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SECTION 6 - STREETS

PERFORMANCE STANDARDS

All street designs shall provide for the safe and efficient travel of the motoring public. Design streets to carry recommended traffic volumes identified for each street classification. Street classifications are set forth in the City of Newport Transportation System Plan (2022) and the Newport Municipal Code.

Design streets to meet or exceed the minimum guidelines set forth in the following documents, as well as all referenced documents cited within this Section:

- *Newport Municipal Code* and all amending ordinances
- *Newport Transportation System Plan* (City of Newport, 2022)
- Oregon Administrative Rules (OAR)
- *A Policy on Geometric Design of Highways and Streets*, 7th Edition (American Association of State Highway and Transportation Officials, 2018)
- *Manual of Uniform Traffic Control Devices* for Streets and Highways, 10th Edition (Federal Highway Administration, 2009), and all Oregon supplements
- *Highway Capacity Manual*, 6th Edition (Transportation Research Board)
- *AASHTO Roadside Design Guide*, 4th Edition (American Association of State Highway and Transportation Officials, 2011)
- *Public Right-of-way Accessible Guidelines* and appendices (U.S. Access Board, accessed 2023)
- *Oregon Standards and Specifications for Construction* (current edition)

The City of Newport plans and implements its transportation facilities to serve vehicular and non-vehicular users. Roadway designs shall be “complete streets” to serve all ages and all abilities both along and across the facility. Developers and design engineers are required to use the following street standards when planning, designing and constructing public and private street facilities, ROW, and public access facilities within the City of Newport.

Use these street standards to support the design and construction of land use requirements, exactions and mitigations within the City of Newport as well as public works projects implemented outside of the land use process.

CONFLICTS AND OBSTRUCTIONS

- **Utility Notification:** The contractor shall comply with the rules and regulations of the Oregon Utility Notification Center: OAR 952-001-0010 through 952-001-0090 and ORS 757.993.
- **General:** Contractor may encounter various obstructions during the course of the work. Obtain maps and information regarding underground utilities from the utility owning and operating such utilities, but the City does not guarantee the location of such utilities. If the contractor interrupts the utility services because of the construction operation, the contractor shall notify the utility owner and the City authorized representative immediately.
- **Protection:** The contractor shall exercise all due care in protecting existing underground and surface facilities and property along the route of the project. This protection shall include, but not be limited to, trees, yards, fences, drainage lines, mailboxes, driveways, shrubs, and lawns. Any existing facilities not specifically designated for alteration or removal that are damaged during construction shall be restored or replaced to an “in kind” or better condition, at the expense of the contractor.
- **Access:** The contractor shall maintain access to all property, including normal delivery service, mail

service, and emergency services.

- Abandoned Utilities: Properly remove, grout, or plug all abandoned utilities at the discretion of the City authorized representative.

DEVIATION FROM STREETS STANDARDS

The City of Newport provides for roadway designs that are flexible and reflective of their context while meeting current safety and operations standards. There may be times when compliance with the City of Newport Standards and Specifications is not desired or possible. If that occurs, the design engineer may petition the City Engineer for a case-by-case review. City Engineer may delegate review authority.

The City does not allow this standard-deviation process to override a Condition of Approval or any other requirement that is part of a finalized land use decision.

Except as provided elsewhere in other City codes, resolutions and land use actions, written requests for deviations from these streets standards shall be reviewed and may be granted by the City Engineer according to the criteria outlined in this document as well as the following additional review criteria for Streets Standards:

- The deviation is required due to extreme topography or natural resource constraints;
- The deviation is required due to inconsistencies with the function of the street and the adjoining land uses; and
- The request specifically addresses the deviation review criteria and those review criteria for the subject standard as provided within this chapter.

ROAD CLOSURES

See Section 1: General Specifications of the *Engineering Design and Construction Standards Manual*.

OREGON DEPARTMENT OF TRANSPORTATION (ODOT)

Within the City of Newport are both Oregon Department of Transportation (ODOT) and City of Newport ROW. With some exceptions (such as maintenance of rapid-flashing beacons), ODOT maintains ODOT ROW. For construction within ODOT ROW, designers are to utilize ODOT street standards. Designs will need approved ROW permits from both ODOT and the City. Submit approved ODOT ROW permit with the City ROW permit application. City permit will not be issued without an active ODOT ROW permit.

RIGHT-OF-WAY AND PAVEMENT WIDTH AND DEPTH

Please refer to City of Newport Municipal Code Table 14.44.060-A (shown below) for street classifications and widths. The adjacent table shows pavement and rock requirements for each classification.

NMC Table 14.44.060-A

FUNCTIONAL CLASSIFICATION	MINIMUM RIGHT-OF-WAY WIDTH	MINIMUM ROADWAY WIDTH
Major Collector	70 - feet	48 - feet
Neighborhood Collector	50 - feet	36 - feet
Local	50 - feet	36 - feet
Yield Street	40 - feet	24 - feet
Shared Street	30 - feet	16 - feet

Engineering Requirements

PAVEMENT THICKNESS	AGGREGATE DEPTH
6"	10"
6"	10"
4"	8"
4"	8"
4"	8"

ACCESS: EGRESS AND INGRESS

Please refer to City of Newport Municipal Code 14.46.030 (Approach and Driveway Standards).

TRAFFIC IMPACT ANALYSIS (TIA)

Please refer to City of Newport Municipal Code Chapter 14.45 (Traffic Impact Analysis Requirements).

The City Engineer will require a traffic analysis report as determined by the type of development and its potential impact to existing street systems. A traffic analysis will generally be required for a development in cases when:

- the development will generate in excess of one hundred (100) trips per AM or PM peak hour onto city streets or county roads, or
- a development's location, proposed site plan, and traffic characteristics could affect traffic safety, access management, street capacity, or known traffic problems or deficiencies in a development's study area.

Report and Study Objectives

A discussion of key traffic issues addressed by the new development and the transportation system and development objectives related to a specific development. General transportation system objectives are:

- To provide safe and effective transfer of vehicle traffic between site and street system;
- To maintain easy and safe traffic flow on surrounding street system;
- To provide convenient, safe and efficient on-site and off-site movement of vehicles, pedestrians, transit, service and delivery vehicles, and bicycles;
- To mitigate adverse site generated traffic impacts on affected streets and intersections. City may set site-specific objectives for each study.

The traffic study will identify and evaluate:

- Safety
- Existing volumes
- Forecast volumes
- System context (relationship of land uses with transportation system)
- Local context (ROW, design vehicle)
- Anticipated users
- Operations, and
- Corridor influences (upstream and downstream controls, railroad crossings, etc.).

Designers should identify and evaluate these components in order to facilitate a context sensitive design that implements current design standards, safety features, and efficient operations. Provide operational analysis for the existing traffic conditions, as well as the design year of the project based upon the City's current twenty-year planning model. Provide lane configurations, vehicle delays, queuing, and level of service results to support concept development as well as for the final chosen configuration.

Turn lane storage length shall be separately accounted for when providing the tapers and shall be based on the analysis of the design year's ninety-fifth (95th) percentile queuing.

The City requires submission of an operational analysis for traffic control other than roundabouts (i.e. traffic signals, stop signs) using Highway Capacity Manual methodologies except as otherwise allowed by

the City Engineer.

The Traffic Impact Assessment (TIA) shall include:

- **Executive Summary**
A concise summary of the following: study purpose/objectives, site location and study area, development description, key assumptions, findings, conclusions and recommendations.
- **Description of Site and Study Area Roadways**
Anticipated nearby development and committed roadway improvements, which would affect future traffic in the study area.
- **Study area definition**
All roads, ramps, and intersections through which peak hour site traffic composes at least 5% of the existing capacity of an intersection approach, or roadway sections on which accident character or residential traffic character is expected to be significantly impacted.
- **On site Traffic Evaluation**
An evaluation of the proposed (and alternative) site access locations, the adequacy of access drive depth, driveway lanes, and queuing storage, the safety and efficiency of proposed vehicular circulation, parking layout, pedestrian and service vehicle routes/facilities, together with recommendations for onsite traffic markings and controls.
- **Technical Appendix**
A technical appendix including worksheets, charts, and drawings to support findings described in the body of the report.
- **Recommendations for Public Improvements**
External roadway improvements recommendations, such as additional through lanes and turn lanes, and traffic control devices necessitated by new development including improvements to transit facilities, and pedestrian and bike circulation.

The recommendations should specify the time-period for making improvements, particularly if improvements are associated with a phased development, the estimated cost of improvements, and any needed monitoring of operating conditions and improvements. During the analysis, identify and report any needed unrelated street improvements to the development.

- **Access Management (see NMC 14.46, Vehicular Access and Circulation)**
On sites with arterial and major collector street frontages, the report shall evaluate and recommend the use of access management plans or techniques:
 - To separate basic conflict areas (reduce number of driveways or increase spacing between driveways and intersections).
 - To remove turning vehicles or queues from the through lanes (reduce both the frequency and severity of conflicts by providing separate paths and storage area for turning vehicles and queues).
 These techniques may include turn restrictions, striping, medians, frontage roads, channelization of lanes or driveways, shared driveways and access between similar uses, access consolidation, lanes for left or right turns, and other transportation system plan (TSP) actions.

- Offsite Traffic Evaluation
 - Offsite traffic should include:
 - Existing daily and PM peak hour counts by traffic movements at intersections effected by generated traffic from the development (use traffic flow diagrams).
 - Projected daily and PM peak hour volumes for these same intersections and proposed access points when the development is in full service. (Use traffic flow diagrams)
 - A determination of the existing levels of service and projected levels of service at each intersection and access points studied.
 - A discussion of the need for traffic signals. This should include a traffic warrant computation based on the current edition of MUTCD.
 - Base specific report recommendations on a minimum level "D" service with maximum volume to capacity (v/c) ratio of nine-tenths (0.90) when the development is in full service. As an example, if recommending a traffic signal, the recommendation should include the type of traffic signal control and identity signalized movements. If requiring a storage lane for right turns or left turns, the recommendation should include the amount of storage needed. If several intersections are involved for signalization and an interconnect system is considered, specific analysis should be made concerning progression of traffic between intersections.
 - The report should include a discussion of bike and pedestrian usage, safe route to schools, and the availability of mass transit to serve the development.

STREET COMPONENTS

Intersections

Locate connecting street intersections to provide for traffic flow, safety, and turning movements, as conditions warrant. Where signalized, design shall provide for optimal signal phasing. Consideration for arterial street progression, protected/permitted and permitted left turn phasing shall occur. New signal proposals in remote locations shall first include an evaluation of alternate applications such as roundabouts.

