

Context & Modal Accommodation Report Learner's Guide

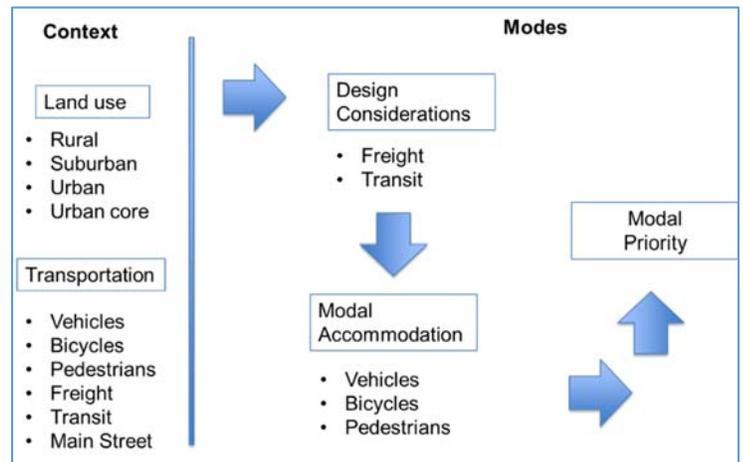
INTRODUCTION

Why Document Context?

Context refers to the environmental, economic, and social features that influence livability and travel characteristics. Context characteristics provide insight into the activities, functions, and performance that roadway design can influence. Understanding current and future context is important to better understand the tradeoffs necessary to balance needs for all roadway users. For the purposes of transportation planning and design, WSDOT divides context into two categories: land use and transportation.

Context also informs roadway design, including the selection of design controls, such as target speed, modal accommodation, modal priority, and other design decisions. **Modal accommodation** refers to the level to which a travel mode will be addressed in the design. **Modal priority** refers to the decision to optimize a roadway design based on the performance of one or more travel modes.

Context Documentation Process



Where Do I Document Context?

The **Context & Modal Accommodation Report** provides a template for recording land use and transportation characteristics that affect modal accommodation, as well as a workflow for determining modal priority.

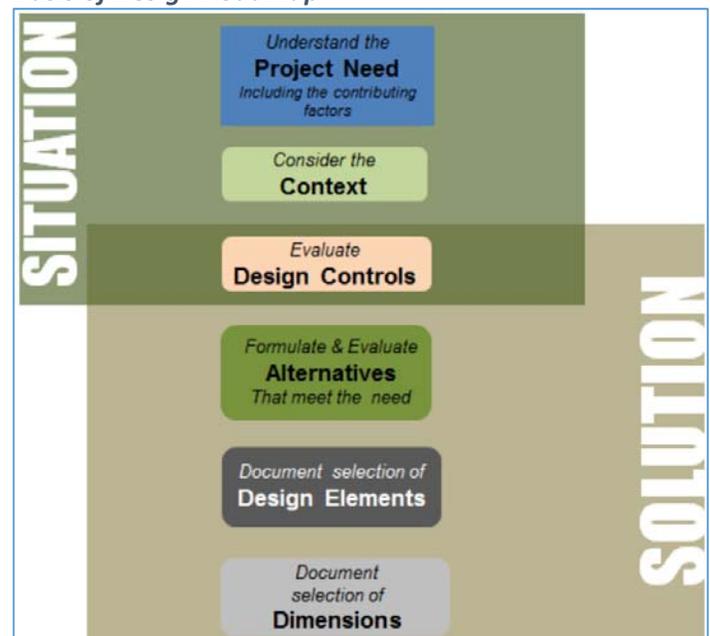
This information is then summarized on the Basis of Design form. Section 2 (Context) of the Basis of Design Form requires documentation of:

- Land use category
- Roadway type
- Bicycle route type
- Pedestrian route type
- Freight route classification
- Transit use considerations
- Main Streets designation

Section 3 (Design Controls) of the Basis of Design Form records:

- Modal accommodation levels (vehicles, bicycles, pedestrians)
- Special design considerations (freight, transit)
- Modal priorities (automobiles, transit, freight, pedestrians, bicycles, other)

Basis of Design Roadmap



1. LAND USE CONTEXT

How Do I Document Land Use Context for Non-Freeways?

