit 28**). A system like Aero-Mod is easy to expand because of its modular construction which utilizes common-wall construction, thus making future expandability easier. Easy expansion is a critical aspect of selecting the type of equipment/ system when development is wanted and needed in community.

Not much forethought was given to the existing WWTP's location relative to development years in the extended future. Its current location does not serve the Town's best interests if growth and economic development are a priority. Many communities expand their WWTPs at their current location because it is typically the least costly and easiest approach. A comparison of the advantages of constructing of a new WWTP on the current site versus a new location east of Town is presented in **Table 1** on the following page.

Option B: Construct New WWTP in Strategic Location for Growth

The **2006 WWI Master Plan** concluded that a new extended aeration WWTP would best suit the Town for future growth. A modular WWTP with concrete walls is well-suited for accommodating growth and for meeting the long-term needs of the town. The concrete modular construction allows the WWTP to be expanded to match both developer's needs and Town growth. The existing master plan can be used to decide on a new location to serve the majority of future undeveloped areas by gravity with a closer proximity to the existing system. Those areas are included in the existing master plan. The modular construction of a new WWTP and its strategic relocation will position the Town to use their wastewater utility to attract development and industries.

The largest area of undeveloped land, which will

be the most attractive to developers, is located on the east side of town near the SR 47 and I-65 interchange. The **2006 WWI Master Plan** only shows the area out to US 52 (**Exhibit 29**); however, the service area should extend out to the SR 47 and I-65 interchange to maximize the town's potential tax base and wastewater customers. The area is ideal for establishing a Tax-Increment Financing (**TIF**) district and for using availability fees and other mechanisms to construct more infrastructure.

The ideal location for a new WWTP is on the east side of town along Prairie Creek or one of its tributaries where a large area could be served via gravity or temporary lift station and force main systems as mentioned in the **2006 WWI Master Plan**. The remaining portion of undeveloped land near the SR 47 and I-65 interchange could be served initially with a regional WWTP near the rest area.

Ultimately, the Town could keep both WWTP's or eliminate a WWTP and pump all flow to one WWTP using a lift station and force main. This will require amending the **2006 WWI Master Plan**, since it does not extend to the interchange. A comparison of the advantages of constructing of a new WWTP on the current site versus a new location east of Town is presented in **Table 1** below.

Benefit:	Option A: Construct New WWTP in Current Location	Option B: Construct New WWTP in Strategic Location for Growth
Proximity to future growth		X
Strategic location to maximize gravity service for future sewers		X
Re-use of existing WWTP components	X	
No need for land aquisition	X	
Attractive to development		X
Maximizes future service area from a master planning standpoint		X
Reclamation of existing WWTP site as conservation area		X

Aquire INDOT Lebanon Rest Area WWTP

INDOT owns and operates a 0.056 MGD (average daily) package WWTP located approximately 2.4 miles north of SR 47 on the east side of I-65 (**Exhibit 31**). INDOT refers to it as the Lebanon Rest Area WWTP. This WWTP consists of new steel tanks that are in good condition. The remainder of the WWTP components are steel and concrete construction. Operationally, it is well maintained, stable, inexpensive, and has not had any no recent IDEM violations.

2009 Monthly Reports of Operation (**MRO**) obtained from INDOT (**Appendix R**) indicate there is sufficient capacity left in the WWTP to serve future growth east of Thorntown. The highest average monthly flows are approximately 0.011 MGD as indicated on the MRO's leaving 0.04 MGD, or 40,000 gallons per day (gpd) of capacity in the 0.5 MGD facility. This represents 400 people based upon the IDEM allocation of 100 gpd per capita. To put this into perspective, this translates to one of the following:

- *130 single family home residential development;*

- *office buildings/complex capable of holding 2,000 employees; or*

- *shopping centers with a total of 285,000 square feet employing 570 people (an outlet mall).*

Pumping wastewater is a viable alternative for a couple of reasons: the distance between the SR 47 and I-65 interchange and the rest area is only 2.4 miles and there is a possibility INDOT would allow the Town to construct a force main inside the INDOT right-of-way, which would eliminate easement acquisition costs.

INDOT stated that master planning would need to be addressed at the SR 47 and I-65 interchange before INDOT would consider the possibility of an ownership transfer as stated in the meeting minutes completed by Whitaker Engineering (**Appendix S**). The long-term benefits provided by the WWTP are critical, and INDOT needs to perform a benefit/cost analysis based upon the rates to get the better

understanding of the implications of an ownership transfer to Thorntown. For example, INDOT would consider a situation where ownership transfer occurs with Thorntown; then Thorntown would operate the plant.

The likelihood that growth will continue north from Lebanon in the future is good. This bodes well for Thorntown if it positions itself to accommodate development. Acquisition of the WWTP will provide an intermediate wastewater treatment solution to allow for growth.

The purpose of the acquiring ownership of the Lebanon Rest Area WWTP is to spur economic development at the SR 47 and I-65 interchange. In addition, it would also:

- *provide a short-term solution to wastewater treatment for interstate development and open doors for future development closer to Town;*

- *position the Town to stake claim of service area for future annexations by providing wastewater service; and*

- *create a destination for people at the interchange.*

Water Infrastructure

Groundwater is valuable resource. Thorntown will need to stake claim to this resource in order to get the growth it desires and to prevent adjacent communities from doing the same. **Exhibit 34** is a Groundwater Availability Map from the Department of Natural Resources, which shows an area (in green) where groundwater is the most abundant. The area north of Thorntown is a potential location for a new water treatment plant to serve the town. The Lebanon Rest Area straddles the green area. The rest area site could be used for package water treatment plant to provide water at the I-65/S.R. 47 interchange. The negotiations with INDOT could potentially involve seeking approval to construct dual, parallel pipes (water and force mains) in the interstate right-of-way.

Exhibit 35 is a listing of the significant wells in Boone County that are registered with the Indiana Department of Natural Resources, and the highlighted wells are near Thorntown. **Exhibits 36** and **37** map the unconsolidated and bedrock aquifer systems of Boone County.

Groundwater availability will be critical factor in dictating the plans for an expansion of the existing water treatment plant or construction of a new water treatment plant and their locations.

Construct Expanded WTP in Current Location

The existing water treatment plant was constructed in 1960. It is running at capacity and struggles to meet the existing demands. It has no capacity to supply water to a large user or for future growth. There is sufficient space on site to expand the WTP by adding the needed components of the WTP to meet the short-term demands within the town and for users closer to town (**Exhibits 31** and **32**). Like the existing WWTP, the WTP current location does not serve the Town's best interests if growth and economic development are a priority. An expansion at this location should be done to meet the existing and short-term demands.

Construct New WTP in Strategic Location for Growth

For the future long-term benefit of the Town, a new WTP should be constructed in a more strategic location. This location will be highly dependent upon the location of a new well field with consideration given to the long-term prospective growth east of town out to the SR 47 and I-65 interchange.

Exhibit 30 shows future looped water distribution system piping extending out to US 52 along with future elevated water tanks. The location of a future WTP could affect the configuration of the system shown. However, both the piping and the tank(s) are essential components that will be needed for development to occur. In addition, optimizing the sizes of the pipes and elevations of the tank(s) will be critical to new development. It is recommended a hydraulic model of the system, of both the existing and future infrastructure be created to ensure the future system will provide adequate pressures and flows to meet regulatory requirements.

Existing Water Infrastructure

Exhibit 33 shows the existing distribution system. The circled sections are 4'' mains that are in need of replacement to meet future demands. They are bottlenecks and are in need of replacement. These replacements should be prioritized to meet demands of any development.

Thorntown sits on a large aquifer that Lafayette currently uses to supply its water. Lebanon is also exploring options to use this aquifer as a water supply source. The 2006 Master also identified Veolia as a potential regional partner.

The SR 47 and I-65 interchange is an integral part of the future of Thorntown. The Lebanon Rest Area WWTP has wells. The condition and capacity of these wells is unknown. If there is sufficient capacity in the wells or the aquifer at that location has adequate capacity, wells could be installed to supply water to the SR 47 and I-65 interchange to spur development.

Case Studies

Maximize Existing Resources

In 2003 the staff at Whitaker Engineering represented the Town of Plainfield in negotiating with INDOT the short-term use and eventual decommissioning of a rest area WWTP a few miles west of SR 267 on I-70. An aerial photograph of this WWTP and the rest area is below. Plainfield connected the decommissioned rest area WWTP to the new Plainfield WWTP and installed a force main inside the I-70 ROW.   They also received approval to put a second, larger force main inside the interstate right-of-way when the need arose.

The agreement allowed INDOT to eliminate unnecessary operational and maintenance costs associated with the rest area WWTP and saved the Town the cost to negotiate and acquire permanent easements for the force main construction.

This case study is slightly different than what is proposed by Thorntown; however, the concept of using the interstate right-of-way as a utility corridor and negotiating with INDOT remains unchanged. In the addition, Thorntown has the potential to use an existing WWTP as a viable alternative to spurring growth at the interchange.