Intersection controls provide right-of-way guidance to motorists at intersections. Most local-to-local street intersections will utilize yield and stop controls as provided for in the MUTCD. The use of yield signs may provide the necessary right-of-way guidance at local street intersections. Considered yield signs prior to stop signs.

Higher order control forms may be necessary as volumes increase. These higher control forms include roundabout control and traffic signal control. Given similar present and future operational performance, roundabouts are preferred over traffic signal control. Although the City has implemented a 'roundabouts first' approach to intersection control form, flexibility is provided to consider other intersection control forms should there be issues identified during the traffic study that warrant further analysis.

The City Engineer will consider traffic signals only where shown to meet MUTCD warrants, and signals improve overall intersection safety and operation, as indicated by the traffic study. Place emphasis on satisfying Warrant 1, Eight (8) Hour Vehicular Volume, and Warrant 7, Crash Experience (using the three most recent years for which crash data is available). Perform warrant analysis using fourteen (14) hour traffic volumes based on actual counts.

Arterial Intersections

Provide exclusive left and right turn lanes and bus turnouts if traffic flow and safety conditions warrant; provide designated crosswalks at controlled locations. Street alignments across intersections shall be continuous.

Collectors and Local Street Intersections

Street and intersection alignments should facilitate local circulation but avoid alignments that encourage non-local, through traffic. Please see Newport Municipal Code Chapter 14.17 for a discussion of Clear Vision Areas and 14.44.060(G) for an explanation of required Intersection Angles.

Half Street Construction

Half street construction is not allowed (NMC 14.44.60, Streets, Pathways, Accessways and Trails, Section H). Modifications to this requirement may be made by the City Engineer to allow half streets only where essential to the reasonable development of the land division, when in conformity with the other requirements of these regulations and when the city finds it will be practical to require the dedication of the other half when the adjoining property is divided.

A development on an unimproved street shall be responsible for constructing a continuous City standard street connecting with the nearest standard (publicly maintained) street.

Permanent Dead-End Streets

Please refer to City of Newport Municipal Code 14.44.060(J), Cul-de-sac. See City of Newport Engineering Department Standard Drawing T-053.

Provide a standard cul-de-sac turnaround at the end of a permanent dead-end street that does not provide looped circulation. Permanent dead-end streets shall be limited to serving no more than twenty-five (25) dwellings and shall not exceed four hundred feet in length from the point of the nearest centerline/centerline intersection. See Standard Detail T-053, *Typical Cul-De-Sac Detail*.

A permanent dead-end street is measured from the right-of-way line at the nearest intersecting street which has at least two points of access, to the right of way line at the furthest end of the dead-end street.

Exceptions to the dead-end street standard must comply with the Newport Municipal Code. A cul-de-sac may terminate an existing dead-end street system which is more than 600 feet long or which serves more than twenty-five (25) dwelling units if no Future Street Plan is in place and design meets the following criteria:

- Alternative emergency vehicle access or fire protection is provided satisfactory to the Manager; and
- The proposed cul-de-sac termination of the street does not adversely impact neighborhood traffic circulation.

FIRE CODE REQUIREMENTS

This design handbook is not intended to provide an exhaustive explanation of fire code requirements. The Design Engineer is expected to be fully versed in fire code specifications and how they relate to the proposed development. However, there are a few specific requirements the City particularly wants designed into any street improvements proposed. They are as follows:

- Fire Department access route to be at least 20 feet wide, 26 feet for ladder trucks (OFC Section

D105)

- No height restrictions below 14 feet 6 inches
- Road surface: all weather with a weight rating of at least 70,000 lbs; weight rating of 80,000 lbs for ladder trucks
- Longitudinal grade no greater than 10%; exceptions can be made on a case-by-case basis (OFC Section D103.2)
- Turn arounds for dead end roads greater than 150 feet long, unless it's looped (OFC Section D103.4)

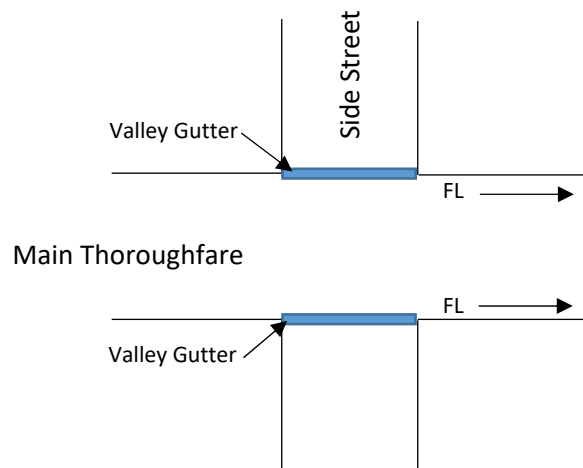
GUTTER FLOW LINES

Street Runoff

City Standard is to place the crown in the center of the street to shed water to storm system on either side of street. When street design includes an offset crown, crown shall be placed at meeting points (ie. between travel lane and parking lane, and not in a travel lane. See SECTION 6 of the Design Handbook for storm design requirements.

Valley Gutters at Intersection

Each intersection has a main road and a subordinate connecting road. At the intersection of these roads, the flow line of the main road controls elevation of the intersecting road. To keep storm runoff flowing down the main road, a valley gutter between the main road and the intersecting road will conform to the flow line of the main thoroughfare.



STREET CLASSIFICATIONS

The Newport Transportation System Plan classifies all streets within the City. The classification for any street not listed shall be that determined by the City Engineer.

DESIGN SPEED

The City provides standard design speed for each of the City's roadway classification designations.

Roadway Classification	Design Speed
Major Collectors	30 to 35 mph
Neighborhood Collectors	30 to 35 mph
Local	20 to 25 mph
Yield and Shared	20 to 25 mph
Alleys	15 mph

Where existing traffic conditions identify speeds in excess of design speeds listed, then use the higher speed for design purposes.

Design speeds shall be consistent throughout a cohesive segment of a roadway corridor. Strongly identify changes in design speeds from one segment to another through design feature changes to

encourage compliance with posted speeds and to model the street form after the abutting land use form.

Design engineers may request a standards deviation to utilize speeds outside of these design speed ranges to reflect changes in abutting land use but should not utilize a deviation to reduce the design speed for individual design elements within a cohesive roadway segment (e.g. a single horizontal or vertical curve).

Designers shall recommend a design speed within these ranges for a particular segment of roadway or roadway corridor. Consider the main factors abutting land use, the type and characteristics of multi-modal travel along-and-across the street, and the degree/style of access management that exists along the roadway segment. Supporting factors may include topography, safety and operations, queuing and intersection control type.

In general, the City brackets design speed into three broad categories:

1. slower speed residential and traffic-calmed commercial streets,
2. mid-range speeds that include commercial and industrial roadways, and
3. higher-speed rural roadways or limited-access highways.

When using higher-speed designs for roadways, the design may need to incorporate higher-level, multi-modal design features such as separated bike/pedestrian facilities, raised medians, and enhanced pedestrian crossing safety features. See the Newport Transportation Plan for information on multi-modal design features.

INTERSECTION SIGHT DISTANCE

Provide sight distance at intersections to allow drivers to perceive the presence of potentially conflicting vehicles, and to allow drivers of stopped vehicles a sufficient view of the intersecting roadway to determine whether to enter or cross it. Although Stopping Sight Distance allows drivers to anticipate and avoid collisions, drivers of major road vehicles may be required to stop or slow to avoid a collision with a minor road vehicle. Designing for longer Intersection Sight Distance enhances traffic operations and is required for all new intersections and driveways. Make adjustments for design vehicles and grades as appropriate.

To provide adequate intersection sight distance, specified areas along intersection approach legs and across their included corners should be clear of obstructions. The dimensions of the legs of these “Intersection Sight Triangles” are dependent on design speeds and type of intersection control. Refer to the 2004 American Association of State Highway and Transportation (AASHTO) “A Policy on Geometric Design of Highways and Streets”, Chapter 9, and Exhibits 9-50 to 9-69 for information on these areas, (called Clear Sight Triangles in the manual).

Designers should coordinate with other disciplines as necessary to ensure that other roadway elements such as median or planter strip landscaping; do not obstruct the required sight lines.

INTERSECTION SIGHT DISTANCE VS. CLEAR VISION AREA

Similar to Intersection Sight Triangles, Clear Vision Areas are triangular areas adjacent to intersections intended to provide sight distance for conflicting traffic movements by establishing a prescribed area in which to prohibit sight obstructions. Note that Clear Vision Areas are a planning level tool and are described by fixed dimensions based on road type and land use zones. Clear Vision Areas do not take

into account vehicular speeds or intersection control, as do Intersection Sight Triangles. Intersection Clear Vision area is defined by Newport Municipal Code and City Standard Drawing T-600.

Clear Vision Area

Please refer to City of Newport Municipal Code 14.17.030 for further information. See Standard Drawing T-600 for various clear vision area layouts.

Intersection Sight Distance

It is the City's policy to have ROW applicant's Project Engineer evaluate safe intersection sight distance using the principles and methods recommended by the current edition of AASHTO. This policy shall apply to the design of new streets and driveways, as well as the placement of any object in the public ROW, including landscaping features. Unless superseded by the current version of AASHTO, the following minimum standards shall apply:

Intersection (and Driveway) Sight Distance

Intersection Sight Distance Design Speed (MPH)	Minimum Intersection Sight Distance (Feet)
15	145
20	195
25	240
30	290
35	335
40	385
45	430

Source: American Association of State Highway and Transportation Officials, *A Policy of Geometric Design of Highways and Streets* 2001, Fourth Edition, (based on AASHTO Case B2 and B3).

Sight distance shall be determined for each street approach to an intersection. A driver on the approach street should be able to see each vehicle on the intersecting street from the time that the vehicle is the sight distance from the intersection until the time that the vehicle reaches the intersection. The City does not allow poles, trees, and similar obstructions within the sight distance area unless designer can show that such obstructions do not prevent the continuous view of the vehicle approaching on the intersecting street.

Calculate site distance with the following assumptions:

- the driver's eye is fifteen (15) feet from near edge of nearest lane of the intersecting street
- the driver's eye is a height range of three-and-one-half (3.5) feet to seven and six-tenths (7.6) feet above the approach street pavement*
- the top of the vehicle on the intersecting street is three-and-one-half (3.5) feet above the cross-street pavement

*Meet the sight distance criteria throughout the range of driver's eye heights.

Traffic speed used in the calculation shall be the highest of the following:

- The design speed of the intersecting street;

- The posted speed of the intersecting street; or
- The measured eighty-fifth (85th) percentile speed of the intersecting street. Assume a design speed of zero where a stop sign or yield sign controls an intersecting street.

