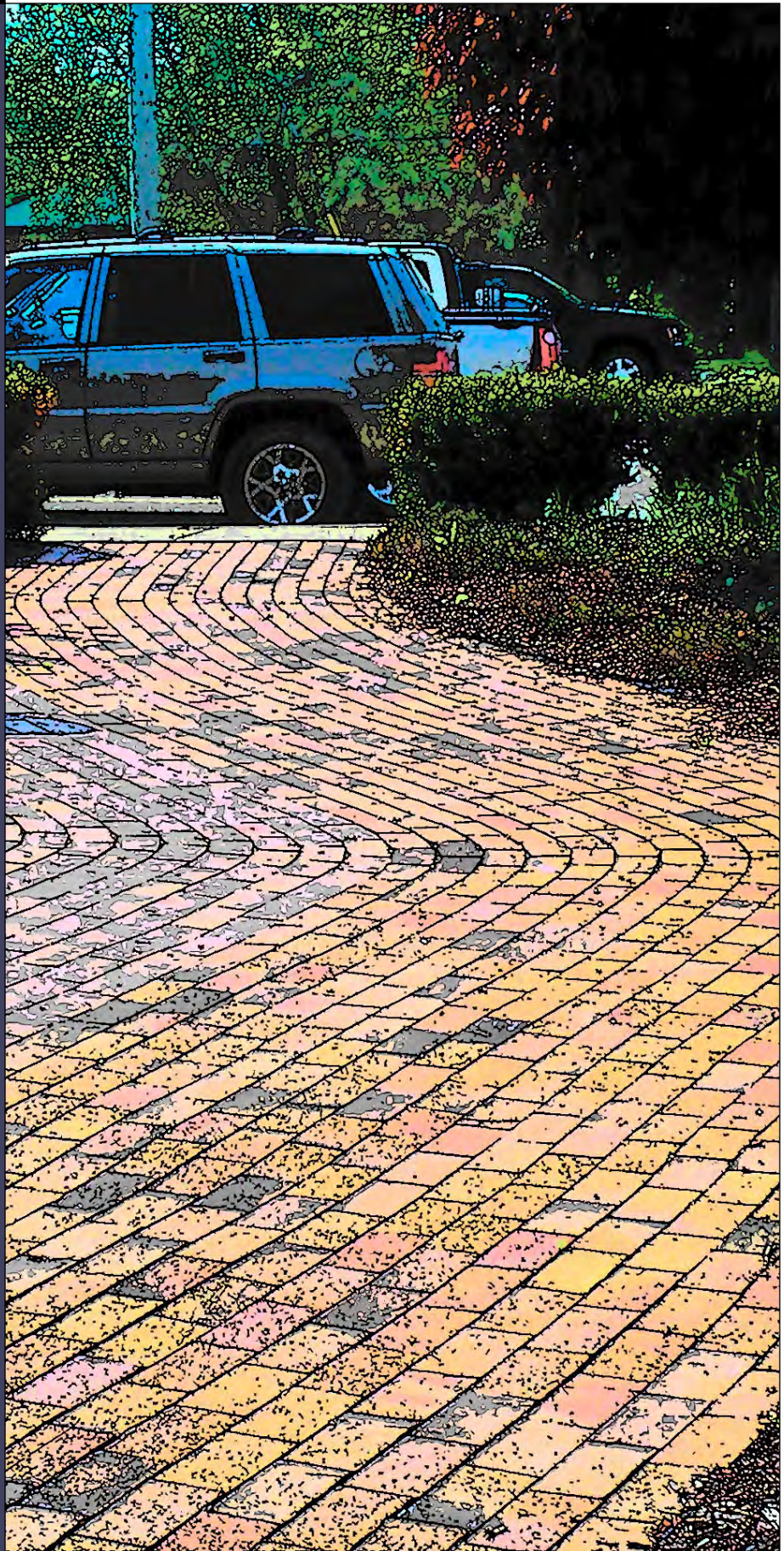


Transportation Plan

“If we don’t plan
for the future,
the future
will come
without a plan.”¹



¹ Source: Brian Schweitzer,
Governor of Montana

Thoroughfare Plan

The function of a road system and its ability to move traffic in an efficient and convenient manner have a significant impact on the viability of land uses and overall quality of life in a community. The primary goal of the Transportation Plan is to plan for a road network that will serve the residents and businesses anticipated in the Land Use Plan chapter. This includes the City of Marshall's road network of State, County and City roadways.

Like the land use planning process, the process for planning a community's transportation system must begin with a study and analysis of existing conditions. This includes an analysis of recent traffic volumes and roadway conditions. For more detailed information about existing road conditions, refer to the Transportation Inventory in the Appendix of the Master Plan.

