

State Street Area Bicycle and Pedestrian Plan: Appendix

Prepared for:



City of Ann Arbor Downtown Development Authority

Prepared by:



THE GREENWAY COLLABORATIVE, INC.

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1. Signal Phasing Alternatives

The recommended exclusive pedestrian phasing can be found in Chapter 3 of the main report. Before recommending this option, several alternatives were explored. The following section discusses these alternative options.

A traffic and pedestrian count was proposed to determine times when the pedestrian volumes are high and the motor vehicles volumes are low to determine how feasible this option is. That information has not yet been collected, so any assessment would be premature. Casual field observations would indicate that there is a mid-day period where both pedestrian and motor vehicle volumes are significant.

Option A – Existing Signal Phasing

The existing signal phasing has one exclusive pedestrian phase within the entire cycle. At this point the intersections are not accessible. A blind person may not understand there is an exclusive pedestrian phase. At a minimum, an Audible Signal that indicates “Walk sign is on for all crossings” should be added.

Table 1a. Existing Condition Phasing

		This table is a generalized illustration of the existing cycle being employed at the signalized “T” intersections in the State Street Areas. Please note that at some intersections there is an protected left turn phase as a part of period 5.			
		Phase	Leg A Pedestrian Indication	Leg A. Vehicular Indication	Leg B Pedestrian Indication
1	Walk	Red	Walk	Red	5
2	Flash Don't Walk	Red	Flash Don't Walk	Red	15
3	Don't Walk	Green	Don't Walk	Red	17
4	Don't Walk	Amber	Don't Walk	Red	3
5	Don't Walk	Red	Don't Walk	Green	37
6	Don't Walk	Red	Don't Walk	Amber	3
				Cycle	80

Option B - Additional Exclusive Pedestrian Phase

This option would place an exclusive pedestrian phase between motor vehicle movements.

Table 1b. Additional Exclusive Pedestrian Phase Option

		This table is generalized illustration of how a second exclusive pedestrian phase may be integrated into the existing cycle and its implications on the cycle time.			
Phase	Leg A Pedestrian Indication	Leg A. Vehicular Indication	Leg B Pedestrian Indication	Leg B. Vehicular Indication	Timing Seconds
1	Walk	Red	Walk	Red	5
2	Flash Don't Walk	Red	Flash Don't Walk	Red	15
3	Don't Walk	Green	Don't Walk	Red	17
4	Don't Walk	Amber	Don't Walk	Red	3
5	Walk	Red	Walk	Red	5
6	Flash Don't Walk	Red	Flash Don't Walk	Red	15
7	Don't Walk	Red	Don't Walk	Green	37
8	Don't Walk	Red	Don't Walk	Amber	3
				Cycle	100

Option C – Leading Pedestrian Interval

This option would place an exclusive pedestrian phase between motor vehicle movements.

Table 1c. Leading Pedestrian Phasing

		This table is generalized illustration of how concurrent pedestrian and motor vehicle movements may work with a leading pedestrian interval and the implications on the cycle time.			
Phase	Leg A Pedestrian Indication	Leg A. Vehicular Indication	Leg B Pedestrian Indication	Leg B. Vehicular Indication	Timing Seconds
1	Walk	Red	Don't Walk	Red	5
2	Flash Don't Walk	Green	Don't Walk	Red	15
3	Don't Walk	Green	Don't Walk	Red	10
4	Don't Walk	Amber	Don't Walk	Red	3
5	Don't Walk	Red	Walk	Red	5
6	Don't Walk	Red	Flash Don't Walk	Green	15
7	Don't Walk	Red	Don't Walk	Green	24
8	Don't Walk	Red	Don't Walk	Amber	3
				Cycle	80

Option D – Diagonal Cross



In many cases an exclusive pedestrian phase is used to permit diagonal crossing movements. This movement compensates for the long cycle time and the difficulty this creates for two-stage crossings. A few pedestrians have figured out the exclusive pedestrian phase in the State Street area and are doing diagonal crossings. Pavement markings are needed to indicate that a diagonal crossing is permitted. Also, because it is an unusual approach, signage is recommended to indicate that diagonal crossing is permitted.