Where traffic signal control exists at an intersection or where a transportation master plan shows a future traffic signal, provide adequate sight distance for potential right turns on red. In some locations, maintenance of the required sight distance may require restrictions to potential development outside the public ROW. The Project Engineer shall demonstrate that adequate restrictions are in place (and enforceable by the City such as sight distance easements) to assure that the required sight distance can be maintained in the future.

At the time of construction plan submittal, the project engineer shall submit a stamped intersectional sight distance report for each new or modified intersection by a development, which generally includes a sketch, calculations, narrative, and photographs, for review by the City.

REQUEST FOR DEVIATION

The City will not allow modifications or exceptions to these standards unless approved by the City Engineer. Traffic control devices shall not eliminate the need for the appropriate sight lines without first receiving a design standards deviation from the City Engineer. The design deviation review for intersection sight distances shall include the following criteria:

- Ability to design intersection at a different location that provides adequate sight distance;
- Ability to provide sight triangles across adjacent property;
- Complexity and level of uniqueness of proposed intersection;
- Extent of access control, number of accesses within functional area of intersection;
- Concentration of travel demand in area;
- Amount of visual clutter or distractions;
- Crash history in the vicinity of the proposed intersection;
- Prevailing speeds on all uncontrolled approaches;
- Traffic volumes and truck percentages.
- Tangent approaches shall be required at all intersections.

SIGHT DISTANCE OBSTRUCTIONS

Identify intersection sight triangles and Clear Vision Areas early in the design process and show on the plans. Sight obstructions between sight lines two (2) and eight (8) feet above curb grade are not permitted within these areas. Show existing obstructions on the plans and identify for removal or relocation. Designers may be required to provide sight distance profiles, if deemed necessary by the engineer, to demonstrate that design meets AASHTO requirements.

Roadways design that extend to and through adjoining properties: designers shall demonstrate roadway extension with centerline profiles for horizontal and vertical geometry while meeting the City's standards or shall adjust the design to allow for the continuation of the roadway.

Where sight triangles extend across private property, acquisition and execution of a recorded "Intersection Sight Triangle" easement is required. Such easements granted to the City of Newport limit the height of vertical features, including but not limited to buildings, walls, fences, berms, signs, roadside terrain and trees/vegetation. If developer cannot provide easements, alternative roadway alignments may be necessary.

Landscaping / Vegetation

Landscaping designed, or natural scape retained, within the Clear Vision Zone is subject to on-going property owner maintenance as defined by NMC Section 8.10.060 and NMC Chapter 14.17.

STREET GEOMETRY

Designers shall align street intersections at right angles when possible except where topography or existing geometric constraints requires a lesser angle. In no case shall the acute angle be less than 80 degrees.

Cross streets that intersect arterial or collector roadways shall have their centerlines aligned. City does not allow centerline offsets unless there is a median on the arterial or collector roadway that creates two tee-intersections.

For dedicated right-turn lanes on approaches to signalized and roundabout intersections, the design engineer shall design turn lanes to incorporate pedestrian islands to minimize the impact of the additional crossing width of the roadway and intersection.

Pedestrians with total blindness cannot easily navigate channelized turn lanes. Provide adequate way-finding, orienteering, and reduced speed approach speeds in order to be fully accessible. Gap identification supplements (eg. truncated domes) may be necessary.

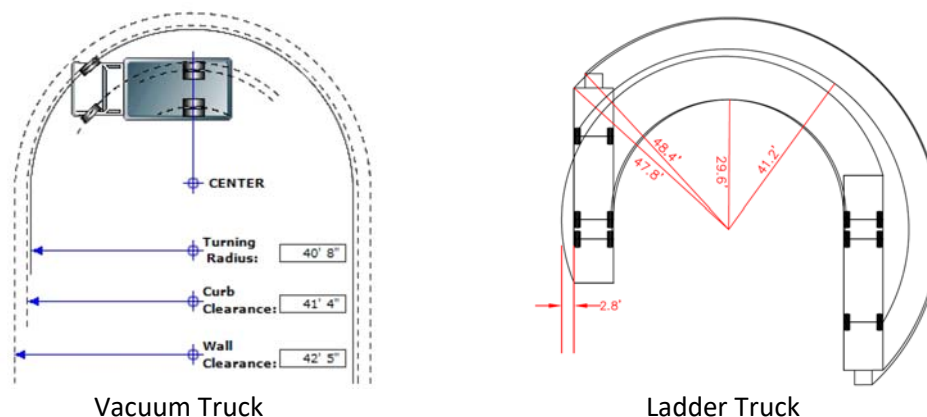
LOCAL STREET DESIGN FOR ADVERSE TOPOGRAPHY

Local streets shall have a minimum cross section slope of two-and-one-half (2.5) percent ("crown") in accordance with Standard Drawings T-051 and T-051A, except in situations of adverse topography. The Design Engineer may utilize a "shed" section when existing ground slope exceeds five (5) percent across the roadway section.

Base existing ground "side slope" criteria on the relationship of ground slope to transverse slope of roadway profile. Continue slope relationship for entire length of roadway alignment.

TURNING RADIUS

The City of Newport has several large pieces of equipment that need to maneuver around corners, through neighborhoods, and in cul-de-sacs. One is the PWKS 2010 Vacuum Truck, another is the Fire Dept's Ladder Truck.



Streets needs to be designed to allow these and other large trucks ease of movement.

CURB RADIUS AND CURB RETURNS

Design curb returns and corresponding grades and transitions to ensure drainage of the intersection, with no standing water. Note grades on each quarter delta of the curb return.

The minimum curb radius shall be as follows:

Curb Return Type	Minimum Curb Radius
Local, Yield, and Shared	15 feet
Collector-Neighborhood	25 feet
Collector-Major	35 feet
Minor arterial – Major arterial	55 feet

Where a designing a radius larger than thirty-five (35) feet, or where site constraints warrant, a three (3) centered symmetric compound curve shall be used. Design three-centered symmetric compound curves only on ROW sufficiently large to accommodate twelve (12) feet minimum between curb face and the property line. The radii of the 3-centered symmetric compound curve shall be one-hundred-twenty (120) feet forty (40) feet one-hundred-twenty (120) feet. Develop the offset of the forty (40) foot radius determined by the design vehicle as follows:

Design Vehicle	Offset
SU	2 feet
BUS	3 feet
WB-40	4 feet
WB-50	5 feet
WB-67	6 feet

HORIZONTAL/VERTICAL CURVES AND GRADES

Design all horizontal curves to the current version of the American Association of State Highway and Transportation Officials (AASHTO) Manual. Further, design horizontal curve radius (on centerline) for each street classification according to the roadway design speed. The radius shall not be less than the following:

Design Speed (MPH)	Radius (Feet)
25	180'
30	300'
35	450'
40	670'

Design criteria for vertical curve length shall include:

- Design speed
- Crest vertical curve
- Sag vertical curve – base stopping sight-distance for crest and sag vertical curves on sight distance and headlight sight distance, respectively. All vertical curves shall be parabolic and the length computed for each location and designed to the current version of the American Association of State Highway and Transportation Officials (AASHTO) Manual.

HORIZONTAL ALIGNMENT

Cross slope

Standard normal cross slope is two (2) percent straight line with a crown in the center of the roadway. Unless approved by the City Engineer, cross slopes shall not exceed four (4) percent.

Standard roadway alignment shall place the centerline of the roadway at the centerline of the right of way. This may lead to a negative super-elevation for some relatively flat curves. Pay particular attention to the design of downhill left turns and downhill left turns on rightward turning curves to eliminate overturning hazards.

Super-elevation

Use super-elevation only as a design element to enhance drivability of horizontal curves on arterial and collector roadways. Super-elevation design is typically around the road centerline in conformance to AASHTO's 2004 Exhibit 3-40 (A). The use of super-elevation for other purposes, or on local streets, shall require a design deviation from the City Engineer.

The maximum design super-elevation shall be six-hundredth (0.06) ft/ft, however in conditions where traffic operations frequently limit travel speeds to below the design speed, the maximum design super-elevation shall be four-hundredth (0.04) ft/ft four (4) percent to reduce the possibility of sliding during snow and ice conditions. Minimum design super-elevation shall be two-hundredth (0.02) ft/ft two (2) percent.

Horizontal Curves

The minimum radius of curvature for a particular super-elevation rate shall be calculated using AASHTO's 2004 formula 3-10 and those values presented in AASHTO's 2004 Exhibit 3-15 and 3-16.

Street Class	Design Speed (mph)	Friction Factor (f)	Super Elevation, e (%)						
			-2.0	0.0	2.0	3.0	4.0	5.0	6.0
Local, Yield, and Shared	15	0.38	50	47	44	43	42	Not Recommended	
	20	0.27	107	99	92	89	86		
	25	0.25	198	180	167	160	154		
Collector	30	0.20	333	300	273	261	250		
	35	0.18	510	454	408	389	371		
Arterial	40	0.16	762	667	593	561	533		508
	45	0.15	1039	900	794	750	711	675	643

Avoid compound horizontal curves on streets having a design speed of greater than 30 mph. If a compound curve is necessary, the ratio of the flatter radius to the sharper radius should not exceed the following:

- 31 – 49 mph design speed two-to-one (2:1)
- 50 + mph design speed one-and-one-half-to-one (1.5:1)

Where the ratio exceeds these limits, insert a suitable length of spiral or a circular arc of intermediate

radius between the two curves.

Adjustments for traveled way widths shall be provided based on AASHTO's 2004 Exhibit 3-48 and 3-50 in order to reduce the amount of off-lane tracking on horizontal curves for the design vehicles ranging from bus to semi-tractor trailer combinations.

On all streets with a design-speed greater than thirty (30) mph there shall be a minimum one hundred (100) foot tangent section between reverse horizontal curves.

VERTICAL ALIGNMENT

Sight Distance

Vertical curves shall conform to the AASHTO design criteria and be designed to provide at least the stopping sight distance shown in AASHTO 2004 Exhibit 3-1. Consider these distances minimums; City recommends additional sight distance to provide drivers with additional margin for error. Drivers need longer decision sight at critical locations such as those with concentrated demand, visually cluttered localities, at changes in cross-section, or at intersections where unexpected or unusual maneuvers are required. AASHTO 2004 Exhibit 3-3 provides decision sight distances for various maneuver types.

GRADES

Minimum Grades

To allow for adequate drainage, the minimum longitudinal tangent grade is 0.0050 feet per foot (0.50%) however, in all cases street grades shall allow for proper and adequate drainage. Cul-de-sac "bulbs" shall have a minimum slope of 0.0060 feet per foot (0.60%).

