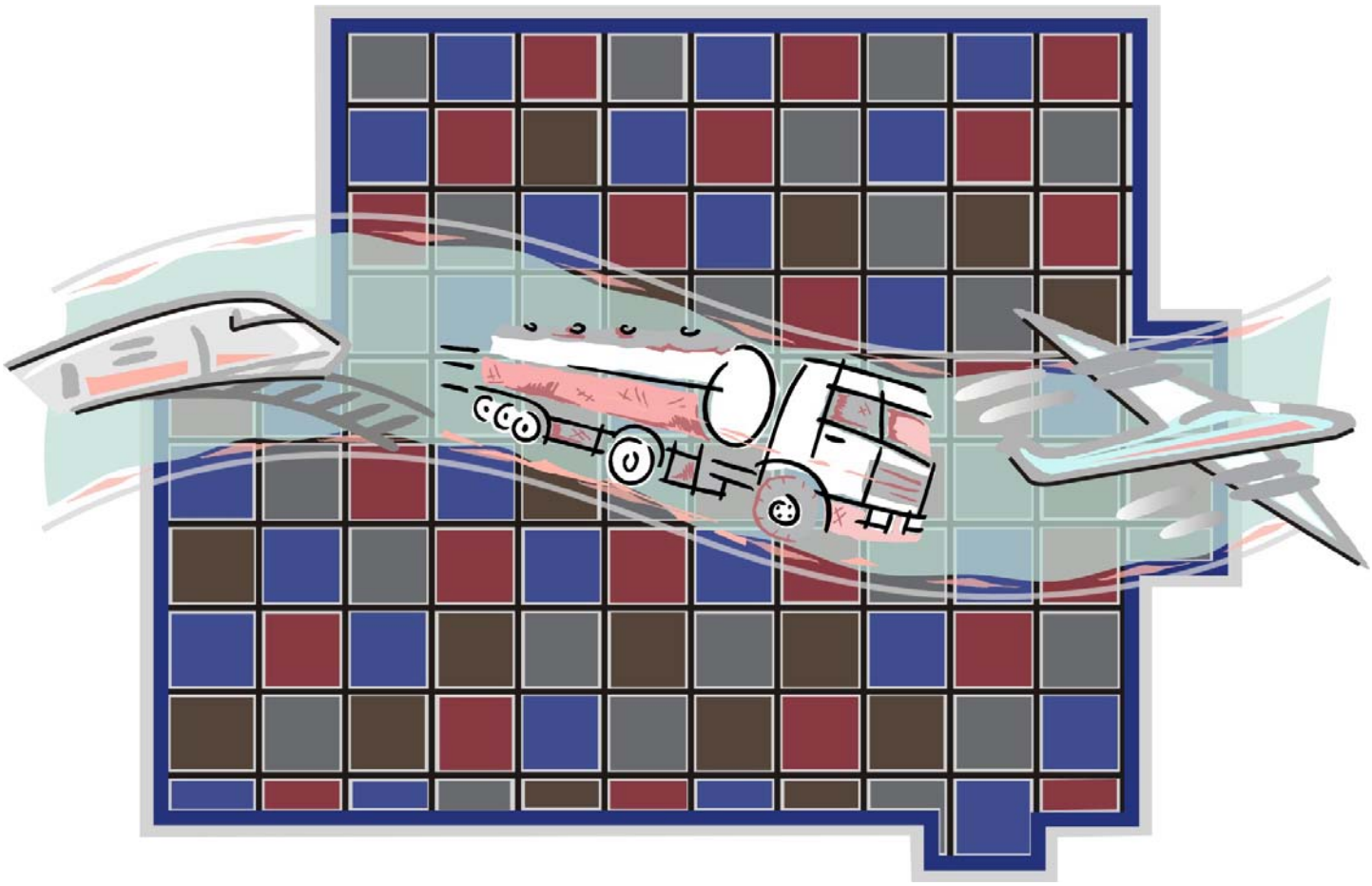
Chapter 7

Interconnected, Multimodal Transportation System



W A M P O

Wichita **A**rea **M**etropolitan **P**lanning **O**rganization

Chapter 7: Interconnected Multimodal Transportation System

Overview

This chapter of the MTP 2035 focuses on how the various parts of the transportation system in the WAMPO region work together. Previous sections of the MTP 2035 have discussed each individual **mode of transportation** without specific discussions of how the various modes fit together. Consider some examples of how the different modes of transportation interact in our daily lives.

