



COMPLETE GREEN STREET CHECKLIST

This document was developed to dissect the structure of an urban street and explore opportunities to make our streets more “complete” while also integrating green street strategies. For those unfamiliar with the terms complete street and green street, common characterizations are:

- **Complete streets** accommodate and are safe for all users including pedestrians, bicyclists, vehicular drivers, and transit users.
- **Green streets** integrate low-impact development (LID) drainage facilities to manage stormwater runoff within the public right-of-way.

The Complete Green Street Checklist identifies street features associated with a complete street, and considers how each feature functions on two types of streets: minor arterial streets and local, residential streets. Minor arterial and local streets are standard street classifications described in the Federal Highway Administration’s Functional Classification Guidelines. These guidelines group streets according to the character of service they are intended to provide. Municipalities’ public works and planning departments use these street classifications to develop a street hierarchy in their city or town, and develop guidelines for the design and construction of public roads.

Minor arterial and local, residential streets have been highlighted in this checklist because they have lower traffic speeds when compared to major arterial streets. Low speed streets generally have more capacity to accommodate complete and green street strategies and provide greater community and ecological benefit.

The Complete Green Street Checklist is intended to assist in the planning and design of new and redeveloped, or retrofitted, streets in urban areas. The checklist is structured to step through each “complete street” street feature, identifying general and specific design considerations for both minor arterial and local, residential streets, and identifying opportunities to integrate green street facilities. The goal of the document is to provide a generic checklist that links complete street and green street principles. The street and intersection diagrams provide a visual connection between the written description and what we commonly see in the built environment.

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Complete Green Street Checklist

Prepared by SvR Design Company



Please see attached sections and intersection perspective.