If you Fail to Prepare, You're Preparing to Fail

The Town of Plainfield's existing WWTP was at capacity and there wasn't sufficient space to expand to meet future needs. Through the use of the Town's wastewater master plan, another location was identified to construct to construct a new WWTP. The new location would allow the Town to minimize the number of lift stations in the system and also serve the vast majority of undeveloped land by gravity. The WWTP was a designed for 2

Aerial photo of former INDOT WWTP at I-70 Rest Area near Plainfield, IN

million gallons per day (MGD). The WWTP and site were master planned for an ultimate build-out of 24 MGD. The project consisted of visiting numerous wastewater treatment plants to observe functionality, interviews with numerous equipment representatives, and selecting equipment to best serve both proposed and ultimate flows. Town officials were heavily involved in the decision-making process and were considered members of the design team.

The modular design of the plant, along with common-wall construction, will allow for rapid and inexpensive expansions that can be designed and constructed in a short time period. This type of design is well-suited for the commercial, industrial, and residential growth the Town will likely experience over decades to come.

Develop Partnerships

A team of five entities including the Tipton County Commissioners, Tipton County Council, Tipton Economic Development Foundation, DaimlerChrysler and Getrag Corporate Group entered into an agreement. A $450 million, 700,000 sq-ft factory was constructed, 145 acres of land were purchased, and water and wastewater treatment plants were constructed. The joint venture planned to occupy the factory to manufacturer transmissions. Expenses that DaimlerChrysler and Getrag Corporate Group incurred in purchasing property and infrastructure development were reimbursed by Tipton County following the sale of bonds. DaimlerChrysler provided the funds to pay costs for Tipton County or Tipton Municipal Utilities to design and construct water and sewer facilities prior to bond issuance.

As part of the economic development incentives, Tipton County Commissioners, Tipton County Council, Tipton Economic Development Foundation agreed to the following:

- *Approve tax abatements for Getrag and DaimlerChrysler up to the maximum amounts and time permitted by law;*

- *To finance the project through tax increment financing through the issuance of 25-year bonds;*

- *To reimburse Getrag for the purchase price of the land prior to the issuance of the bonds;*

- *To reimburse DaimlerChrysler for expenditures for utility, county road and other infrastructure improvements.*

The joint venture was proposed to employ over 1,000 people and spur growth throughout Tipton County and at the S.R. 28 and U.S. 31 intersection, which is approximately 4 miles from Tipton.

Goals & Objectives

Goal 1:

Construct new WWTP to spur growth.

Objectives:

1. *Retain engineer to amend master plan to include larger, future service area out to SR 47 and I-65 interchange and include future lift station locations.*

2. *Retain engineer to request NPDES discharge limits for the WWTP location alternatives.*

3. *Investigate funding and loan options.*

4. *Actively pursue partnership with developers and industries.*

5. *Form team to select design engineer, decide on new location for WWTP, and decide on type of process.*

Goal 2:

Execute agreement with INDOT for ownership transfer of Rest Area WWTP.

Objectives:

1. *Retain engineer to master plan interchange area.*

2. *Meet with INDOT to present master plan and continue discussions of ownership acquisition.*

3. *Request INDOT perform benefit / cost analysis and commit to ownership transfer.*

4. *Develop and adopt ordinance establishing connection charges for EDU's.*

5. *Seek developers to build at the interchange.*

Goal 3:

Determine location for new WTP.

Objectives:

1. *Retain services of a hydro-geologist to investigate well fields.*

2. *Initiate discussions with potential regional partners.*

3. *Retain engineer for feasibility study for new WTP.*

Goal 4:

An all-encompassing goal relative to utilities and an aggressive comprehensive plan is to PREPARE FOR GROWTH!

Objectives:

1. *Retain engineer to create construction standards for wastewater, water, storm water and transportation infrastructure.*

2. *Adopt construction standards via ordinance to ensure they are used on all private and public works projects.*

3. *Create hydraulic model of existing and future water distribution system.*

SUGAR CREEK

APP P̶L̶

WOOD BUILDING
W/EFFLUENT
FLOW METER

16.1 ACRE
WASTE STABILIZATION
LAGOON

APP P̶L̶

APP P̶L̶

DIVIDER
CURTAIN

INFLUENT MANHOLE
W/FLOW METER

APP P̶L̶

APP P̶L̶
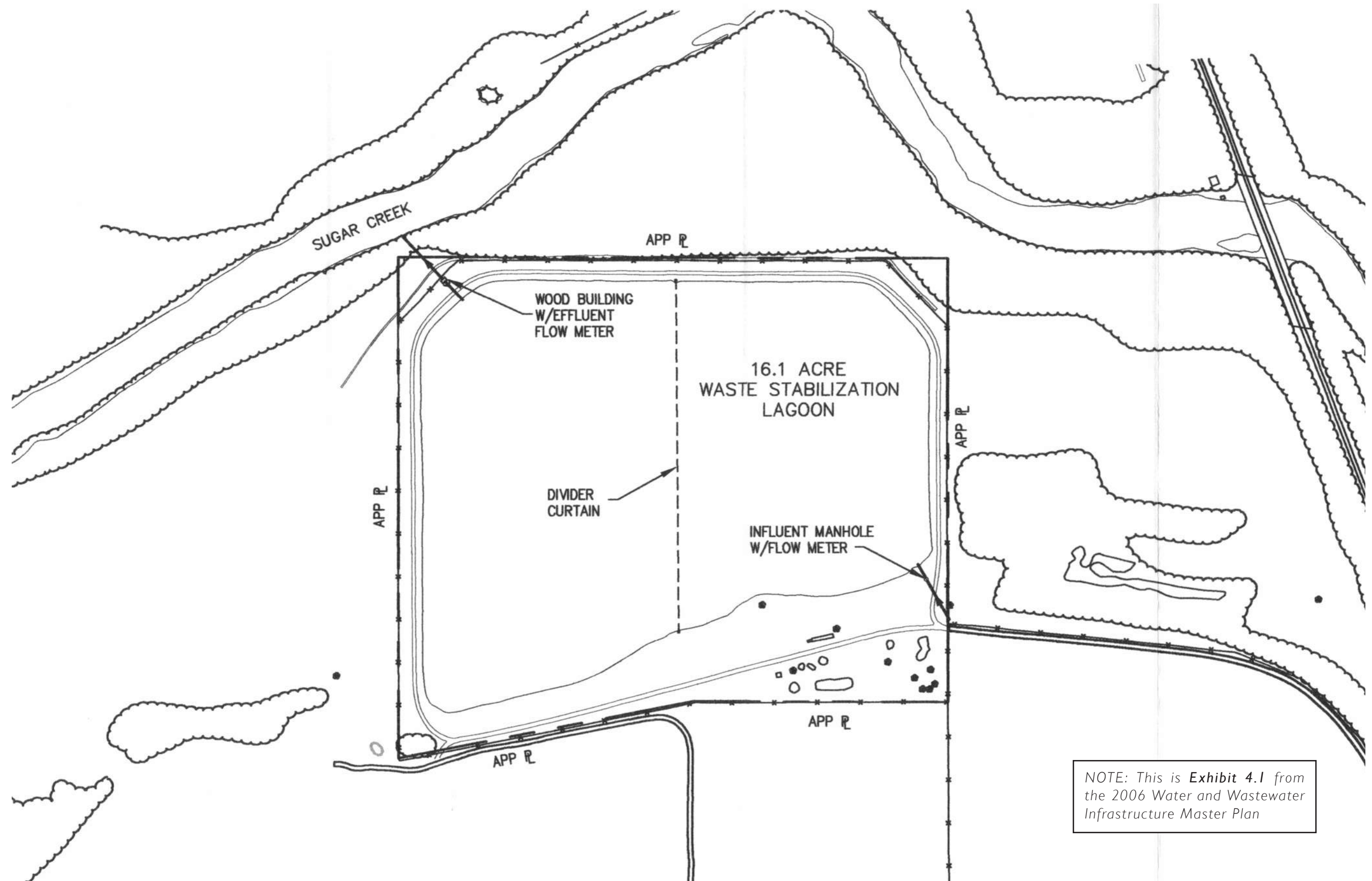
NOTE: This is **Exhibit 4.1** from
the 2006 Water and Wastewater
Infrastructure Master Plan

Diagram of Existing Thorntown Wasterwater Treatment Plant
Ladd Engineering, Inc.