- On your morning drive to work you may pass cyclists on the road, stop for pedestrians in a crosswalk, and then park in a lot a block from your workplace and walk.
- You attend an event at the new Intrust Bank Arena. You drive downtown, park, and get on the Q-line bus that takes you to the arena.
- You prefer to take transit but live a mile from a bus stop. You ride your bicycle to the bus stop, put your bicycle on one of Wichita Transit's new bicycle racks, ride the bus to your destination, and then ride your bicycle the rest of the way.
- You need to fly to Denver. You drive your car to the airport or take a bus or a taxi. Then you get on a plane.

Each of these examples shows how modes of transportation are connected. These connections are a part of our everyday travel patterns and influence how we can get around.

This chapter will explore the differences between planning for individual modes of transportation and planning for these connections. It defines **multimodal**, discusses the benefits of multimodal planning, and provides future opportunities to enhance multimodal connections in the WAMPO region. It discusses some of the key factors to consider in planning connections between modes and the strategies included in the MTP 2035 that encourage multimodal connections and planning.

What is a mode of transportation?

These are the ways people and goods move around the region. For the MTP 2035, the modes of transportation discussed include roadways, bicycles, walking, transit, rail, and aviation

Bike Rack at Wichita Transit Center

What is multimodal?

Having more than one mode, or form, of transportation.

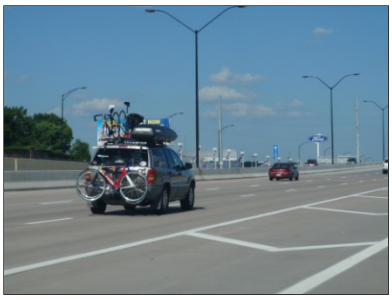
What Is Multimodal?

The examples previously listed show the multimodal nature of the transportation system as it exists today in the region. One of the four short-term objectives of the MTP 2035 is to "increase multimodal options and access." One of the long-term objectives is to "increase the percentage of the population that uses alternative modes of transportation." In order to achieve these objectives, the region must enhance the connections between modes of transportation.

What is livability?

It refers to the social and environmental quality of the community as it is perceived by residents and visitors.

Well planned interactions between the various modes of transportation effectively serve the public. The level of interaction between different modes of transportation helps to determine the overall **livability** of the region. If different transportation services are well coordinated, people have more choices on how they travel around the region.



Multimodal

What Is Multimodal Transportation Planning?

Multimodal transportation planning takes into account the integration and interaction between various modes of transportation. In other words, when a new or expanded road is planned, the project also includes consideration of connections and facilities for bicycles, pedestrians, and buses, when appropriate.

Multimodal planning can take on various forms. It can occur along a single corridor, which may include road, transit, bicycle, and/or pedestrian facilities along the same route. This is often related to the idea of complete streets, where streets serve a wide variety of users. Complete streets include design features to encourage greater community interaction, more walking, cycling, and use of transit, along with vehicle travel.

Complete Street Example

Multimodal planning can include planning for region wide, citywide, or community links for different transportation modes. It assesses whether roads, sidewalks, trails, bus stops, and any other transportation facilities are located appropriately so that travelers can connect between different modes of transportation.

Multimodal planning involves working to adequately and appropriately provide transportation options. For example, if there are nearby areas that residents may want to walk or bicycle to, are there sidewalks, bicycle lanes, and/or paths? If a neighborhood contains a population that provides a **good market** for transit, is transit easily accessible? These questions should be asked when planning each transportation improvement.

What does "good market" for transit mean?

A neighborhood or area that includes a high concentration of one or more of the following: elderly, low-income, jobs, social services, public housing, schools, walking options, people without cars, and/or people interested in using transit.