Street Feature #	General Street Feature Notes and Design Considerations	Specific Street Feature Design Considerations Based On Street Classification		Green Street Opportunity and Design Considerations	How does proposed design incorporate the recommended complete green street design features? If the design does not explain why.
		Minor Arterial Cross Section (maximum two lanes each direction) Typical ROW width 80 feet - 100 feet	Local, Residential Street Cross Section (two lanes each direction) Typical ROW width 60 feet - 80feet		
1 Bicycle Facilities	Accommodate needs of bicycle traffic and install/implement facilities on designated bicycle routes in accordance with local, state, and federal guidelines and/or requirements.	Bike facilities and street markings can be incorporated within the travelway to indicate the presence of cyclists in the roadway.	Cyclists can typically share the road with motorized vehicles on roads with design speeds less than 25 mph. Sharrow markings or signage may be sufficient.	Permeable Pavements: Consider aggregate size in regards to surface texture. Edges/joints of permeable pavers may result in a rougher pavement surface for cyclists. Pavement material different from adjacent roadway helps to delineate bicycle lane from vehicular travel lane.	
2 Bus Bulbs	Appropriate in locations with transit service in combination with on-street parking.	To provide opportunities to enhance bus waiting areas, incorporate shelters, benches, and trash/recycling receptacles and maintain clear pedestrian zones in the public sidewalk.	Not applicable.	Permeable Pavements: Where bus bulbs are adjacent to, or include street trees, permeable pavement provides opportunity to direct surface water to tree roots.	
3 Curb Bulbs	Consider opportunities to incorporate or preserve significant trees, create enlarged gathering or planting areas, integrate natural drainage facilities, and provide traffic calming functions. Consider impacts to street operations and maintenance, such street sweeping/cleaning.	Appropriate at corners and mid-block where there is on-street parking; mid-block locations may be appropriate to support mid-block crossings.	Appropriate on streets with sufficient right of way and on-street parking.	Permeable Pavements: Consider for curb bulbs surfacing. Biofiltration/Bioretenion: Curb cuts and lowered planting areas provide opportunities for bioretention and infiltration, as well as storage during larger storm events in vegetated biofiltration or bioinfiltration planters.	
4 Curb Radius at Intersections	Curb radius should be sized to minimize crossing distances for pedestrians while maintaining required turning radii for buses, emergency vehicles, waste management vehicles and commercial deliveries. Choose appropriate design vehicle and consider potential impacts, or lack of impacts, where design vehicle turning movements cross lane lines.	Emphasis on incorporation of curb bulbs where on street parking exists.	Small radii are encouraged to reduce speed of turning movements onto residential streets.	Curb bulbs along a corridor may reduce the contributing pollutant generating impervious surface. Consider use of permeable pavement to reduce impervious surface area.	
5 Curb Ramps and Crosswalks	Curb ramps required at all intersections and in each direction. In accordance with local jurisdiction, ADA requirements, and PROWAG guidelines. Provide perpendicular ramps to maintain path of travel. Explore widening ramps to accommodate higher pedestrian volumes (i.e. near schools or parks).	Striped crosswalks recommended across the arterial.	Striped crosswalks not required at uncontrolled intersections.	Permeable Pavements: Consider use of permeable pavement in crosswalks to reduce impervious surface area and provide contrast between crosswalk and adjacent roadway pavement. To meet ADA requirements, curb ramps will likely have to be constructed with impervious concrete.	
6 Curb or Curb and Gutter	Minimum curb height as required by local guidelines. Maintain continuous curb height to minimize tripping hazards.	Appropriate along minor arterials especially with parking and/or bus stops to prevent the vehicles from encroaching on the pedestrian area.	Optional adjacent to single family uses; encouraged adjacent to non-single family uses (e.g. parks, community centers, schools)	Permeable pavements: Consider for the gutter line in locations which will receive water with lower total suspended solid levele. Explore opportunities to incorporate curb cuts or flush curbs to integrate natural drainage facilities, improve accessibility or provide flexibility to streetscape.	
7 Decorative Elements	Decorative elements, such as public art and specialty paving, are encouraged to promote and support community/neighborhood goals, values, and character. Should be coordinated with neighborhood plans and community groups.	Appropriate especially in amenity zone.	Encouraged especially in amenity zone. Coordinate with adjacent land uses.	Permeable Pavements: Consider use of pervious pavers where specific plan indicated specialty pavements.	
8 Design Speed and Road Geometry	Review design speed in context of local street grid, adjacent land uses and community goals in addition to standard street classification requirements. Consider allocation of right-of-way for all users.	Recommended posted speed and design speed between 25 - 30 mph	Recommended posted speed and design speed between 20 - 25 mph	Streets with low design speeds (20mp) have been designed without curbs. Surface elements such as vegetation, street lighting, amenities (e.g. benches, bike racks, public art), and bollards can be used to direct traffic and delineate parking areas.	
9 Drainage	Design facilities to meet local guidelines for conveyance capacity, water quality treatment, and flow control requirements. Incorporate green infrastructure to the maximum extent feasible.	Consider use and impact of pervious pavements and other surface natural drainage elements including swales, rain gardens, and stormwater planters in context with adjacent land uses and structures.	Some traffic calming elements, such as curb bulbs, medians, traffic circles, and some pavement materials provide opportunities to incorporate natural drainage facilities within the public right-of-way. Consider use and impact of drainage elements in context with adjacent land uses and structures.	Consider opportunities to provide water quality treatment, flow control, flow attenuation, infiltration/groundwater recharge, and sediment removal for surface runoff from the public right-of-way. Consider maintenance of natural drainage elements and development of Operations and Maintenance Manual for future use when applications differ from existing standard maintenance procedures.	
10 Driveways	Where driveways are required, minimize width of driveway and maintain elevation and cross slope of adjacent sidewalk at crossing. Minimize area of potential conflict between pedestrians and motorized vehicles. Encourage sidewalk elevation at driveway to match adjacent sidewalk to create perceived hierarchy between pedestrian and motorized vehicles.	Minimize the number of driveways crossings and evaluate number of access points to adjacent properties.	Encourage alley access to residences where possible, driveways crossing sidewalks are discouraged.	Permeable Pavements: Consider use of permeable pavement to reduce impervious surface area, especially where the sidewalk continues through the driveway section.	