For non-freeway facilities, follow the procedure below for determining whether the land use context is rural, suburban, urban/town, or urban core. Note these land use categories are not the same as the land use designations that local governments use in their comprehensive plans and zoning maps. Rather, they are labels attached to land uses with certain characteristics that affect roadway design considerations, according to the national study, *An Expanded Functional Classification System for Highways and Streets*. Additionally, the real world displays a broad range of contexts; you may find the context you are trying to document does not perfectly align with one of the four land use categories. There may also be transitional areas between contexts that require special attention. In addition to the guidance provided here and the indicators you document, apply your professional judgement and knowledge of the project area to select an appropriate land use category.

What are the Land Use Categories?

These categories represent distinctive land use environments beyond simply “rural” and “urban” to help determine a more accurate context. These categories influence roadway design, including determining appropriate operating speeds, mobility and access demands, and modal users.

Rural. The rural category ranges from no development (natural environment) to some light development (structures), with sparse residential and other structures mostly associated with farms. The land is primarily used for outdoor recreation, agriculture, farms, and/or resource extraction. Occasionally non-incorporated communities will include a few residential and commercial structures. Rural characteristics also include:



- No or very few pedestrians – except those locations used for outdoor recreation and modal connections, and where socioeconomic factors suggest that walking is likely to serve as an essential form of transportation
- Bicycle use mostly recreational– except for tourist destinations, modal connection locations and between communities where bicycle commuters may be expected or where socioeconomic factors suggest that bicycling is likely to serve as an essential form of transportation
- Low development density
- Isolated residential or commercial activities
- Commercial uses include general stores, restaurants, and gas stations, normally at crossroads
- Setbacks for structures are usually large, except in the immediate vicinity of small settlements
- Transit service availability is often absent or highly limited, but varies widely depending on the jurisdiction. On-demand service is typically found to provide specialized transportation service

Suburban. Locations classified as suburban include a diverse range of commercial and residential uses that have a low or medium density. Suburban areas are usually (but not always) connected and closely integrated with an urban area. The buildings tend to be multi-story with off-street parking. Sidewalks are usually present and bicycle lanes may exist. These areas include mixed use town centers, commercial corridors, and residential areas. Big box commercial and light industrial uses are also common. The range of uses encompasses health services, light

industrial (and sometimes heavy industrial), quick-stop shops, gas stations, restaurants, schools and libraries. Suburban characteristics also include:

- Heavy reliance on passenger vehicles
- Transit may be present
- Residential areas may consist of single and/or multi-family structures
- Building and structure setbacks from the roadway vary from short to long
- May have well planned and arranged multi-uses that encourage walking and biking
- Planned multi-use clusters may integrate residential and commercial areas along with schools and parks
- Some highways that fit this category may be designated by WSDOT as “Main Street Highways” (see Appendix B: Identification of State Highways as Main Streets, www.wsdot.wa.gov/research/reports/fullreports/733.1.pdf).



Urban. Urban locations are high density, consisting principally of multi-story and low to medium rise structures for residential and commercial use. Areas usually exist for light and sometimes heavy industrial use. Many structures accommodate mixed uses: commercial, residential, and parking. Urban areas usually include prominent destinations with specialized structures for entertainment, athletic and social events as well as conference centers and may serve as a Main Street. Urban characteristics also include:

- Various government and public use structures exist that are accessed regularly
- Building setbacks are both short and long
- Streets normally have on-street parking
- Wide sidewalks and plazas accommodate more intense pedestrian traffic
- Bicycle lanes and transit corridors are frequently present
- Off-street parking includes multi-level structures that may be integrated with commercial or residential uses
- Some highways that fit this category may be designated by WSDOT as “Main Street Highways” (see Appendix B: Identification of State Highways as Main Streets, www.wsdot.wa.gov/research/reports/fullreports/733.1.pdf).