What Are the Benefits of Multimodal Planning?

There are several key benefits to planning for an integrated, multimodal transportation system. Collectively these benefits enhance the livability of our communities.

Reduced Overall Congestion

If a greater percentage of the population has access to quality transportation options other than a car, there is likely to be less cars on the road. Fewer cars mean less congestion and a reduced need for large parking areas. Achieving this requires transportation options that are attractive and convenient enough to encourage substantial numbers of travelers to leave their cars at home. The potential expansion of the Wichita Transit system, as discussed in **Section 6.3: Public Transportation**, represents an opportunity to provide transit services that will effectively serve more of the population.

What are bus turnouts?

A recessed area for a designated bus stop in order to pick up and drop off passengers. The purpose of the bus turnout is to avoid blocking a lane of traffic and to improve passenger safety during boarding.

Improved Safety

A multimodal approach to planning leads to increased safety because transportation facilities are designed to safely accommodate all anticipated users. For example, roads can be designed with appropriate planned crossing points for pedestrians, lanes and signage for cyclists, and clearly marked stopping points, or **bus turnouts,** for buses.

Pedestrian/Bicyclist Stop Sign

Improved Air Quality

The negative effects on air quality can be reduced with a multimodal approach to planning. Connecting transit, bicycle, and pedestrian facilities has the potential to attract

more users and decrease congestion, which improves air quality. The relationship between transportation and air quality is discussed in detail in **Chapter 10: Air Quality**.

Enhanced Health and Well Being

Multimodal planning that leads to more biking and walking can provide benefits for health and well being of regional residents. More options and convenient access to walking and biking facilities increase the opportunity for citizens to live an active lifestyle.

Bicyclists

Improved Mobility for Low-Income and Disabled Populations

Some members of the community do not have access to or are unable to operate their own car. Transit, walking, and bicycling options provide travel options for everyone. When the connections between these modes of transportation are enhanced, users benefit from being able to get to more locations in shorter periods of time.

Reduced Cost for Transportation

Multimodal transportation planning can lead to two types of long-term cost savings for transportation facilities. First, it leads to better and more efficient use of existing infrastructure. More walking, biking, and transit use can potentially result in less need to expand roads for more cars and trucks.

Wichita Transit Bus

Second, the multimodal approach in the early planning stages avoids the cost of retrofitting a transportation project after it is built. Projects may not always include multimodal options when they are built. Including these facilities after the fact can be very costly. Enhancing multimodal options during the planning and design phases can create opportunities to reduce costs for users. With the opportunity to walk, bike, or take transit, some of the vehicle costs, such as fueling and maintenance, can be reduced.

Ability to Support a Variety of Land Use and Development Patterns

As discussed in **Chapter 5: Land Use and Transportation Connection**, there are certain types of development that encourage and benefit from greater multimodal transportation options and connections. What good is it to have a store within walking distance of residents if there is no sidewalk or path to get there?

Multiuse Path

These benefits are among the many potential positive effects of planning for and implementing projects that enhance the interconnected, multimodal transportation system in the WAMPO region. As discussed in the sections for the various modes of transportation (**Chapter 6: Transportation System Elements**), many multimodal transportation options exist within the region. Many key connections between transportation modes already exist, but there is always room for improvement.

What Are the Key Multimodal Connections to Consider?

Countdown Pedestrian Crossing

Integrated, multimodal transportation system connections and links are what allow a traveler to make a trip by using multiple modes of transportation. Connections between modes include physical connections at key points and timed connections so that transfers from one mode of transportation to another do not cause undue delay. The following paragraphs identify key multimodal connections and the important considerations with those connections.

Road – Bicycle and Pedestrian

Road with Median

Connections between biking, walking, and vehicles are something residents experience every day. Many people drive to work or stores then walk. Bikes, and sometimes pedestrians, share roads with cars. Sidewalks and paths often run next to roads or cross roads at intersections or crossings. If trails and sidewalks can efficiently and safely cross roads at properly spaced crossing points, then roads will be less of a barrier to walking and biking. In addition, these crossings can provide the least interruption to traffic possible. Well delineated and maintained sidewalks, trails,

What are pedestrian islands?