Complete Green Street Checklist

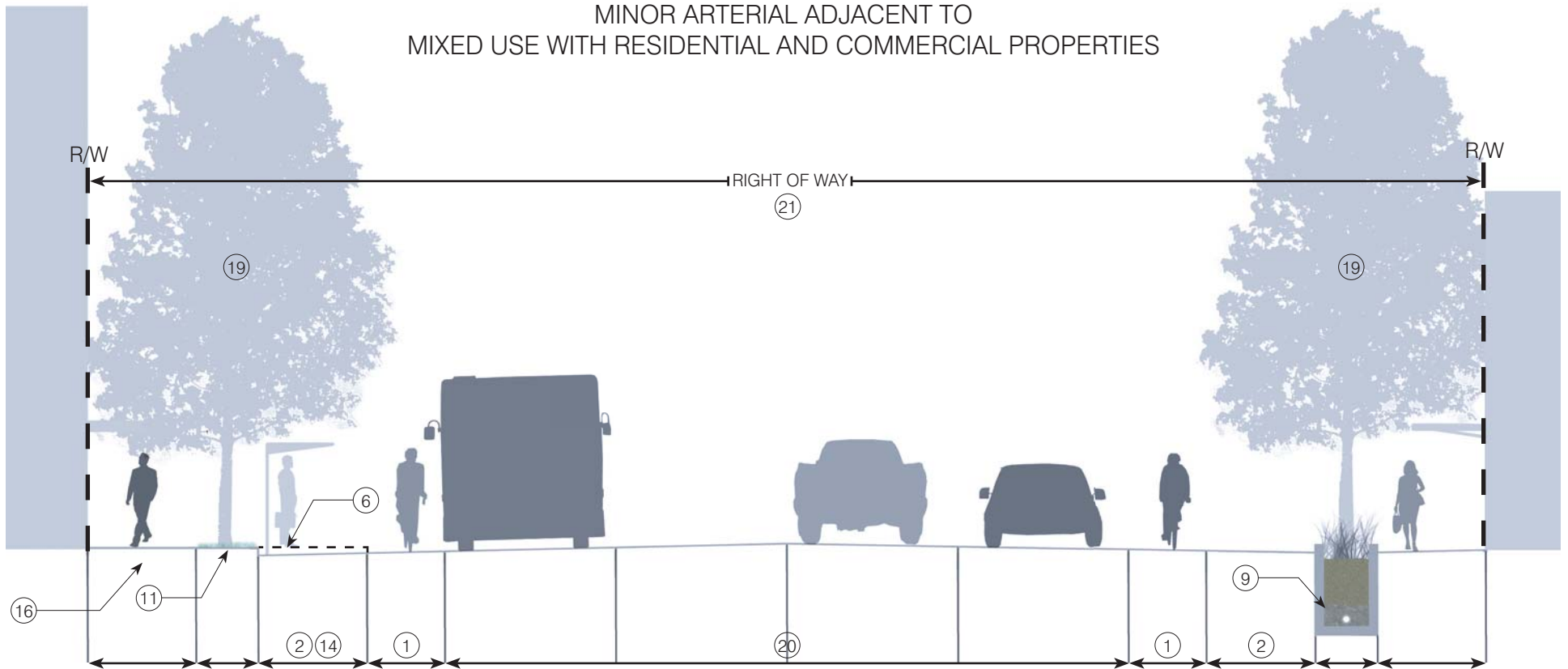
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11	Landscaping	To provide buffer between pedestrians and vehicles as well as environmental and aesthetic benefits. Native species to minimize establishment and maintenance/irrigation.	Low landscaping to preserve sight lines.	Vegetation that delineates parking area and walkable zone encouraged, especially if curbsless street.	Biofiltration/Bioretenion: Incorporate swales, rain gardens, or stormwater planters to supplement conventional stormwater facilities and provide water quality treatment, flow attenuation, infiltration/groundwater recharge, and/or sediment removal for surface runoff.
12	Load/Unload Zones	May be required in commercial areas to support local businesses. Location and size of zones should be design in accordance with local guidelines.	Incorporate to support drop-offs and delivery activities.	Short-term load zones where appropriate (e.g. adjacent to multi-family housing and institutional land uses)	Permeable Pavements: Consider to reduce impervious surface area.
13	Medians	Maybe used to reduce impervious surface in the travelway.	Consider vegetated medians on streets where supported by large right-of-way	Location specific due to topography or drainage constraints and where community interests will support.	Permeable Pavements and Biofiltration/Bioretenion: Incorporate permeable pavements, swales, rain gardens, or stormwater planters. Opportunities to integrate natural drainage systems, street trees and landscaping, increasing habitat area and providing traffic calming and buffering.
14	On-Street Parking	Consider level of service and turn-over rates for size, type and quantity of on-street parking required. Consider back-in only angle parking for safety and visibility, particularly when adjacent to on-street bicycle facilities (bike and sharrow lanes). Review standard parking stall dimensions based on desired level of service. For example, seven-foot parallel parking width has proven effective and become standard for several municipalities across the county when the parking lane is striped with continuous paint line.	Where sufficient right-of-way exists, on-street parking is encouraged and has benefits for residents, business districts, and may provide some traffic calming effect. Should only be encouraged where transit service is not a priority.	Formalize, or organize parking. Parking may be limited to one side of the street.	Permeable Pavements: Consider to reduce impervious surface area and provide additional visual delineation between parking and travel lanes.
15	Pedestrian Lighting	To improve safety and visibility for main pedestrian routes of travel.	Prioritize at pedestrian crossing locations, in transit zones, where there are security concerns, and where adjacent uses support pedestrian activity. Dark sky friendly.	Pedestrian scaled and dark sky friendly lighting that focuses light on clear pedestrian zone. Prioritize on streets leading to schools, community centers, neighborhood business districts, parks, and major transit stops.	Energy Conservation: Solar powered lighting or LED lights to minimize electrical usage.