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SUGAR CREEK

ABANDON
EXIST. OUTLET

ABANDON
EXIST. LAGOON

LIQUID SLUDGE
STORAGE

MIXER

FUTURE PLANT
EXPANSION AREA

EXCESS FLOW
EQUALIZATION

MIXER

NEW
EFFLUENT
PIPE

APP PL

PROPOSED PLANT
LIFT STATION
& FORCE MAIN

PROPOSED 0.250 MGD
EXTENDED AERATION
PLANT

PROPOSED
CONTROL
BUILDING

APP PL

NOTE: This is *Exhibit 8.2* from
the 2006 Water and Wastewater
Infrastructure Master Plan

Diagram of Proposed Renovations to Existing Thorntown WWTP
Ladd Engineering, Inc.
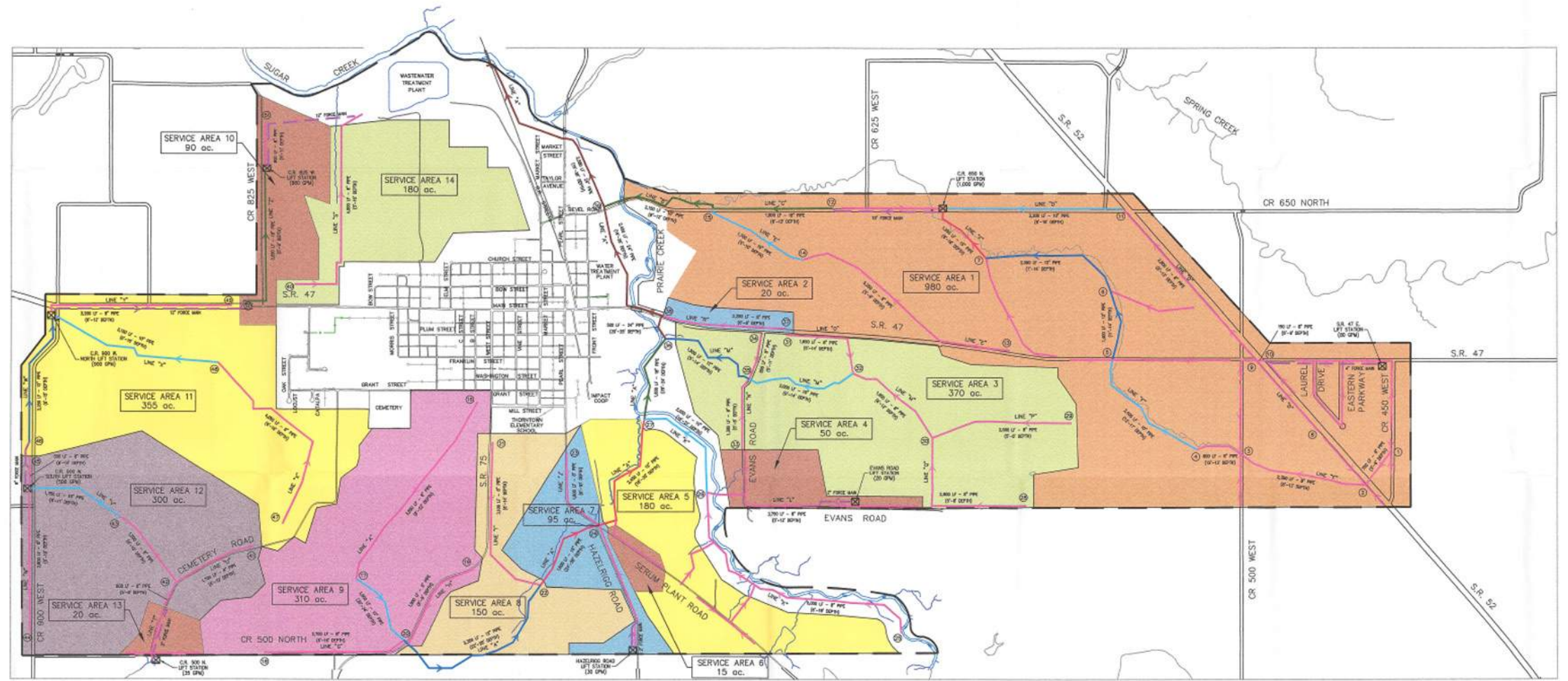
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Map of Proposed Future Service Area: Wastewater
Ladd Engineering, Inc.

NOTE: This is **Exhibit 8.5** *from the 2006 Water and Wastewater Infrastructure Master Plan*

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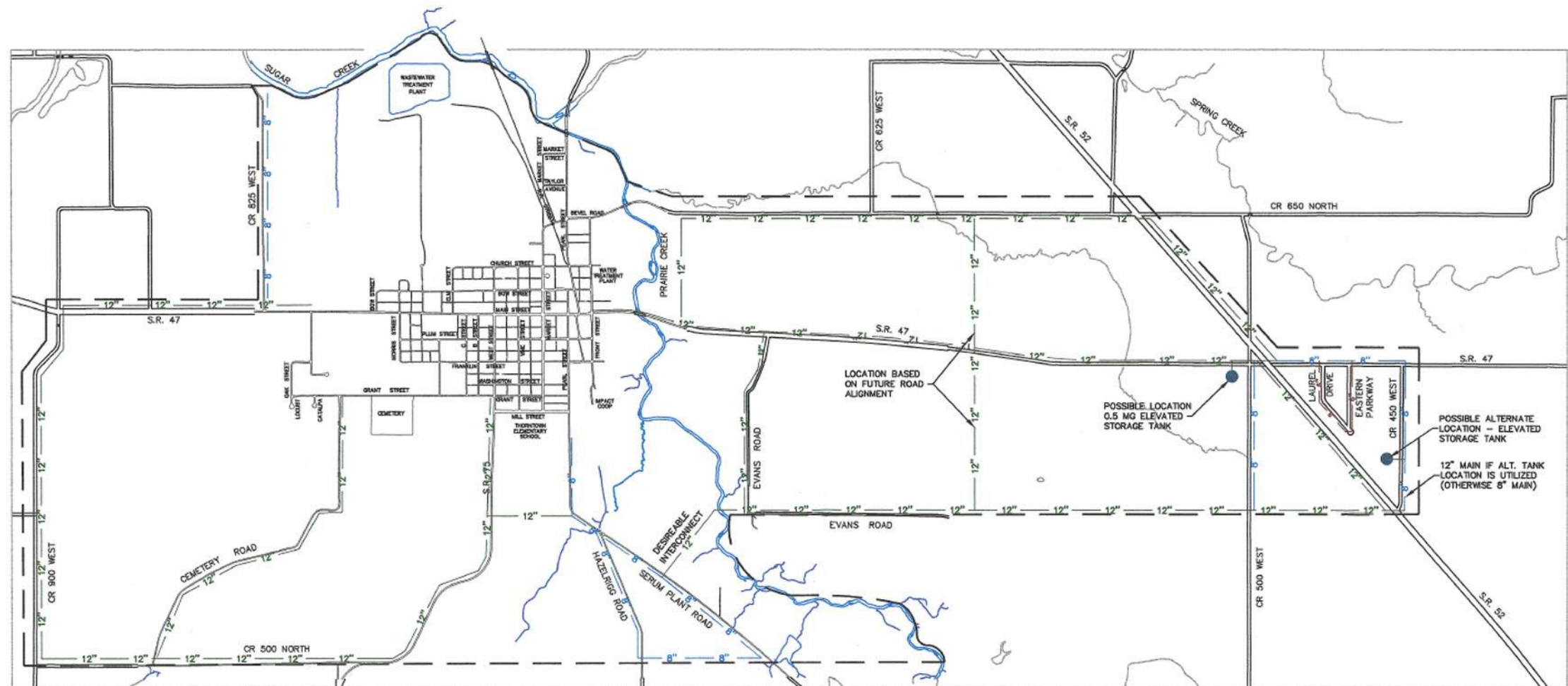
LEGEND

— 6" — FUTURE 6" WATER MAIN
— 8" — FUTURE 8" WATER MAIN
— 12" — FUTURE 12" WATER MAIN
— — — STUDY AREA

NOTE: This is *Exhibit 7.1* from the 2006 Water and Wastewater Infrastructure Master Plan

Map of Proposed Future Service Area: Water
Ladd Engineering, Inc.

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Map of Thorntown Comprehensive Plan Jurisdiction

▬▬	Interstate Highway	─·─·─	County
──	U.S. Highway	─··─··─	Township
▬▬	State Highway	▬▬▬	Sugar Creek Twp.
──	County Roads	▭	Corporate Limits
----	Future Road		
┼┼┼┼	Rail Road	∿	Creek / Legal Drain
──	Keewasakee Trail	▰	Lake
▪▪▪▪	Farm Heritage Trail	▰	Gravel Pit
		▰	WWTP Lagoon

▭ Comp. Plan Jurisdiction

▲ I-65 "Lebanon" Rest Area

Existing Wastewater Treatment Plant

Existing Water Treatment Plant

Lebanon Rest Area Wastewater Treatment Plant

Future Force Main

Future Lift Station

Thorntown

Sugar Creek Township

Washington Township

Jefferson Township

Center Township

Boone County

Montgomery County

Clinton County

Hazelrigg

Existing Wastewater and Water Plants, and Proposed Force Main and Lift Station

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NORTH
WELL
(#2)

EMERGENCY
WELL
(#3)

SOUTH
WELL
(#1)