Table 1d. Diagonal Cross Phasing

		This table is a generalized illustration of how allowing diagonal pedestrian movements may work and the implications on the cycle time. The interval variables are due to the considerable distance for diagonal crossing at the North University and State Street Intersection.			
		Phase	Leg A Pedestrian Indication	Leg A. Vehicular Indication	Leg B Pedestrian Indication
1	Walk	Red	Walk	Red	8 - 10
2	Flash Don't Walk	Red	Flash Don't Walk	Red	20 -28
3	Don't Walk	Green	Don't Walk	Red	17
4	Don't Walk	Amber	Don't Walk	Red	3
5	Don't Walk	Red	Don't Walk	Green	37
6	Don't Walk	Red	Don't Walk	Amber	3
				Cycle	88 - 98

Table 1e. Comparison Chart

This table looks at pedestrian and motor vehicle delay. For calculating the pedestrian delay for crossing the second road, 12 seconds were assumed as the time it takes for a pedestrian to cross the first road. Also, leg A was assumed to be crossed first and leg B (the longer motor vehicle phase) second.

Option	Existing Phasing	Additional Exclusive Ped. Phase	Leading Pedestrian Interval	Diagonal Crossing
Max. Ped. Delay Crossing One Road	75 seconds	55 seconds	75 seconds	80 – 88 sec.
Max. Ped. Delay Crossing Second Road	68 seconds	48 seconds	35 seconds	0 seconds
Max. Ped. Delay Crossing Both Roads	143 seconds	103 seconds	110 seconds	0 seconds
Max. Time Between Walk Phase	75 seconds	55 seconds	42 seconds	80 – 88 sec.
Max. Vehicle Delay	63 seconds	83 seconds	55-70 seconds	71 – 81 sec.
Total Cycle Time	80 seconds	100 seconds	80 seconds	88 – 98 sec.

Conclusion

While the additional exclusive pedestrian phase option reduces the pedestrian delay significantly when crossing one road, it is only marginally better than the leading pedestrian interval when crossing both roads. While the diagonal crossing eliminates the problem of people crossing the “T” intersection in two stages it creates a longer delay for crossing just one road. Therefore, the Leading Pedestrian Phase was chosen as the best option.

1.2 Supplemental Measures

Four supplemental measures are listed that may complement any of the options for the Signalized “T” intersection. These are:

- Modifying the Safety Clearance Cycle
- Countdown Timers
- Audible Signals

Modifying Safety Clearance Cycle

Right now, there is a short Walk interval and a long Don’t Walk interval. It would appear that the current safety clearance is based on 3 feet/second with a buffer built in at some intersections. The Access Board’s Draft Guidelines on Accessible Public Rights-of-Way recommend that the pedestrian signal phase timing be calculated at 3 feet/second. The crosswalk plus the entire length of the curb ramp are used in the calculation of the crosswalk distance. There is no specific guideline for the safety interval. As most pedestrians with mobility restrictions will begin to cross at the onset of the Walk phase, a 3.5 ft./sec. safety interval may be considered prudent.

The advantage of reducing the safety interval would be that the Walk interval could be extended. As it stands now, many pedestrians perceive the 5-second Walk interval as extremely short.

Table 1f. Crosswalk Distances and Crossing Times

Please note that distances shown come from construction documents, not actual field measurements.

Intersection	Crosswalk and Ramp Distance	Pedestrian Phase Guideline	Crosswalk Distance	Safety Interval At 3.5 Ft./Sec.	Safety Interval At 4 Ft./Sec.	Potential Walk Phase
North University at State Street	75’	25 sec.	51’	15 sec.	13 sec.	10 sec.
State Street at William Street	59’	20 sec.	42’	12 sec.	11 sec.	8 sec.
State Street at North University	55’ & 58’	20 sec.	38’ & 41’	12 sec.	10 sec.	8 sec.
State Street at Liberty Street	53’ & 56’	20 sec.	36’ & 38’	11 sec.	10 sec.	9 sec.
Liberty Street at State Street	55’	19 sec.	40’	12 sec.	10 sec.	7 sec.
Liberty Street at Thompson Street	53’	18 sec.	35’	10 sec.	9 sec.	8 sec.
Thompson Street at Liberty Street	58’	20 sec.	40’	12 sec.	10 sec.	8 sec.