16	Sidewalks/Walkways	Wider sidewalks support pedestrian activity especially around non-residential land uses. Sidewalks should provide a 6-foot minimum clear walkable zone and maintain a 2% maximum cross slope. Recent studies indicate a correlation between public health and the inclusion of sidewalks along streets.	12ft - 15ft sidewalk and landscape/furniture zone. Furniture zone could support sidewalk cafés adjacent to commercial uses.	Landscape zone recommended.	Permeable Pavements: Consider aggregate size and shape/size of pavers related to surface smoothness.
17	Street Furniture	Street furniture use and location are appropriate if the right-of-way is sufficiently wide to accommodate street furniture while meeting the needs of sidewalk width and landscaping. Consider functionality of bike rack style with local bicycle groups/organizations.	Benches, bus shelters, bike parking, trash and recycling receptacles, and way finding	Benches, resting/gathering areas as desired by local community	Street furniture including benches and other seating areas can be created from local materials as an opportunity to make them more artistic and specific to the region.
18	Street Lighting	Improve safety and visibility for all modes. Consider dark sky friendly light levels.	Prioritize street lighting at intersections and pedestrian crossings.	Prioritize street lighting at crosswalks where Residential Streets intersect with Local Connectors.	Energy Conservation: Solar powered lighting or LED lights to minimize electrical usage.
19	Street Trees	Street trees are encouraged to provide a buffer between pedestrians and vehicle traffic. Tree spacing and species selection in accordance with local regulations. Consider species selection and placement near bus stops, drainage features and permeable pavements for maintenance purposes. Provide as much soil volume as possible.	Spacing and species in accordance with local regulations. Preferred minimum planting area is 6-feet x 8-feet. At transit zones trees should be located to accommodate loading areas and preserve vehicle access. High branching to accommodate pedestrian movements.	5-foot minimum setback from pavement edge, where less than 5-feet is available consider use of tree box.	Tree Canopy: Maintaining and increasing native species tree canopy along the street can reduce the head island effect, provide shade for pedestrian, increase aesthetic of the street, provide opportunity for a local food source.
20	Travel Lanes	Minimize motor vehicle lane width to reduce pedestrian crossing distances, encourage lower motor vehicle travel speeds, and enhance allocation of right-of-way across all users and uses of right-of-way.	11- to 12-foot lane widths	10- to 11-foot lane widths	Permeable Pavements: May be more appropriate for residential streets or very low volume arterials. Consider operations and long-term maintenance of permeable pavement systems.

