Chapter 7. Transportation

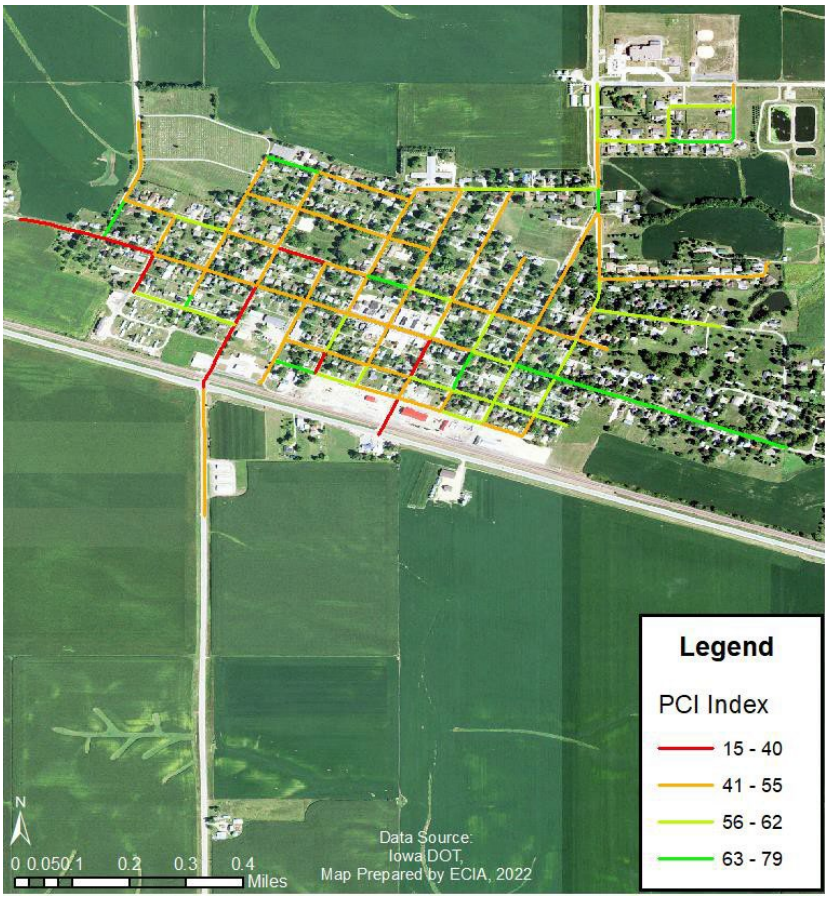
Transportation is an incredibly important facet of a city; it impacts where people live, how they get to work, how goods flow in and out of a city, and overall quality of life. Transportation also connects people and goods to other communities; businesses import products and raw materials from outside the region, and export goods and commodities to other regions. Connects to regional transportation networks allow businesses to conduct these transactions quickly and efficiently. The goal of this chapter is to determine policies and best practices that will result in more efficient and affordable transportation to residents and businesses in the City of Mechanicsville.

Local City Streets

Mechanicsville's local street network is separate from County or State roads; maintenance and construction are the responsibility of the municipality. The City of Mechanicsville's Street network within city limits is approximately 8.2 miles long. The majority of the street system has an asphalt surface while some newer roads such as Cottage Dr have a PCC (Portland Cement Concrete) surface. A minority of roads at the edge of the city boundaries are gravel roads.

Continued street maintenance will be one of Mechanicsville's most important transportation priorities. Regular maintenance protects the community's investment in its streets by preventing deterioration and extending its useful life. Well maintained streets support the economy, quality of life, and health of a community because they help residents get to their destinations safely and efficiently.