Future Functional Classification

Traffic is concentrated on certain roadways due to the roads' physical condition, level of use, and direction of travel, as well as the overall land use pattern. About 20 percent of the roads carry approximately 80 percent of vehicle miles traveled. In order to set funding priorities for the roads that carry the highest volumes, transportation planners established a street classification system. This functional classification system is the foundation upon which the road network is designed.

In order to function successfully, the overall traffic circulation system must be carefully integrated. In the City of Marshall, the three basic types of roads are arterials, collector streets, and local streets (refer to the Thoroughfare Plan map). The definitions for these classifications are provided below.

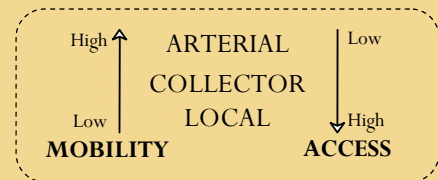
Arterial Streets

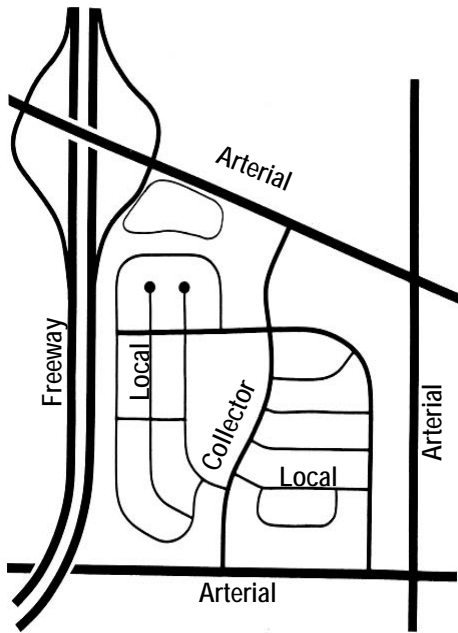
Arterials are the "highest order" of surface streets, and they typically carry high volumes of traffic; they provide travel routes from one city to another, and can traverse one or more states. They are most often used for longer trips, as higher speeds are allowed. When an arterial passes through a more populated area, the number of intersections increases and speeds decrease. Arterial roads have a dual function: to provide routes for through traffic while providing access to abutting properties and minor intersecting streets. This can lead to congestion and traffic crashes because of turning vehicles conflicting with through traffic.

Access v. Mobility

Although there is some variation in classification, roadways are typically divided into those that carry through traffic and those that carry local traffic. It is desirable to physically separate these two road types as much as possible to eliminate conflicting traffic movements, traffic congestion, delays, and crashes.

The role of each road classification in providing access and mobility is illustrated below. Generally, as access increases, mobility decreases – and vice versa.





Collector Streets

Collector streets primarily permit direct access to abutting properties and provide connections to higher order arterials. Through traffic movement from one part of the City to another is deliberately discouraged on these streets. The collector street, in most cases, is a public roadway serving moderate traffic movement from local streets to arterial streets. Although collectors permit access to abutting property, it is preferable that they do not serve an access function for residential lots. The collectors may accommodate pedestrians and public utility facilities within the right-of-way. Collectors feed the arterials, thus reducing the number of curb cuts onto arterials and ensuring fewer interruptions for arterial traffic. Some collectors are residential collectors and others are nonresidential collectors. The nonresidential collectors accommodate traffic generated by industrial and commercial developments. The residential collectors connect local streets serving residential areas to the arterial system.

Local Streets

Local streets serve the purpose of providing access to abutting land and consist of all streets that do not belong to one of the higher classifications. These streets make up a large percentage of total street mileage in urban areas, but they almost always carry a small portion of vehicle miles traveled. They offer the lowest level of mobility and may carry no through traffic. Examples of this class of roadway are residential subdivision streets and cul-de-sacs.

Access Management Recommendations

Most streets provide two functions: 1) to move traffic and 2) to provide access to land uses that abut them. However, these functions can often conflict because each access point interrupts traffic movement as vehicles turn off and onto the roadway. In order to balance these two road functions, access management techniques should be used. Access management techniques provide ways in which the road network's capacity can be maximized, by reducing the impact of development abutting the major road network.

The techniques described below primarily apply to more intensive, non-residential land uses. Access management is usually implemented through the site plan review process, and these techniques are suggested as guidelines in that process. Each case will require an individual analysis to determine the appropriate action given the characteristics of the site and use.

Restricting the Number and Spacing of Access Points

Limiting the number of driveways permitted for each land use can help preserve the traffic movement function of a roadway. Proposed and existing land uses should provide the minimum number of driveways needed to provide access to a development site. If additional driveways are proposed, additional street frontage for the subject site and appropriate spacing between existing driveways should be provided.