MINOR ARTERIAL ADJACENT TO
MIXED USE WITH RESIDENTIAL AND COMMERCIAL PROPERTIES



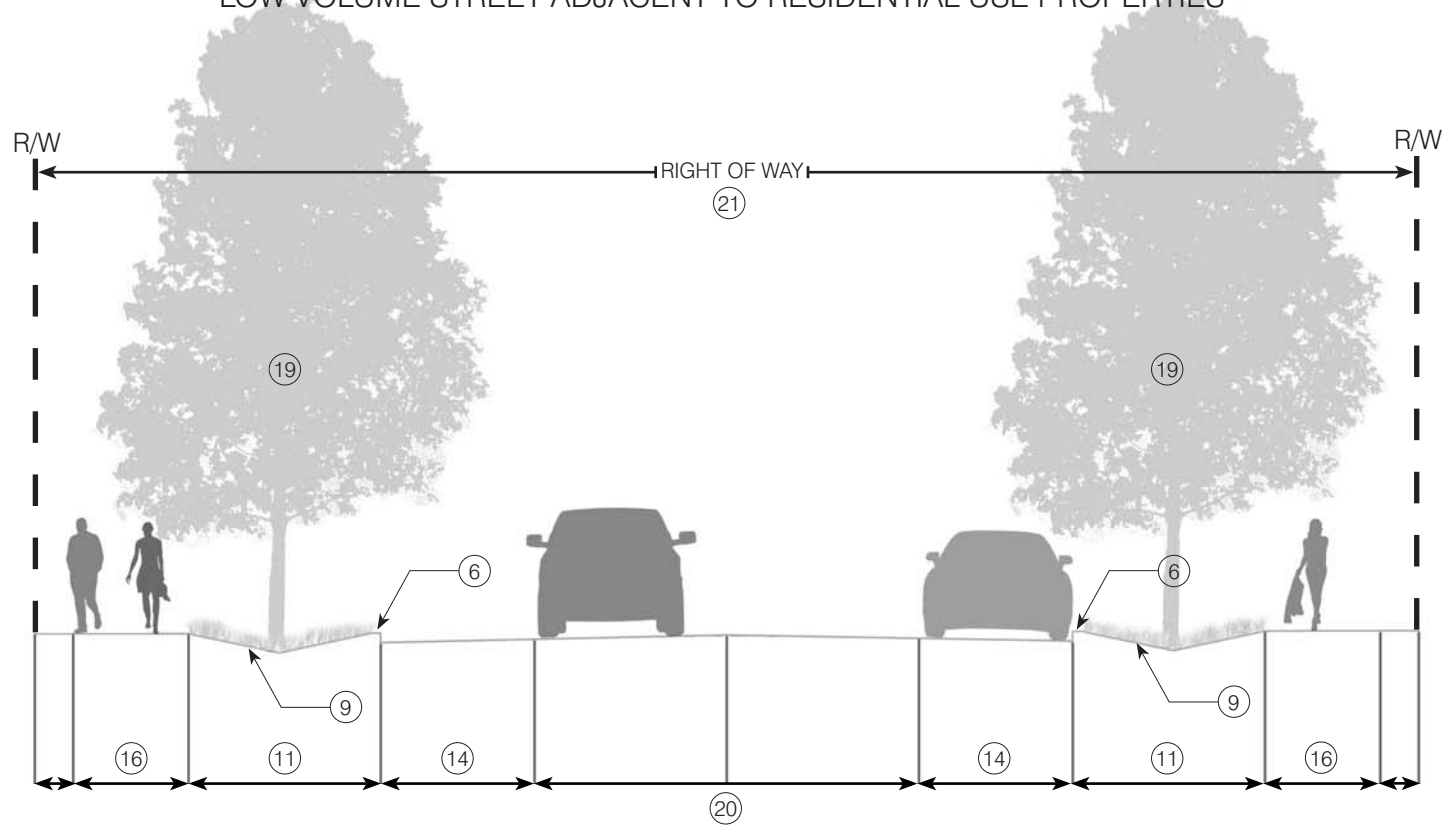
COMPLETE STREET SECTION

Note: Numerical references shown represent the street feature number identified on the Complete Green Streets Checklist (pages 1 and 2). The Checklist provides a typical description of each street feature by street type (minor arterial and residential).