Maximum Grades

Street grades shall be determined with consideration of topographical conditions and relation to existing and planned streets. Where intersections occur on roadway sections with moderate to steep grades, reduce grades through the intersection wherever practical to facilitate vehicular turning movements and reduce the potential for crashes.

Roadway Classification	Maximum Permissible Grade
Arterial	0.060 ft/ft (6%)
Major Collector	0.080 ft/ft (8%)
Neighborhood Collector	0.100 ft/ft (10%)
Local, Yield, Shared, Cul-de-sac	0.120 ft/ft (12%)

Exceptions:

- Grade breaks – City permits grade breaks within a corridor, but are not to exceed one (1) percent every one hundred (100) feet.
- Hillsides – Street grades on hillsides exceeding fifteen (15) percent slope may exceed maximum street grades, subject to Fire Department approval.

Local and cul-de-sac streets may exceed twelve (12) percent, but in no case permitted to fifteen (15) percent. The City Engineer may approve a grade greater than twelve (12) percent when all of the following conditions exist:

- Topographic constraints do not allow the development served by a street with a maximum grade of twelve (12) percent without causing destabilization of soils by excessive cuts and fills.
- There is no access to the developing property through adjacent properties at a maximum twelve (12) percent grade.

- The local street section will not exceed a combination of length, horizontal alignment, and/or grades exceeding twelve (12) percent will create hazardous traffic conditions. IV. In no case shall the maximum street grade exceed fifteen (15) percent.

Cross Slopes

Street cross slopes shall be as shown in street typical section Standard Drawings T-051 and T-051A.

PAVEMENT DESIGN

Construct all streets with asphaltic concrete.

Typical flexible pavement thicknesses will be as shown in Standard Drawings T-050 and T-050A. This will apply only to local streets and lower classifications. Rigid pavement thickness shown on Standard Drawing T050B.

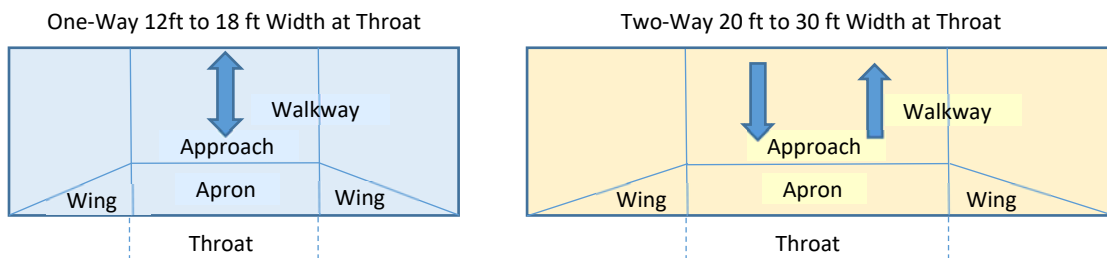
The Design Engineer will provide a street structural design section for all roadways classified as "Major Collector" or "Neighborhood Collector" and higher, and for local streets in industrial zones, see Standard Drawing T-050A. Minimum standards for roads classified as "Local", "Yield", or "Shared" shall be as shown in Standard Drawing T-050. For concrete street sections see Standard Drawing T-050B

OTHER RIGHT-OF-WAY DESIGN ELEMENTS

Please see Newport Municipal Code Chapters 14.46 (Vehicular Access and Circulation), 14.47 (Pedestrian Access) and Chapter 14.48 (Land Divisions)

DRIVEWAYS

A "driveway" is a private way that begins at a public ROW. The driveway is proposed to serve not more than four individual lots/parcels cumulative as the primary vehicular access to those individual lots/parcels. (NMC 14.01.020, Definitions, "Private Street" and "Private Driveway"). City Staff do not maintain roads serving four or fewer developed lots as they are considered private driveways.



Driveway Design

Driveways in the ROW are required to be perpendicular to the ROW line. When designing a garage, building elevations need to consider how the car will transition from existing street grades to finish floor elevations using a perpendicular ADA compliant driveway. Designing a driveway after a house plan has been devised may make it impossible to get a car in the driveway if the slope between street and building is too steep. Finish floor grades need to be adjusted to accommodate driveway transitions.

The locations of new driveways shall be approved through land use and through a ROW permitting process. The City Engineer will base a driveway review on the following considerations:

- Limit of one (1) one-way driveway per single-family Lot

- Multi-residential unit driveways may require a commercial, twenty (20) foot throat, and require rebar
- Lot location
- Corner lot – more constraints than mid-block driveways
 - Access is to the lowest classified roadway facility abutting the property);
 - Adequate intersection sight distance for all turning movements in and out of the proposed driveway are provided;
 - Clear Vision Zone thirty-five (35) feet back
 - Maximum distance to an intersection is provided given the lot configuration and site layout;
- Proximity of proposed driveway to property line and adjacent property driveway
 - Top of wing begins a minimum on two-and-one-half (2.5) ft from adjacent property line
 - Allow full-height six (6) inch curb between driveways
 - Allow room for catch basin, if needed
 - Create a smooth walkway transition
 - Design for easy constructability
- Five (5) foot wings: transition from six (6) inch reveal to one (1) inch lip
- Driveway apron shall extend all the way to the ROW.
- Road Slope both longitudinal and cross
- Apron has maximum twelve (12) percent slope
- Minimum depth walkway: four (4) foot through driveway
- Minimum depth apron: two (2) foot behind curb
- Minimum one (1) inch lip across driveway throat
 - To maintain gutter flow
- Elevation at back of driveway
 - Elevation below street grade – drop panel or partial drop panel; rotate sidewalk/apron
- Maximum sixteen (16) percent grade break in combined street cross slope and apron slope
- Green Strip
 - Three (3) Foot wings
 - Apron depth varies
- There is a valid land use approval for the driveway (or it is confirmed that no land use approval is necessary for the driveway in question);
- Driveways shall not compromise safety and operations;
- Where a proposed driveway is across the street from another driveway, alley, or street, align the path of travel, where possible.
- Concrete driveway approaches are required on all new construction or reconstruction where there is existing or proposed sidewalk or curb.
 - City permits asphalt driveways where sidewalk or curb is not existing or proposed, as approved by the City Engineer.
- New alleys or reconstructed alleys must have a driveway approach at the intersection of the alley and roadway.
- Proposed driveway approach ensures that all drainage is contained on-site.
- Design standards deviation requests to consider a curb return rather than a driveway approach may be considered by the City Engineer in accordance with the following specific driveway review criteria:
 - Design vehicle for site is too large to accommodate turns within the standard driveway apron; and
 - All site drainage is still contained on-site.

Define permitted access to private property with the use of driveway curb cuts. Street access points shall be the minimum necessary to provide egress/ingress while not inhibiting the safe circulation and carrying capacity of the street.

On Major Collector streets and above, one driveway per site frontage will be the normal maximum number. Double frontage lots and corner lots on these streets may be limited to access from a single street, usually the lower classification street. For the City Engineer to approve additional driveways on frontage roads there must be a finding that no eminent traffic hazard would result and impacts on through traffic would be minimal; restrictions may be imposed on additional driveways, such as limited turn movements, shared access between uses, closure of existing driveways, or other access management actions.

Driveway approach types shall generally be limited to those shown in the Standard Drawings for residential driveways, and commercial/industrial driveways. Residential driveways shall conform to Standard Drawing T-151 & T-151; commercial / industrial driveways shall conform to Standard Drawing T-152. City Engineer shall approve curb return for driveway approaches.

For classification of Major Collector and above, driveways adjacent to street intersections shall be located beyond the required queue length for traffic movements at the intersection. If this requirement prohibits access to the site, City Engineer may allow a driveway with restricted turn movements.

Driveway grades shall not exceed twelve (12) percent from the curb line to the front edge of sidewalk. Place a one-half (½) inch to one (1) inch curb lip across driveway. See NMC 14.46.030 for Access Spacing Standards.

Widths (Minimum/Maximum in Feet)

Street Classification	Residential Zone	Commercial Zone	Industrial Zone
Principal Arterial	NA ¹	12/30 ⁵	12/40 ⁵
Major Collector	NA ¹	12/30 ⁵	12/40 ⁵
Neighborhood Collector	12/18 ²	12/30 ⁵	12/40 ⁵
Local, Yield, Shared	12/18 ²	NA ¹	NA ¹
Cul-de-sac	12/18 ²	NA ¹	NA ¹

NOTES:

¹Special conditions may warrant access.

²Twenty-Eight (28) foot maximum with three (3) car garage (measured at low curb cut)

³For frontage greater than 130/ft. one additional curb cut permitted.

⁴Build to Minor Collector standard.

⁵Certain businesses may warrant one additional curb cut for service driveway.

For classification of Major Collector and above, driveways adjacent to street intersections shall be located beyond the required queue length for traffic movements at the intersection. If this requirement prohibits access to the site, City Engineer may allow a driveway with restricted turn movements.

Within commercial, industrial, and multi-family areas, shared driveways and internal access between similar uses are encouraged to reduce the access points to the higher classified roadways, to improve internal site circulation, and to reduce local trips or movements on the street system. Establish shared driveways or internal access between uses by means of common access easements at the time of

development.

Sidewalk Through Driveways

Sidewalks shall travel through City Standard driveway aprons at sidewalk grade by segmenting the driveway with the sidewalk. To maintain their effectiveness, detectable warning surfaces should not typically be used where an accessible route of travel intersects a residential or commercial driveway entrance or within a parking lot. However, the City reserves the right to require detectable warning surfaces at certain high-volume commercial entrances that may function like a roadway.

- The minimum sidewalk width through driveways is four (4) feet for construction within the City of Newport. The design shall provide sufficient horizontal and vertical control and the drawings annotated to ensure that driveway conforms to federal, state, and local accessibility standards.
- ADA-compliant walkway required even when not constructing sidewalk adjacent to driveway.*
- On five (5) foot sidewalks, increase driveway depth by one (1) foot to allow a two (2) foot apron and a four (4) foot walkway. See Standard Drawing T-150.
- On six (6) foot sidewalks, driveway depth shall match sidewalk depth with a two (2) foot apron and a four (4) foot walkway. See Standard Drawing T-150.

Drop Panel Driveways

In areas where the existing ground falls away at back of driveway, design drop panel driveways to maintain ADA walkway requirements. In all other situations, design driveways with city standard rising apron and plane-through walkway. See Standard Drawings T-151. Drop panel wing lengths shall conform to ADA requirements for maximum running slopes.

