

Traffic Signal Prioritization Methodology

This rating may be used to assist with recommendations for signal installation and provides an accounting of requested intersections.

Once a location is determined eligible for a traffic signal, the following criteria are applied to help rank locations (there is no maximum score).

Traffic Signal Ranking Criteria:

1. Accident Score(Max Points: unlimited)

Only those accidents susceptible to correction by traffic signals during the last 60 months are considered. Points are assigned using the following equation:

$$EPD = 2P + 4I + 8F$$

EPD = The number of equivalent property damaged accidents

P = The number of property damage only accidents

I = The number of injury accidents

F = The number of fatal accidents.

2. Pedestrian/Bicycles.....(Max Points: 30)

A maximum of **10** pedestrian points are assigned for EACH of the following:

- Pedestrians (General)** – 1 point is assigned for each 10 pedestrians crossing the uncontrolled street during the highest 4 hours.
- Pedestrians (Schools)** - 1 point is assigned for every 4 students crossing the uncontrolled street during the highest 2 hours.
- Bicycles** - 10 points are assigned if the side street is on the City Bikeway Master Plan or on a safe route to school.

3. Average Daily Traffic (ADT) Volumes(Max Points: 10)

Points are assigned based on the average daily traffic (ADT) volumes as follows:

SIDE STREET ADT	MAIN STREET ADT					
	<2,000	2,001 – 5,000	5,001 – 10,000	10,001 – 15,000	15,001 – 20,000	20,001 +
<2,000	0	1	2	3	4	5
2,001 – 5,000	1	2	3	4	5	6
5,001 – 10,000	2	3	4	5	6	7
10,001 – 15,000	3	4	5	6	7	8
15,001 – 20,000	4	5	6	7	8	9
20,001 +	5	6	7	8	9	10

4. Peak Hour Traffic Volumes(Max Points: 10)

Points are assigned based on the highest peak hour traffic volume as follows:

SIDE STREET ADT	MAIN STREET ADT							
	<400	401 – 600	601 – 800	801 – 1,000	1,001 – 1,200	1,201 – 1,400	1,401 – 1,600	1,601 +
<100	0	0	1	2	3	4	5	6
101 - 200	0	1	2	3	4	5	6	7
201 - 300	1	2	3	4	5	6	7	8
301 - 400	2	3	4	5	6	7	8	9
401 +	3	4	5	6	7	8	9	10

5. Speed(Max Points: 5)

Points are assigned to account for associated factors involving higher speed streets as follows:

Posted Speed (MPH)	Points
50 +	5
40-49	4
35-59	3
30-34	2
25-29	1
<25	0
Zero points are assigned if the intersection has an all way stop.	

6. Proximity to Nearest Signalized Intersection.....(Max Points: 10)

To maintain progressive traffic movement along arterials, signals should not be spaced too closely. Points are assigned according to the distance to the nearest traffic signal as follows:

Distance to Nearest Signal	Points
< 400 feet	0
400 - 549 feet	1
550 - 699 feet	2
700 - 849 feet	3
850 - 999 feet	4
1,000 – 1,149 feet	5
1,150 – 1,299 feet	6
1,300 – 1,449 feet	7
1,450 – 1,599 feet	8
1,600 – 1,749 feet	9
1,750 feet +	10

7. Special Conditions.....(Max Points: 40)

Points are added or deducted based on special conditions related to the benefits/drawbacks of signalization as determined by the City Traffic Engineer.

a. Activity Centers (Max Points: 5)

- 1) One point is assigned for each of the following activity centers that generate pedestrian or emergency vehicle traffic and are within ½ mile of the intersection.

- School
- Park
- Library
- Hospital
- Stadium
- Arena
- Senior Center
- High Density Residential
- Commercial Center
- Fire Station
- Employment Center
- Railroad Crossing (2 Points)

b. Funding Sources (Max Points: 20)

- 1) An analysis of different funding sources is conducted and points are assigned accordingly. The point range is 0 to 10 with 100% city funding being equal to 0 and 100% outside funding being equal to 10.
- 2) If an existing crossing guard may be eliminated by installation of a signal, 10 points is assigned

c. Engineering Judgment (Max Points: 25)

The City Traffic Engineer recognizes the assumptions and simplifications that have been made in developing standards, and applies judgment to ensure that solutions actually work in practice. Engineering judgment understands the needs and incorporates effective and practical solutions. A maximum of 15 points may be applied – usually in increments of 5 points. Typical factors that may be included (but not limited to) are as follows:

- Signal Warrant
- Previous accident history
- Sight distance
- Operational impacts or improvements to the surrounding roadway network
- Potential for improved roadway or intersection safety
- Potential traffic diversion
- Future development and/or land use shifts that may impact traffic circulation
- Future transportation facilities that may impact traffic circulation (i.e. new pedestrian or bicycle facilities, new roadways, roadway widening projects, etc.)

d. Point Deductions (-10 points maximum)

There are often conditions that reduce the benefit of adding a signalized intersection. 5 points are deducted for each of the following attributes:

- T-intersection
- Signal spacing
- Steep grades
- Raised median (refuge)
- R-O-W constraints
- Utility conflict