Urban Core. Urban core locations include the highest level of density with mixed residential and commercial uses accommodated in high-rise structures. There is commonly on-street parking, although it is usually time restricted. Most parking is in multi-level structures attached or integrated with other structures. The area is accessible to automobiles, commercial delivery vehicles, biking, walking, and public transit. Urban Core characteristics also include:

- Sidewalks and pedestrian plazas are present
- Bicycle facilities and transit corridors are common
- Typical land uses are mixed commercial, residential, with some government or similar institutions present
- Commercial uses predominate, including financial and legal
- Structures (predominantly high rises) may have multiple uses
- With the highest land value of any category, setbacks from the street are small



- Some highways that fit this category may be designated by WSDOT as “Main Street Highways” (see Appendix B: Identification of State Highways as Main Streets, www.wsdot.wa.gov/research/reports/fullreports/733.1.pdf).

How Do I Select a Land Use Category?

Step 1. Split the route into segments

More than one land use category may apply within project limits. Split the roadway into segments by mileposts if land use characteristics change significantly along the route. Fill out a Context & Modal Accommodation Report for each segment.

Step 2. Determine a land use category (current state)

Quantify the following indicators through an assessment of the area adjacent to the existing or planned roadway to determine your initial land use context category.

Factor	Criteria	Sources
Land Use	Land uses within ½ mi of roadway	Community Planning Portal (Use Basemap Imagery Hybrid) SR View
Density	Housing units / acre	EPA Smart Location Database*
Density	Jobs / acre	EPA Smart Location Database*
Density	Intersections per sq. mi.	EPA Smart Location Database*
Density	Typical building height	SR View
Setback	Typical building setback	Community Planning Portal (Use Basemap Imagery Hybrid)
Setbacks	On street or off street parking	Community Planning Portal (Use Basemap Imagery Hybrid)

*Note the unit of analysis for the EPA Smart Location Database is the census block group. This works well in more populated areas with smaller census block groups. In rural areas, the census block group may be so large the data might not represent small areas well. In those cases, use aerial photos to approximate the measure visually, or leave the indicator blank.

You may find the indicators don’t match up perfectly with a single land use category. Using your professional judgement and knowledge of the project area, select the category representing the best fit.

Step 3. Determine a land use category (future state)

Using the same factors and categories, consult with local agency staff, and review state, regional, and local planning documents to consider and document potential or anticipated changes to land use context. Sources of information include the local comprehensive plans, local zoning regulations, regional plans, WSDOT Highway System Plan, WSDOT corridor sketches, and WSDOT planning studies in the corridor.

Step 4. Select final land use context category (current and future state)

Once an initial land use category is determined, use additional (primarily qualitative) considerations to verify the selected category is appropriate. Because data used in the initial determination may be incomplete, conflicting, or difficult to interpret, it’s expected that professional judgment is used to confirm the context result. Even when the overall assessment is clear, discontinuities or transitions between categories may exist and require further interpretation.

Confirm or make adjustments to the initial context category based on a qualitative analysis. Use information gathered from consultations with local and regional agency staff, as well as the project’s community engagement processes, to validate a final determination about current and future context. Document the process used to make this final context determination. Include the data used, interdisciplinary input, and issues encountered and resolved in the process. Conclude with a final land use context determination that confirms or adjusts the initial category for the project, and seek the endorsement of this final determination from the project advisory team.

2. TRANSPORTATION CONTEXT

How Do I Document Transportation Context?

Follow the procedure below to determine the current and future transportation context for the roadway. If you split the roadway into segments based on land use characteristics, use the same segments for identifying transportation context. Fill out a Context & Modal Accommodation Report for each segment.

Document the transportation context for:

- Motor Vehicles
- Bicycles
- Pedestrians
- Freight
- Transit
- Main Street Highways

How Do I Determine Roadway Type?