6" FILTER
BACKWASH LINE

UNTREATED
WATER
FROM WELLS

BACKWASH
WATER
SAND FILTER

WATER
TREATMENT
BUILDING

DETENTION
TANK

AERATOR

TREATED WATER
TO STORAGE &
DISTRIBUTION

100,000 GAL
ELEV. STORAGE
TANK

10"
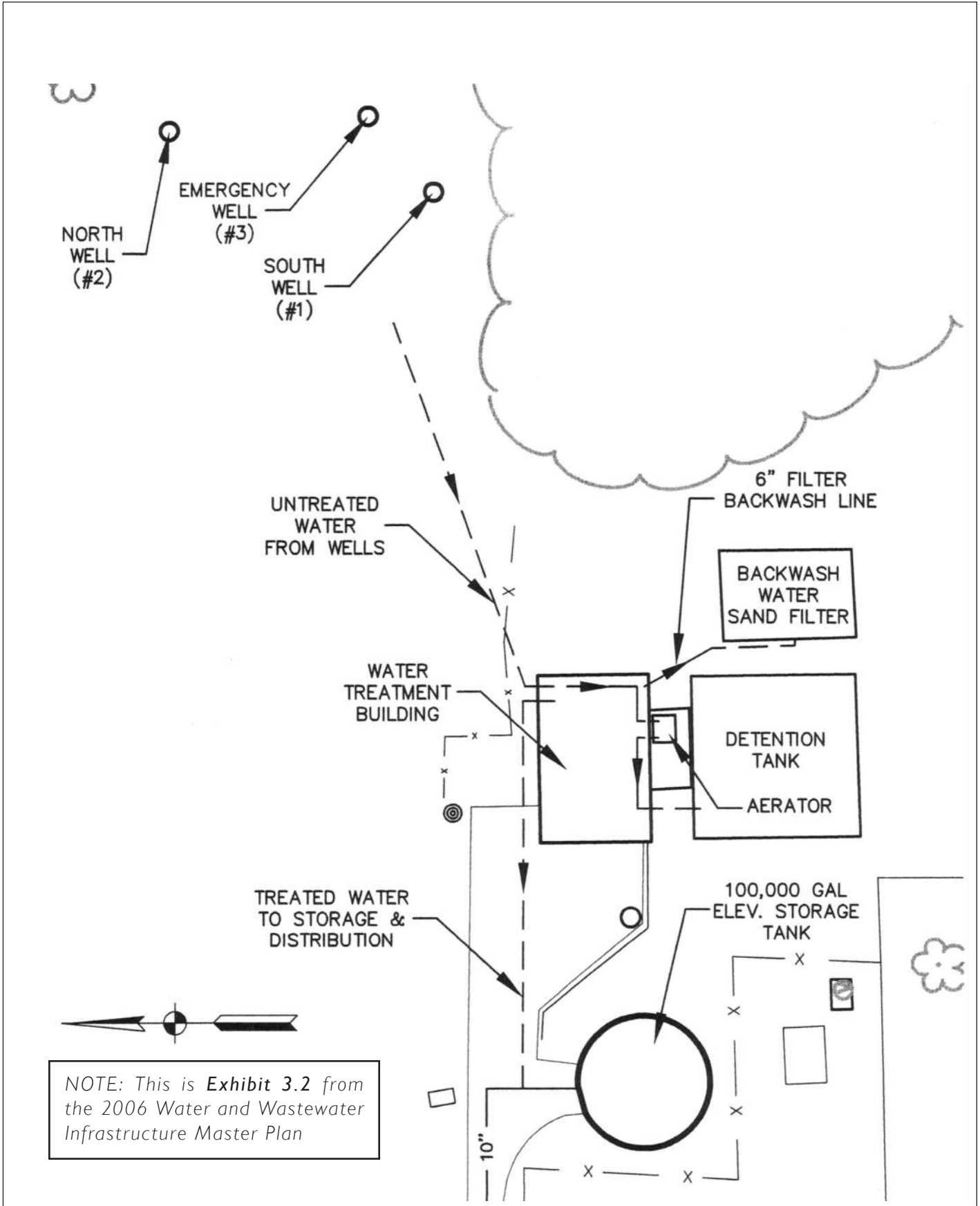
NOTE: This is **Exhibit 3.2** from the 2006 Water and Wastewater Infrastructure Master Plan
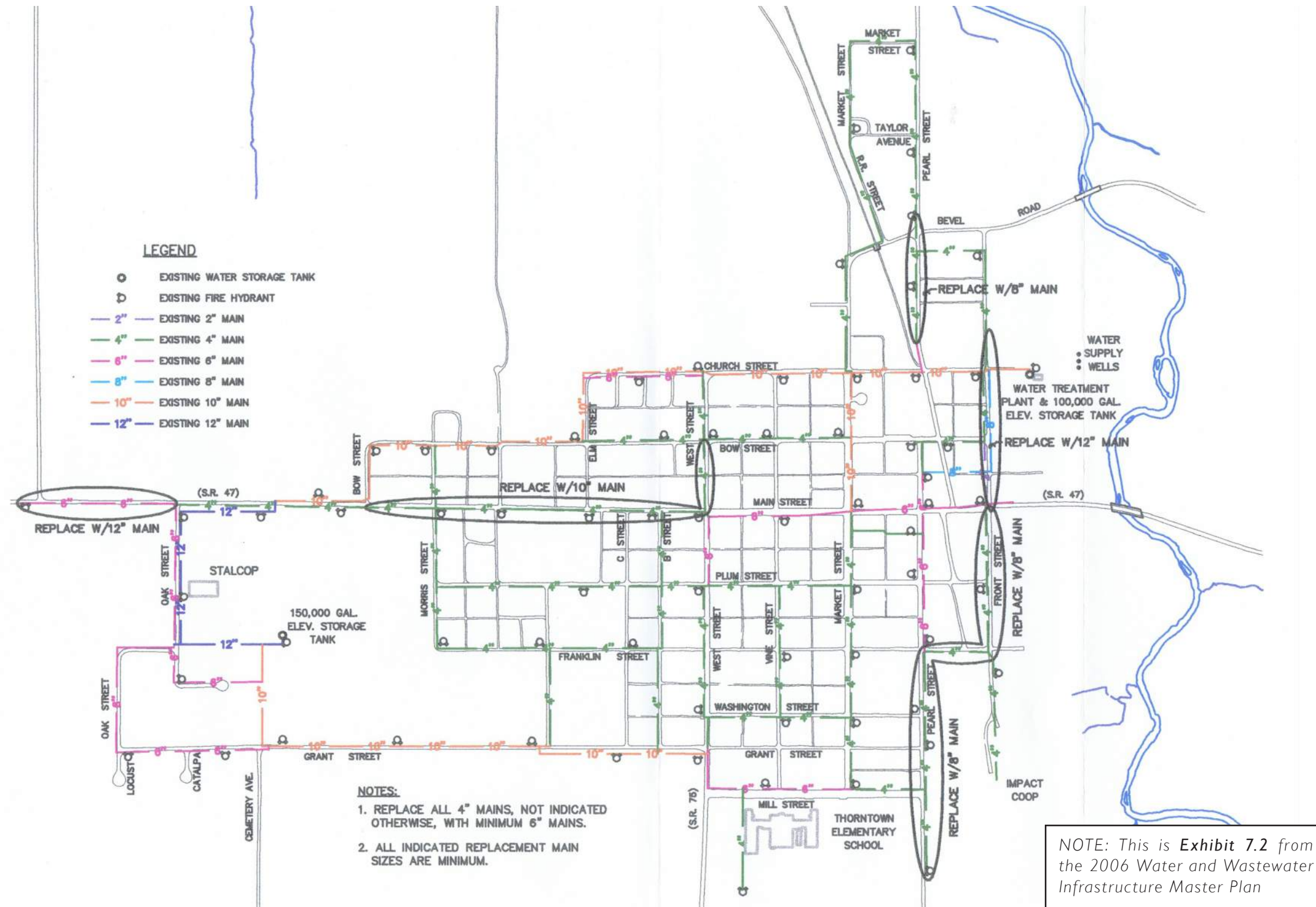
Diagram of the Existing Thorntown Water Treatment Plant
Ladd Engineering, Inc.

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LEGEND

⊙	EXISTING WATER STORAGE TANK
⌀	EXISTING FIRE HYDRANT
—— 2" ——	EXISTING 2" MAIN
—— 4" ——	EXISTING 4" MAIN
—— 6" ——	EXISTING 6" MAIN
—— 8" ——	EXISTING 8" MAIN
—— 10" ——	EXISTING 10" MAIN
—— 12" ——	EXISTING 12" MAIN

NOTES:

1. REPLACE ALL 4" MAINS, NOT INDICATED OTHERWISE, WITH MINIMUM 6" MAINS.

2. ALL INDICATED REPLACEMENT MAIN SIZES ARE MINIMUM.

NOTE: This is **Exhibit 7.2** from the 2006 Water and Wastewater Infrastructure Master Plan

Proposed Improvements to Existing Water Infrastructure
Ladd Engineering, Inc.

