Chapter 2: Planning and Scoping a Complete Streets Project

Planning a road project is a complex process that requires consideration of several components. This chapter helps engineers, planners and elected officials to identify the gaps and opportunities in road projects that are currently in the planning or design phase. The flow chart in figure 9 summarizes the suggested steps of complete streets projects.

Identifying Complete Streets Gaps and Opportunities

Figure 9: Identifying Complete Streets Gaps and Opportunities
Step 1: Analyze transportation context
Every road corridor is embedded in a larger system of land use (including local and regional destinations), as well as in a regional street network. When developing a road design, communities are encouraged to consider land use and connectivity to destinations to determine mode priorities. Furthermore, opportunities may arise dependent on the type of road project being considered. The Cuyahoga County complete streets typology presented in Chapter 3 will be based upon the categories outlined in Chapter 2.1.

Step 2: Determine mode priorities
Based on the development patterns and network considerations communities will be able to determine mode priorities for their specific corridor. Figure 10 illustrates examples for an 80 foot ROW with different mode priorities.

Step 3: Review project and existing roadway conditions
The selection of specific design features will be impacted by the type of road project a community is pursuing. Chapter 2.3 highlights the differences between maintenance, resurfacing, and reconstruction projects.

Step 4: Select complete streets elements to include in project
Chapter 3 and 4 together offer complete streets design elements and guidelines planners and engineers may choose to include in their specific road project. Chapter 3 outlines a street typology based upon development patterns and network aspects. For each street type; design elements will be listed in Chapter 3 and definitions of those elements can be found in Chapter 4.

For further details on planning complete streets:


Federal Highway Administration – Pedestrian and Bicycle Safety: Provides different tools to conduct pedestrian and bicycle crash analysis, safety audits and countermeasures selection assistance: http://safety.fhwa.dot.gov/ped_bike/tools_solve/

2.1 Transportation Context

Many of Cuyahoga County’s main commuter streets transect commercial as well as residential areas of varying density. Different adjacent land uses and densities may require different complete streets treatments along the same corridor. For instance, if a street runs through a neighborhood center, communities may want to prioritize pedestrian mobility and safety in this area.

2.1.1 Development Patterns

Communities are encouraged to determine the land use along specific road corridors and to choose the appropriate complete streets facilities based on the suggestions in Chapter 3. To identify development patterns along a corridor, communities will want to look at zoning and land use maps as well as taking walks along the corridor (which gives first hand user experience). The general development patterns recommended to prioritize users of the street are the following:

- Commercial, retail, and office uses (See Chapter 3.1)
- Neighborhood/ residential (See Chapter 3.5)
- Industrial uses (See Chapter 3.3)
- Semi-rural residential areas (See Chapter 3.7)

2.1.2 Street Network Considerations

In addition to analyzing development patterns, communities may want to assess their multi-modal networks that connect pedestrians, cyclists, and transit riders to local and regional destinations. Additionally, communities might want to consider looking at the Cleveland Metropark’s Reservation Concept Plans to identify opportunities to better connect both regionally and locally. Specific design ideas can be found in Chapter 3 for:

- Commuter streets (Chapter 3.2),
- Boulevards (Chapter 3.4),
- Transit spines (Chapter 3.6), and
- Bridges (Chapter 3.8).

When it comes to local connectivity for pedestrians, several cul-de-sac subdivisions impose special challenges. Figure 9 illustrates the differences in block size and connectivity of different grids compared on the same scale. Looking at the different grids, it becomes apparent that cul-de-sac developments do not provide direct pedestrian connection. People might choose to drive to a location (restaurant) that is

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33 (Congress for the New Urbanism, 2012, p. 5)
34 (Greater Cleveland Transit Authority, 2004) AND (Cleveland Metroparks, 2012) AND (NOACA, 2013c)
only 1/2 mile away as the crow flies, but 2 miles away in actual street distance. Therefore the goal of complete streets development should be to create “a finely woven fabric of streets and blocks that offer direct, varied pedestrian routes made interesting through careful design.”