Use the designated functional classification found on the [WSDOT Online Map Center](#) or in the [WSDOT State Highway Log](#) to define the current federal functional class.

Based on local, regional and state plans and consultation with the project advisory team, consider whether the roadway will continue to serve the same function in the future. Indicating the future function does not change the federal functional classification. Rather, it acknowledges that the official classification may not reflect the current or future function of the roadway. The table below describes the roadway types:

Roadway Type	Description
Principal Arterial	Corridors of regional importance connecting large centers of activity. These routes may be limited access facilities.
Minor Arterial	Corridors of regional or local importance connecting centers of activity.
Collector	Roadways of local importance providing connections between arterials and local roads.
Local	Roads with no regional importance for local circulation and access only

Document your reasons for selecting the future roadway type in the box provided.

How Do I Determine Bicycle Route Type?

Categorize bicycle routes based on the purpose of the trip and the network connectivity a facility provides. Use quantitative and qualitative information about bicycle connections associated with the project location to determine the current and future bicycle route type using one of these three classifications:

Bicycle Route Type	Description
Citywide Connector (CC)	The route is part of a citywide network, provides a connection to major activity centers, or is a regional bike route stretching over several miles that attracts a high volume of use, serving a primary commute or recreational purpose. These routes are typically associated with arterials and collectors.
Neighborhood Connector (NC)	The route provides a neighborhood or sub-area connection, making connections to higher order facilities or more local activity centers, such as neighborhood commercial centers. These routes are typically associated with minor arterials and collectors.
Local Connector (LC)	The route provides local connections of short lengths, providing internal connections within neighborhoods, or linking neighborhoods to higher order facilities. These routes are typically associated with collectors and local roads

Enter the bicycle route type here and on the top row of Section 3 Mode Accommodation – Bicycles.

How Do I Determine Pedestrian Route Type?

Describe pedestrian use in terms of estimated volumes (current and future). The amount of pedestrian traffic affects several factors, including pedestrian facility capacity, vehicular delays at signalized intersections, and most importantly, the level of risk associated from pedestrians in the travelled way. The four pedestrian route types are based on volume as follows:

Pedestrian Route Type	Description
P1	Rare or occasional use
P2	Low volume – best measured in pedestrians per day
P3	Medium volume – best measured in pedestrians per hour
P4	High volume – best measured in pedestrians per hour, where sub-hour peak periods are typical

Enter the pedestrian route type here and on the top row of Section 3 Mode Accommodation – Pedestrians.

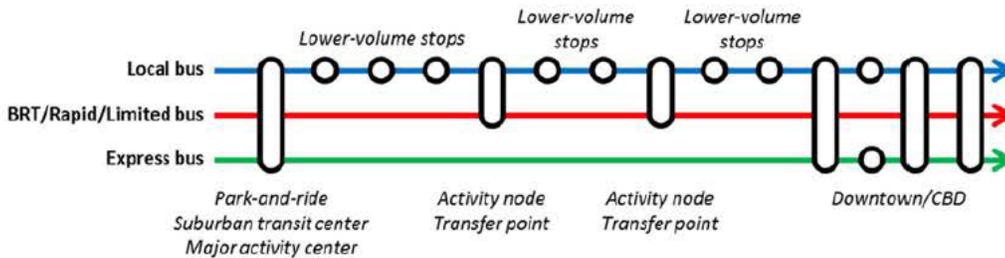
What Freight Considerations are Important to Design?

Freight routes may not require significant additional facilities beyond those provided for other motorized vehicles, if mobility and speeds of vehicular routes are consistent with freight movement. Special design consideration commonly relates to the [Freight and Goods Transportation System classification](#). Document the classification for the project area and note the presence of freight rail crossings and the turning movements of freight vehicles if known. Based on your consultation with the project advisory team and subject matter experts, there may be other special considerations for freight you can also note here. Contact the [Rail, Freight, and Ports Division](#) for help identifying freight classifications, industry needs and truck operations.