Countdown Timers

As many of the pedestrians are able bodied college students there is a propensity to treat the flashing Don't Walk as an extension of the Walk phase. This is due to the fact that as it stands now only 5 seconds of every 80 seconds has a Walk signal. The use of the experimental countdown timer may be appropriate in this case given the nature of many of the pedestrians so that they may judge themselves how much time is left.

Audible Signal

As noted earlier, to be accessible the signals should have an audible tone. As pedestrian activation is not needed, a pedhead-mounted speaker facing the waiting area below would be appropriate. In addition to making the intersection accessible, the signal will help cue able-bodied pedestrians to the Walk phase. Given the short Walk phase this is important. Also, the audible signal is an excellent way to indicate an exclusive pedestrian phase.

2. *Bicycle Accommodations and Restrictions*

2.1 Paired Improvement Options

Given the state of flux that the State Street area is in accompanied by the political pressures on both ends of the spectrum, a matched set of sidewalk bicycling restrictions and in street bicycling improvements were initially proposed. The three options explored were:

- A – Awareness of Existing Laws
- B – Experimental Pavement Markings and Moderate Restrictions
- C – Bike Lanes and Severe Restrictions

Option A would have little effect and Option C would be difficult to implement given the significant changes and loss of on-street parking that has take place with the road conversion and pedestrian improvement project. Option B is a minimal cost alternative that would complement Option C well should that be pursued in the future.

Option A – Awareness of Existing Laws

Right now bicyclists are allowed on all downtown roads and are required to operate much like a motorized vehicle. Current law requires that when riding on a sidewalk, a bicyclist must yield right-of-way to pedestrians providing an audible signal when passing a pedestrian. This option uses minimal signage.

In-road Bicycle Accommodations:

- Bicycle Warning Sign (W11-1) with optional Share the Road Plaque.

Sidewalk Riding Restriction:

- Yield to Peds (R9-6) signage posted in “downtown pedestrian sidewalk zone”.

Issues:

- Bicyclists may not use the audible signal required when approaching a pedestrian on a sidewalk
- Limited visibility of proposed Bicycle Warning Signs due to parking.

Expected Outcome:

- A reduction in wrong-way bicycling
- Negligible reduction in sidewalk bike riding.

Option B – Experimental Pavement Markings and Moderate Restrictions

In-road Bicycle Accommodations:

- Use the Shared-use Arrow on William, Liberty, Washington, State Street and North University.

Sidewalk Riding Restriction:

- A restriction on bicycle speed to 5 MPH on sidewalks in the “downtown pedestrian sidewalk zone”.

Issues:

- The shared-use Arrow is an experimental pavement marking that requires approval from the Federal Highway Association for use as a test.
- Signing bicycle speed limits on sidewalks is awkward.

Expected Outcome:

- Much better awareness of bicyclists right to cycle in the roadway.
- Greater comfort level in on-road bicycling by existing on-road bicyclists.
- Minimal to Moderate shift of sidewalk bicyclists to roadway cyclists.
- Higher numbers of sidewalk bike riding during times of road congestion.

Option C – Bike Lanes and Severe Restrictions

There are numerous bike lanes proposed entering the downtown as well as considerable bicycle traffic that crosses through the downtown between the west side of town and the U of M campus. The bike lanes would provide a route that would allow bicyclist to avoid much of the congestion during peak travel times.

In-road Bicycle Accommodations:

- Minimum of one east-west bikeway and one north-south bikeway in the downtown area.
- Shared-use Arrow on roads without a bike lane.