Figure 9. Pavement Condition Index, Mechanicsville



Source: Iowa DOT, 2022

Pavement Quality

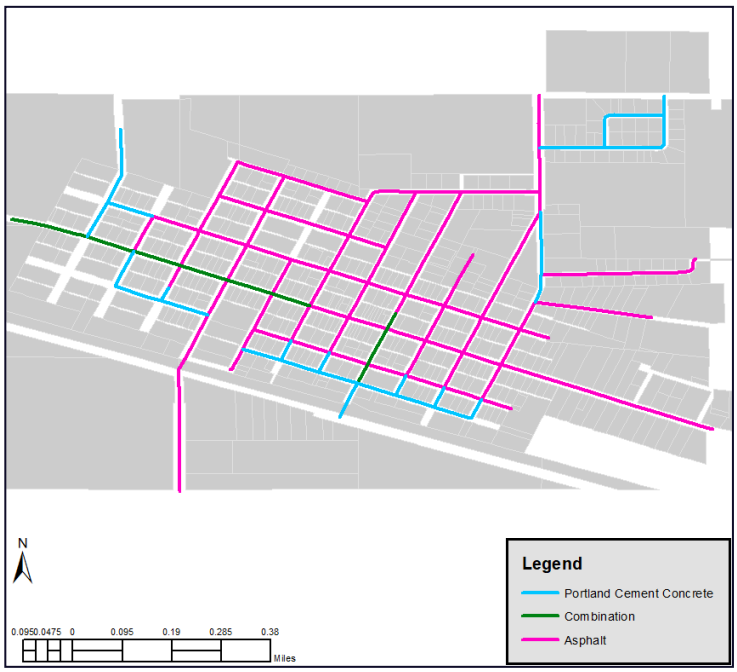
The Pavement Condition Index (PCI) is a standard measurement employed by the Iowa department of transportation that helps classify roads by the quality of the pavement using the roughness of the road as the primary variable. Generally, a PCI of between 0-25 indicates a seriously damaged or failing road, 26-55 is poor, and a score above 55 is fair or good quality. Figure 9, shows the PCI scores of the local roads throughout Mechanicsville, color codes denote the priority level rather than the category that they would technically classify under. The majority of streets in Mechanicsville are between poor and fair quality; however, there are

a number of streets in the western portion of town that should be considered high priorities for maintenance or replacement, these are marked in red.

Pavement Type

There is a multitude of methods and materials that can be used to construct and surface roads. Each material offers a variety of benefits as well as unique drawbacks. The two most common material that are used in Mechanicsville are Asphalt and Concrete, the characteristics of each will be discussed below.

Figure 10. Pavement Type, Mechanicsville



Source: Iowa DOT, 2022

Asphalt Pavement

Approximately 5.8 miles of Mechanicsville's roads are asphalt, this makes up 71% of the local road system located within the municipal boundaries. Asphalt pavement has a number of positive characteristics, it is generally cheaper than concrete, offers better skid resistance, and is easier to maintain compared to concrete.

Asphalt, like other road materials, has a variety of unique distresses that occur over natural the lifecycle of the road. Two of the most common issues that face asphalt roads are Alligator cracks and bleeding. Alligator cracks can occur for a variety of reasons, but the most common reasons are either poor drainage or too much loading on the structure. If alligator cracks are not repaired early enough potholes and pavement disintegration will occur. Bleeding is another common issue that occurs in asphalt roads. This occurs when a film of asphalt binder rises to the surface of the pavement, which results in slippery surface when conditions are wet and sticky when it is dry.

Concrete Pavement

Concrete pavement makes up roughly 1.7 miles (20%) of Mechanicsville's local road system. Concrete roads of many advantages including a longer lifespan and less maintenance when compared to asphalt pavement. However, concrete is often more expensive than asphalt, and it is more difficult to repair and install.

Most of the distresses that are unique to concrete are due to the fact that concrete is not a very flexible material like asphalt. Extreme temperature, high pressure, and surface movement can all lead to various forms of cracking. Corner breaks are one of the most common issues that occur in concrete. Corner breaks occur when high loads are combined with support failures. Scaling is another form of distress that is marked by a network of hairline cracks which extend through the upper surface of the concrete. Usually improper construction, poor aggregate, and natural freeze/thaw cycles can cause this. Repairing concrete pavement often requires replacing the entire concrete slab, which is time consuming and expensive.

