

CITY OF KIRKLAND

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**DEPARTMENT OF PUBLIC WORKS
PRE-APPROVED PLANS POLICY**

Policy R-4: Driveway Policy

I. DEFINITIONS AND CLASSIFICATIONS

1. Driveways are vehicle accesses to individual properties, parking spaces, and parking facilities, including garage doors/entrances.
2. Driveway Types
 - a. Residential Driveway: One providing access to a single-family residence or a duplex.
 - b. Multifamily / Non-Residential Driveway: One providing access to an office, retail, institutional, industrial building, or to residential developments of more than two units.
3. Sight Obstruction: any structure, monument, sign, fence, shrubbery, rockery, parked vehicles, hedge or natural growth located within the driveway / intersection sight area and the height limits defined in Public Works Pre-Approved Plan Policy R-13 that may obstruct the visibility for drivers.
4. Sight Distance Triangle or Driver’s Sight Area: the area at an intersection or driveway that must be clear of sight obstructions. Sight distance triangle is shown in Figure 1 of Public Works Pre-Approved Plans Policy R-13.
5. High Accident Location (HAL): An intersection or road segment that has an accident rate that exceeds the average accident rate for similar locations during a given period and/or experiences abnormal accident patterns. For information on High Accident Locations contact Transportation Engineering Supervisor Jennifer Palmer at 425-587-3894 or by e-mail at jpalmer@kirklandwa.gov. For crash data, please contact Transportation Engineering Analyst David Gourlie at 425-587-3867 or dgourlie@kirklandwa.gov.
6. Traveled Way: The portion of the road intended for the movement of vehicles and bicycles, exclusive of parking lanes and shoulders.
7. How driveways are measured (see Figure 1):
 - a. Driveway offsets from intersections are measured using the standards outlined in Table 1.
 - 1) The intersection measurement point depends on the type of intersection, presence of crosswalks, and street functional classification.
 - 2) The intersection measurement point shall be selected to provide the most conservative driveway setback.

- 3) All driveways shall be measured from the curb return or closest tangent of the proposed driveway.

Table 1. Intersection offset spacing measurement

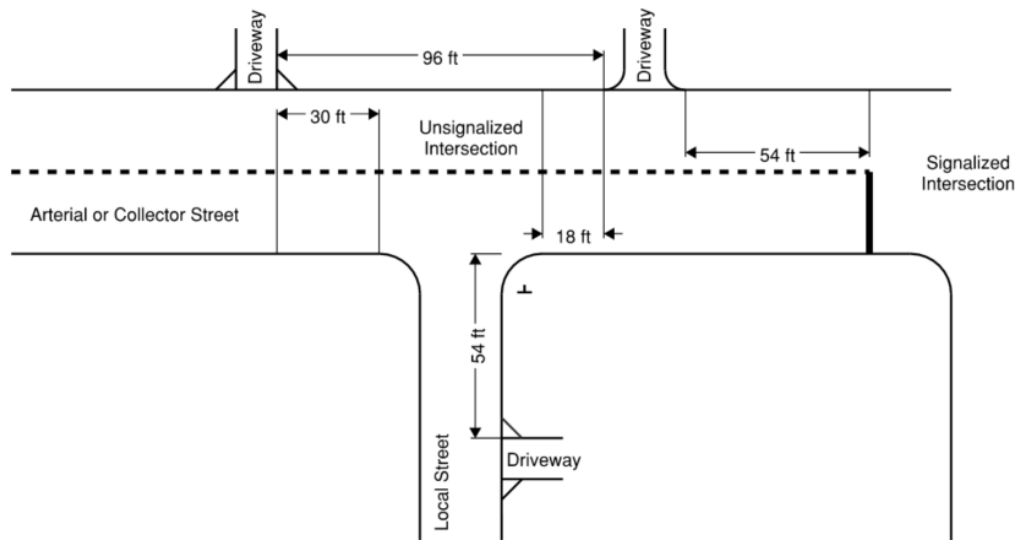
Intersection Offset Cases	Intersection Measurement Point	Driveway Measurement Point
1. Driveway offset from a signalized intersection	Back of the stop bar	Curb return or closest tangent of the proposed driveway
2. Driveway offset from an unsignalized intersection on a collector or arterial street	<ol style="list-style-type: none"> a. Crosswalk present at intersection: nearest edge of crosswalk b. Curb present on intersecting street: the curb return of the intersection c. Curb not present on intersecting street: edge of roadway 	Curb return or closest tangent of the proposed driveway
3. Driveway offset from an unsignalized intersection on a local street	<ol style="list-style-type: none"> a. Crosswalk present at intersection: nearest edge of crosswalk b. Curb present on intersecting street: the face of curb c. Curb not present on intersecting street: edge of roadway 	Curb return or closest tangent of the proposed driveway

- b. Driveway offsets from adjacent driveways are measured from the curb return or closest edge of each driveway.