Commercial Driveways

In areas with heavy traffic such as commercial, industrial, and multi-family areas, reinforced concrete is required for driveways. See Standard Drawing T-152. A commercial driveway may be a one-way or two-way driveway.

SIDEWALK

The City of Newport, in association with the Americans with Disabilities Act (ADA) *Transition Plan for Curb Ramps and Sidewalks in the Public Rights-of-way* August 2013 and the 2016 – 2018 *ADA Transition Plan for Curb Ramps in Public Rights-of-Way update* wants to make sidewalks accessible to everyone. The City has developed the following design guidelines and policy in association with the United States Code of Federal Regulations (CFR) (See 28 CFR 35). The *2010 ADA Standards for Accessible Design* (<https://www.ada.gov>) for helping meet Federal ADA requirements set forth in *Public Rights-Of-Way Accessibility Guidelines* (<https://www.access-board.gov>). Curb ramps are required for both new construction and most reconstruction projects. Additionally, maintenance operations or approved privately-funded (public) improvements may require upgrades, roadway surface alterations or addition of ADA facilities. See Standard Drawing T-210 for sidewalk details.

Sidewalk construction and location details shall be as shown on the Standard Details. The City does not permit asphalt sidewalks. Developers may use asphalt multi-use trails in place of sidewalks as planned in the City's Transportation System Plan. It is not desirable to have two parallel facilities (sidewalk and trail) therefore, when replacing the sidewalk, the trail shall conform and meet all sidewalk requirements as outlined herein.

Sidewalks shall be located within the ROW. If design engineer desires a deviation to this location then a

request shall be made of the City Engineer. Deviation considerations shall include these specific criteria:

- The centerline of the sidewalk shall not meander more than thirty-five (35) feet from the street curb line; and
- Where topographical or vegetation limitations require, fifteen (15) foot public access easements, seven-and-one-half (7.5) feet each side of centerline, shall be provided.
- Sidewalk shall be five (5) to six (6) feet in width as required by the Newport Municipal Code.

The pedestrian zone, which includes sidewalks and pathways, must remain free of obstacles. Obstructions include, but are not limited to, fire hydrants, mailboxes, utility pedestals, utility poles, utility vaults, trees, sign posts and signs, street light poles, signal poles, and signal control equipment. Where wide sidewalks exist, place above ground obstructions as close as possible to curb to clear and maintain a pedestrian corridor at least four (4) feet wide.

In areas where there will be industrial use and small equipment driven over the sidewalk, rebar reinforced concrete may be required (eg. in front of the fish plants along Bay Boulevard).

Stamp all new curbs to indicate where each water service, sanitary lateral, storm lateral, and irrigation line crosses beneath curb line. Stamped impressions shall be as follows: water service—"W", sanitary lateral—"S", storm lateral—"D", and irrigation lines—"IR". Impressions shall be two (2) inch high, on top of the curb, and shall accurately locate service below stamp.

Wedge Walls

Sidewalk adjacent to adverse sloping ground may need extra support to stabilize walk and base rock. The City allows for installation of a concrete wedge with extended back edge, known as a wedge wall. See Standard Drawing T-202 for depth and shape.

Pony Walls

Pony walls are short, under twelve (12) inches, non-engineered retaining walls used to protect the back of walk. See Standard Drawing T-202.

Obstructions

Structures and obstructions including but not limited to fire hydrants, street signs, utilities, utility poles, signal poles, central delivery mailboxes, and individual mailboxes shall not be located in the accessible path of travel portion of the sidewalk.

Horizontal Alignment

Construct sidewalks abutting property line with the back of walk at twelve (12) inches from property line within the ROW. Designers may meander sidewalk from the property line if there is room between property line and curb. Sidewalk does not need to be curb tight. Green strips may be used as landscaping around winding sidewalks.

The sidewalk shall generally follow a smooth and gradual alignment free of sharp angles or bends; horizontal curves shall not be less than twenty (20) foot radius.

Vertical Alignment

Sidewalk grades shall comply with Public Rights-of-Way Accessibility Guidelines. Changes in vertical elevation of the sidewalk with respect to the roadway's running curb elevation can lead to difficulties in achieving ADA compliance with running slopes and ramp slopes.

The total vertical separation between the top of curb and the top of the sidewalk influences roadside grades and cross-slopes of planter strips.

When a curb-tight sidewalk is constructed, the total vertical separation between the top of curb and the top of sidewalk shall be zero (0) feet – the sidewalk shall be flush with the curb.

SURFACE ALTERATIONS

A roadway **alteration** includes activities such as reconstruction, rehabilitation, resurfacing, widening, and projects of similar scale and effect (See 2010 *ADA Accessibility Standards*, section 106.5). Designers should not consider maintenance activities, such as filling potholes, minor pavement patching, and limited trench cuts for utilities as alterations. However, activities that occur within a street level pedestrian walkway (a marked or unmarked crosswalk) may not reduce the path's accessibility (See 28 CFR 35.133(a)). A street-level pedestrian walkway (e.g. marked or unmarked crosswalk), regardless if curb ramps are currently present, is where pedestrians would cross an intersecting road.

ENCROACHMENTS

Sidewalk designs that include encroachments on City of Newport property or ROW will require completion of an License to Encroach form and review. Encroachment permit requests will be reviewed against NMC Chapter 9.15 (Encroachment Permits).

CONCRETE CURB

All development projects will be required to construct street improvements with concrete curbs meeting the following criteria:

- Joint spacing in curbs shall be fifteen (15) foot maximum for contraction joints and forty-five (45) foot maximum for expansion joints. In addition, expansion joints shall be located at all curb return points and at driveway curb-drop transition points.
- Provide a minimum of two drainage block outs to accommodate 3" drainpipe for each lot.
- Do not use valley gutters except when designing inverse crown alleys or other special conditions as approved by City Engineer. See Standard Drawing T-302.
- Extruded curb not used on public streets. Use in ROW only with City Engineer Approval. See Standard Drawing T-303.
- Surmountable curb Standard Drawing T-301.
- Monolithic sidewalk-and-curb prohibited.

C Curb

In places where C curb is already in place, install new curb to match existing C curb.

Curb and Gutter

The City of Newport prefers curb and gutter installation for all new development.

Mountable Curb

Mountable curb is used in areas where there is a high likelihood of normal traffic driving over the curb (eg, a roundabout). Mountable curb may be used in other circumstances with City Engineer approval.

Curb Endings

Curb endings are tapered to avoid creating a tripping hazard. If a curb ends in an area where no further

curb will be installed, taper the ends to avoid an abrupt edge.

Weep Holes

Weep holes are used to drain water from behind a curb to the street drainage system. Weep holes must have a minimum of two (2) inches of concrete cover to avoid cracking the sidewalk. Weep holes must also be an inch above the flow line along the curb to insure that leaves or other debris floating along the flow do not clog the weep hole. See Standard Drawing S-210.

CURB RAMPS, CROSSWALKS, AND CURB EXTENSIONS

Curb Ramps

All new street intersections shall provide sidewalk ramps (for access) that meet the requirement of the Americans with Disabilities Act (ADA). In residential areas, the ramp will be located at the midpoint of the curb return. On streets classified above local or cul-de-sac, ramps may be required at different locations within the curb return. It may also be required to construct two (2) ramps at a curb return when a different location is required. Retrofit of existing ramps within the project limit may be required.

Design sidewalk ramp locations with regard to storm water flows, street grades, and pole locations. Other factors may also dictate sidewalk ramp location. See Standard Drawing T-211 and T-212 for standard locations.

Exceptions to ADA requirements may be granted in some circumstances. See ADA Ramp Design Exception Form 211.A at end of this Section.

All required curb ramps must meet the *Public Rights-of-Way Accessibility Guidelines* published by the U.S. Access Board. The City, by this reference adopts *Public Rights-of-Way Accessibility Guidelines* into its standards.

Curb ramps are required where a pedestrian walkway (e.g. a sidewalk or trail/path) with a *prepared surface* intersects a roadway. *Prepared surfaces* may include concrete, asphalt, or other compacted materials such as soil and granite. Concrete and asphalt are the two most common *prepared surfaces* found in Newport. Conditions for curb ramp construction:

- If any new construction, or reconstruction, impacts a curb where a pedestrian walkway (e.g. a sidewalk or trail/path) intersects a roadway then a new ramp or replacement of an existing non-compliant curb ramp must be constructed.
- If any work includes resurfacing through a street level pedestrian walkway (e.g. marked or unmarked crosswalk), even if the work is not the full width of the roadway, then curb ramps must be built or reconstructed on both ends of the crosswalk.
- If any sidewalk work connecting to an existing non-compliant ramp that requires modification to any portion of the ramp to meet current sidewalk design standards, then the City requires reconstruction the entire ramp to current standards.
- If any utility trench work impacts a curb at a cross walk, with or without a ramp, then the City requires replacement of existing non-compliant curb ramp or construction of new ramp if none exists.
- If utility trench work does not impact a curb ramp but is “limited to a portion of the pavement, including a portion of the cross walk,” replacement of an existing non-compliant curb ramp may not be required (depending on overall project scope and required pavement restoration limits).

Any land use application for new development, that includes requirements for sidewalk construction or

frontage improvements, to meet current City Standards, the City Engineer will review all curb ramps along the property frontages for compliance with current standards. Applicants will be required to bring any non-complaint curb ramps along the property frontage into compliance. This requirement must be included as a condition of approval in the land use decision.

Number and Direction of Curb (ADA) Ramps

The City prefers each new intersection designs contain a perpendicular curb ramp on narrow sidewalks with small radii allowing room for wheel chair turns within the crosswalk area of street, unless site conditions require modification. If site conditions prevent the use of directional ramps, the design engineer must provide documentation to the City Engineer for review and approval.

When perpendicular ramps are installed the striping of adjacent crosswalks is also required to provide the safety area within the roadway required by perpendicular ramps.

See Standard Drawing T-214 for truncated dome placement.

Design Details

Design curb ramps to fit the site; detail curb ramps on constructions plans. The City may require that curb ramps be designed and stamped by a professional engineer as part of any permit application. Complete *Design Criteria For New Ramps* form at end of this section. Submit design form with plans for review.

