

The logo for Warsaw, Missouri, featuring the word "Warsaw" in a stylized green font with a wavy underline, and "Missouri" in a smaller, plain green font to its right.

Warsaw Missouri

A handwritten-style "Welcome to Warsaw" in a light green color, positioned over a background image of a park with trees and a path.

Welcome to Warsaw

Warsaw Livable Community Transportation Improvement Project
Warsaw, Missouri

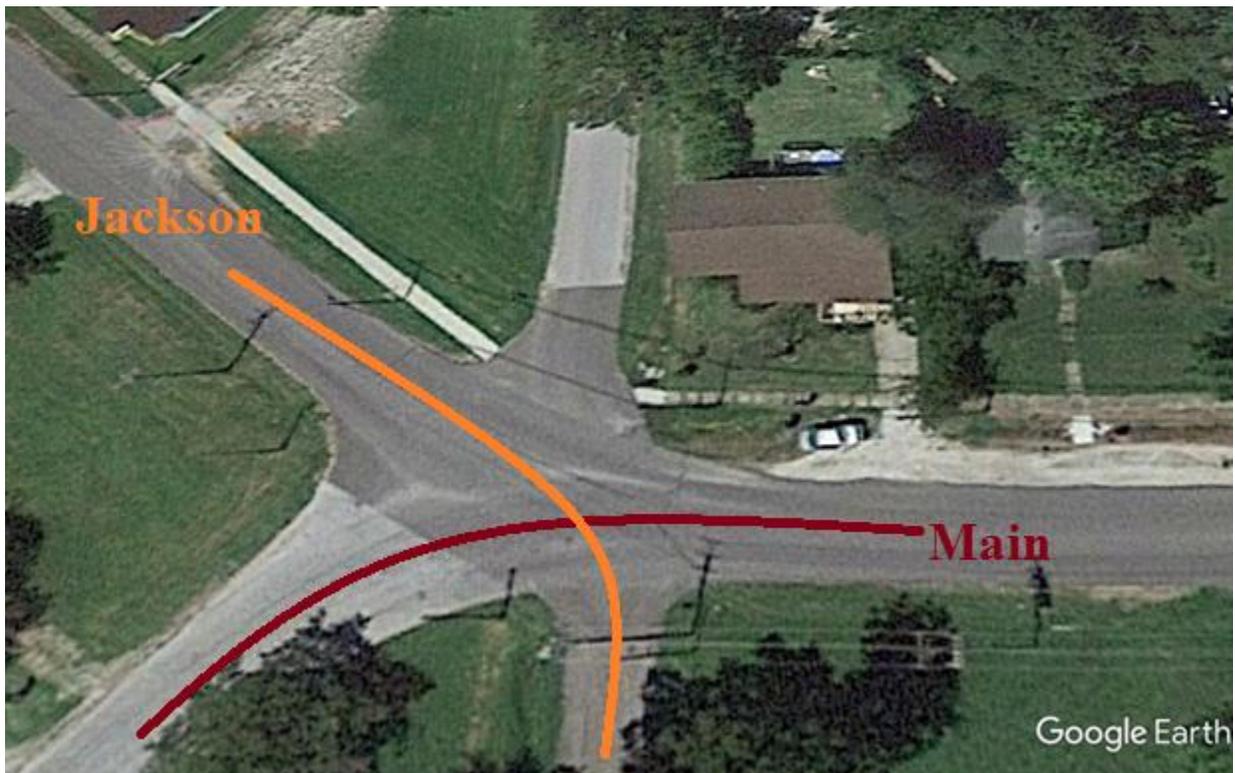
Attachment I Environmental Protection

I-1 Relevant pages addressing stormwater from the Commercial Street TEAP PER is provided as a link.

I-2 Letter from Burns and McDonnell Engineers

Roundabout

Following pictures were taken from the intersection of Main and Jackson Street. This is the starting point of the Jackson Street project with a roundabout at the Main Street Intersection. Complete Street Improvements will continue from Main Street up Jackson. At the end of this document is information from our Comprehensive Plan.





WARSAW LIVABLE COMMUNITY TRANSPORTATION IMPROVEMENT PLAN

Main Street from State Street to Kraft Street This section of Main Street would begin where the downtown streetscape project ended, just west of State Street. The roadway should be improved to include sidewalks, way-finding signage, curb and gutter with enclosed storm sewers and street lighting. The section from the intersection of Jackson Street to Kraft should also include widening for on-street bike lanes. The improvements would also include widening the existing box bridge over the Town Branch Creek and constructing a roundabout at the intersection of Arcadia & Jackson. This is a 5-legged intersection on Main Street that should be revised to a four-way intersection. This intersection could be reconstructed as a roundabout with landscaping and gateway features into downtown and the harbor. Closing one two of the street connections, such as the south and north legs of Arcadia is recommended. The City should approach the residents along this short street segment and determine if there are any negative impacts to closing this connection. The estimated cost for these improvements, including engineering and inspection is \$1,799,190.



Example of how a roundabout might work at Main& Jackson

Main Street from Kraft Street to U.S. 65 This section of Main Street is mostly a commercial gateway into downtown from U.S. 65. The roadway in this area should be improved to include a center turn-lane, on-street bike lanes, sidewalks, way-finding signage, curb and gutter with enclosed storm sewers and street lighting.

