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**DEPARTMENT OF PUBLIC WORKS
PRE-APPROVED PLANS POLICY****Policy R-29: Guidelines for Temporary Traffic Control Plan Preparation****PURPOSE:**

The purpose of these guidelines is to assist in the preparation of Temporary Traffic Control Plans (TTCPs) in the City of Kirkland.

An acceptable TTCP provides the guidance and warning necessary for the orderly and predictable movement of traffic through and around work zones thereby minimizing inconvenience to the public while providing safety and accessibility for all road users and workers.

A Temporary Traffic Control Plan (TTCP) is required for any project that may include work within traffic lanes, shoulders, sidewalks, crosswalks, parking and bicycle facilities:

- Along arterial and collector streets.
- Within 200 feet of signalized intersections.
- Central Business District.

In addition, a TTCP is required for:

- Projects that require full or partial road closures.
- Special Events (public or private) expected to have traffic impacts on City streets.
- Work on any street that Public Works deems necessary.

For projects or work activities that do not require a TTCP, the contractor is responsible for implementing appropriate traffic control per MUTCD (Manual of Uniform Traffic Control Devices) recommendations.

TTCPs require a minimum two-week review period for each submittal by Public Works.

GENERAL NOTES:

1. TTCPs must conform to the most recent edition of the Manual of Uniform Traffic Control Devices (MUTCD) and any supplements.
2. TTCP must be site and project specific; therefore, typical drawings, taper tables and MUTCD illustrations, by themselves, are insufficient. All TTCP shall clearly indicate all existing transportation facilities impacted by work including roads, bike lanes, sidewalks, transit stops, and driveways.
3. TTCPs must fit field conditions so field check of the project site is recommended prior to and during the preparation of a TTCP.
4. Based upon the complexity of a project, a suitable sequence of construction must be discussed with City Staff prior to fully developing TTCPs. Each construction phase shall be provided with appropriate work zone traffic control and the impacts of utility relocation, traffic delays, detours and capacity restrictions must be considered and addressed.

5. No more than one TTCP shall be in use at any given time for a single project. If multiple TTCPs are submitted for review and approval at one time, then the TTCPs shall be clearly labelled as separate plans.
6. Previously approved TTCPs cannot be combined into a new TTCP without review and approval by Public Works.
7. Road and/or sidewalk closure must be evaluated by Public Works with respect to both the necessity as well as the impact of the closure to the public. Road closures shall require additional temporary traffic control including advance notification, approach and detour signage. The utilization of VMS (Variable Message Signs) is recommended to convey information to the public on the proposed closure at least two weeks in advance.
8. Any work impacting sidewalks, pedestrian crossings and bike facilities shall be specified and appropriate detour shall be included in the proposed TTCP.
9. Any work requiring the temporary closure of a crosswalk equipped with Pedestrian Flags will require the flags to be removed and the flag holders bagged. Flags will be returned to holders when crosswalk access is restored.
10. Any work within the public right of way shall be restricted to the hours of 9:00 AM to 3:00 PM, Monday through Friday on arterial streets. Work on Holidays, weekends or at night shall not occur unless an exception is granted by Public Works.
11. Reduced work hours may be required for any project located near a school to minimize traffic impacts during pick-up and drop-off times.
12. Construction activity, loading and unloading of equipment shall not block any traffic lane other than those previously specified on the TTCP.
13. Any construction activity that involves lane closures at or within 150 feet of a signalized intersection will require a Uniformed Police Officer at the intersection, unless otherwise approved by the City of Kirkland Transportation Engineer.
14. Access shall be maintained to all driveways unless permission for closure is granted by the property owner or manager.
15. Accessibility for emergency vehicles shall be maintained at all times.
16. Pavement excavation shall be limited to a maximum of one travel lane at a time unless otherwise specified on the TTCP.
17. Temporary "No Parking" signs shall be placed 24 hours prior to commencing work.
18. All Temporary Traffic Control (TTC) devices shall be removed as soon as practical when they are no longer needed. Similarly, when work is suspended for short periods of time, TTC devices that are no longer necessary shall be removed or covered.
19. Two travel lanes (one for each approach) have to be open at all times on arterial streets unless an exception is granted by Public Works.
20. TTCPs that require the presence of UPO (Uniform Police Officer) to manage traffic at signalized intersections need input from Public Works Traffic Group regarding whether or not the traffic signal will be operated in red flashing mode. Public Works Traffic Group must be notified at least one day in advance for any signal that will be placed in red flashing mode.
21. TTC shall be placed in locations that minimize impacts to sidewalk and bike lanes to the extent feasible.
22. Approved night work requires all traffic control devices to be retroreflective.