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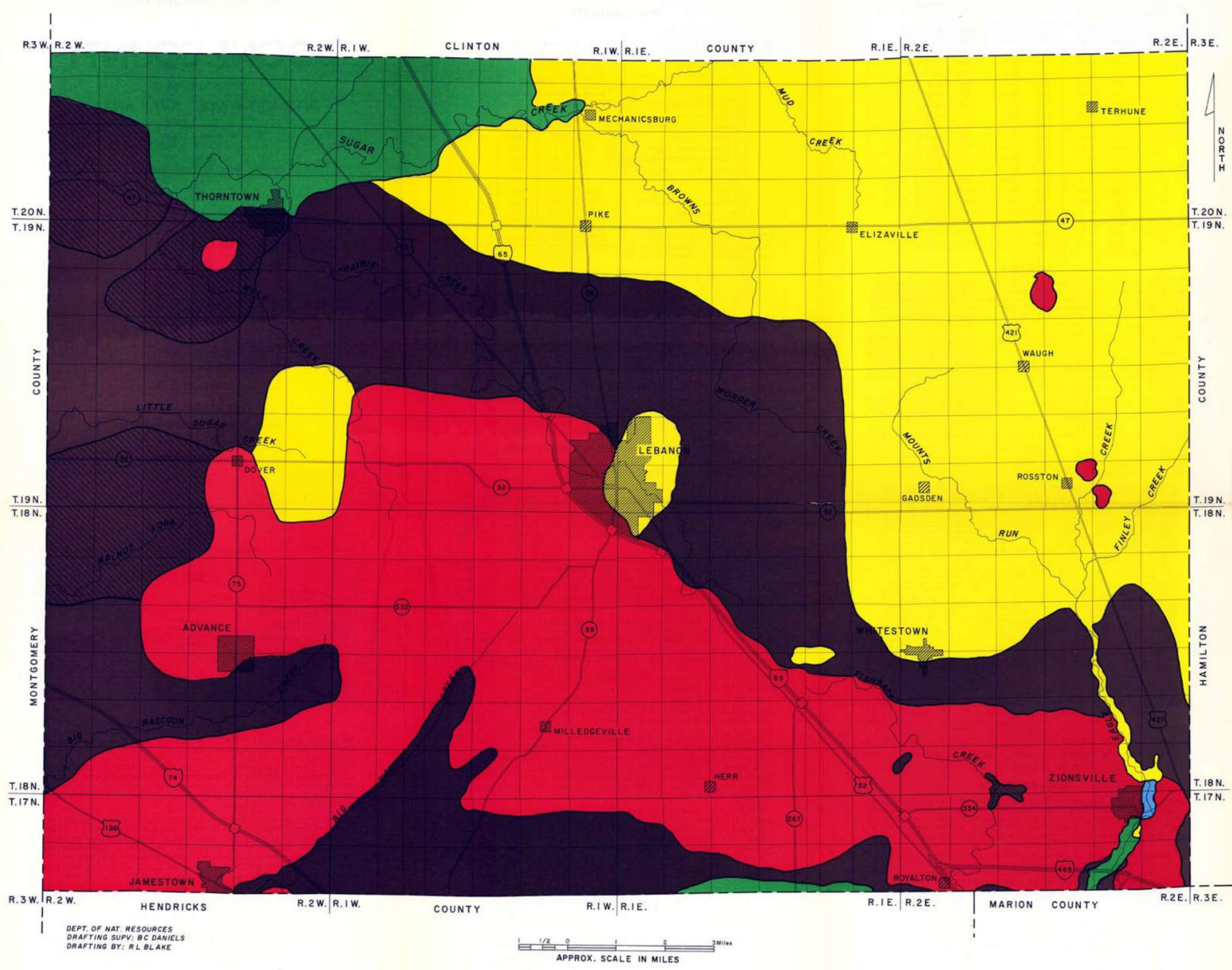
AVAILABILITY OF GROUND WATER
IN
BOONE COUNTY, INDIANA

AREAS IN WHICH YIELDS FROM 0-25 GALLONS PER MINUTE CAN BE DEVELOPED

Well yields in this area are quite erratic with the possibility of "dry holes" being encountered in any given locality. Most wells, however, will yield sufficient water to meet normal domestic needs, and it is possible locally, where the glacial sand and gravel deposits thicken, to obtain wells yielding over 25 gallons per minute (gpm). Aquifer sources in these areas range from thin sand and gravel zones within the glacial drift deposits, to blue shale and fine-grained sandstone sources in the western and central parts, and to limestone and some limited sources from the black shale bedrock in the eastern portion of the county. These aquifers, regardless of location have, in general, a limited potential for development, and unless locally anomalous conditions are encountered, well yields in the range of those described above can be expected. Large diameter "bucket rig" or bored wells are a commonly used well construction in this area, and are evidence of the generally limited ground-water potential. Well depths in the area are quite variable, ranging from 30 to over 400 feet, with most well depths between 80 and 150 feet.

AREAS IN WHICH YIELDS FROM 0-50 GALLONS PER MINUTE CAN BE DEVELOPED

Water supplies in these areas are obtained primarily from thin intertill sand and gravel aquifers occurring within the glacial drift sequence, from shale and sandstone bedrock aquifers in the central and western areas, and from limestone sources in the eastern parts of the county. "Dry holes" are less common in this area as compared to the first section described; however, ground-water conditions are nearly as erratic, and many areas exist where limited supplies could occur on a local basis. Well depths are quite variable, ranging from 35 to over 300 feet. Thick deposits of glacial drift predominate and wells in excess of 200 feet are commonly noted. Most wells in the area, however, are between 100 and 175 feet in depth. While thin intertill sand and gravel aquifers are extensively used in the area and supply moderate amounts of water, locally, where thicker deposits of sand and gravel are present, wells yielding in excess of the 50 gpm could be obtained from properly constructed and developed wells.

AREAS IN WHICH YIELDS FROM 0-50 GALLONS PER MINUTE CAN BE DEVELOPED

The majority of the wells in these areas are completed in bedrock aquifers which are found at a shallow depth. The shale and sandstone sources are normally encountered from 30-75 feet below the land surface and most well depths are generally less than 125 feet. Some sporadic deposits of sand and gravel are present in these areas and when sufficient thickness are encountered domestic wells or larger water supplies can be obtained. Ground-water conditions are generally more favorable in these areas than in those previously described. Well depths vary from 40 to over 175 feet in these areas.

AREAS IN WHICH YIELDS FROM 5-150 GALLONS PER MINUTE CAN BE DEVELOPED

Well supplies in these areas are predominantly obtained from sand and gravel aquifers within the glacial drift. Well depths are quite variable, ranging from 30 to over 300 feet. Locally, sand and gravel units occuring at depths over 200 feet, may have the capability of supplying water in amounts greater than those designated above. Additionally, in the eastern portions of this area limestone aquifers of unknown capability are present which may have the ability to supply 50-250 gpm to properly constructed and developed drilled wells; however, data pertaining to these sources are virtually lacking. Intertill sand and gravel aquifers are extensively used in these areas and while the depth to these units is quite variable, zones at approximately 50 feet, 100 feet, and 200 feet are noted in many areas. Usually each of these zones has a water level or piezometric surface separate and distinct from the others, which is found at an increasing depth below the land surface with the increased depth of the formation. For this reason the definition of a regional or county wide piezometric surface is, at best, a difficult undertaking. Wells in this area often will fall into the 100-150 foot depth range.

AREAS IN WHICH YIELDS UP TO 250 GALLONS PER MINUTE CAN BE DEVELOPED

Nearly all of the wells in these areas obtain water from deposits of sand and gravel. The average depth of a well is shallower than in other areas and wells less than 100 feet deep are commonly noted. A number of flowing wells are found in the northwestern portion of this sector in the Sugar Creek valley, and artesian water levels of over 20 feet above the ground surface have been recorded. Glacial outwash deposits and increased thicknesses of intertill sand and gravel are generally more prevalent in this area, and available information indicates that on a local basis limited areas may be present where yields in excess of 250 gpm can be obtained. Glacial drift in the northwestern portion of this area is generally greater than 230 feet thick and thicknesses in excess of 300 feet could be obtained. Sand and gravel deposits generally range from 5-40 feet thick, but locally, where outwash deposits are found, depths in excess of 40 feet may be encountered. Underlying bedrock aquifers are of only limited capability. The depth of wells in these areas range from 40-275 feet.

AREAS IN WHICH YIELDS UP TO 500 GALLONS PER MINUTE CAN BE DEVELOPED

Glacial outwash and intertill sand and gravel aquifers in this area offer the best known potential for ground-water development in the county. This area, although of limited areal extent, contains wells with yields from 500-1,000 gpm each. The availability of recharge, proximity of Eagle Creek, and high water-yielding capability of the sand and gravel deposits favor the development of wells with yields of up to 500 gpm each. Glacial drift in excess of 125 feet occurs in the area. No significant bedrock ground-water sources are known to underlie the area and well depths are generally less than 100 feet.

Map of Ground Water Availability, Boone County (1977)
Indiana Department of Natural Resources, Division of Water

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Registered Significant Ground-Water Withdrawal Facilities in Boone County, Indiana