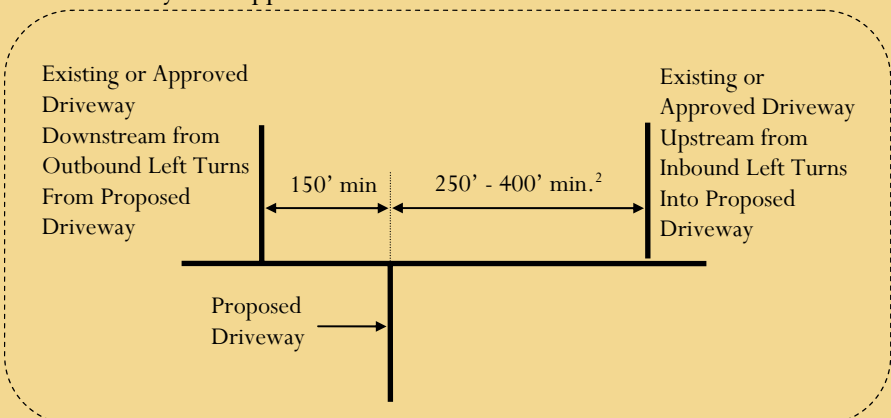
Even if only one access point is proposed, the most appropriate location should be selected to preserve the function of the roadway and, more importantly, to assure public safety. Driveways located too close together are safety hazards and they can negatively impact road capacity.

Recommended Spacing for Nonresidential Driveways

Driveways on Same Side of Street:

Speed Limit (mph)	Minimum Spacing ¹ (feet)
25	135
30	155
35	180
40	215
45	260
50+	310

Driveways on Opposite Side of Street:



¹ Center-to-center.

² Varies with volume of peak-hour traffic using driveways.

Note: Greater separation between driveways and street intersections may be required.

Encouraging Shared Access

Providing shared access to a site reduces the number of access points, preserves the capacity of the road, and can even help to maintain the character of the community. Shared access can be achieved through a variety of techniques including shared driveways, frontage roads, and internal connections between sites. As discussed above, access management is critical for non-residential land uses because of their intensive nature and tendency to demand a higher number of access points.

Access / Driveway Design

Another access management technique is assuring proper driveway and intersection design. Driveways should be designed with adequate width, turning radius, and depth to allow automobiles and large trucks to enter and exit a site safely and efficiently. A clear-vision area at the corners of all driveways and intersections is also needed for safe driver visibility.

In addition, uses that generate high volumes of traffic may warrant the construction of deceleration and acceleration lanes adjacent to driveways and intersections. Left-turn passing lanes or center left-turn lanes may also be necessary. Such improvements are often identified by the completion of traffic impact studies. In general, traffic impact studies are recommended whenever a proposed land use will generate more than 750 vehicle trips per day and/or more than 100 vehicle trips in one direction during the morning (e.g., 7 a.m. - 9 a.m.) or afternoon (4 p.m. - 6 p.m.) peak hour.

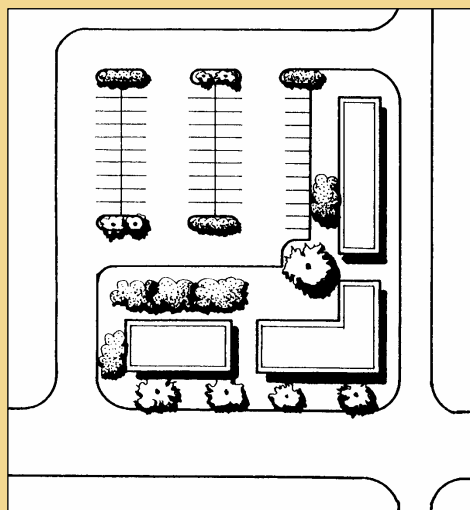
Finally, restricting turning movements at a driveway or intersection is often warranted due to traffic volumes or poor spacing of proposed access points relative to existing driveways and/or intersections. For example, when an existing driveway is too close to an intersection, it is possible to improve the access and safety by restricting turning movements to right turns in and out of a proposed or existing development site.

Action Items

- ☑ Consider adopting site plan review standards that encourage service drives and combines parking and drives.
- ☑ Consider adopting good access management practices to reduce the number of driveways for individual sites.
- ☑ Work cooperatively with MDOT and the Calhoun County Road Commission to provide an efficient and safe system of arterial roadways.

Nonresidential Shared Access

Shared access for a number of nonresidential uses preserves the road capacity, which is especially important near intersections. Shared parking at the rear of buildings can also help to preserve the appearance and character of the community. If shared access drives are not feasible, internal service roads and/or internal parking lot connections between uses should be provided to preserve roadway capacity.