NIGHT WORK:

Public works will require night work for TTCPs that have severe traffic impacts as determined by the Public Works Traffic Group. Typical night work hours are 9PM-5AM although extended hours may be permitted by Public Works. Night work shall always be required if two lanes of traffic (one for each approach) cannot be maintained on an arterial street unless an exception is granted by Public Works. Night work shall also be required if an evaluation of existing traffic volumes and patterns finds that any TTCP will functionally reduce an arterial or high-volume collector street to only one lane of traffic. The following configurations may require night work:

- Work at signals that requires shifting one direction of traffic into a left turn pocket where a high volume of left turns occur
- Work at signals that requires shifting two directions of traffic into left turn pockets
- Work at signals that requires shifting a high-volume left-turn movement into a through lane on a single approach to the intersection
- Work at signals that requires shifting left-turning traffic into a through lane on multiple approaches to the intersection

If an initial TTCP review finds that night work will be required by Public Works, a pre-construction meeting shall be required to confirm the extents of the work required, the duration of work, anticipated noise levels, and any potential alternatives to mitigate the impact of night work to adjacent residents prior to review and approval of the TTCP. If Public Works determines that there is no feasible alternative to night work, then an applicant may apply for a work hours exception and noise variance from the Planning department.

TTCP REQUIREMENTS:

This section specifies the elements (in content and format) that need to be included on a TTCP in order for the plan to be approved. Failure to include any of the following elements may require resubmittal of a TTCP:

1. Description of the work, address/location, work hours, and contact information.
2. Vicinity map showing the location of the project.
3. The TTCP shall be drawn on 11" X 17" sheets. Electronic submittal is encouraged.
4. The TTCP drawings must use legible lettering and clear, contrasting, symbols for viewing or printing and must indicate north arrow and scale.
5. Nearby streets with street names to assure proper orientation.
6. Posted speed limit.
7. Existing channelization including travel lanes, left /right turn bays, two-way left turn lanes, curbs and gutter, driveways, sidewalks, shoulders, bike lanes, parking lanes, median islands, traffic control devices including traffic signals and signs within the traffic control zone including areas affected by taper transition.
8. Existing bus stop locations within the extents of the traffic control zone.
9. Dimensions of all the work zone components shown in **Figure 1**. These include:
 - **Advance Warning Area** - Where traffic first recognizes a work zone is approaching.
 - **Transition Area**- Where traffic is redirected from the normal travel path. Transitions can occur as a lane or shoulder closure, lane shifting, or an entirely new alignment via a crossover or on-site diversion. Use of the proper **Taper Length (L)** is recommended (See **Table 1**) to increase the safety performance of the transition area. There are four types of tapers: merging, shifting, shoulder, one-lane/ two-way and downstream. These are shown in **Figure 2**.

- **Buffer space** - Provides protection for motorists and workers, typical length is 50 to 100 ft. There are two types of buffer spaces: longitudinal, which provides a recovery area for errant vehicles prior to reaching the work area, and lateral buffer or "shy distance, which is developed between the edge of the travel lane and the edge of the work area.
 - **Work Area** - Where work is being conducted.
 - **Termination area** – where traffic resumes normal path, typical length 50-100 ft)
10. The TTCP drawings must show the type and size of all the appropriate TTC devices (signs, drums, cones, barricades, arrow panels, etc.) using MUTCD coding designation and sign names on each component of the work zone. The size of advanced warning signs shall be based on the posted speed (See **Table 2**); larger signs may be used if a smaller sign size is not available.
 11. The TTCP drawings must show the spacing of signs, barricades, delineators, drum and cones and identify taper length. **Table 3** shows recommended sign spacing and **Table 4** shows recommended channelizing device spacing.
 12. TTCP shall show all the traffic control devices required to guide pedestrian through or around the work zone.