| No.	Use	Regist. Owner	Well No.	Capacity (gpm)	Depth (ft)	Dia. (in)	Aquifer System	Well Ref. No.	Topo Map	T, R, S
1	06-00122	IR	Golf Club of Indiana	1	275	50	24	TT	116689	Zionsville	17n,1e,12
				2	275	60	24	TT		Zionsville	17n,1e,12
2	06-00260	PS	Town of Thorntown	1	200	69	8	TC		Thorntown	20n,2w,35
				2	200	70	8	TC		Thorntown	20n,2w,35
				3	300	70	10	TC		Thorntown	20n,2w,35
3	06-00842	PS	City of Lebanon Utilities	SC1	700	146	18	TC	30848	Thorntown	20n,1w,28
				SC2	700	145	14	TC		Thorntown	20n,1w,28
				SC3	700	146	18	WabashOwsub	30849	Thorntown	20n,1w,28
				SC4	700	142	16	WabashOwsub		Thorntown	20n,1w,28
				SC5	700	146	18	WabashOwsub	30846	Thorntown	20n,1w,28
4	06-00843	PS	City of Lebanon Utilities	CS 3	200	104	26	TT	31052	Lebanon	19n,1w,36
				CS 4	200	104	12	TT	31095	Lebanon	19n,1w,36
				CS 10	200	218	16	TT		Lebanon	19n,1w,36
5	06-00844	MI	City of Lebanon Utilities	MP1	350	96	26	TT	31023	Lebanon	19n,1e,30
6	06-00845	PS	City of Lebanon Utilities	SS 1	200	221	10	TT	30817	Lebanon	18n,1e,6
				SS 2	200	241	10	TT	30509	Lebanon	18n,1e,6
7	06-01401	IR	Zionsville Golf Club	1	20	120	4	WhiteOw	155615	Zionsville	18n,2e,35
				3	220	160	8	WhiteOw		Zionsville	18n,2e,35
8	06-01901	PS	Whitestown Utilities	3	300	189	12	TT	380261	Zionsville	18n,2e,18
				4	300	189	12	TT	380256	Zionsville	18n,2e,18
9	06-01905	IR	Ulen Country Club	1	100	80	4	TT		Lebanon	19n,1e,30
				2	200	96	6	TT	30601	Lebanon	19n,1e,30
10	06-02281	PS	Advance Water Works	3	100	224	8	BG-SDC	391292	Lizton	18n,2w,22
11	06-02497	PS	Jamestown Mun. Water Work	4	90	94	10	TT	154672	New Ross	17n,2w,5
				5	110	65	8	TT	154697	New Ross	17n,2w,5
12	06-02753	IR	Cool Lake Golf Course	2	250	224	8	TT	142870	Mechanicsburg	20n,1e,30
13	06-02960	IR	Wolf Run Golf Club	1	250	195	8	TT		Rosston	18n,2e,3
				2	250	195	8	TT		Rosston	18n,2e,3
				3	10	195	4	TT		Rosston	18n,2e,3
				4	50	185	6	TT		Rosston	18n,2e,3
14	06-03498	IR	White Lick Golf Course	3	30	64	4	TT	116718	Fayette	17n,1e,10
15	06-04208	IR	Hickory Bend Golf	1	60	136	6	TT	278844	Rosston	18n,2e,4
16	06-04212	IN	Builders Concrete & Supply Co.	1	200	165	8	TT	282515	Fayette	18n,1e,27
17	06-04422	IN	US Aggregates, Inc.	W-1	50	42	5	WabashOwsub		Colfax	20n,2w,33
18	06-04551	PS	Highgrove Development, Inc.	1	60	116	5	TT	383234	Carmel	18n,2e,36
				2	60	61	5	WhiteOw	383232	Carmel	18n,2e,36
				3	15	119	5	WhiteOw	383233	Carmel	18n,2e,36

IN = Industry
IR = Irrigation
MI = Miscellaneous Uses
PS = Public Supply
T,R,S = Congressional Township, Range, and Section

BG-SDC = Borden Group Aquifer System - Silurian and Devonian Carbonates Aquifer System
TC = Tipton Complex Aquifer System
TT =Tipton Till Aquifer System
WhiteOw = White River and Tributaries Outwash Aquifer System
WabashOwsub = Wabash River and Tributaries Outwash Aquifer Subsystem

List of significant wells in Boone County
Indiana Department of Natural Resources, Division of Water

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UNCONSOLIDATED AQUIFER SYSTEMS OF BOONE COUNTY, INDIANA
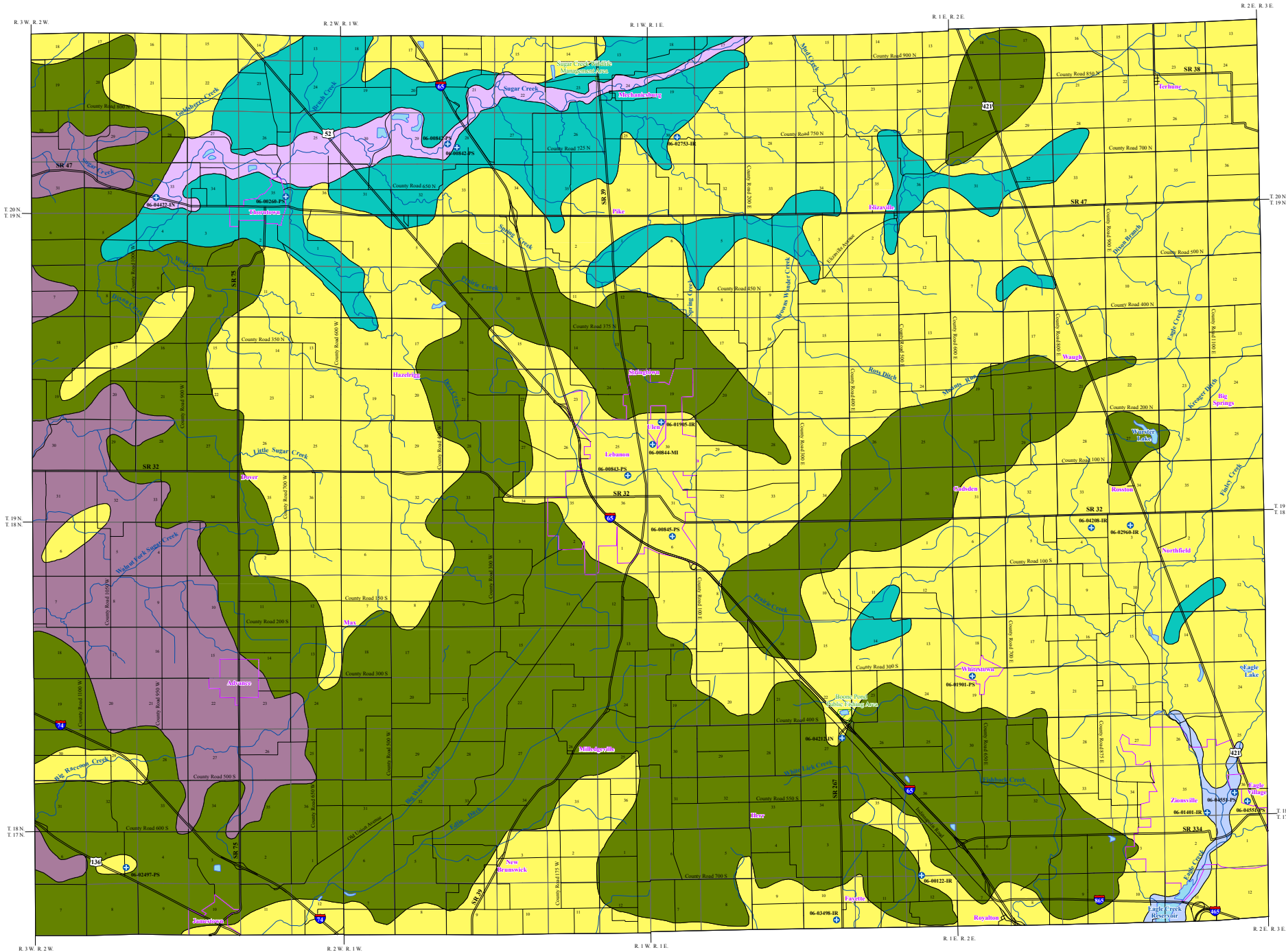
The unconsolidated aquifer systems of Boone County are a result of a complicated sequence of glacial events and comprise sediments deposited by or resulting from glaciers, glacial meltwaters, and post-glacial precipitation events. Six unconsolidated aquifer systems have been mapped in Boone County: the Till Veneer; the Tipton Till; the Tipton Till Subsystem; the Tipton Complex; the Wabash River and Tributaries Outwash Subsystem; and the White River and Tributaries Outwash. Because of the complicated glacial geology, boundaries of the aquifer systems in this county are commonly gradational and individual aquifers may extend across aquifer system boundaries.

The thickness of unconsolidated deposits in Boone County is quite variable, due to the deposition of glacial material over an uneven bedrock surface. In a few places along Sugar Creek and Big Raccoon Creek in western Boone County, bedrock is at or near the surface. North and northeast of Lebanon, the thickness of unconsolidated deposits increases to over 350 feet. Elsewhere, the depth to bedrock is generally less than 100 feet, roughly west of a diagonal from the southeast corner to the northwest corner of Boone County.

Regional estimates of aquifer susceptibility to contamination from the surface can differ considerably from local reality. Variations within geologic environments can cause variation in susceptibility to surface contamination. In addition, man-made structures such as poorly constructed water wells, unplugged or improperly abandoned wells, and open excavations, can provide contaminant pathways that bypass the naturally protective clays.

Till Veneer Aquifer System

In Boone County, the Till Veneer Aquifer System consists of areas where the unconsolidated material is predominantly thin till overlying bedrock. Along some of the major streams, this system also includes thin alluvium and surficial sand and gravel outwash deposits overlying shallow bedrock. The Till Veneer Aquifer System in Boone County is primarily mapped in places along Sugar Creek and Big Raccoon Creek, and some tributaries in the western third of the county. This system has the most limited ground-water resources of the unconsolidated aquifer systems in the county. Total thickness of the Till Veneer Aquifer System generally ranges from about 25 to 50 feet.

There is little potential for ground-water production in this system in Boone County. Potential aquifers within this system include thin isolated sand and/or gravel layers. Therefore, very few of the reported wells penetrating this aquifer system in the county are completed in unconsolidated materials. The system is commonly bypassed in favor of the underlying bedrock. In this county the depth of the few wells completed in the Till Veneer Aquifer System range from 36 to 47 feet deep with static water levels ranging between 3 and 20 feet below the surface. Most of the wells have reported capacities of less than 10 gallons per minute (gpm).

This system is generally not very susceptible to contamination from surface sources because of the low permeability of the near-surface materials. However, there are areas where protective clay layers are thin or absent. These areas are very susceptible to contamination.