Sidewalk Riding Restriction:

- “Walk Your Bike” Sign (R9-6a) posted in “downtown pedestrian sidewalk zone”.

Issues:

- Limited road width would cause loss of on street parking in the downtown area.
- “Walk Your Bike” restrictions would be less successful on roads without a bike lane than those with a bike lane.

Expected Outcome:

- Moderate to substantial reduction in sidewalk bicycle riding due primarily to citizen harassment of non-compliant bicyclists.

Although our initial recommendation was to pursue Option B, on-going analysis and public input points towards a combination of alternatives: the Shared-use Arrow with the “Walk Your Bike” signage. It was concluded that pedestrian-bike conflicts are at a level that is serious enough to warrant a trial period of the “Walk Your Bike” signage without placement of bike lanes at this point. However, the Shared-use Arrow will improve conditions and awareness for bicyclists in the roadway. See Chapters 3 and 4 in the main report for further discussion of these issues.

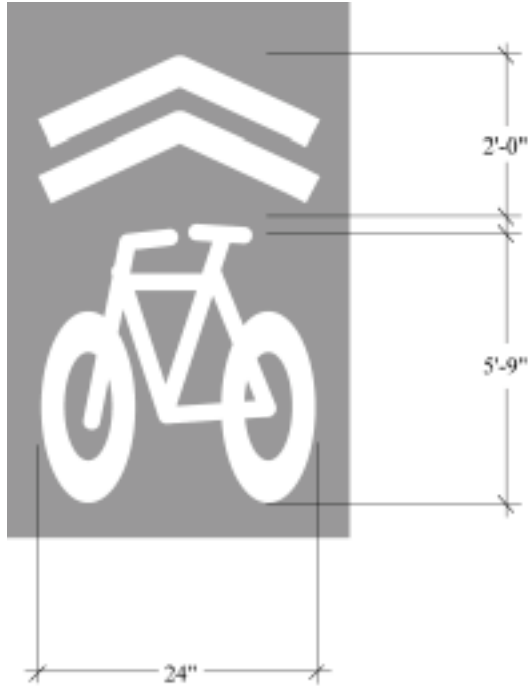
2.2 Signage Alternatives

Shared-Use Arrow Pavement Markings

Two alternative markings for the shared use arrow were explored. Research has not indicated a clear preference for one over the other but Option “A” is preferred due to its differentiation from the bike lane, similarity to the W-11 sign, potential application in other similar situations, and simplicity of the pavement markings.

Fig. 2a. Shared-use Arrow Options

A – Bike with Chevron



B – Modified Bike-in-House



Bicycle Warning Sign Options

The standard bicycle caution sign (W-11) does not specifically address the issue that the lane is shared by the bicyclist and the motorist, nor does it specifically address that a motorist needs to yield to the bicyclists. As many motorists assume they have the right-of-way the road, Options A and B underscore the bicyclists rights. Option A incorporates the text into a W-11 sign and has been used in Chicago. Option B uses a supplemental plaque, much like the share the road plaque. While Option B uses a standard W-11, the size of the sign assembly may be ungainly.

The disadvantage of Options A and B is being able to place them prominently. Parallel parking often requires that the sign be placed quite a distance to the side of the travel way. In addition, in some cases vegetation may obscure the sign. An alternative is Option C – a standard W-11, that may be placed on the cross bar of the signal pole. While this would be a prominent location, the height would suggest going only with the most simple of icon messages.

Fig. 2b. Bicycle Warning Sign Options

A – Modified W-11



B – W-11 with Supplemental Plaque



C – W11 with Prominent Mounting






2.3 Bicycle Restrictions on Sidewalks

Several different options ranging from requiring bicyclists to walk their bikes to simply posting a sign telling bikes to Yield to Pedestrians were explored. The following signs were designed originally considered appropriate to pair with the Shared-use arrow. After substantial public input on the issue, it was decided that the “Walk Your Bike” affords the most safety for pedestrians and bicycles alike.