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LOW VOLUME STREET ADJACENT TO RESIDENTIAL USE PROPERTIES

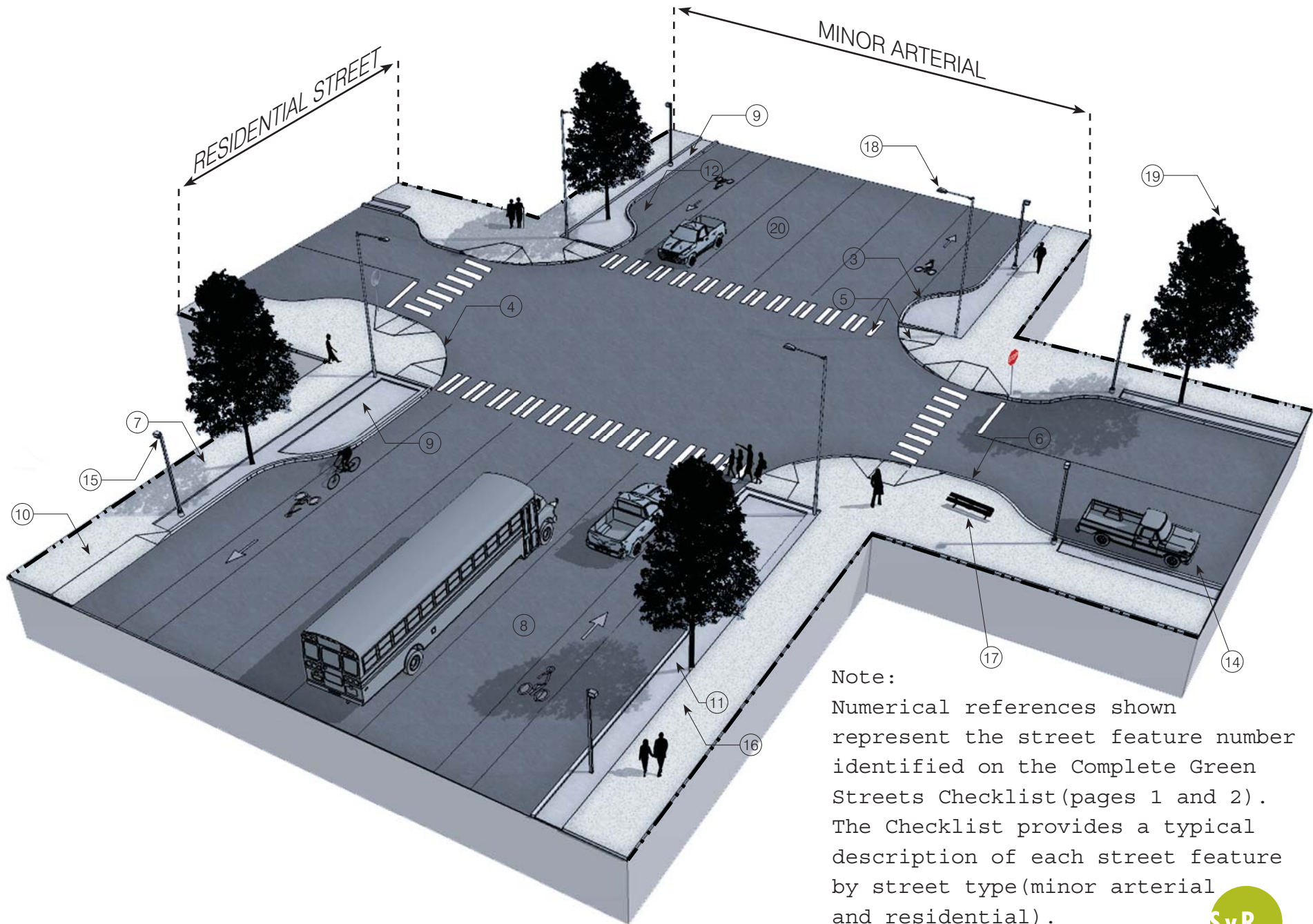


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COMPLETE STREET INTERSECTION