8. Modifications

A modification to this policy may be proposed by the City or requested by the applicant. The applicant may request for a variance by submitting a written request, prepared by a licensed transportation engineer, to the City Transportation Engineer. Along with the request, the applicant shall provide an engineering analysis and supporting data. Ideally, the request will be supported by policies found in current transportation engineering design materials such as those published by NACTO, AASHTO, ITE or WSDOT. The City Transportation Engineering Manager will make the final decision as to whether or not the variance should be granted.

Figure 1. Example of driveway spacing measurements



II. DRIVEWAY DESIGN, CONSTRUCTION, MAINTENANCE AND OPERATION

1. General Considerations

- a. Driveways shall be designed to allow safe and efficient movement of vehicles to/from the intersecting street.
- b. Construction shall be in accordance with APWA Standards Specifications, Washington State Chapter and City of Kirkland Pre-Approved Plans.
- c. Maintenance of driveways including pavement, signing and marking shall be the responsibility of the owner whose property the driveway serves.
- d. Whenever practical consolidation of driveways of adjoining properties is encouraged. Therefore, in conjunction with approval of development the City may request developers to provide access and circulation easement to an adjacent owner where joint access is reasonable to serve future development.
- e. All abandoned driveways on the street frontage to be improved shall be removed and the curbing and sidewalk to be restored to City standards.
- f. The continued use of pre-existing driveways may be prohibited with the redevelopment of a site.
- g. Per KZC 105.100, driveway materials must match or exceed the adjacent road. Pervious surfaces can be used in compliance with the stormwater design manual.
- h. Driveways providing access onto arterial streets may be denied if alternate access is available or if the Public Works Director identifies potential safety issues.
- i. In general, left turn restrictions shall be imposed at driveways when one or more of the following conditions are met:

- 1) Located within 150 ft of signalized intersections, within 150 ft of unsignalized intersections located on arterial streets, or within 200 ft of intersections considered High Accident Locations (HAL). (See R-4 I.7. Definition and Classification section for measurement guidelines.)
- 2) Location does not meet spacing, offset, and/or setback requirements.
- 3) Location experiences safety and operational conflicts.
- 4) Where Transportation Division Staff considers it necessary based on an engineering investigation.

A variance to these restrictions may be requested by submitting a written request to the Public Works Director. Along with the request, the applicant shall provide an engineering analysis and supporting data for review. The analysis shall be prepared by a licensed transportation engineer. The Public Works Director will make the final decision as to whether or not the variance should be granted.

- j. It is preferred that new driveways be aligned with existing opposing driveways or be offset to the left of the existing opposing driveway in order to minimize left turn conflicts on the streets.
- k. Unless it creates significantly more traffic conflicts and impacts to traffic flow, driveway(s) shall be located off the street with the lower functional classification.
- l. For commercial and multi-family developments with more than 4 dwelling unit, on-site parking within 25 feet of the driveway or garage entrance, measured from the back of sidewalk or garage entrance/door, is prohibited.
- m. Internal parking garage facility ramps shall be 24 feet wide.
- n. Approaching vehicles from a parking garage facility ramp must be visible to drivers in the parking aisle approaching the ramp.

2. Access from Alleys

- a. Driveway for multi-family with more than 4 dwelling units and non-residential uses accessing from arterial or collector streets shall be, at the minimum 24 feet in width. Within a parking structure, driveway width shall be, at the minimum, 24 feet in width.

In order for a property to have access from an alley, it must have frontage on another public street, i.e., an alley cannot serve as the sole access (vehicular and pedestrian) to a property.

3. Vehicle Gates

- a. A vehicle gate is defined as a physical barrier that controls access to enter and exit a property. The most common types of gates are swing gates and sliding gates.
- b. Gates shall be installed on private property, unless approved by Kirkland Public Works.
- c. Gates must be located, at a minimum, 25 feet from the back of sidewalk or from the face of curb or edge of traveled way if there is no sidewalk.
- b. Swing gates must open inward unless the gate itself does not obstruct a public sidewalk, walkway, bicycle lane, or street, AND there is at least a 25-foot queue area in front of an opened gate for vehicles entering to queue without obstructing a public sidewalk, walkway, bicycle lane, or street.

- c. Call box and gate control box must be located so that a vehicle waiting does not obstruct a public sidewalk, walkway, bicycle lane, or street.

