

CHAPTER 6

GROWING SMARTER: THE LAND USE AND TRANSPORTATION CONNECTION

A Better Way to Grow

If the Corridor MPO acknowledges the trend toward an expanding lower density growth pattern, a lack of alternative transportation modes, limited transportation funding, and a competitive economic market for jobs and population, the question then becomes, “what is a better way to grow?”

This chapter presents current land use and transportation planning best practices from jurisdictions that have achieved real growth and an improved economy through land use and transportation planning.

Integrating Transportation Choices

Land use and transportation are integrally connected and should be addressed together rather than separately. Often, new roads and road improvements are planned for independently of land use. In this disjointed planning process, transportation improvements are considered to be fixes to current mobility issues without regard for the land use changes the improvements may induce. When this happens, a new or widened road that was planned to relieve congestion can quickly become congested due to the new development and new trips drawn to the promise of better access.

Conversely, land use decisions to permit growth without consideration of the transportation implications often produce unintended consequences for travel times, levels of congestion, and even emergency response times. Understanding the connection between land use and transportation (and other public services and facilities) and producing coordinated “smart growth” policies can result in more integrated, accessible, and healthier communities.

As development patterns have grown increasingly dispersed, with segregation of areas for residential, commercial, and employment uses, trips are even more exclusively made by automobile. In the United States, 40% of all trips are less than two miles, and 28% are less than one mile. The average adult can walk a mile in about 20 minutes, and yet 65% of those trips are taken by car. Few people live within comfortable walking or biking distance of work, food markets, and schools. Many neighborhoods in the Corridor MPO region do not even have sidewalks. This means there are currently few places where it is enjoyable—or even possible—to walk in safety and comfort. Mixed-use development, transportation options, and complete streets seek to remedy this situation and reduce reliance on the automobile.

CHAPTER CONTENTS

- A Better Way to Grow
- Integrating Transportation Choices
- Mixed-Use Activity Centers
- Multi-Modal
- Complete Streets

Mixed-Use Activity Centers

Compact, mixed-use activity centers reduce vehicle miles traveled (VMT) and promote walking and other alternative modes of transportation. Bringing residents closer to employers, schools, stores, post offices, and other services increases opportunities to make more trips by bike and on foot. This can significantly reduce vehicle miles traveled, reducing congestion, energy use, and greenhouse gas emissions, while improving public health.

The availability and quality of public transit and other transportation options can influence the decisions of employers, residents, and developers. Having a variety of safe and efficient ways to travel can attract residents, employers, and visitors. It can also encourage people to choose alternatives to driving alone as comfort increases and travel time declines. By improving the efficiency, comfort, and safety of other modes, the Corridor MPO region can support livable, walkable communities.

Mixed-use activity centers provide opportunities to enhance the use of various alternative transportation modes – most notably public transportation, walking, and biking, by recognizing the link between land use and transportation.

Each activity center is unique, but common elements include the presence of mixed retail, office, and residential uses, connected by complete streets, transit-friendly design features, and access to alternative modes of transportation.

Mixed-use activity centers encourage a rich diversity of compatible and complementary land uses. Such uses should relate to the physical scale and character of the neighborhood and enhance linkages to surrounding uses. The size, shape, and location of buildings on their parcels should create patterns that help define neighborhood character. New development should be compatible with and compliment existing development. This can be achieved through a variety of approaches.

- **MIXED-USE DEVELOPMENT.** Mixed-use activity centers should integrate retail, office, service, entertainment, education, and residential land uses. The specific mix, amount, and intensity of such uses will vary depending upon the type of development projected for the neighborhood. Some areas may have higher concentrations of commercial uses, with residential uses complementing these activities.



In other locations, residential uses may serve as the dominant land use, with local office, retail, and services supporting it.

In general, these developments have conveniently located office, retail, and service uses that support transit usage. The size and intensity of the center will vary to fit the needs and preferences of the neighborhood it supports.

- **MIX OF HOUSING TYPES.** Residential development is a key ingredient to the ultimate success of any mixed-use development. Diversity of ownership patterns, price ranges, and building types should be considered.
- **INTENSITY OF DEVELOPMENT.** Intensity of development is typically higher near the core of the center and lower in surrounding areas. Residential densities can vary from 60 units per acre in a downtown setting to as low as four to seven units per acre in suburban areas. In general, the higher the density, the greater the potential for sustaining a diversity of transportation choices.
- **BUILDING PLACEMENT AND ORIENTATION.** Design guidelines should encourage appropriate placement and orientation of buildings. Buildings aid in defining the street right-of-way and pedestrian space. The main entryway to commercial buildings should face streets, plazas, or parks.
- **WINDOWS AND DOORS.** Windows and doors are arranged to “enliven” a street and provide visual interest that can encourage walking and use of other transportation modes. Blank walls along pedestrian ways should be avoided. Windows should be placed at ground level. Design standards may be used to promote visual interaction between the street and adjacent buildings. Standards ensure a minimum level of window placement along public ways relative to window length, height, and materials.
- **BLOCK SIZE.** The length of any given block can be a critical design element in determining the success of multi-modal developments. The longer the block length, the less appealing the development for foot traffic and on-street interaction. The length of any block within a node should generally be no longer than 500 feet. Blocks should be delineated by either streets or major pedestrian separations.
- **FOCAL POINTS.** Locating transit stations/stops at a central node of activity provides a visual and functional focal point to aid in generating ridership and heighten the sense of user security and orientation.



Multi-Modal

Multi-modal corridors are major transportation facilities that accommodate auto, bus, bicycle, and pedestrian travel and connect mixed-use activity centers. These corridors support the opportunity to build distinctive, vibrant, high-quality, high-density, and transit based neighborhoods that are attractive to pedestrians.