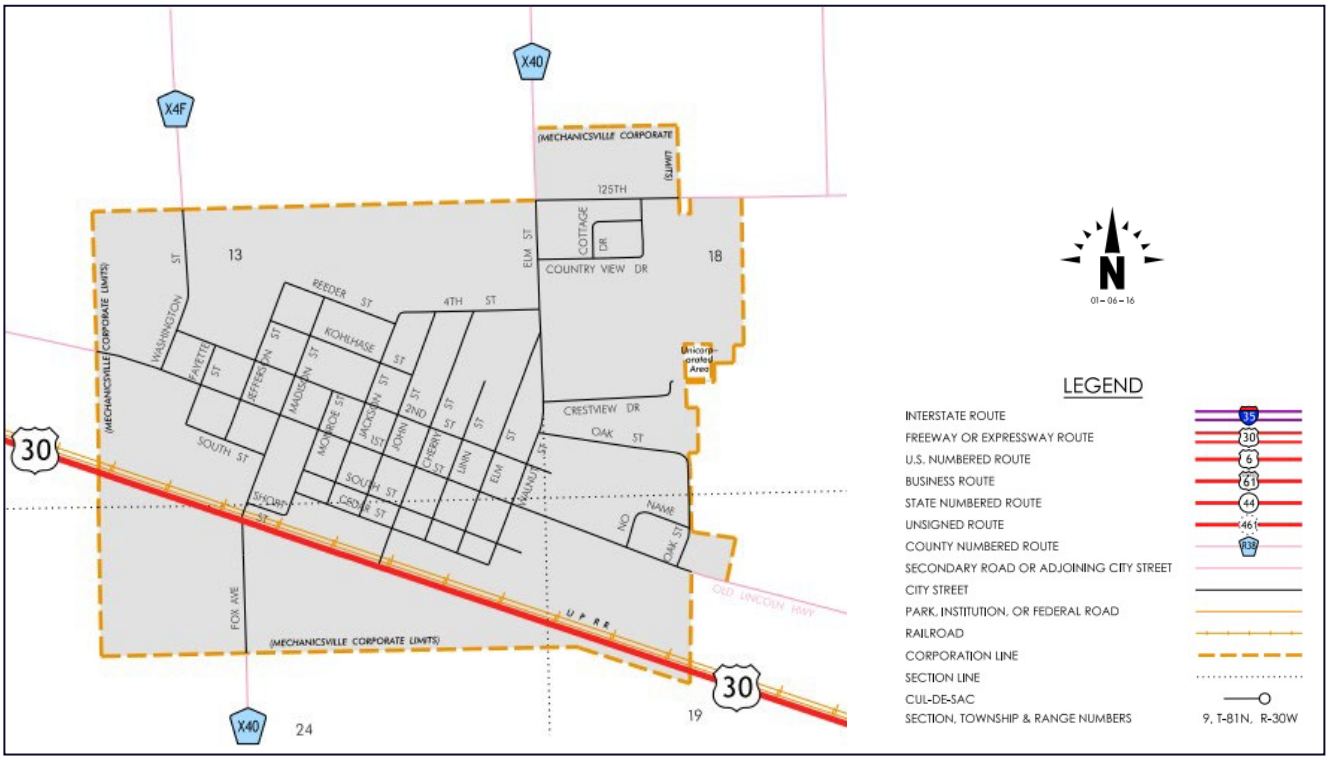
Highways

Mechanicsville is directly located on US Highway 30, this provided an important connection to neighboring communities and to federal/state highways such as Interstate 380, US Highway 61, and Iowa 1. US Highway 30 is critical to the future growth of Mechanicsville; a large majority of Mechanicsville residents commute to Cedar Rapids, Iowa City, and other locations using Highway 30. Not only is this important for commuter travel, but also for industrial operations, such as farmers and other local businesses. Speed and safety of highways factor heavily in business calculation, so it is important the Highway 30 is a high-quality road. Highway 30 also provides connections to amenities located in larger cities, easy access to grocery stores, malls, and other retail shops helps rural communities maintain a high quality of life. Highway 30 is maintained by the Iowa Department of Transportation.