4. Number and Locations of Driveways

- a. Single Family Driveways: One driveway.
Single Family with an Accessory Dwelling Unit: One Driveway
- b. Circular Driveways: The following criteria must be met for a circular driveway to be approved:
 - 1) The property frontage exceeds 60' and/or a minimum 15' inside radius for the circular driveway would exist from the back of sidewalk.
 - 2) The width of the curb cuts for the proposed circular driveway shall not exceed 10' each.
 - 3) Spacing, offset and setback from intersections shall be as recommended for the conventional driveways.
- c. Multifamily / Non-residential: One driveway.
- d. Driveways at Corner Lots: Driveways at corners must follow recommended setback from intersections or be located at the farthest property line.

5. Proximity to Mid-Block Crosswalk

Driveways must be located at least 25' from the nearest edge of the crosswalk measured from the nearest edge of the proposed driveway. In the case where the crosswalk has a protective island and the proposed driveway is to the right of the crosswalk, the proposed driveway shall be located at a minimum of 50' from the nearest edge of the crosswalk.

6. Proximity to Transit Loading Zone

Driveways must be located at least 20 feet from the nearest edge of a transit loading zone.

7. Spacing, Offset and Setback from Intersections

Allowed spacing between driveways, offset from existing opposing driveways and setback from intersections shall be measured as described in Section I.7. Definition and Classification. Factors taken into account in the determination of the recommended values or any proposed variances are:

- Street Functional Classification
- Projected Daily and Peak Driveway Volumes
- Best available speed data.
- Impacted Street Peak Traffic Volumes.
- Intersection Geometry (Number of Lanes, Lane Usage)
- Street and Intersection Safety Characteristics
- Parcel size
- Availability of alternate access

Table 2 shows recommended (desirable) and minimum (required) values for driveway setback, spacing, and offset.

Table 2. Required driveway setback, spacing, and offset

	Street Functional Type where the driveway is located		Land Use Category		
			Residential (4 units or less)	Multi-family / Non-residential	
			Minimum	Recommended	Minimum ¹
Setback from Intersections	Local		50'	75'	75'
	Collector	Unsignalized	75'	75'	75'
		Signalized	100'	200'	150'
	Arterial	Unsignalized	100'	150'	100'
		Signalized	150'	200'	150'
		HAL	150'	200'	150'
Spacing	Local		10'	50'	50'
	Collector		20'	50'	50'
	Arterial		100'	150'	150'
New driveway offset to the Left of Existing Opposing Driveway	Local		NA	NA	NA
	Collector		NA	NA	NA
	Arterial	25-30 MPH	100'	150'	150'
		35 MPH	150'	200'	150'

¹Recommended values are required. Minimum values are only permitted if the use of recommended values increases the potential for traffic conflicts at the proposed driveway location and/or results in reduced sight distance that cannot be mitigated, such as the presence of horizontal or vertical curves.

8. Width of Driveway Entrance

Driveway width shall be measured at the throat and shall adhere to the requirements in Table 3:

Table 3. Required driveway widths

Driveway Type	One Way	Two Way
Single Family (including Detached Dwelling Units, Duplexes, and Two/Three-Unit Homes per KZC 115.115(5))	10'	20'
Single Family Joint-Use	10'	24' ⁴
Multi-Family (4 units or less)	10'	20' ¹
Multi-Family 5 or more	12-15'	24' ^{2,3,4}
Non-Residential	12-15'	24' ^{2,3,4}

¹The first 25 feet of the driveway measured from behind the sidewalk must be 24 feet wide. If rolled curb is allowed, the rolled curb may be included in the 20-foot driveway width. However, the first 25 feet of the driveway measured from behind the sidewalk must be 24 feet wide excluding rolled curb.

²If medians, traffic islands and turn lanes are used in driveway, greater width shall be considered. Driveways may be wider to provide for truck access when truck load/unload is required on site. A turning path illustration using the AASHTO design vehicle must be provided for Kirkland Public Works review and approval. The appropriate AASHTO design vehicle shall be based on the operational characteristics of the site and approved by Kirkland Public Works prior to completing the analysis. Approval shall be on a case-by-case basis. The goal is to minimize the width of the driveway.

³ This standard may be reduced to no less than 20 feet if the City’s Transportation Engineer determines that there are no conflicts due to sight obstructions, location, traffic volumes, or other circulation factors. The applicant must request a driveway variance and the burden of proof is on the applicant to demonstrate that a narrower driveway is safe. If turning path illustrations are used to support the driveway variance, the appropriate AASHTO design vehicle shall be based on the operational characteristics of the site and approved by Kirkland Public Works prior to completing the analysis.