Pedestrian Facilities Plan



The Marshall Riverwalk.
Photo credit: Marshall Area Chamber of Commerce

Sidewalks and pedestrian safety paths are pedestrian-oriented facilities that are an integral part of the City's transportation network. They are generally located within the street right-of-way. Sidewalks are typically five feet in width and located one foot from the edge of right-of-way.

Due to the increasing use of the bicycle as a mode of transportation, bicycle facilities have become an important element in the road design process. Existing road systems may be supplemented with facilities to provide for such traffic. Bike paths generally carry two-way bicycle traffic with a width of eight to ten feet. Two-way bike paths are common in recreation areas connecting different points of interest. When designing such exclusive bike paths, it is necessary that different design factors such as turning radii, grades and sight distance be considered. When located within the right-of-way, bike paths are typically set one foot from the edge of the right-of-way.

Existing Pedestrian Facilities

At the present time, there is one existing pathway in the City. Marshall's Riverwalk is a long and winding boardwalk along the Kalamazoo River that connects Stuart's Landing on the Mill Pond to Kalamazoo Road and Monroe Street. The Riverwalk is part of the North Country National Scenic Trail (NCNST) and the Calhoun County Linear Trailway system. When completed, the Riverwalk would be part of a trail that connects Lake Erie with Lake Michigan, as well as Port Henry, New York with Bismarck, North Dakota.

Many of Marshall's residential streets are lined with sidewalks, connecting neighborhoods to Downtown and community facilities such as parks and schools. Sidewalks have also been incorporated into the design of The Brooks Research and Industrial Park.

Recommendations

Sidewalks and pedestrian facilities should continue to be incorporated into all future residential and nonresidential development to preserve and enhance the walkability of the City. In addition, the City should evaluate opportunities to improve pedestrian circulation. This could include making improvements to crosswalks at key locations, such as adding pavement color, texture, and markings, and improved pedestrian and vehicular signage; implementing an improved wayfinding signage system throughout the City; and sustaining a regular sidewalk maintenance program.

Action Items

- Actively plan for and seek funding for the creation and extension of the Marshall Riverwalk and other non-motorized pathways within the community.
- Coordinate with road agencies and the North Country Trail Association to promote the North Country National Scenic Trail.
- Continue to require sidewalks within new residential and nonresidential developments.
- Evaluate opportunities to improve pedestrian circulation throughout the City.
- Improve wayfinding signage.

The City should actively plan for the extension of the Marshall Riverwalk to expand this valuable scenic and recreational resource within the community. Ultimately the Riverwalk should extend the full length of the City from east to west, as well as provide connections to destinations such as the Marshall House, Ketchum Park, and possibly Brooks Nature Area.

The Riverwalk’s link to the North Country National Scenic Trail should continue to be promoted. The City should collaborate with the Calhoun County Road Commission and the North Country Trail Association to promote opportunities for trail improvements along the NCNST Temporary Connectors¹, such as trail identification signage and wider shoulders along the roadway. These types of improvements can often be coordinated with other planned road improvements, such as pavement resurfacing projects, to reduce cost.

The City, with the North Country Scenic Trail Association, should collaborate with the adjacent townships and other agencies and organizations to promote development of new non-motorized pathways to replace the temporary connectors or “road walks” of the NCNST.

North Country National Scenic Trail

The North Country National Scenic Trail (NCNST) is a premier footpath that stretches for about 4,600 miles linking communities, forests, and prairies across seven northern states. It extends from Crown Point on the western shore of Lake Champlain in eastern New York State to Lake Sakakawea in North Dakota. Between New York and North Dakota it passes through Pennsylvania, Ohio, Michigan, Wisconsin, and Minnesota. Already, more than 1,700 miles have been certified off-road. Additional miles follow shared paths, and some road walks yet remain. When completed, it will be the longest off-road hiking trail in the United States.



Chief Noonday is the local chapter of the North Country Trail Association (NCTA) in the counties of Barry, Calhoun and Kalamazoo in south central and western Michigan. The NCTA is the nationwide nonprofit organization that works in partnership with the National Park Service to build, maintain, and promote the North Country National Scenic Trail.

Source: www.northcountrytrail.org

¹ Temporary Connector locations, as illustrated on Map 9, are consistent with information available at www.northcountrytrail.org.

TRANSPORTATION PLAN



Pathways Plan
 City of Marshall, Michigan
 MAP 9

- Marshall Riverwalk (Existing)
- Marshall Riverwalk (Future)
- North Country National Scenic Trail (Temporary Connector)