Areas of refuge, such as medians, that typically divide lanes of a road where pedestrians can safely stop when crossing a road.

and bike lanes along roadways create less conflict between bikes, cars, and pedestrians. **Pedestrian islands**, countdown pedestrian crossing signals, and "share the road" signs are enhancements that offer a better and more efficient interaction between bikes, pedestrians, and cars. **Section 6.2: Bicycle and Pedestrian** provides more detail on many of the issues related to interaction between bicycle and pedestrian facilities and roads.

Road – Transit

In the WAMPO region, buses and cars share the roads. Designated bus stops minimize traffic disruption when buses stop to let riders on and off. Road features, such as bus turnouts, provide a lane away from traffic to allow the bus to drop off and pick up riders. Bus stop signs also allow drivers to know where buses are likely to stop.

Transit Stop

The MTP 2035 includes many transit improvements, such as the introduction of planning for several new park and ride locations. These park and ride lots allow residents who do not live near transit services to park their vehicle and ride the transit system. Park and ride lots are a strong example of the links that are needed to make a multimodal transportation system work efficiently.

Road – Aviation

Wichita Transit Bus with Bike Rack

It is important that the roads that provide access to Mid-Continent Airport and other regional airports, as outlined in **Section 6.5: Aviation**, remain efficient. A good connection between the airports and the road network provide a needed connection for passengers as well as freight. Parking is also a major issue at airports. The provision of adequate parking at Mid-Continent Airport is part of the Mid-Continent Airport Master Plan.

Transit – Pedestrian

The majority of fixed route transit service users walk to access the bus system from their homes and from the bus to their final destination. For the transit system to function safely and efficiently, there need to be sidewalks and/or trail connections between residences and locations to

board the bus. In addition, bus stops are more likely to be used if shelters, schedules, and lighting are provided.

Transit – Bicycle

Similar to the transit-pedestrian connection, adequate paths connecting homes and destinations to bus stops is important to allow bicyclists to use the transit system. Wichita Transit recently installed bicycle racks on many of their buses. This greatly enhances opportunities to link trips using bicycles and transit. More bicycle racks or bicycle lockers at key points where cyclists may board the transit system would also help the connection. These are essentially park and ride facilities for bicyclists.

Transit – Aviation

Mid-Continent Airport is currently served by one fixed transit route as well as taxis and shuttles. For transit to be a viable option for people arriving and leaving the region via the airport, frequent and consistent service between the airport and key local destinations such as downtown is needed. There may be opportunities to enhance transit service to the airport as part of the conversion to a grid system as discussed in the **Section 6.3**.

Transit Stop at Mid-Continent Airport

Others

There are other potential connections between modes that are less common but may also need consideration in the future. The MTP 2035 includes discussion on the addition of passenger rail service to the region. If passenger rail is introduced, transit service serving the stop(s) is essential. Visitors coming to the region on rail will not have personal vehicles once they arrive so they will need some form of transportation. Bike, pedestrian, and car connections will also need to be addressed at the passenger rails stop(s). Parking for bikes and cars should be available as well.

Bike Rack

What Are the Issues to Consider with Multimodal Planning?

There are several common issues that need to be considered in planning facilities to support multimodal

connections. The following paragraphs identify many of these common issues.

Weather

Extreme weather conditions affect the ability of travelers to effectively use all parts of the multimodal transportation system. One key issue related to weather is exposure. Walkers, bikers, and transit users are more exposed during periods of extreme hot, cold, rain, or snow compared to road users. There are some design features that can lessen this exposure, such as transit shelters and shading on trails.

What is service coordination?

It means that the timing and location of different modes of transportation are matched so that a user can easily make connections between modes without extensive delay.

Timing

Timing issues relate mostly to transit connections and the ability to reach destinations on time. **Service coordination** is needed to ensure that transfers between buses can be made in a timely manner. Encouraging more multimodal trips by implementing park and ride lots will require more coordination. Buses serving park and ride lots should arrive and depart on a regular schedule without much deviation. Park and ride users would expect the bus to show up on schedule and arrive at the destination on time.

