

**Broadway Corridor
Intersection & HAWK Delay Times**

All times shown in seconds

Assuming:

80% fewer HAWK delays

50% fewer intersection delays

	Current Plan	with HAWK Changes	Delay Saving
Intersections			
Euclid	42	0.5 21	
Highland	11	0.5 5.5	
Campbell	32	0.5 16	
Tucson	23	0.5 11.5	
Country Club	60	0.5 30	
Total Intersection Delay Times	168		84
Travel Time	420	420	
% of Travel Time at Intersections	0.40		0.20
HAWKS			
Delay time	30	30	
# of delays	2	0.2 0.4	
Total HAWK Delay Times	60	12	48
Travel Time	420	420	
% of Travel Time at HAWKS	0.14		0.03
Total Intersection & HAWK Delay Times	228	96	132
Travel Time	420	420	
% of Travel Time at HAWKS & Intersections	0.54		0.23

Broadway Corridor background info

External sources about Broadway widening

Design document for Broadway widening, at the 30% point

"Broadway project draft Design Concept Report" (DCR)

<http://broadwayboulevard.info/pdf/Broadway-DCR-Public-Review-FullDoc-120815.pdf>

Facebook post by Dr. Arlie Adkins, UA professor of transportation issues, including video

Describes eastbound drive through Broadway Corridor during afternoon peak period.

He was stopped by 2 HAWKs, and then stopped at both subsequent signalled intersections.

<https://www.facebook.com/arlieadkins/posts/10153719854839102>

"Broadway Corridor Transportation Study", by Parsons-Brinckerhoff in 1987

Table 3, page 10, (page 16 in reader),

Compares expectations of various roadway configuration options.

Says that intersections for 8-lane configuration would need to be 14-16 lanes wide.

<https://www.tucsonaz.gov/files/transportation/broadwaycorridortransstudy.pdf>

Important items in the DCR

Table 4.9, on page 4.24 (page 60 in the reader)

Shows that travel time, for 6-lane configuration, will be 7 minutes

Table 4.10, on page 4.25 (page 61 in the reader)

Shows that 168 seconds, or 40% of travel time, is spent at signalled intersections, in 6-lane configuration.

3.2.2.1, on page 3.13 (page 33 in the reader)

"Traffic flow during morning and evening peak periods is often congested due to several factors, including insufficient capacity at the Campbell Avenue intersection, interruptions in traffic progression created when the HAWK pedestrian/bicycle crossings are activated, and buses blocking the outside through lanes at transit stops that do not include bus pullouts."

3.2.2.5, on page 3.14 (page 34 in the reader)

"Along this section of Broadway, there are five (5) signalized intersections ... HAWK beacons are provided at five (5) unsignalized intersections. ... The five HAWK signals are operated to allow the pedestrian or bicyclist to fully cross Broadway. Timing of the five signalized intersections is coordinated during the morning and evening peak periods to improve progression and traffic flow along Broadway. Operations of the HAWK signals are not coordinated with the traffic signals."

3.2.2.4, on page 3.14 (page 34 in the reader)

"This section of Broadway had the highest density of signalized crossings of any arterial in the region."

7.2.2.1, on page 7.5 (page 107 in the reader)

"The possibility of integrating the HAWKs into coordinated operation with the traffic signals to improve progression and traffic flow will be determined in final design. This could include operating the HAWKs as two-stage crossings which would be possible since a median refuge area would be available."

Why is the City ignoring a better way to move traffic on Historic Broadway?

A design costing much less money and no demolition of buildings?

We don't have to waste \$74 million on widening Broadway, with the enormous negative impact on the surrounding area. We can speed up traffic flow by improving the signals instead. Here's how:

On city streets, a major delay is at the signaled intersections. Anyone who has spent time sitting at red lights is very aware of this. In Tucson, there also are signaled pedestrian crossings, known as HAWKs, or High-intensity Activated Cross Walks.

In a widened Broadway Corridor, about half of a driver's time will be spent at intersections and HAWK crossings, based on City data. That's because there are 5 signaled intersections and 4 HAWKs in that 2-mile section. This total of 9 crossing points is greater than for any similar section of road in Tucson.

To improve traffic flow, timing the HAWKs is a better place to start. Signaled intersections in the Broadway Corridor are synchronized, but that doesn't work as well as it could, because HAWK crossings are triggered whenever a pedestrian wants to cross. This stops the cars, putting them out of sync, and adding unnecessary congestion at the next intersection.

The solution is to fix the HAWK crossings. There are two ways to do this. Each can be done with existing technology, for a fraction of the cost of widening the road.

We can use cameras and computers to monitor the flow. Traffic on major streets moves in cycles of peaks and valleys, because of red and green signal lights. Pedestrians could be allowed to cross only during "valley" times, when few cars would be delayed. This would delay pedestrians about 1/3 of the time, but would prevent the delay of most of the cars, because of the peaks.

Another way is to synchronize the HAWK crossings with the signal lights. The City's design document acknowledges the HAWK timing issue and says this will be "considered" very late in the design. One of these two approaches should have been analyzed at the start.

But can we choose traffic flow technology instead of road widening within the RTA framework?

Yes we can. The enabling legislation says the RTA is required to use public funds wisely. Design changes can be made if there is "no degradation in performance." The streamlining of HAWK crossings, resulting in fewer delays at intersections, would produce as much improvement as widening the road, and maybe more.

What about other components of the Broadway plan, like sidewalks, bike lanes, landscaping, and ADA compliance for wheelchairs? We can still have those. And the overall cost will be much lower, if we don't widen the road.

Then why didn't the City make the HAWK changes in the first place?

Broadway widening is still a project that makes no sense.

Join the Broadway Coalition to get a better, smarter design for our transportation dollars.