The design must provide sufficient horizontal and vertical control, with the drawings annotated to ensure that ramp conforms to federal, state, and local accessibility standards. Design curb ramps with corresponding grades and transitions to ensure positive drainage of the intersection. Note grades including running slopes and cross slopes on each quarter delta of the curb return. The City may require that curb ramps be designed and stamped by a professional engineer as part of any permit application. To assist in the City's review of plans and for contractors and observation staff to ensure compliant and quality ramp construction, designers are required to show the following information in plans:

- **Running slope** (parallel to path of travel) percentage and direction
- **Cross slope** (perpendicular to path of travel) percentage and direction
- **Control points** with finished grade and top of curb (where applicable) elevation information
Control points may include throats of ramps, top and bottom of ramps and landings, tie-in points to match existing or other proposed features, and any wings or curb returns. Per *Public Rights-Of-Way Accessibility Guidelines*, the absolute legal maximum constructed slopes allowed are:
- **Dimensions** of features (e.g. length and widths of ramps and landings)

Per *Public Rights-of-way Accessibility Guidelines*, the absolute legal maximum constructed slopes allowed are:

- $\leq 8.3\%^*$, twelve horizontal to one vertical (12:1) run/rise, for a **running slope** (parallel to the direction of travel); and
- $\leq 2.0\%$, forty-eight horizontal to one vertical (48:1) run/rise, for **cross slope** (perpendicular to the direction of travel).*

*The City standard cross slope is one-and-one-half (1.5) percent to allow for tolerance during construction.

The City recognizes that when curb ramps are constructed in the field some tolerances from the design may occur; designers are directed to use the following maximum design values to ensure the

constructed ramps and sidewalks will follow *Public Rights-of-Way Accessibility Guidelines* required absolute maximum slopes:

- For **running slope** (parallel to direction of travel) the maximum design value should be 7.5%, curb ramps and transition ramps are not required to be longer than fifteen (15) feet.
- For **cross slope** (perpendicular to direction of travel) the maximum design value should be 1.5%

Cross-slope Challenges

When cross slope compliance is challenged by existing ground, especially when multi-use paths/sidewalks are crossing perpendicular to a hillside designers are required to keep cross slopes to a maximum 5%. When tying in a multi-use path/sidewalk perpendicular to a street with a steep longitudinal slope, designers are required to have a one-and-one-half (1.5) percent cross slope landing at the top of the transition ramp area where path/sidewalk meets street.

Existing Physical Constraints

Where existing physical constraints make full compliance with current construction standards impracticable for altered elements, spaces, or facilities, compliance is required to the extent practical within the scope of the project. If the engineer of record deems the work is not practical due to existing constraints, the City Engineer will decide whether any deviation or claim of impracticality is justified.

A common example of “within the scope of the project” would be when all work related to a project is restricted to one corner of an intersection. In this case, the developer would only be responsible for providing two accessible curb ramps at this location (regardless of what was present in the existing conditions). They would not be responsible to construct new or alter existing curb ramps on the other corners of the intersection outside of the project limits.

Existing physical constraints can include, but are not limited to, underlying terrain and topography, ROW availability, underground structures, adjacent developed facilities, drainage, or the presence of a notable natural or historic feature.

Crosswalks

ORS 801.220 defines crosswalks as any portion of a roadway at an intersection or elsewhere distinctly indicated for pedestrian crossing by lines or other markings on the surface of the roadway. Where no marked crosswalk exists, a crosswalk is every crossing of an intersection.

Detectable warning surfaces are required on all accessible curb ramps, and where the pedestrian paths of travel crosses intersecting roadways, such as a paved trail intersecting a roadway with no curb. *Public Rights-of-Way Accessibility Guidelines* refers to this as a blended transition. Detectable warning surfaces must extend for the full width of the curb ramp or blended transition.

Standard crosswalks placed at street corners comprise two solid lines running across street. Mid-block crosswalks, when approved, are a continental crosswalk design with staggered white bars. Conform design of crosswalk to MUTCD for Streets and Highways, current edition, Section 3B.18. See Standard Drawing T-213 for details.

Crosswalk striping may be dependent on intersection usage. Although the MUTCD may not require crosswalk striping on all crosswalks at an intersection, the MUTCD is only one criteria for striping assessments of crosswalks, pedestrian safety, ADA requirements, pedestrian traffic volume, nearby businesses and gathering points, and other factors, will be included when evaluating the need for

crosswalk striping.

Curb Extensions

Curb extensions are used to increase pedestrian safety, designate parking spaces, slow traffic, smooth elevation transition, and various other usages. The need for a curb extension is assessed by the City Engineer based on existing and planned usage of an area.

Curb extensions shall be designed to ensure storm runoff continues around extensions to reach drainage basins, are large enough to allow for proper ADA ramps, walkway, pedestrian gathering, signage, and hydrants when applicable.

ADDITIONAL REQUIREMENTS

In general, when altering a feature in the public ROW, apply the requirements for new construction to the maximum extent feasible. Document, in writing, any design that does not meet the accessibility requirements for new construction; submit document to the City for review or approval prior to construction.

PLANTER STRIP

The planter strip is that portion of the roadside located between the curb and the sidewalk. Planter strips are required to conform to roadside safety requirements in terms of their slope, landscaping, appurtenances, utilities, etc.

The landscaped portion of the planter strip must be a minimum of five (5) feet wide, except where the sidewalk meander returns to be adjacent to the curb. In order to prevent sharp re-entrant angles in the landscaped portion of the planter strip, construct an edge not less than eight (8) inches long and squared to the curb at the juncture of the sidewalk to the curb.

Planter strips must contain street trees when required by the Newport Municipal Code. Street trees shall conform to the City's landscaping requirements found in Chapter 9.10 and 14.19 and sight distance requirements in this SECTION.

Planter strips may be utilized for swales or landscaping. See SECTION 8 of the Engineering Design Manual for Landscape requirements.

The cross-slope of the planting strip between the curb and the ROW must not be steeper than 4H:1V to provide a recoverable roadside slope. All appurtenances, utilities and structures located within the planter strip that are roadside safety obstacles must comply with roadside safety principles of Chapter 1.6 of this document. Obstacles must be located as far from the roadway as possible and be designed with recoverable slopes or breakaway foundations complying with AASHTO "Standard Specifications for Structural Supports for Highway Signs, Luminaires, and Traffic Signals, with interim revisions."

The planter strip must not contain stairs. The City does not allow stairs to be located within the public way. Deviations to this standard may be submitted to the City Engineer for design standard deviation review.

BOLLARDS

Bollards may be used in the ROW. City Engineer will assess need and application by individual use. See

Standard Drawing T-604.

PARKING

Please refer to City of Newport Municipal Code 14.14.030 for required number of parking spaces.

- Where bike lanes exist, the City Engineer may prohibit parking.
- No parking within thirty (30) feet of curb return.

For streets designated as “Neighborhood Collector” and below, the City Engineer may consider design modifications to conserve major trees in the public ROW. The City Engineer may approve removing parking lanes on one or on both sides of a street.

ON-STREET PARKING

Design on-street parking accommodate parking parallel to the curb. There may be instances when head in or back in angle parking is desirable. The City will consider these instances on a case-by-case basis.

BUSINESS AND PASSENGER LOADING ZONES

See NMC 6.05.015 for creation and requirements of loading zones.

MULTI-USE PATHS

A shared-use path or mixed-use path is a form of infrastructure supporting multiple recreation and transportation opportunities, such as walking, bicycling, inline skating and people in wheelchairs. The City prohibits motorcycles and mopeds on multi-use paths. See Standard Drawing 201.

PUBLIC USE STAIRWAYS

Design Stairways shall conform to the *Oregon Standards and Specifications for Construction*, current edition.

BIKEWAYS

Off-Street Bike Paths

The Newport Transportation System Plan, 2023, summarizes the City's policy and implementation strategies for bikeways within the City. Follow AASHTO and ODOT standards and criteria as the minimum guidelines for bikeway design, construction, and control. Use the following guidelines for bikeway improvements:

- *Oregon Bicycle & Pedestrian Plan* (ODOT, current edition)
- *Guide to Development of Bicycle Facilities* (AASHTO, current edition)
- *Manual on Uniform Traffic Control Devices* with Oregon supplements (Oregon Transportation Commission, current edition)

In general, bikeway design shall meet the standards referred to above. All bikeways shall have a minimum cross slope of two percent (2%) and a maximum cross slope of five percent (5%). On curved alignments, the cross slope shall be to the inside of the curve. Use a minimum design speed of twenty (20) MPH for base bikeway curvature.

Bikeway grades shall be limited to a maximum of five (5) percent unless topography dictates otherwise... Where topography dictates, grades over five (5) percent are acceptable when a higher design speed is used; provide additional width.

TRAFFIC CONTROL SIGNAGE

The City Engineer or designee shall first review and approve any sign designed for installation within public ROW.

Street signs and barricades shall be designed and installed according to City of Newport Standards and Specifications, and meet the requirements of the most current edition of the MUTCD as well as the Oregon Supplements to the MUTCD. This applies to signs and traffic control devices on all streets open to public travel, whether publicly or privately owned or maintained.

To provide appropriate roadside safety, ground-mounted signposts shall be breakaway in compliance with the current AASHTO "Standard Specifications for Structural Supports for Highway Signs, Luminaires, and Traffic Signals, with interim revisions."

New signs shall be installed, and existing signs modified, to reflect new lane configurations and in coordination with existing or revised pavement markings. Remove and replace signs beyond the project limits as necessary to reflect changes implemented with the project.

Update existing signs within project limits not compliant with these requirements in terms of offsets, siting, physical condition, and applicability to bring them into compliance.

Plans shall reference signs by MUTCD type, and include designs for all non-standard signs. Before any new highway, detour, or temporary route opens to traffic, all necessary signs and barricades shall be in place. Signs necessitated by road conditions or restrictions shall be removed when those conditions cease to exist or the restrictions are withdrawn. Install temporary TRAFFIC CONTROL CHANGE AHEAD signs, wood posts, on any project that changes traffic control type.

Sign Design

These guides shall be followed for sign dimensions, colors, messages, letters, numerals, spacing, borders, etc., except as otherwise provided in these City Standards and Specifications.

Drawn-to-scale drawings for nonstandard signs shall be included in the construction plan set for approval prior to fabrication.

Standard post-mounted street name signs are single-sided; signal mast arm-mounted street name signs and central-island, roundabout, street name signs are single-sided. Refer to Standard Drawing R-7, R-7A, R-8 and R-9.

See City Standard Drawing T-450 for City sign standards.

Sign Placement

Sign installations shall not block pedestrian paths of travel in the sidewalk; maintain an ADA compliant pedestrian access route at all times.

For arterial and collector roadways, the signs shall be visible from, at a minimum, the stopping sight distance of the roadway for the design speed (AASHTO). Do not place street name signs so far around curb returns on side streets signs fail to meet required visibility parameters. The City Engineer or designee shall review existing and proposed site features ensure that there are no existing or proposed obstructions to sign visibility within this required sight distance.