Where can I find more information on the transit system and park and ride lots?

Section 6.3 discusses transit in more detail.

Young Children, Bags, and Packages

A common challenge for travelers attempting to use multimodal transportation services and make connections is transporting young children (often with strollers), bags, and packages. Including space on buses for strollers, carts, packages, and wheelchairs can help address this issue. Transit stops can include benches or other locations to put a package down safely. Sidewalks and trails can include street furniture or rest points to allow those carrying packages or walking with young children to stop and rest.

Where can I find more information on safety?

Section 6.6: Safety discusses safety in more detail.

Safety

Multimodal connections create a host of safety considerations. Many of the safety concerns are related to points where cyclists and pedestrians come into conflict with motor vehicles. These include intersection and crossing locations. Another conflict is created by having shared use of the road by cars, bicyclists, and pedestrians;

especially if the road is not designed for bicyclists and/or pedestrians. An often overlooked safety issue is the potential conflicts between pedestrians and bicyclists on shared paths.

Personal safety is also an issue for multimodal connections where individuals may be more vulnerable to criminal activity such as at transit stops and along trails and paths. Lighting, cameras, and emergency call buttons/stations provide a safer environment and increase personal safety. Obstacles on pedestrian and bicycle facilities are also a safety issue and can create hazardous conditions for users.

Paratransit Service

Accessibility

Special attention is required to meet the needs of people with disabilities. Often, people with disabilities are more dependent on transit, sidewalks, and paths. Provisions are guided and required by the Americans with Disabilities Act (ADA). The ADA requirement mandates access for all. Provisions for people with disabilities need to be considered in the development of road, transit, bicycle, pedestrian, and other facilities. This includes designing facilities and amenities that can safely accommodate wheelchairs and provide safety features for the blind and hearing impaired.

Costs to Users and the Public

Part of planning for multimodal transportation systems is deciding who pays. Owning a car or truck is an expensive investment considering the cost of the vehicle, fuel, maintenance, insurance, etc. Many of the fees associated with owning a vehicle, such as fuel taxes and licensing fees, help pay for roads. Due to the costs, some members of the community are unable or choose not to own a personal vehicle.

What is dial-a-ride service?

Typically a curb-to-curb transit service that is available on an on-call basis. This service is usually for disabled individuals.

Transit users in the WAMPO region typically pay to ride the bus or be picked up by a **dial-a-ride service**. Fees for these services only cover a small (15% to 20%) portion of the total costs of these services. Even though roughly 80% of transit costs are subsidized, some low-income individuals still have difficulties paying to ride the bus. As the multimodal transportation system is enhanced and new

services are provided, the question for public officials will be, who pays for what? Will the user pay for the service or will it be subsidized?

When planning and designing projects that include multimodal connections, it is important for communities to look at key implementation issues that can be used to achieve strong connectivity between various modes of transportation.

Multiuse Path

How Does the WAMPO Region Plan to Enhance Multimodal Connections?

Enhanced multimodal connections are a strong part of the MTP 2035. This is evident by the projects and strategies included as part of this plan.

Projects

A project scoring system was developed to evaluate projects that were submitted to be included in the MTP 2035. Points were given to projects that accommodate, connect to, or include facilities for more than one mode of transportation. This was an effort to emphasize the importance of multimodal connections.

Where can I find more information on the projects included in the MTP 2035?

Appendix 4 includes the project list for the MTP 2035.

The projects in the MTP 2035 include many miles of improvements for bicycles and pedestrians. The project list includes many pathway projects, as well as road and bridge projects that have a multimodal component, such as sidewalks. These projects may enhance the ability of residents to walk or bike to new locations.

The MTP 2035 project list also includes the expansion of the transit system. It includes such changes as moving from the existing radial system to a grid system, the addition of park and ride lots, and other improvements identified in **Section 6.3**. These projects will provide greater access to those who wish to walk, bike, or drive and then take transit.