Table 1, Taper Length Criteria and Formula

Type of Taper	Taper Length	Taper Formula: $L=WS^2/60$, W(typical offset = 12ft), S(Speed)			
		25 MPH	30MPH	35MPH	40MPH
Merging	L	120-150'	150-200'	200-250'	250-300'
Shifting	0.5L	60-80'	80-100'	100-125'	125-150'
Shoulder	0.33L	50'	60'	80'	80'
One Lane/two-Lane Taper	50-100'	50'	60'	80'	100'
Downstream	50-100'	50'	60'	80'	100'

Table 2, Sign Sizing

Posted Speed Limit (MPH)	Sign Size
Not Allowed	24"x24"
25 or 30	30"x30"
35	36"x36"
40	48"x48"

Table 3, Sign Spacing

Posted Speed Limit (MPH)	Spacing (ft)
25	100-150
30	150-200
35	200-300
40	300-350

Table 4, Channelizing Device Spacing

Posted Speed Limit (MPH)	Taper Spacing (ft)	Tangent Spacing (ft)
25 or 30	20	40
35 or 40	30	60

Figure 1. Component Parts of a Temporary Traffic Control Zone

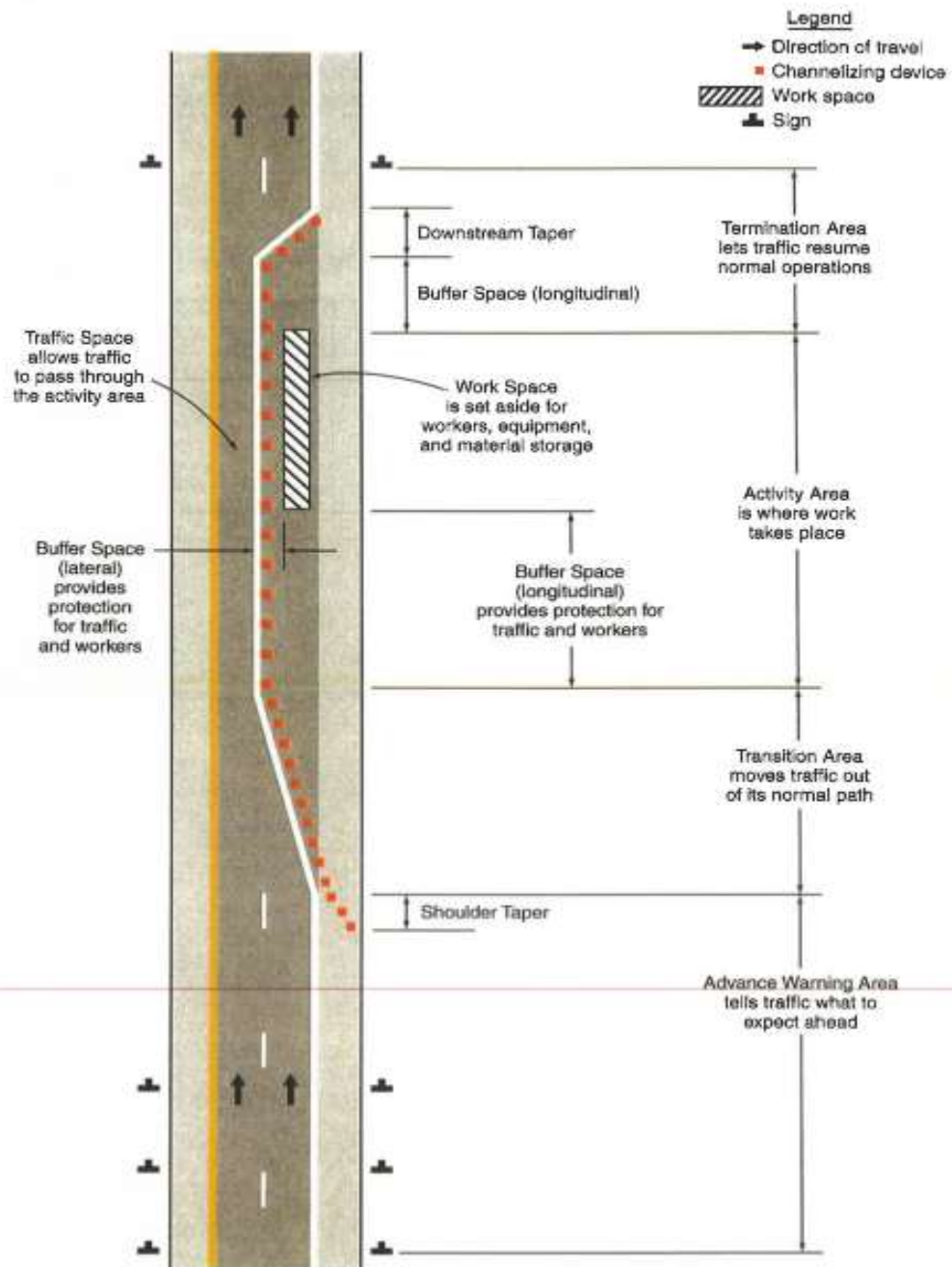


Figure 2. Types of Tapers and Buffer Spaces