Tipton Till Aquifer System

The Tipton Till Aquifer System primarily consists of glacial till with intratill sand and gravel layers. In Boone County, this aquifer system ranges in thickness from about 50 feet to around 300 feet. However, the sand and gravel aquifers in this system tend to be thin and discontinuous.

Wells completed in this system are capable of meeting the needs of most domestic and some high-capacity users in Boone County; however, where one well might produce a good or adequate water supply, a nearby well may not produce any water. Saturated aquifer materials include sand and/or gravel deposits that are commonly 7 to 15 feet thick and are generally overlain by 40 to 75 feet of till. Wells producing from this aquifer system are typically 75 to 175 feet deep. Domestic well capacities are commonly 10 to 30 gpm. Static water levels generally range from 20 to 45 feet below the surface. There are 13 registered significant ground-water withdrawal facilities (23 wells) using the Tipton Till Aquifer System. Primary usages for these facilities are public water supply and irrigation. The reported pumping rates range up to 350 gpm.

The Tipton Till Aquifer System typically has a low susceptibility to surface contamination because intratill sand and gravel units are commonly overlain by thick glacial till. Shallow wells completed in this system are moderately susceptible to contamination.

Tipton Till Aquifer Subsystem

Areas where unconsolidated materials are generally greater than 50 feet in thickness, yet have limited aquifer potential, are mapped as the Tipton Till Aquifer Subsystem in Boone County. The unconsolidated deposits vary between 50 feet to over 300 feet thick for the subsystem in this county. However, the depth to bedrock is generally less than 150 feet. Potential aquifer materials include thin, discontinuous intratill sand and gravel deposits. Where present, these deposits are typically capped by till that is commonly 45 to 85 feet thick.

About 30 percent of wells started in this subsystem in Boone County are completed in the underlying bedrock aquifer system. However, the Tipton Till Aquifer Subsystem is capable of meeting the needs of some domestic users in the county. The wells producing from this subsystem are completed at depths ranging from 50 to 120 feet. Intratill sand and gravel aquifer materials are typically less than 5 feet thick. Domestic well yields are commonly 5 to 15 gpm and static water levels are generally 5 to 40 feet below the surface.

This subsystem is generally not very susceptible to surface contamination because intratill sand and gravel units are overlain by thick till deposits. Wells producing from shallow aquifers are moderately to highly susceptible to contamination.

Tipton Complex Aquifer System

The Tipton Complex Aquifer System is characterized by unconsolidated deposits that are quite variable in materials and thickness and primarily located in the northern third of Boone County. Aquifers within the system range from thin to thick, and include single or multiple discontinuous intratill sand and gravel layers. The aquifers are highly variable in depth and lateral extent and are typically confined by thick clay layers. The total thickness of unconsolidated deposits ranges from about 50 feet to over 350 feet.

This system is capable of meeting the needs of domestic and most high-capacity users in Boone County. Saturated aquifer materials in the Tipton Complex Aquifer System are generally 10 to 35 feet thick and are overlain by a till cap which is commonly 40 to 90 feet thick. Wells in this system are typically completed at depths ranging from 70 to 160 feet. Domestic well yields are commonly 10 to 50 gpm and static water levels are generally 10 to 40 feet below the surface. There are two registered significant ground-water withdrawal facilities (5 wells) using this system. These facilities are used for public water supply. Reported capacities for the wells range from 200 to 700 gpm.

The Tipton Complex Aquifer System is not very susceptible to contamination where overlain by thick clay deposits. However, in some areas where surficial clay deposits are thin or lacking, the shallow aquifer, if present, is at moderate to high risk.

White River and Tributaries Outwash Aquifer System

The White River and Tributaries Outwash Aquifer System is mapped along sections of Eagle Creek and Little Eagle Creek in Boone County. In places, sand and gravel from the melting glaciers (outwash) were deposited in the stream valleys. The total thickness of unconsolidated deposits in this system ranges from about 50 feet to over 150 feet.

This aquifer system is capable of meeting the needs of domestic and high-capacity users in Boone County. Wells in the White River and Tributaries Outwash Aquifer System are completed at depths from 15 to 100 feet. Sand and gravel aquifers are commonly 20 to 50 feet thick and are generally capped by silt, sandy clay, or clay ranging from 5 to 20 feet thick. However, in many places, the protective cap is missing and unsaturated sand and gravel deposits lie above the productive aquifer. Domestic well yields in this system are 10 to 60 gpm and static water levels range from flowing to 50 feet below the surface. In Boone County, there are two registered significant ground-water withdrawal facilities (4 wells) in this system. Uses for these facilities are public water supply and irrigation. Reported capacities for these wells range up to 220 gpm in Boone County; however, the Indianapolis Water Company has wells with reported capacities of around 600 gpm just south of the county line.

This system is moderately susceptible to surface contamination where overlying clay or silt deposits are present. However, areas that lack overlying clay or silt deposits are highly susceptible to contamination.
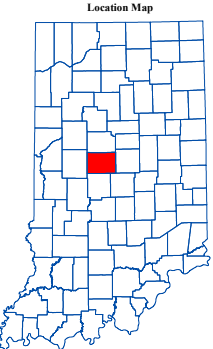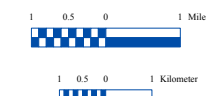
Wabash River and Tributaries Outwash Aquifer Subsystem

In Boone County, the Wabash River and Tributaries Outwash Aquifer Subsystem is mapped along portions of Sugar Creek. Total thickness of unconsolidated deposits overlying bedrock ranges from about 50 feet to over 300 feet.

The Wabash River and Tributaries Outwash Aquifer Subsystem has the potential to meet the needs of domestic and some high-capacity users. The wells in this system are completed at depths from 36 to 285 feet. Saturated aquifer materials include sand and gravel deposits that are commonly 10 to 25 feet thick. Domestic well yields typically range from 10 to 45 gpm with static water levels ranging from flowing to 50 feet below the surface. There are two registered significant ground-water withdrawal facilities (4 wells) using this system. These facilities are used for public water supply and industry. Reported capacities for the wells range up to 700 gpm.

The aquifer materials in the Wabash River and Tributaries Outwash Aquifer Subsystem are generally overlain by 5 to 25 feet of silt or clay. However, in many places, this layer is missing and unsaturated sand and gravel deposits lie above the productive aquifer. Areas within this aquifer system that have overlying clay or silt deposits are moderately susceptible to surface contamination; whereas, areas that lack overlying clay or silt deposits are highly susceptible to contamination.
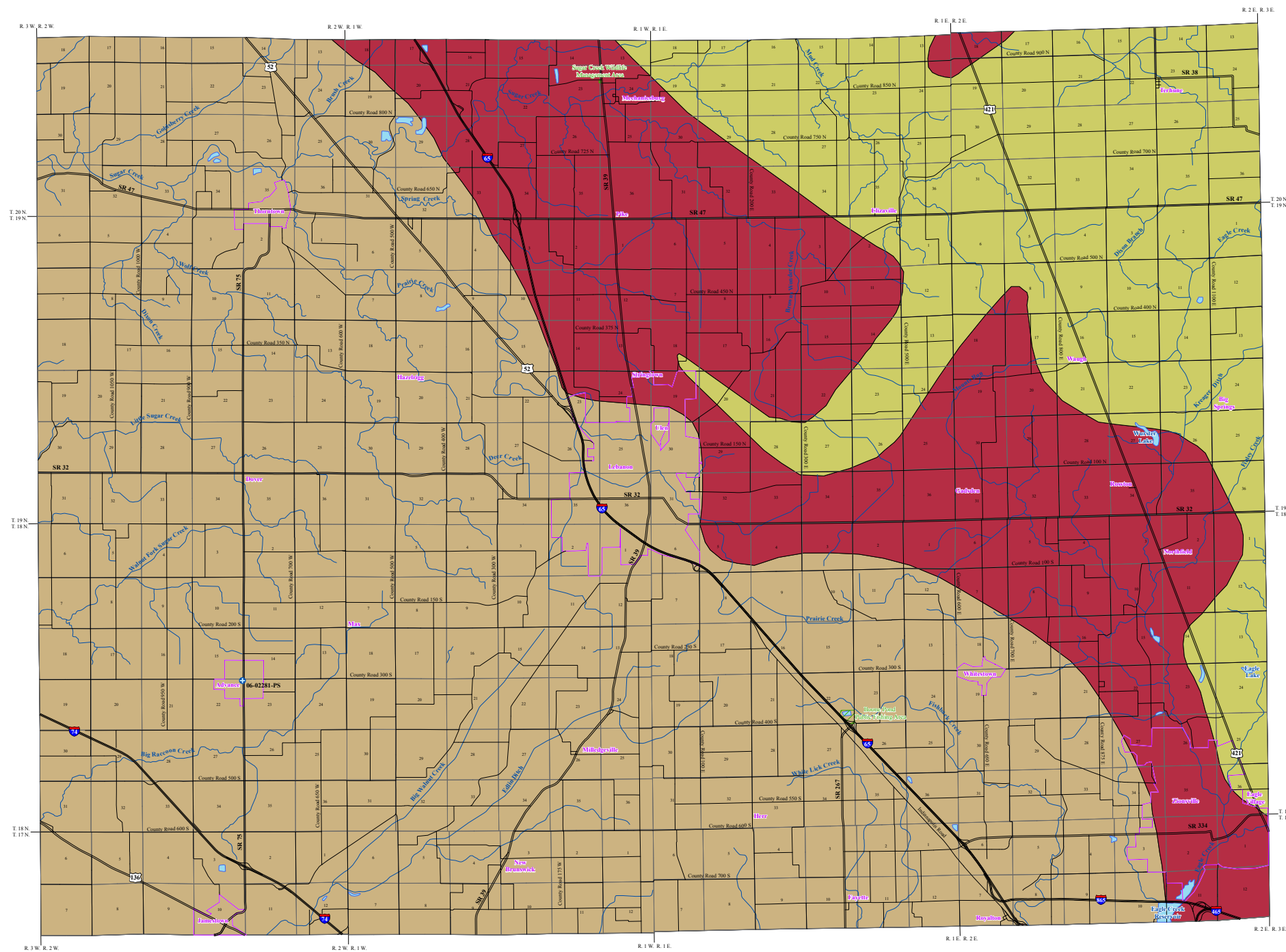
EXPLANATION