Multi-modal travel efficiency can be increased by infilling or redeveloping of land along these corridors. These corridors can link different modes together (i.e., bikes on buses or being able to park once and walk to multiple destinations), giving people travel choices.

Intelligent transportation systems can greatly improve travel along corridors. Coordinated traffic signal systems can keep traffic moving at a speed that compliments adjacent development. Technology can help provide up-to-the-minute information on bus arrival times, and road conditions and makes transportation choices more convenient. “Smart” transportation can also help provide transportation options for an aging population.

Multi-modal corridors should be anchored by mixed-use activity centers. Between these centers, a significant amount of travel demand is expected.

As these corridors carry a majority of trips and link important activity and commercial centers, maximizing their efficiency requires improving the relationship between the multi-modal transportation system, land use, and design.

CHARACTERISTICS OF A QUALITY MULTI-MODAL TRANSPORTATION CORRIDOR

- Connections to multiple mixed-use activity centers;
- High frequency transit service;
- High quality pedestrian and bicycle facilities allowing for safe and convenient travel along the corridor;
- Numerous safe and convenient opportunities to cross the corridor;
- Pedestrian and bicycle access to transit;
- A mix of uses with a high concentration of users, including residential areas that produce trips and commercial retail, office and business activity centers which attract trips; and
- High-quality, context sensitive, pedestrian-friendly design.

WHAT MULTI-MODAL CORRIDORS INCLUDE

Automobile

- Improved traffic flow through operational improvements, intersection enhancements, and a focus on addressing system “bottlenecks”;
- Roadway improvements which support multi-occupant vehicle use;
- Roadway-related functional efficiency and safety improvements; and
- Signal coordination optimization based on current traffic flow patterns.

Pedestrian

- Complete sidewalks that provide direct and continuous connections between destinations and to transit;
- Enhanced pedestrian crossings at strategic locations; and
- Pedestrian signals and crossing count-down signal heads.

Bicycle

- Complete bicycle trails, lanes, and route system to provide direct and continuous connections;
- Safe street crossings; and
- Bicycle route signage.

Transit

- High-frequency transit;
- Enhancements at all transit stops including transit signs and pavement platforms, and further enhancements at high demand stops including shelters, benches, and trash receptacles; and
- Operational system efficiency improvements, such as bus bypass lanes, bus signal prioritization.

Complete Streets

Complete streets are streets that provide safe, attractive routes for multiple modes of transportation within the same right-of-way. They can simultaneously accommodate drivers, bikers, pedestrians, and transit riders. Complete streets provide transportation options, especially for the one-third of Americans who do not drive. They include the young, the elderly, those who cannot afford to own and maintain an automobile, as well as those who simply choose not to. Complete streets create opportunities for a large portion of the population to lead active, independent lives. As with any public infrastructure investment, well-designed complete streets can also spur private investment and urban development.

In short, access creates value, and balanced land use enhances mobility. By maximizing the connection between land use and transportation, the Corridor MPO can use Connections 2040 to simultaneously promote a more effective transportation system and a more livable region.

Federal Guidelines



In 2003, FHWA published Design Guidance Accommodating Bicycle and Pedestrian Travel: A Recommended Approach (Guidance), a policy statement to guide jurisdictions in integrating bicycling and walking into their transportation systems. The Guidance establishes the following four policies:

1. Bicycle and pedestrian facilities should be included for all new construction and re-construction projects in all urbanized areas unless one or more conditions are met:
 - a. Bicyclists and pedestrians are prohibited by law from using the roadway;
 - b. The cost of establishing bikeways or walkways would be excessively disproportionate to the need or probable use; and
 - c. Where a sparse population or other factors indicate that there is no need.
2. In rural areas, paved shoulders should be included in all new construction and reconstruction projects on roadways used by more than 1,000 vehicles per day.
3. Sidewalks, shared use paths, street crossing, pedestrian signals, signs, street furniture, transit stops and facilities, and all connecting pathways shall be designed, constructed, operated, and maintained so that all

pedestrians, including people with disabilities, can travel safely and independently.

4. The design and development of the transportation infrastructure shall improve conditions for bicycling and walking through the following additional steps:
 - Planning projects for the long-term;
 - Addressing the need for bicyclists and pedestrians to cross corridors, as well as travel along them;
 - Getting exceptions approved at a senior level; and
 - Designing facilities to the best currently available standards and guidelines.

Complete Street Design

While the definition of a Complete Street is universally applicable, the design of Complete Streets is variable. Each street has unique characteristics. Therefore, a complete street in a rural area will be different from a complete street in an urban area. However, both streets are designed to balance safety and convenience for everyone using the road.

Elements that may be found on a Complete Street include: sidewalks, bike lanes, crosswalks, wide shoulders, medians, bus pullouts, special bus lanes, raised crosswalks, audible pedestrian signals, sidewalk bulb-outs, and more. The following characteristics are “typical” of Complete Streets in an urban and suburban setting.

- **Urban.** Urban streets are utilized to access mixed-use and commercial areas. These streets typically carry a higher volume of traffic and have more pedestrians and bicyclists present. Transit is an active component, and intermodal connections are a priority.
- **Suburban.** Suburban roadways provide unique design challenges to creating Complete Streets. Suburban streets typically evolve from unimproved rural roads, which typically lack sidewalks and bicycle facilities. As development occurs along rural roadways, they need to meet suburban street standards that include sidewalks and bicycle lanes or paths. Ideally, suburban roadways should achieve City street standards, recognizing that there is already a backlog in unfunded roadway improvements. Options, such as separated sidewalks and paths or shoulders to accommodate the bicycles, should be incorporated in all new roadway improvements.