Install signs for private streets at intersections with public streets (i.e. Stop sign/street name sign installations) within public ROW. Refer to MUTCD for required signs. See Standard Drawing T-450 for City of Newport Sign requirements.

Install End-of-Road Markers on dead-end or stub streets where the pavement ends. Type III barricades are advisable where a higher level of visual cue is desired, such as where the end of roadway precedes a non-traversable slope or major obstruction.

Type III barricades, with appropriate road closed signage, shall be installed at the end of the traveled way when the pavement continues but travel is restricted beyond a certain point. The barricades shall effectively block traffic. Barricade colors, reflectivity, and design shall conform to the most current edition of the MUTCD with Oregon Supplements.

Horizontal and Vertical Clearance

Sign installations shall comply with the most current edition of the MUTCD and City of Newport Standard Details. Maintain vertical and horizontal clearance to the sign face for vehicular and non-motorized traffic.

Street Name Signs

Design street name signs labeling all streets at each intersection. See Standard Drawing T-450.

In business districts and on collectors and arterials, place street name signs in at least two locations, on diagonally opposite corners so that they shall be on the far right side of the intersection for traffic on the major street. On local streets and residential areas, place street name signs in at least one location for each intersection.

Install signs for private streets on private property, outside of public right of way. Such sign installations shall incorporate a supplemental PRIVATE DRIVE sign mounted below the standard street name sign.

Street Names

Please refer to City of Newport Municipal Code 9.85.025 and 9.85.030.

The City's Planning Division, prior to recording of any maps or plats will approve street names for all new development. The city planner shall refer proposed street names to the Newport Fire Department for their consideration.

Colors and Visibility

Public street name signs shall have a white border along the outside edge of the sign and white lettering. The colored background shall be green.

Private street name signs mounted on private property, at locations other than intersections with public streets, shall include a background color of retro-reflective green, blue, brown, or black, with white retro-reflective lettering. Pair private street name signs with a supplemental black on yellow PRIVATE DRIVE sign when installed at intersections with public streets.

School-related signs shall be fluorescent yellow-green.

PAVEMENT AND CURB MARKING

Pavement Marking

Provide striping and other pavement markings on all arterial and collector streets within City limits. Striping of local streets is not required unless deemed necessary by the City Engineer.

Striping designs shall comply with the current edition of the MUTCD with Oregon Supplements, and City Standards and Specifications. Oregon Standard Drawings contain pavement marking line and legend details. Provide up-to-date Oregon Standard Drawings with design submittal. Striping materials may be restricted to City equipment limitations.

Plans shall show and identify a minimum of three hundred (300) feet of existing striping beyond the project limits, to ensure proper tie-in to existing striping. Where project limits occur within five hundred (500) feet of existing pavement or striping tapers, extend the limits of striping plans to include the full taper. Plans shall show and identify all existing striping and include all striping removal necessary to implement new striping as shown. Plans shall reflect the following City standards:

- Left turn lane transitions - where painted center medians transition to left turn lanes, gaps are preferred over reverse curves.
- Turn lane storage shall reflect 95th-percentile queues as determined in a queuing analysis; submit with the striping plan.
- Leading ends of raised medians and islands shall be painted yellow or white as applicable, in conformance with the MUTCD. In addition, install surface-mounted tubular markers as shown the *Oregon Standard Specifications for Construction*.
- Where a fixed obstruction is present within a paved roadway, such as a raised median preceded by a painted median or two-way-left-turn-lane, the approach area shall be marked with Transverse diagonal lines and no passing lines, unless otherwise provided in Section 3 of the MUTCD.
- Provide marked crosswalks at all signalized intersections and at other locations according to the City's Standard Operating Policy. Do not mark crosswalks at uncontrolled locations without City Engineer approval. See CURB RAMPS, CROSSWALKS, AND CURB EXTENSIONS above for further direction on crosswalk striping.

Curb Painting

Paint curbs yellow for a total of twenty (20) feet approaching a stop sign. Paint red curbs for a total of twenty (20) feet at fire hydrants, ten (10) feet on either side of the hydrant. Paint shall be high performance latex, designed for streets and parking lots. The paint must meet federal specification TT-P-01952E Type II. The paint should be suitable for surfaces such as Portland cement concrete, bituminous cement concrete, asphalt, tar, and previously painted areas of these type surfaces.

Colors must meet Traffic Standards for the Traffic Yellow and OSHA Safety Red. Examples of common colors and their FED-STD-595 color chip Yellow – #33538 and Red – #31136.

The curb must be prepared for the paint application. Remove any organic material near the curb, remove existing loose paint, and clean oil spills. Acceptable methods of cleaning the curb surface are high-pressure washing and/or hand scrubbing using clean water and clean water to rinse.

Surface shall be clean and completely dry before application of paint starts. Paint curb from the top seam of the curb (sidewalk or planter strip edge) to a point even with the driving surface and within the limits specified by the City of Newport and its representative.

Paint areas shall be protected (masked, taped or both) to prevent dripping or over spray of paint onto the sidewalk or street surfaces and to provide clean/straight edges.

Apply the paint per manufacturer's specifications, or, typically, when the weather is between 60° and 80° Fahrenheit and overnight temperatures do not drop below freezing for optimal adhesion. Choose a day when the weather is dry and when the wind is not blowing to avoid the wind carrying the paint and to prevent blowing debris onto the freshly painted surface.

STREET LIGHTING, TREES, AND NAMES

Street Lighting

Please see the City of Newport Municipal Code 14.48.055.

On private development projects, all costs of installation shall be borne by the developer. The City will pay for ongoing power and maintenance expenses for public street lighting. Ongoing expenses for private street lighting (including power costs) shall be borne by the developer or homeowner's association.

For street lights in the ROW, Central Lincoln Peoples Utility District (CLPUD) has two choices for street lighting: a "Cobra" overhead light on a pole and an "Acorn" decorative light. For additional street lights in the ROW, the City prefers CLPUD lights to unique lighting features.

Additional Street Lights

A local citizen may request an additional street light near his or her home through submitting a request to the Engineering Department. When a request comes in, a letter will be sent to surrounding property owners to see if a majority of neighbors are in agreement with adding a light. If no one protests the additional light, the City will contact Central Lincoln PUD (CLPUD) and arrange for installation of an light.

In residential neighborhoods additional lights may cause problems if a light shines into a bedroom window, blocks a sidewalk, or there isn't an existing pole on which to set the light. If streets lights are powered by underground conduit, there may not be access to power for the desired area.

In some areas of town, the City owns the street lights. Installing an additional light of the same make and model may not be possible. Most often however, the City prefers to use either the decorative "acorn" lights or overhead "cobra" lights owned by CLPUD.

Illumination Design Requirements

Streetlights are required at all street intersections with collectors and arterials, including private street intersections with collectors and arterials. This requirement does not extend to alley intersections. When developing property in an area without existing street lights, check with Newport Municipal Code to see what is required.

Separate street lighting plans are not required for most projects although plans should show proposed streetlights on plan and profile or utility sheets. Plans must include the following:

- Proposed pole locations shall comply with the City's Roadside Safety requirements of this document.
- Provide power supply via underground wiring and conduit systems conforming to power company requirements.

- Fixtures shall be cut-off fixtures to minimize light pollution and up lighting.
- CLPUD shall approve, own, and maintain light poles and fixtures.

Do not place utility infrastructure within one foot of a survey monument location noted on a subdivision or partition plat, per ORS 92.044 (7).

General Design

- Design all street lighting using the American National Standards Institute (ANSI), Illuminating Engineering Society of North America (IESNA), National Electrical Code, Oregon Amended (NEC) and Central Lincoln Public Utility District (PUD) unless otherwise amended by these Standards or City Engineer.
- The City prefers all streetlights within the ROW be owned and maintained by Central Lincoln Public Utility District.
- The Contractor shall be responsible to arrange with PUD for installation and connecting the street lighting system to the local distribution system, and following all installation requirements specified by PUD.
- All electrical components shall be lab approved from labs accepted by the State of Oregon or Underwriter's Laboratories, Inc. (UL).
- All street light plans shall include model number for intended material used which includes but not limited to; conduit, wire, junction box, precast foundation, transformer/unmetered distribution panel/controller, pole, LED Luminaire, photoelectric control and plan layout with all electrical components included. Plans may require P.E. Certification. All materials shall be on the latest PUD Approved Materials List.
- The Contractor shall be responsible to provide all required traffic control during system installation and follow workmanship conforming to the National Electrical Safety Code (NESC), and Standards for the American Society for Testing and Materials (ASTM).
- For installation of new street lighting on an existing street lighting system, contact the City Engineer.
- All street light poles should be located near property lines and at least twenty-five (25) feet from any street trees, unless otherwise approved in writing by the City Engineer.
- The Design Engineer shall submit a copy of the approved lighting plan to the City before commencement of any work.
- The City and the appropriate natural resource agencies shall determine whether to provide lighting for shared-use paths in designated natural resource and wildlife areas.
- Luminaire shall be a "historic" style.

On private development projects, all costs of installation shall be borne by the developer. The City will pay for ongoing power and maintenance expenses for public street lighting supplied by Central Lincoln PUD. Ongoing expenses for private street lighting (including power costs) shall be borne by the developer or homeowner's association.

The City does not permit decorative lighting without special approval and maintenance agreements signed by the City Engineer.

Street Trees

Please refer to City of Newport Municipal Code 14.19.050 Landscaping Required for New Development, Exceptions (see Section 7 Landscaping of the *Engineering Design and Construction Standards Manual*). City does not maintain trees in the ROW. Adjacent property-owners are required to maintain trees

planted as part of a landscape design or natural scape next to their property.

Root barriers are required in sidewalk tree wells NMC 14.19.050(D)(5). See Standard Drawing L-605 for root barrier details.

Tree Wells are a concrete cutout in a curb-tight sidewalk for planting a street tree in the ROW. These may be installed in areas where there is room for a tree well and a 5 ft sidewalk around the tree. See Standard Drawing L-606 for construction specifications.

UNDERGROUND UTILITIES

City Owned

Please refer to City of Newport Municipal Code Title V: Public Works and Utilities and Chapter 9.05, Utilities. See Standard Drawing G-051.

Privately Owned

Please refer to City of Newport Municipal Code Section 14.48.045, Underground Utilities and Service Facilities. See Standard Drawing G-052 and G-053.

FOUR-YEAR MORATORIUM STREET CUT REPLACEMENT GUIDELINES

The City of Newport has a four-year moratorium on all new street pavement surfaces, starting at date of pavement completion (NMC 9.10.095). This includes overlays, inlays, reconstruction, and new construction of at least a half street or greater.