Below are several of the signage options that were considered during the project and presented to the public for feedback before deciding on a final recommendation. Option A, is a standard R9-6 sign. Bicyclists riding on the sidewalk are required to slow their speeds and respect pedestrian traffic While it notes the requirement of bicycles to yield to pedestrians, it does not have indication for speed. Options B and C are custom signs based on the R9-6 “Bikes Yield to Pedestrian” sign. The icons are based on some of the new signs in the proposed second revision to the national MUTCD. Option B is not prescriptive with a speed recommendation where Option C does list an actual speed limit.

All of the options would be 12” x 18” signs. They would be placed at the beginning of each block and angled 45 degrees towards the sidewalks. In most cases the signposts for the parking signs may be utilized with a specialized mounting bracket.

Fig. 2c. Sidewalk Bicycle Usage Sign Options

A – R9-6	B – Custom with Icons	C – Custom with Speed Limit
		

3. *Completed Items*

The following items were implemented coinciding with the two-way crossover:

1. Caution Two-way Traffic Signs at crosswalks and Window Posters
2. In-street “Stop for Pedestrian” signs at Stop sign controlled intersections

Caution Two-way Traffic Signs at Crosswalks and Window Posters

Placement

12” x 18” signs made of corrugated plastic were posted on signposts or lamp posts at every crosswalk where the road changed from one-way traffic to two-way traffic. Approximately 35 signs were posted.

Similar posters measuring 8.5” x 11” were distributed to all businesses in the State Street area with the recommendation that the two-sided poster be placed in a doorway.

The posters placed in the door of establishments such as restaurants and coffee shops reminded pedestrians of the traffic change.



Support

Pedestrians, accustomed to years of one-way traffic patterns coupled with an established pattern of mid-block crossings were crossing in the middle of the block while looking for traffic in only one direction. Also, even though most of the intersections are signalized with pedestrian phase lights, there is a long history of crossing at traffic gaps against the light. Pedestrians were not in the habit of looking both ways when looking for traffic gaps. Temporary measures were needed to remind pedestrians as well as automobiles that the roads were now two-way.

Fig. 3a. Sign and Flyer Design

In-street “Stop for Pedestrian” Signs**Placement:**

For several days following the transition to two-way streets, a sign was put in the roadway to alert motorists at the tee-intersection of Maynard and Liberty to the presence of pedestrians. The sign was mounted on a portable plastic frame and was the same sign used in the roadway during Art Fair at the mall crossing along North University. The temporary sign seemed to be effective for increasing compliance of motorists at the new two-way intersection.

4. Summary of Public Input

The following items summarize the public input received throughout the project. They include:

- Summary of Public Input from the May 21st Alternatives workshop
- Public comments made during the May 21st Alternatives workshop
- Summary of Public Input from the October 2 Preliminary Plan workshop
- Sample worksheet from the October 2 Preliminary Plan workshop
- Talled results from the October 2 Preliminary Plan workshop
- Summary of Public comments made during the October 2 Preliminary Plan workshop

State Street Area Bicycle and Pedestrian Plan

May 21, 2003 Workshop: Public Input Summary

Major Issues Addressed in the Workshop:

Bike lanes and Sidewalks

A major concern of many of the people attending the workshop was the danger and inconvenience to both pedestrians and cyclists caused by biking on the sidewalk. Clearly, the status quo in the State Street area is not working, and an equitable solution for bikes, pedestrians and motorists must be sought. People also voiced a strong concern that there is a lack of bike facilities including bike parking and bike lanes downtown. Generally, people attending the workshop supported the idea of N-S and E-W bike lanes as a possible solution to the problem.

The addition of bike lanes in several areas would mean a loss of parking spaces, which is a major concern for the merchants in the downtown area. Several people noted the need for more data about the effect that loss of parking spaces has on the economic success of a business. Several people also noted that while loss of parking is not good, bike traffic also is good for downtown business. One major concern about bike lanes in the State Street area was the incompatibility of larger parked cars and bikes in tight spaces because of the danger of door swings. Narrowing automobile travel lanes to sub-11' or using different direction bike lanes on different roads were suggestions of how to accommodate bikes in the roadway.