Communities should consider their street grid from a network and destination perspective and identify priority bicycle routes, streets that urgently need pedestrian facilities (in absence of sidewalks), and possible pedestrian connections between cul-de-sacs or through parks. Communities are encouraged to identify nodes of activity and most suitable pedestrian and bicycle priority connections between those nodes. Once those priorities are identified, specific street reconfigurations and design elements become relevant.

Figure 10: Street Networks in Cuyahoga County: Varying connectivity, block size and density levels (Source: google maps)

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35 (Congress for the New Urbanism, 2012, p. 14)
Urban Design Reclaimed – Analysis of Connections in Streetgrid

- Find the regional systems – roads, greenways, transit lines – that intersect the neighborhood
- Identify areas likely to have connectivity problems (cul-de-sacs, housing areas built after 1960, large blocks and parcels)
- Delineate the 5 minute walking radius around each neighborhood center (identified pedestrian sheds)
- Identify smaller clusters of activity as neighborhood focal points (schools, churches, public institutions)
- Examine in detail the routes within neighborhood center pedestrian sheds and within proximity of neighborhood focal points
- Identify improvements to pedestrian connectivity. Might include:
  - Emphasizing additional/ alternative routes to bypass the busiest streets
  - Include alleys
  - Mid-block crossings and crosswalks

2.2 Impact of Mode Priorities on Design Choices

Road projects often times face a variety of decisions made by engineers such as the number of travel lanes, the width of each lane, and what additional amenities and facilities to include. In commercial areas and residential streets leading up to commercial areas, especially, there is an increased opportunity to get the highest reward for dollars spent on bicycle, pedestrian, and transit facilities. As stated earlier, most trips people take are less than 2 miles which is within easy bicycling distance. During the past decades the idea of the purpose of streets was to move commuters to their destination as fast as possible. Figure 11 illustrates how 80 feet of ROW on a commuter street can be reconfigured based on different community priorities. The short text under each picture explains the decisions made for each configuration.

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36 (Talen, 2009)
Example of different design for a 80 feet right-of-way based on mode priorities

“80 feet ROW - Business As Usual”: Many streets are designed with 12 foot travel lanes and 10 foot temporary parking lanes. The sidewalks are often times very narrow and do not provide much protection for pedestrians.

“80 feet ROW - Pedestrian Priority”: Especially in Commercial Districts (Suburban Business Districts), communities might want to consider making pedestrians a priority as it can support park-once solutions. By reducing travel lane width from 12 feet to 10 feet and by reducing parking lanes to 8 feet, communities can add trees and benches to the sidewalk to provide a sufficient buffer from moving traffic. In the picture the planting strip on the left hand side of the street is meant to illustrate a chicane that can enable mid-block crossings for pedestrians and structured on-street parking.

“80 feet ROW - Pedestrian and Bicycle Priority”: Especially communities with a sizable residential community around their commercial districts (Neighborhood Centers and Old Main Streets) might want to consider making pedestrians and bicycles a priority on their commercial streets as people can easily bike 2 miles within 10 minutes to get to stores. This street configuration can be achieved by taking out one parking lane and one travel lane. The idea is that by putting in a bike lane, more people living in the neighborhood will bike to the stores rather than take their car, which means less on-street parking would be needed.

“80 feet ROW - Transit Priority”: As Cleveland is becoming a national leader in Bus Rapid Transit; connecting inner-ring suburbs through BRT might become more and more interesting. Making transit a priority might mean to take out travel lanes. The above example is an extreme case where the car travel lanes are reduced to 2 and where there is no on-street parking. On a real corridor, the transit shelters might be caddy-corner from each other which means that one of the transit shelters shown above (8 feet) could be a turning lane or a parking lane.

“80 feet ROW - Mode Balance”: The example shown above will be more likely to be found in Suburban Business Districts, Neighborhood Centers or streets leading to Lifestyle Centers. There would be a strong commitment by the community to enable residents to shift modes – workers could travel more conveniently by Bus Rapid Transit to work or people living closer could take their bikes on a protected bike lane. This configuration needs to be part of a broader network that connects protected bike lanes and priority bus lanes through towns and ideally several communities.