The number of commercial driveways through this area of Main Street warrants the addition of a center turn lane to improve traffic flow and safety. Access management should be included to reduce and consolidate driveways where possible and to clearly define driveways in lieu of the entrances that span the full width of the business frontage. Any reconstruction and widening in this area should take into consideration the possible impacts of redevelopment and, if possible, incorporate that into the roadway.

Stormwater

The highest elevation of Jackson Street can be seen at the top of both pictures. The slight crest in the middle of the pictures is the dividing point from where storm water flows. Between the highest elevation and the crest, the stormwater flows in the Intersection of Commercial and Jackson.



Below: Typical deteriorated sidewalks. Note distance from the sidewalk to the street. Plenty of room for stormwater improvements





Above: This picture illustrates the sufficient width of the street for a roadway for sidewalks, bicycle lanes and drive lanes while incorporating stormwater improvements.

Below: As we enter a flood prone area, looking at the intersection of Jackson and Commercial.





Above: Looking up Commercial Street from Jackson towards the school. Bicycle lanes are currently on the streets, but many use it for walking paths.

Below: Open storm ditches at the intersection of Jackson and Commercial Street.





Above: Roadway the Town Branch tops the roadway. Notice the orange caution sign for high water.

Below: All the water from the previous pictures converge at this point. Just in front of the red car is the box culvert over the Town Branch.



ENVIRONMENTAL PROTECTION

Following from page 15 of the [Building on Success to Capitalize on the Future Comprehensive Plan](#)

“The area south of East Main Street from Highway 65 to downtown Warsaw is envisioned as a redevelopment area of approximately 60 acres focused on creating a mixture of residential types and commercial support businesses and activities. The anchor for the resort environment is a hotel with conference, banquet and special events facilities. Associated with the hotel are villas, cabins and/or condominiums that are available for long-term vacation rental, timeshare and / or purchase. Additionally, new single-family patio style or attached homes in maintenance provided neighborhoods are developed.”

Objectives:

1. Study and implement improvements along Town Creek to provide better storm water management and open space improvements to the area. **Outcome: Currently conducting Town Branch Stormwater Study.**
2. Construct sidewalks that connect to the trails network throughout the area. **BUILD application.**
3. Address circulation and traffic impacts associated with pick-up and drop-off times at the elementary school, minimizing impact on the surrounding neighborhood.

Relevant pages (3) selected from the Comprehensive Plan. We have highlighted certain sections for easier review. Scroll to continue.

- The network of underutilized rights-of-way / easements on the surface and unused water mains underground is an asset that may be leveraged in the future by uses such as public trails or conduit for the delivery of fiber and other technological systems.
- Storm water management is a growing issue nationally. As Warsaw expands there will be impacts on the surface drainage system throughout the community. Frequency and intensity of storms will influence the immediacy of addressing issues associated with further development in the drainage basins in which Warsaw resides.
- To be competitive in attracting new residents and businesses, it will become increasingly important that a variety of technology platforms, uses and users can be accommodated through a state of the art technology infrastructure system provided in a cost effective manner.

In addition to the planning considerations identified above several themes arose from a series of citizen interviews / meetings conducted during the planning process. These citizens were primarily associated with the banking / finance, real estate, and development industry, or were local business or property owners. The citizens were asked to discuss their development ideas, business opportunities and thoughts regarding issues and barriers facing the community, as well as their vision for the future of Warsaw.

The resulting general themes arose also influenced the development of the comprehensive plan vision, goals and objectives:

Both of these systems have been studied recently and master plans for facility improvements have been developed based upon an assessment of age, capacity and potential expansion of the systems. These master plans provide details regarding system improvements and priorities so that capital improvement plans can be developed and funding sought in a logical manner.

The significance of these efforts is reflected by the fact that at one point in time deficiencies in the sewer collection system prompted the Missouri Department of Natural Resources (MDNR) to instruct the city to stop development. Since then over 70,000 linear feet of sewer main have been rehabilitated and key components to the wastewater treatment plant have been added to address past issues and position the system and community for growth.

Additionally, as water system improvements have been made approximately 33,000 linear feet of unused water main have been left in place for future use.

Storm Water

The City of Warsaw does not have a storm water utility in place. Most storm water is handled on the surface with drainage flowing on private property, along streets and in swales / culverts leading to Town Creek and the Lake of the Ozarks.

Flooding issues associated with storm water drainage are relatively infrequent, depending on storm events. Long rainfall events can create significant storm water flow along Town Creek, as well as issues in various areas including at Van Buren Street and Town Creek.

Natural Gas / Electric / Communications

These utilities are provided by several private service providers in the area:

- Summit Natural Gas (SNGMO) – natural gas
- Kansas City Power and Light (KCP&L) - electricity

Objectives:

1. Study and implement improvements along Town Creek to provide better storm water management and open space improvements to the area.
2. Construct sidewalks that connect to the trails network throughout the area.
3. Address circulation and traffic impacts associated with pick-up and drop-off times at the elementary school minimizing impacts on the surrounding neighborhood.
4. Develop programs to assist with costs associated with minor repair and remodeling of residential structures.
5. Address property conditions that have a detrimental impact on adjacent and surrounding properties via code enforcement action.
6. Assist in the development of community service groups and neighborhood associations that can assist in working with those needing assistance to address poor living and/or property conditions.

Northern Warsaw Neighborhoods (Highway 7; Jackson Street; north of Truman Dam Access Road; North Town Commercial District)

Goal: Primary expansion area for new residential neighborhood development. Primary Land Uses: Low and medium density residential; public uses.