Strategies

The MTP 2035 also contains several strategies aimed at encouraging further enhancement of an interconnected, multimodal transportation system. These include:

Strategy 1: Develop and implement a 'complete streets' policy. This policy would identify certain streets to be designed to accommodate all road based transportation uses including cars, trucks, transit, bicycles, and pedestrians. These streets would include design features to encourage greater community interaction and more walking and use of transit.

Strategy 3: Support and assist in the study, development, and implementation of a regional transit system, when appropriate. The future transit system should particularly focus on providing connections to and between major public facilities.

Strategy 5: In 2007, WAMPO completed a Regional Pathway System Plan that identified ideas for building and connecting regional trails and bicycle routes. WAMPO should now work to build the support of the local communities to make this plan happen.

Strategy 12: Promote efficient roadway, transit, and non-motorized connections between communities in the region.

Strategy 17: Provide information to both bicyclists and motorists on rules of the road.

Strategy 28: Study the feasibility of a **transportation hub or mobility center**.

Strategy 32: Increase coordination between jurisdictions and with other agencies on projects, safety issues, identification of transportation barriers for low-income populations, elderly, disabled, and transportation related public welfare.

When implementing these strategies, WAMPO may seek to develop more ways to evaluate enhancements to the multimodal transportation system. Some considerations for measuring success would include developing ways to

Where can I find more information on the strategies?

Chapter 3 includes the strategies developed for the MTP 2035.

What is a transportation hub or mobility center?

A location where multiple transportation services come together. For example, one hub or center may include stops for multiple bus routes, a station for intercity bus service, a station for intercity passenger rail, and a park and ride lot.

measure the level of service for walking, biking, and transit use similar to those for roads. These may include measures of the time it takes for multimodal travelers to get from one point to another.

When implementing strategies 1, 3, 12, and 32, WAMPO may develop a series of **best practice design ideas** for providing multimodal connections. These design ideas would provide a list of potential solutions to address some of the multimodal connection issues discussed in this chapter.

WAMPO communities may want to evaluate ways to enhance multimodal connections and options that can support **travel demand management** initiatives in the region. As discussed in this chapter, better intermodal connections and planning could lead to greater use of transit, walking, and biking, reducing the demand for roadway use by personal vehicles.

What is a best practice design idea?

Planners, engineers, and others involved in transportation projects often learn new ideas based on the experiences from building other projects. Based on past experience, lists and descriptions of what has worked well are compiled and used to guide the development of new projects. These are sometimes called best practices.

What is travel demand management?

An effort to reduce the number of car trips, reducing the need for expansions to the road network. More information on TDM can be found in **Section 6.8**.

How Will Enhanced Multimodal Connections Increase the Livability of the WAMPO Region?

Having a strong, multimodal, interconnected transportation system is key to enhancing the livability of the WAMPO region. Livability is enhanced because residents and travelers experience the benefits of multimodal transportation planning discussed above, including reduced congestion, improved safety, improved air quality, enhanced health and well being, improved mobility, reduced cost, and the ability to support a variety of development.

Livability could also be improved when regional residents have more practical transportation choices. Without strong multimodal connections and services, people who want to walk, bicycle, or take transit for health, environmental, and/or economic benefits do not really have that choice. In these cases, there is a constant struggle to overcome barriers and obstacles, such as:

- Delays due to circuitous transit routes and infrequent service.

Sidewalk along Hillside Street

- Discontinuous or poorly maintained sidewalks and trails.
- Roads without sidewalks.
- Roads without adequate space, signing, and markings for cyclists.
- Lack of safe and convenient locations to cross major highways.

By implementing the projects and strategies proposed in the MTP 2035, the WAMPO region will be taking key steps to overcome many of these barriers and provide residents with enhanced transportation choices.

Pedestrian Bridge

Enhancing transportation choices also improves access to opportunities, another key part of achieving greater livability in the region. Not all regional residents have the ability, means, or desire to drive a personal vehicle to work, school, health care, shopping, and other services. Their opportunity to access many destinations may be limited by a lack of strong multimodal connections. Implementation of the MTP 2035 will provide more opportunities linked to transportation for residents.

Bike Lane