Farm to Market Roads

In addition to US Highway 30, Mechanicsville is connected to nearby communities by a system of regional highways that include Farm to Market Roads and other secondary roads. A Farm to Market Road is a road that is used to connect agricultural areas to distribution centers in nearby cities. Many residents of Mechanicsville work in farming and other associated agricultural industries, making Farm to Market routes a topic of critical importance to the health of the local economy. The primary Farm to Market Roads through Mechanicsville are X-40 and X-4F; it is important that the maintenance of these routes is prioritized, as they significantly impact the local economy.

Figure 11. Road Classifications, Mechanicsville



Source: Iowa DOT, 2022

Regional Coordination

Highways are integral to the future of Mechanicsville; however, these roads are maintained by external agencies like the Iowa Department of Transportation and Cedar County. Due to this, the City of Mechanicsville will have to actively work with these agencies to maintain these highways and other critical connections.

The City of Mechanicsville can coordinate on regional transportation projects through Regional Planning Affiliation 10 (RPA 10). Mechanicsville is a member of RPA 10, an organization that facilitates regional coordination for transportation projects. RPA 10 covers a 7-county region including Benton, Cedar, Iowa, Johnson, Jones, Linn, and Washington counties. RPA 10 is governed by a policy board made up of representatives of its member cities, counties, and regional transportation agencies. Mechanicsville shares a RPA 10 Policy Board Representative with other small cities in Cedar county. Participation in the RPA 10 policy board gives Mechanicsville access to transportation funding and allows the community to have a seat at the table for discussion of regionally significant transportation projects.

Public Transit

River Bend Transit (RBT) provides transit services to the City of Mechanicsville. RBT is one of sixteen regional transit systems in the state of Iowa and is a non-profit service organization. RBT's services are open and available to the general public. RBT vehicles are fully equipped with lifts or ramps to assist entry, and drivers specialize in serving people with disabilities. RBT's regular operating time frame is from 5:30 a.m. to 7:00 p.m.

RBT's fares vary depending on which county the ride starts and where the rider is traveling, or if a rider is using a contracted service. Prices for seniors age 60+ and disabled individuals are lower than prices for the general public. RBT has identified specific days for each county to commute to desirable destinations. Table 3 summarizes RBT's services in Cedar County.

Table 3. River Bend Transit Cedar County Services

Service	Days	Seniors (60+) or person with disabilities- Round Trip Suggested Donation	Established Fare for General Public
Tipton	M,W,Th	$3.00	$8.00
Iowa City	T, Th, F	$6.50	$11.50
Cedar Rapids	Th	$6.50	$11.50
Davenport	Th	$6.50	$11.50
Out of County		$6.50	$11.50
In-Town Service		$1.50	$6.50
County Service		$3.00	$8.00

Source: River Bend Transit

Bicycle and Pedestrians

Walking and biking are important modes of transportation for Mechanicsville, particularly for trips within the city. Walking and biking can provide transportation for those who are unable to drive or don't have access to a car. Choosing to walk or bike instead of driving can save money, improve air quality, and improve physical

health. Increasingly, younger generations are putting a higher value on bicycle and pedestrian transportation; so, investing in this infrastructure may be a useful strategy for resident recruitment and attraction.

Existing bicycle and pedestrian facilities can be classified into three categories: trails, on-street bicycle routes, and sidewalks. The following section provides a description of each.