- Registered Significant Ground-Water Withdrawal Facility
- Stream
- County Road
- State Road & US Highway
- Interstate
- Municipal Boundary
- State Managed Property
- Lake & River

Location Map

Thorntown Comprehensive Plan (Final): July 12, 2010

Map of Unconsolidated Aquifer Systems, Boone County (2008)
Indiana Department of Natural Resources, Division of Water

Exhibit 36   171

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BEDROCK AQUIFER SYSTEMS OF BOONE COUNTY, INDIANA

The occurrence of bedrock aquifers depends on the original composition of the rocks and subsequent changes which influence the hydraulic properties. Post-depositional processes, which promote jointing, fracturing, and solution activity of exposed bedrock, generally increase the hydraulic conductivity (permeability) of the upper portion of bedrock aquifer systems. Because permeability in many places is greatest near the bedrock surface, bedrock units within the upper 100 feet are commonly the most productive aquifers.

Bedrock aquifer systems in the county are overlain by unconsolidated deposits of varying thickness, ranging from outcropping along Sugar Creek in parts of western Boone County to over 350 feet in the north-central portion of the county. Most of the bedrock aquifers in the county are under confined conditions. In other words, the potentiometric surface (water level) in most wells completed in bedrock rises above the top of the water-bearing zone.

The yield of a bedrock aquifer depends on its hydraulic characteristics and the nature of the overlying deposits. Shale and glacial till act as aquitards, restricting recharge to underlying bedrock aquifers. However, fracturing and/or jointing may occur in aquitards, which can increase recharge to the underlying aquifers. Hydraulic properties of the bedrock aquifers are highly variable.

Three bedrock aquifer systems are identified for Boone County. They are, from west to east and younger to older: the Borden Group of Mississippian age, the New Albany Shale of Devonian and Mississippian age, and the Silurian and Devonian Carbonates. Bedrock wells represent about ten percent of all wells completed in the county.

The susceptibility of bedrock aquifer systems to surface contamination is largely dependent on the type and thickness of the overlying sediments. However, because the bedrock aquifer systems have complex fracturing systems, once a contaminant has been introduced into a bedrock aquifer system, it will be difficult to track and remediate.

Mississippian -- Borden Group Aquifer System

The Mississippian age Borden Group outcrops/subcrops primarily west of Interstate 65 in Boone County. This bedrock aquifer system is composed mostly of siltstone and shale, but fine-grained sandstones are common. Carbonates are rare, but do occur as discontinuous interbedded limestone lenses, mostly in the upper portion of the group. The Borden Group in Boone County is overlain by unconsolidated deposits with a maximum thickness ranging from less than 5 feet to over 300 feet.

Because the Borden Group is generally not very productive, it is typically used only where overlying deposits do not contain aquifer material. The Borden Group is often described as an aquitard, and yields of wells completed in it are typically quite limited. Most of the domestic wells either produce from the overlying unconsolidated deposits or penetrate through the shale and siltstone in favor of the underlying Silurian and Devonian Carbonates. Reported depths commonly range from 90 to 200 feet deep. The amount of rock penetrated in this system typically ranges from 50 to 175 feet. The typical domestic well in the subcrop area produces less than 15 gallons per minute (gpm). Many dry holes have been reported in this system. Static water levels commonly range from 10 to 40 feet below the land surface. There is one registered significant ground-water withdrawal facility (1 well) in the subcrop area of this system. However, the well is completed in the more productive underlying Silurian and Devonian Carbonates. This facility is used for public water supply and has a reported capacity of 100 gpm.

The Borden Group is composed of primarily fine-grained materials that limit the movement of ground water to fractures, joints, and along the bedrock surface. Thus, in most of the western portion of the county where bedrock is shallow, risk to contamination from the surface or near surface sources is high. Where the overlying sediment consists of thick fine-grained clay materials, the Borden Group Aquifer System in Boone County is at low risk to contamination from the surface or near surface sources.

Devonian and Mississippian -- New Albany Shale Aquifer System

The New Albany Shale consists mostly of brownish-black carbon-rich shale, greenish-gray shale, and minor amounts of dolomite and dolomitic quartz sandstone. The New Albany Shale is generally less than 100 feet thick and it subcrops in a thin band east of Interstate 65 in Boone County. About half of the domestic wells penetrate through the shale in favor of the underlying Silurian and Devonian Carbonates.

Because the New Albany Shale is generally not very productive, it is typically used only where overlying deposits do not contain aquifer material. The New Albany Shale is often described as an aquitard, and yields of wells completed in it are typically quite limited. Domestic water wells commonly yield less than 10 gpm with typical static water levels ranging from 10 to 60 feet below the surface. Many dry holes have been reported. The permeability of shale materials is considered low. The New Albany Shale Aquifer System, therefore, has a low susceptibility to contamination introduced at or near the surface.

Silurian and Devonian Carbonates Aquifer System

In Boone County, this aquifer system consists primarily of middle Devonian age carbonates of the Muscatatuck Group and underlying Silurian carbonates. It is composed of only Silurian carbonates where Muscatatuck Group rocks have been removed by erosion. Because individual units of the Muscatatuck and Devonian systems consist of similar carbonate rock types and cannot easily be distinguished on the basis of water well records, they are considered as a single water-bearing system.

Few wells utilize the Silurian and Devonian Carbonates Aquifer System in the subcrop area in Boone County due to availability of thick unconsolidated deposits. Reported depths range from 88 to 305 feet deep. The amount of rock penetrated in this system ranges from 2 to 132 feet. Water wells completed in this system are generally capable of meeting the needs of domestic users. Reported yields for domestic wells range from a few dry holes up to 65 gpm. Static water levels range from 16 to 100 feet below the land surface. This aquifer system has a low susceptibility to surface contamination due to thick clay deposits over most of the county.

EXPLANATION

- Registered Significant Ground-Water Withdrawal Facility
- Stream
- County Road
- State Road & US Highway
- Interstate
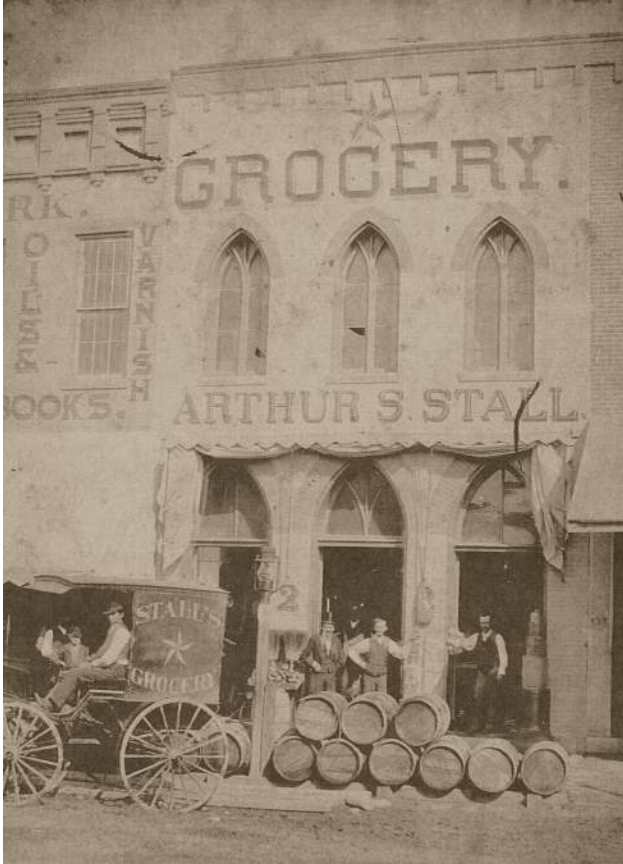- Municipal Boundary
- State Managed Land
- Lake & River

Location Map
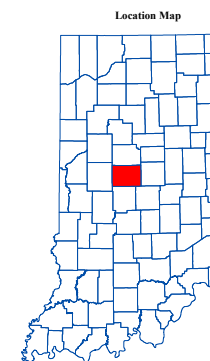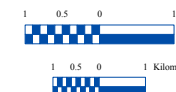
Map of Bedrock Aquifer Systems, Boone County (2008)
Indiana Department of Natural Resources, Division of Water

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Appendices

Barn on Fall Road in Sugar Creek Township, 2010

Stall Grocery on Main Street, c. 1880

Appendices