What Transit Considerations are Important to Design?

Transit can provide service on any roadway type. The purposes of transit trips are similar to those of automobile trips and include commuting, work related business, shopping, personal errands, and social/recreational. The facilities and design considerations for transit uses depend on the type of transit service provided. Note that special design consideration is required for projects that involve one or more of the following elements:

- Fixed route type: there are three primary types of fixed-route transit service, operating along designated routes at set times (Local, Limited, and Express). If one of these services exists on the project, determine the route type using criteria shown in the illustration below and the following bullets:



Source: TRPC Report 165: Transit Capacity and Quality of Service Manual.

- Local routes serve many stops along a route and emphasize access to transit over speed.
- Limited stop routes (also known as frequent routes, including bus rapid transit) balance transit access with speed. These routes run frequently and serve higher volume stops (e.g. major activity centers and transfer points).
- Express routes emphasize speed over transit access, and people often use them for longer distance trips.

Note that in addition to fixed-route service, many agencies provide demand-response paratransit services that provide specialized transportation services in both rural and urban areas.

- Bus rapid transit or light rail
- Transit signal priority installation
- Planned transit facilities and routes
- In lane bus stops and/or potential bus pullouts
- Facilities for people with specialized transportation needs (e.g. hospitals, senior centers, schools, transit-dependent communities, etc.)

Documenting relevant information or data about transit can help designers evaluate transit needs and the potential for transit to improve highway performance in the project area. Contact the [Public Transportation Division](#) for help or for more information about identifying and coordinating with transit agencies and local jurisdictions that serve the project area.

What Considerations are Important for Designing Main Street Highways?

The Main Streets designation for highways is a point of reference and consideration when documenting transportation context. Main Street highways serve the aesthetic, social, economic, and environmental values in a larger community setting in addition to transportation. They are set up as specific state route and milepost designations.

For the list of designated highways see [State Highways as Main Streets: A Study of Community Design and Visioning](#), Appendix B: Identification of State Highways as Main Streets.

3. DESIGN CONTROLS (MODAL ACCOMMODATION)

What is Modal Accommodation?

Modal accommodation refers to the level to which WSDOT will address a travel mode in the design of a roadway. It is expressed on a scale of low, medium, and high, where a higher accommodation level is associated with the use of design features or criteria that tend to improve the performance of that mode compared to a lower level. Once established, WSDOT will use the modal accommodation level to inform the decision on modal priority. Determine both the current and the future modal accommodation.

Make an **initial** modal accommodation determination, for both the current and future, by comparing the land use context and the roadway type. Make a **final** determination for both the current and future using additional information and evidence to validate or modify the initial determination. Consult the project advisory team and/or subject matter expert(s) on the final determination.

How Do I Determine the Initial Modal Accommodation?

Based on the land use context and roadway type you have already documented, use the table below to determine the initial modal accommodation. Compare current land use context and current roadway type and record the results under "Initial Modal Accommodation (Current)." Then compare future land use context and future roadway type and record the results under "Initial Modal Accommodation (Future)."

Initial Modal Accommodation Table

		Land-Use Context			
		Rural	Suburban	Urban	Urban Core
Roadway Type	Freeways				
	Principal Arterial				
	Minor Arterial				
	Collector				
	Local				

<p>Motor Vehicles Incl. Freight</p> High Medium Low	<p>Bicycles</p> High Medium Low	<p>Pedestrians</p> High Medium Low	Transit compatibility not shown because it varies by route (compatibility can't be determined based on roadway type and land-use context)
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How Do I Determine the Final Modal Accommodation for Motor Vehicles?