Figure 11: Eighty feet of ROW on a commuter street
2.3 Types of Road Projects

There are four main categories of roadway projects that are constructed throughout Cuyahoga County. Each type of road project offers different complete streets opportunities.

2.3.1 Maintenance

The purpose of a maintenance project is to extend the life of the existing pavement and improve public safety by re-establishing the roadway surface. These projects are very quick and little, if any, design is involved. Multiple roads can be included in a single project and be completed within one construction season. Maintenance projects can include crack sealing, striping, filling potholes, signal upgrades or reprogramming, and other small corrections. Often, city forces will perform this type of project without the use of an outside contractor. Municipalities pay for these types of projects from their own funding sources, either gas tax or general funds money.

While these projects are small, there are still complete street elements that are able to be incorporated. Whenever a street is being restriped it should be looked at for the addition of bicycle lanes, sharrow markers, or painted pedestrian islands. Signal reprogramming can include longer pedestrian phases or “scramble” phases at pedestrian heavy intersections. Sign upgrades for reflectivity and installation of “Share the Road” signs are able to be done on these minor projects as well.

2.3.2 Resurfacing, Restoration, and Rehabilitation (3R)

The purpose of a 3R project is to preserve and extend the life of an existing highway while improving safety and enhancing its operation. These projects retain the existing line, grade and geometrics of the facility. These projects include:

- Resurfacing,
- Pavement structural and joint repair,
- Minor lane (less than a full lane) and shoulder widening,
- Minor alterations to vertical grades and horizontal curves,
- Bridge repair,
- Removal or protection of roadside obstacles, and
- Spot safety improvements.

From concept to construction, these projects typically take about one year for project design with construction then taking about one season. Small design and safety improvements are included with maintenance resurfacing projects. Minor shoulder widening for pavement width, American with Disabilities Act (ADA) curb ramps, and drainage structure adjustments are also usually included in maintenance projects. Minor resurfacing projects can often be completed with local (municipal or
County funds) funding. Projects that are larger in cost or scope often require assistance with State funding.

Safety and comfort are goals of these types of projects. Within that framework, there are many opportunities to incorporate complete streets elements. Bicycle lanes, “sharrows,” and crosswalks are all striping modifications that can be included. Minor lane widening to allow for wide shoulders and sidewalk construction can improve both bicycle and pedestrian safety. For transit facilities, these projects provide the opportunity to construct concrete bus pads and install bus shelters (with green roofs!).

2.3.3 Reconstruction

The purpose of a reconstruction project is to upgrade an existing facility to meet new design standards or new capacity requirements. These projects often require the acquisition of additional ROW for either temporary or permanent uses. Minor projects can be completed with local (municipal or County funds) funding. Projects that are larger in cost or scope often require assistance with State funding.

These projects often take longer than 2 years from concept to construction, but can take much longer depending on the scope of the project. Reconstruction projects typically follow the Ohio Department of Transportation (ODOT) design requirements and submittal schedule with multiple reviews during the design phase. Because of the scope of reconstruction projects, and the long time line, there are ample opportunities for complete streets to be incorporated in to these projects. Many of the elements provided in this manual are able to be included in reconstruction projects. Stormwater analysis should include alternative styles of management such as bio-retention cells, permeable pavement for pedestrian areas, and native landscaping. Bicycle facilities can include bike lanes, bike parking, or possibly cycle tracks. Pedestrian improvements can include widened sidewalk, furniture, and enhanced intersections. Each reconstruction project should be reviewed for the addition of complete streets elements.

2.3.4 New Construction

The purpose of new construction is to provide access to locations where access was not previously available. These projects always involve new right-of-way acquisitions, environmental impact studies, and significant public involvement. Projects that are larger in cost or scope often require assistance with State funding. New constructions are also part of new residential developments which communities can guide through their subdivision regulations.

New construction projects can take many years to be completed from concept to construction. They also provide the best opportunity to create a truly complete street. On these projects, complete streets elements should be included from the very beginning. Depending on the classification and use of the street being constructed, different elements are applicable.