⁴ Variance to the driveway width: the applicant must demonstrate that the proposed width of the driveway will allow two opposing standard size passenger vehicles passing each other to have at least 2 feet of clearance between the vehicles and 18 inches of clearance between the vehicles and any walls, permanent structures, vertical curbs, or similar obstructions. If the driveway provides access to delivery trucks, then these clearances must be met for the opposing truck and passenger vehicle. The appropriate AASHTO design vehicle shall be based on the operational characteristics of the site and approved by Kirkland Public Works prior to completing the analysis.

9. Grades, Throat Length, Horizontal and Vertical Alignment

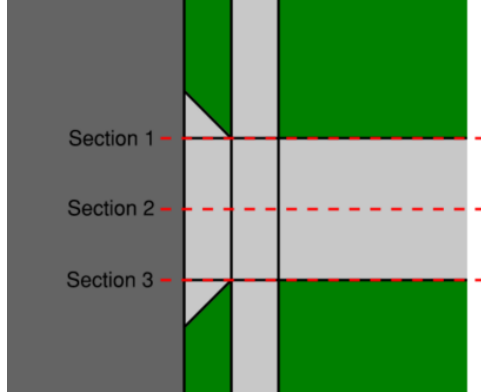
New driveways shall preferably intersect the adjacent street at 80 to 100 degree angle. For Multifamily /Non-Residential driveways the average grade on the landing (distance behind back of existing or future curb line) shall not exceed 6%. Average grade on the landing is measured using the following equation for at least three driveway sections, the left side of driveway, center, and right side of driveway. Grade breaks within the landing area are permitted provided that the difference in grade does not exceed 8%, as shown in Figure 2. Grade beyond landing shall not exceed 15%. (see Table 4)

Table 4. Required driveway landing area and throat length

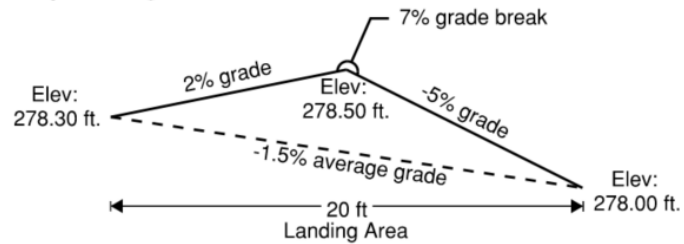
<u>Driveway Daily Volumes</u>	<u>Landing (Relatively Flat Distance Behind Back of Existing or Future Curb line)</u>	<u>Throat Length (Distance between face of curb and the parking area served)</u>
<100	20'	20'
100 - 1500	20'-25'	40'
>1500	30'	60'

$$\text{Average Grade} = \frac{\text{Elevation at existing future curb line} - \text{Elevation at back of landing}}{\text{Required landing length}} * 100 \text{ for each section}$$

Figure 2. Average grade calculation



Sample Average Grade Calculation for Section 2



10. Traffic Control at Driveways

- a. Multifamily / Non-residential driveways may be controlled by stop signs, roundabouts or traffic signals.
- b. Traffic signalization may be considered to control driveways projected to exceed 2000 vehicles per day and that are located on arterial streets with ADT in excess of 15,000. Traffic signal warrant analysis shall be performed at driveways considered for signalization.
- c. Signalized driveways shall be designed and built so as to minimize interference with existing traffic signals and shall have a minimum 100 ft storage area between the face of curb and any turning and parking maneuver within the development.
- d. For multi-family and non-residential use, parking shall be located at a minimum of 25 feet behind the back of sidewalk.
- e. For parking garage facilities having 10 or more parking spaces, parking shall be located a minimum of 25 feet beyond the garage entrance.

11. Sight Distance

Public Works Pre-Approved Plan Policy R-13 specifies sight distance requirements for driveways and various types of intersections.