Motor vehicle accommodation refers to the level to which WSDOT will address a motor vehicle when making design decisions that address or affect needs associated with motor vehicle travel. Start with the results of the initial modal accommodation table as documented during the previous exercise. Then use the adjustment factors as a way to think through whether to increase or decrease vehicle accommodation based on strategic and suitability conditions including:

- [Traffic speed](#)
- Mobility (Volume/Capacity or Vehicle Level of Service)
- [Access classification](#)
- [Strategic freight corridor designation](#)
- Local goals to reduce single occupancy vehicles (SOV)
- [Availability of transit](#)
- [Presence of bicycles and pedestrians](#)

You can also document other factors subject matters experts or the project advisory team indicate are important. Apply your professional judgement to determine which adjustment factors are applicable and whether data is available. Some data sources available statewide are hyperlinked in the list above. There may be additional or better data available from local and regional governments or in previously completed WSDOT studies of the project area.

Make the final motor vehicle accommodation determination in consultation with the project advisory team and/or subject matter experts, explain your reasoning in the box provided, and document the final decision.

How Do I Determine the Final Modal Accommodation for Bicycles?

Bicycle accommodation refers to the level to which WSDOT will address bicycles when making design decisions that address or affect needs associated with bicycle travel. Start with the results of the initial modal accommodation table as documented during the previous exercise. Then use the adjustment factors as a way to think through whether to increase or decrease bicycle accommodation based on strategic and suitability conditions including:

- Local and regional bicycle plans
- Distance to major bicycle destinations
- [Distance to transit stop](#)
- Alternative bicycle routes available within ½ mile
- [Disadvantaged population](#)
- [Traffic speed](#)
- [Traffic volume](#) (with and without [bicycle lanes](#))
- [Truck volume](#)
- [Bicycle volume](#)
- Bicycle facility type
- [Width of bike and parking lanes](#)
- Frequency of bicycle lanes blockages
- [Pavement condition](#)
- [Through lanes per direction](#)

You can also document other factors subject matters experts or the project advisory team indicate are important. Apply your professional judgement to determine which adjustment factors are applicable and whether data is available. Some data sources available statewide are hyperlinked in the list above. There may be additional or better data available from local and regional governments or in previously completed WSDOT studies of the project area.

Make the final bicycle accommodation determination in consultation with the project advisory team and/or subject matter experts, explain your reasoning in the box provided, and document the final decision.

How Do I Determine the Final Modal Accommodation for Pedestrians?

Pedestrian accommodation refers to the level to which WSDOT will address pedestrians when making design decisions that address or affect needs associated with pedestrian travel. Start with the results of the initial modal accommodation table as documented during the previous exercise. Then use the adjustment factors as a way to think through whether to increase or decrease pedestrian accommodation based on strategic and suitability conditions including:

- Local and regional pedestrian plans
- [Pedestrian volume](#)
- Distance to major pedestrian destinations
- Pedestrian safety (based on [vehicle speeds](#) and [pedestrian volume](#))
- Block length
- [Distance to transit stop](#)
- [Disadvantaged populations](#)

You can also document other factors subject matters experts or the project advisory team indicate are important. Apply your professional judgement to determine which adjustment factors are applicable and whether data is available. Some data sources available statewide are hyperlinked in the list above. There may be additional or better data available from local and regional governments or in previously completed WSDOT studies of the project area.

Make the final pedestrian accommodation determination in consultation with the project advisory team and/or subject matter experts, explain your reasoning in the box provided, and document the final decision.

4. SOURCES

1. [Chapter 1102: "Context Determination."](#) WSDOT Design Manual, July 2017.
2. [Chapter 1103: "Design Control Selection."](#) WSDOT Design Manual, July 2017.
3. Stamatiadis, N., A. Kirk, D. Hartman, J. Jasper, S. Wright, M. King, and R. Chellman. 2017. [An Expanded Functional Classification System for Highways and Streets](#). Pre-publication draft of NCHRP Research Report 855. Transportation Research Board, Washington, D.C.
4. Mekuria, Maaza C., Peter G. Furth, and Hilary Nixon. May 2012. [Low-Stress Bicycling and Network Connectivity](#). Mineta Transportation Institute.
5. [2013 Quality/Level of Service Handbook](#). State of Florida Department of Transportation.