Trails

Most trails in the area are classified as multi-use trails. These trails typically are concrete, asphalt, or packed crushed rock and usually between 8 feet and 10 feet wide. Multi-use trails are physically separated from motorized traffic by an open space or barrier and can be in an independent right of way or within a roadway right-of-way. Multi-use trails usually accommodate both bicyclists and pedestrians are suitable for most age groups and abilities. It should be noted that Mechanicsville is currently working on a walking path that surrounds that

In addition to multi-use trails, the community could also look at trails that are geared to more specific types of uses including hiking and mountain biking. These specific-use trails are almost always used for recreation and are usually unpaved, steeper, and narrower than a multi-use trail, and as a result, may require a relatively higher level of physical ability.

Sidewalks

Sidewalks are an important part of the pedestrian network. Sidewalks provide necessary walking connections to homes, businesses, transit services, and other activities.
Many streets in Mechanicsville have sidewalks, but some gaps exist in the sidewalk network. In some cases, sidewalks do not exist, in others the sidewalks are there but pedestrians are deterred by an unsafe crossing of a busy street. Sidewalk maintenance can also be an issue. Unlike trails or city streets, private property owners usually maintain sidewalks, and owners can vary greatly in their ability or desire to maintain sidewalks. Private ownership somewhat limits the City's ability to address gaps in the sidewalk network. But the City does have options available to improve the sidewalk network.

- Inventory the sidewalk network and identify critical gaps and safety issues.
- Work with property owners to address sidewalks issues.
- Install safety improvements at crossings if needed.

Railroad

Rail transportation has been an important aspect to Mechanicsville's early development, going back to the mid-1800s when Northwestern Railroad first gained possession of the land required to build the original rail lines. The Northwestern Railroad was eventually consolidated into Union Pacific Railroad (UP), which currently operates the lines that run through Mechanicsville. The tracks that run through the city are part of the UP main line that provides a direct route between Chicago and the west coast. This freight is a critical connection for businesses in the region and beyond, but it also may create challenges for the community.

Railroad issues can range from minor inconveniences like noise from passing trains or being stuck waiting at a crossing, to more serious concerns like crossing safety, emergency response planning for derailments, or assuring emergency vehicles access if a crossing is blocked by a train.

In Cedar County, railroad safety planning is joint effort between cities, the sheriff's department, the Cedar County Emergency Management, and the railroad. Planning efforts of these agencies are documented in the

2021 Cedar County, Iowa Multi-Jurisdictional Hazard Mitigation Plan. This plan includes a number of recommendations aimed at reducing the risk posed from railroad incidents as well as other events like natural disasters.

In the past there have been a number of safety issues and accidents at the railroad crossings in Mechanicsville. However, UP and the City have been able to implement a number of safety improvements since 2011, when a number of significant accidents occurred. The City of Mechanicsville should continue to work with UP and emergency management officials to ensure a balance between railroad safety, community safety, and quality of life.

Transportation Recommendations

The following recommendations are intended to guide the City of Mechanicsville in providing safe high-quality transportation for all residents of the City.

Transportation Planning Process

- Continue to work with outside agencies such as Cedar County, the Iowa Department of Transportation, and Regional Planning Affiliation 10 to maintain regional highway connections
- Participate in the Highway 30 Coalition to collaborate with other municipalities on future developments regarding Highway 30.
- Continue to look for opportunities to fund transportation infrastructure projects through state and federal programs.

Transportation Safety

- Continue to actively participate in the Cedar County Hazard Mitigation Planning process; identify and mitigate safety issues relating to the city's transportation infrastructure.

Roads and Bridges

- Evaluate the City's street system and plan future street maintenance projects through a Capital Improvement Program (CIP).

Public Transportation

- Coordinate with River Bend Transit to improve public service in the Mechanicsville area

Bicycle and Pedestrian

- Create a more complete bicycle and pedestrian network through the development of trails, on-street bicycle routes, and sidewalks.
- Improve safety for bicyclists and pedestrians by adding improvements to on-street bicycle routes and improving street crossings.
- Sidewalk maintenance to help keep sidewalks safe and accessible for the entire community.

Railroad

- Continue to work with Union Pacific and emergency management officials to ensure a balance between railroad safety community safety and quality of life.