TEMPLATES FOR REQUIRED VEHICLE TURNAROUND AREA

SUPPLEMENTAL TO PRE-APPROVED POLICY R-4

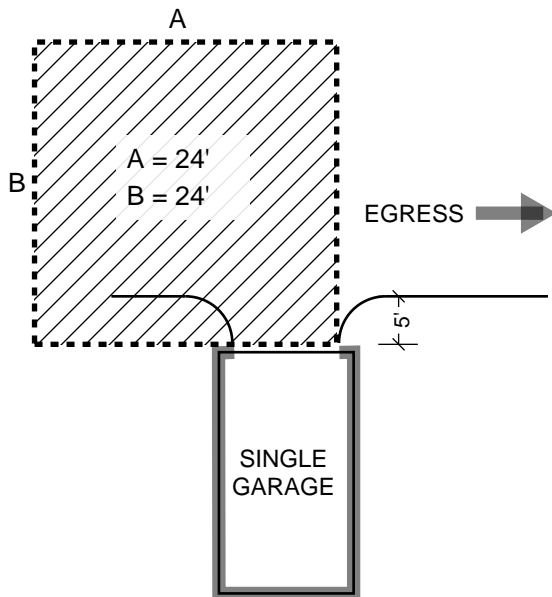
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THE FOLLOWING VEHICLE TURNAROUND AREA TEMPLATES ARE REQUIRED FOR SINGLE-FAMILY RESIDENTIAL DEVELOPMENT PROJECTS WITH MULTIPLE DWELLING UNITS PROPOSED ON A SINGLE LOT (I.E., COTTAGE, CARRIAGE AND TWO/THREE-UNIT HOMES, AND/OR ACCESSORY DWELLINGS UNITS).

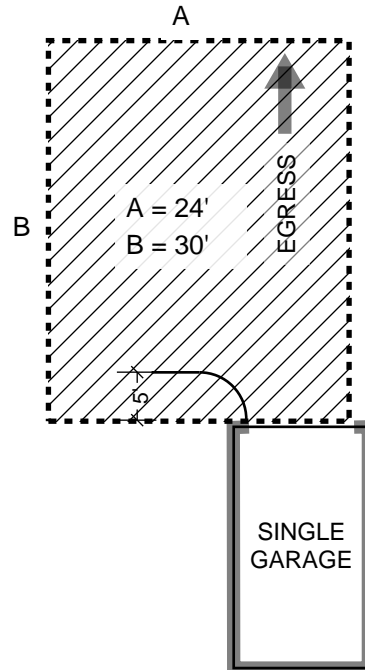
A PARKED VEHICLE MUST BE PROVIDED WITH THE MINIMUM TURNAROUND AREA PRESCRIBED BY THE TEMPLATES. THE VEHICLE MUST BE ABLE TO USE THE TURNAROUND AREA TO BACK OUT IN ONE SINGLE MANEUVER AND DRIVE FORWARD TOWARDS THE EGRESS.

AN AUTOTURN ANALYSIS IS NOT REQUIRED IF THE PRESCRIBED TEMPLATES ARE USED. IF THE APPLICANT ELECTS TO PERFORM AN AUTOTURN ANALYSIS IN-LIEU OF USING THE TEMPLATES, THEN THE INPUT PARAMETERS FOR THE AUTOTURN ANALYSIS MUST BE SUBMITTED FOR REVIEW. AUTOTURN INPUT PARAMETERS SHALL BE SET SUCH THAT THE VEHICLE DIMENSIONS ARE 16 FT LONG BY 6 FT WIDE; THE WHEELBASE IS 9.5 FT; AND TURNING RADIUS IS 20 FT.

GARAGE PARKING SCENARIOS

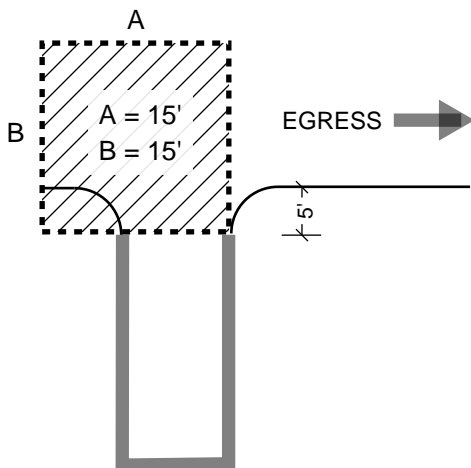


EGRESS DIRECTION IS ADJACENT TO GARAGE

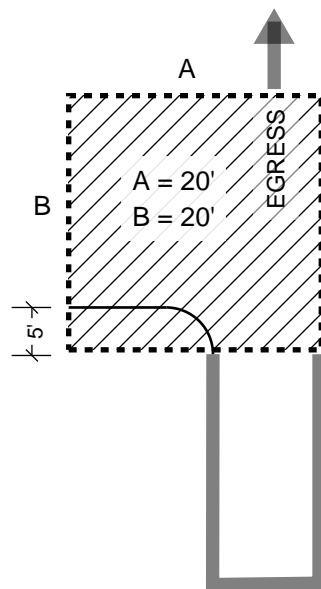


EGRESS DIRECTION IS OPPOSITE TO GARAGE

SURFACE PARKING SCENARIOS



EGRESS DIRECTION IS ADJACENT TO STALL



EGRESS DIRECTION IS OPPOSITE TO STALL