Anyone applying to open cut a moratorium street for emergency repair of subsurface facilities shall apply for the appropriate permit through the City of Newport Engineering Department. If applicant receives an approved permit, the applicant thereby agrees to adhere to strict reconstruction guidelines to achieve the following goals:

- Minimize pavement degradation
- Maintain structural integrity of street
- Maintain a smooth riding surface
- Limit visual impact and perceptions

TRENCH RESTORATION REQUIREMENT

Repair the trench cut per Standard Drawing G-105. Asphaltic concrete shall be replaced in a minimum of two (2) inch lifts and be at least 92% of Rice test (ASTM D2041) theoretical maximum density as determined in conformance with AASHTO T-209.

MORATORIUM REPAIR

After performing trench cut restoration, a two (2) inch grind/inlay for a distance of one (1) foot per posted mile per hour (mph) each direction from the cut is required. The extent of surface grind/inlay width will be as follows:

- A single lane that is impacted will have full restoration for the width of the lane
- If multiple lanes, the full width of those lanes shall be restored
- If impact extends past the centerline, all lanes curb to curb shall be restored
- Place all inlayed asphaltic concrete with a self-propelled slip form paver. Drag boxes shall not be used

- All tie-in joints to existing asphaltic concrete surfaces shall be sealed with rubberized asphalt emulsion (hot or cold)
- All striping removed by grinding shall be replaced with thermoplastic. All symbols, emblems, arrows, letters and bars shall be pre-formed thermoplastic

STRIPING RESTORATION

All striping removed by grinding shall be replaced with thermoplastic. All symbols, emblems, arrows, letters and bars shall be performed thermoplastic.

MAILBOXES

Mailboxes located within ROW are subject to these Standards and Specifications. Consider roadside design safety aspects. Fatal crashes have occurred within the City of Newport due to vehicles striking mailbox fixed object hazards that did not provide breakaway supports. Foundations and support structures of individual and cluster postal delivery boxes shall meet the current AASHTO "Standard Specifications for Structural Supports for Highway Signs, Luminaires, and Traffic Signals, with interim revisions."

Firmly secure the mailbox to the post to ensure that the impact of a vehicle does not loosen the box that could then become a flying object hazard.

Mailboxes shall not require that users cross an arterial or collector roadway. Locate mailboxes on the user's side of arterial and collector roadways.

For all new and reconstructed roadway projects, consider rural delivery mailbox styles for consolidation into cluster postal delivery boxes.

Show the location of cluster postal delivery boxes on the engineered plan submittal drawings for review and approval. The United States Postal Service will approve the location of cluster postal delivery boxes.

Design and construct an accessible pedestrian path of travel to the mailbox per *Public Rights-of-Way Accessibility Guidelines* requirements.

Maintain an accessible pedestrian path of travel on sidewalks adjacent to cluster boxes per *Public Rights-of-Way Accessibility Guidelines* standards.

Cluster postal delivery boxes shall not be located on arterial and collector streets, unless otherwise approved by the City Engineer. Their location shall be shifted to nearby and convenient local streets. When locating the cluster postal deliver box take care to locate it in an area that minimizes impact on abutting properties.

The back edge of the sidewalk shall smoothly meander back from the central delivery mailbox station to provide a 5-foot wide unobstructed pathway. The edge of the mailbox shall comply with the City's Clear Zone Requirements of this document.

STREET STANDARD DRAWINGS

Standard Street Section: Local, Yield, And Shared Streets

Aggregate and asphalt depth varies by anticipated street volume. See Standard Drawing T-050 for

construction requirements.

Standard Street Section: Major Collector And Neighborhood Collector Streets

Aggregate and asphalt depth varies by anticipated street volume. See Standard Drawing T-050A for construction Requirements.

Typical Concrete Section

Not typically used for streets in ROW. See Standard Drawing T-050B.

Typical Roadway Layouts: Major Collectors, Neighborhood Collectors, Local Streets

Transportation System Plan July 2022 for design guidance. See Standard Drawing T-051.

Typical Roadway Layouts: Yield And Shared Streets

Transportation System Plan July 2022 for design guidance. See Standard Drawing T-051A.

Typical Cul-De-Sac Detail

See Standard Drawing T-053 for construction requirements.

Standard One-Way Driveway Approach Detail

One-way driveways are used for standard residential driveways. See Standard Drawing T-150.

Drop Panel Driveway One-Way Approach Detail

Used when elevations fall away from the back of sidewalk. See Standard Drawing T-151.

Commercial One-Way And Two-Way Driveway Reinforcement Detail

Commercial driveways may be one-way two way. Due to the traffic weights traversing the driveway, concrete is required of all commercial driveways, which may include apartments as well as industrial areas. See Standard Drawing T-152 and T-150 for construction requirements.

Multi-Use Path

Wide paths used for pedestrians and bikers. See Standard Drawing T-201 for construction details.

Pony Walls & Wedge Walls

Pony and wedge walls are used with the elevation at the back of sidewalk either climbs or drops away from the sidewalk. See Standard Drawing T-202 for construction details.

Standard Sidewalk Details

See Standard Drawing T-210.

Sidewalk And Ramp Detail With Planter Strip

See Standard Drawing T-211.

Sidewalk And Ramp Detail Without Planter Strip

See Standard Drawing T-212.

Pedestrian Crossing Detail

City prefers new ramps have updated crosswalk striping installed. See Standard Drawing T-213 for construction requirements.

Truncated Dome Placement

Domes must be oriented in the direction of travel. See Standard Drawing T-214.

Curb And Gutter Detail

Types of curb used within the City of Newport. See Standard Drawing T-301 for construction requirements.

Valley Gutter Detail

In areas where elevations may be particularly flat, a concrete valley gutter may be required at intersections to keep water flowing. See Standard Drawing T-302 for construction specifications.

Extruded Curb Detail

Not used on roadways or with sidewalk. See Standard Drawing T-303 for construction details.

Standard Sign Detail

Guidelines for street sign lettering and post installation. See Standard Drawing T-450 for construction specifications.

Clear Vision Area At Intersection

Detailed view of clear vision areas with differing angles. See Standard Drawing T-600 and Newport Municipal Code for further information on clear vision areas.

Bollard Detail

Bollards are used to protect infrastructure. See Standard Drawing T-604 for construction specifications.

Root Barrier

Street trees are required to have a root barrier system in some situations. See Standard Drawing T-605 for construction details.

Tree Wells

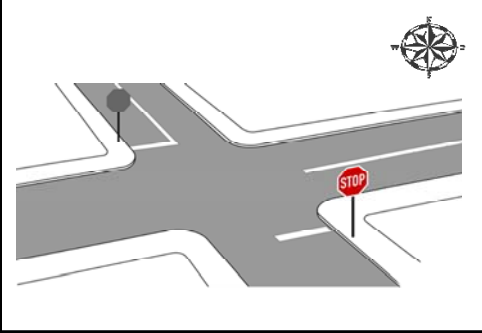
Trees wells along sidewalks require root barrier systems and unobstructed walkways. See Standard Drawing T-606 for installation specifications.

END OF SECTION

ADA Ramp Design Exception Form

Project Name: _____	Project No: _____
Project Designer: _____	Engineer of Record: _____

1. Curb Ramp Locations (One Form Per Intersections). Newport Municipal Code **9.70.010.B.4** requires Property owners to install ADA compliant access in adjacent sidewalks, driveways and street corners.



- SKETCH CURB RAMPS.
- GIVE EACH CURB RAMP A REFERENCE NUMBER, 1 – 8.
- NOTE LOCATION OF NEARBY MID-BLOCK RAMPS, IF APPLICABLE.
- PROVIDE STREET NAMES.
- SHOW LOCATIONS OF ANY EXISTING SIGNS, HYDRANTS, ETC.

2. Use Back of Form to Identify Design Criteria for New Ramps.
 3. Identify Corners that Do Not Meet the Design Criteria Listed On the Back of This Form.
 List the Criteris That Are Not Met and Explain Why
 Describe Mitigation Options
 Provide Recommendations for Adding to Transition Plan List

Additional Space Provided On Back of This Form.

Approvals
 If all corners have two single ramps and they meet design criteria listed on back, additional approval by an ADA techical Advisor in NOT REQUIRED.

_____ Engineer of Record, Sign and Print Name	_____ Date
_____ ADA Technical Advaisor, Sign and Print Name	_____ Date

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Design Criteria for New Sidewalk Ramps Form

DESIGN CRITERIA FOR NEW RAMPS								
1	2	3	4	5	6	7	8	CHECK IF ELEMENT MET
<input type="checkbox"/> D	<input type="checkbox"/> D	<input type="checkbox"/> D	<input type="checkbox"/> D	<input type="checkbox"/> D	<input type="checkbox"/> D	<input type="checkbox"/> D	<input type="checkbox"/> D	A. 1. A DIAGONAL RAMP PROVIDING BOTH DIRECTIONS OF TRAVEL (D) OR 2. A SINGLE RAMP PROVIDING ONLY ONE DIRECTION OF TRAVEL (S) (E.G. ACROSS ONLY ONE STREET, INCLUDES MID-BLOCK RAMPS).
<input type="checkbox"/> S	<input type="checkbox"/> S	<input type="checkbox"/> S	<input type="checkbox"/> S	<input type="checkbox"/> S	<input type="checkbox"/> S	<input type="checkbox"/> S	<input type="checkbox"/> S	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	B. IF DIAGONAL RAMP (D), (4.5' X 4.5') LANDING IN ROADWAY IS OUTSIDE OF TRAVEL WAY.
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	C. RAMP PERPENDICULAR TO THE FACE OF CURB.
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	D. ROADWAY RAMP THROAT COMPLETELY WITHIN LEGAL CROSSING.
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	E. 7.2% MAXIMUM RAMP RUNNING GRADE WITH 1.1% FOR CONSTRUCTION TOLERANCE.
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	F. FLAT (4' X 4') LANDING IN SIDEWALK.
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	G. MINIMUM RAMP WIDTH (NOT INCLUDING WINGS) IS 48".
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	H. MAXIMUM DRAINAGE SLOPE OF THE GUTTER IS 2% WITH MAXIMUM CROSS SLOPE OF 5% AT THE GUTTER.
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	I. MAXIMUM RAMP TO STREET GRADE BREAK IS 11% MAXIMUM (ALGEBRAIC DIFFERENCE).

Space for Additional Comments.

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STREET AND TRANSPORTATION SYSTEM STANDARD DRAWINGS