Another solution mentioned several times is a Walk-Your-Bike zone around the State and Liberty area where bicyclists would be required to dismount and walk their bikes. Enforcement and education are major issues concerning the success of this proposed solution.

Enforcement and Education

Lack of enforcement by the police of existing ordinances for both bicyclists and automobile-drivers was brought up many times by different people in each section of the workshop. Clearly, this is a major issue concerning bike and pedestrian safety that needs to be addressed. As several people noted, coupled with the problem of lack of enforcement is a lack of education and understanding of the existing laws for not only automobile drivers, but bicyclists and pedestrians as well. Also mentioned was the observation that many bike police officers do not follow the standard rules of bike safety and therefore set a poor example for other bicyclists.

Accessible design

Another major issue at the workshop that was brought up several times was the importance of accessible design of pedestrian and bike facilities. It was stressed that these facilities should accommodate users of all abilities yet they often fail to do so. Detectable warning strips were mentioned as an important accessible design feature on crosswalks.

Campus/ Town

Several people brought up the observation that the expected behavior of bicyclists and pedestrians on the campus of the University is very different than what is expected or allowed off-campus. Bikes are allowed on sidewalks and students don't have to worry about car traffic on campus. Pedestrians and bicyclists rule on campus and they often take that attitude to the public streets. This observation critically pertains to the design of facilities at the interface of the town and campus. Care must be taken to design the facilities in a way that smoothes the transition between one set of norms to the next.

E-W Connector

The presentation briefly touched on The Greenway Collaborative Inc.'s initial analysis indicating a need for an E-W bike facility connector. The analysis focused on 3 possible corridors, Washington Street, Liberty Street and Williams Street. Liberty Street seems to be the least feasible of the three options. William Street seems to be the best option because it requires the removal of the least amount of parking, and the street width is feasible to accommodate bike lanes along the entire way. While no specific feedback was given on the preference between Washington and William Street from the attendees, it was noted that a detailed accounting of the number and types of parking spaces to be lost on each one should be considered. One person noted that North University and South University would also make good bike routes and should be considered.

In a follow-up conversation with Chris White of AATA regarding the possible conflicts of bikes with buses, he noted that Washington Street is a particularly busy street for buses, with 5 routes. William Street has 2 bus routes, one of which runs only one way on Williams. Chris said that while there have been no significant bike/bus problems with the buses and bike lanes on Packard, it is an important aspect to consider when designing a non-motorized system.

N-S Connector

Both Division and Fifth Streets were ruled out as options for a N-S connector because of the heavy traffic and high speeds of these thoroughfares. Fourth Street is not as feasible because it has a large amount of bus traffic. Therefore, State Street was proposed in the presentation as the best possibility of a N-S bike lane connector. This would mean the removal of parking along Angell Hall and the east side of the block between Liberty and Washington. One person noted that the removal of parking in front of Angell Hall is problematic because there is no parking deck nearby. In a follow-up discussion with Sue Gott, campus planner for the University of Michigan, she said that the idea of removing parking along this stretch of Angell is a possible option. Construction for a new addition to the Art Museum is planned which would change the existing dynamics of State Street along that stretch.

The discussion of the N-S connector brought up the issue of the need for a N-S connection through the campus near the Power Center and Dental School. Although not in the study area, the design and location of this proposed pathway could have a large effect on the location of the non-motorized system in the State Street area and should therefore be considered.

Lowering Speeds

Another proposal for improving bike and pedestrian conditions in the downtown area is to lower the speed of automobiles through signal phasing. Lowering the speed from 25 to 22 mph does not have a significant effect on pedestrian and bike LOS. Lowering the speed from 25 to 20 does have a significant effect on the bike LOS for both Washington and William Street. One person attending the workshop did note that while the posted speed is 25 mph, cars could be moving at much lower speeds already, in which case lowering the speed would not have an effect on bike and pedestrian LOS.

Issues outside the purview of the State and Liberty Street project

Several important issues were brought up that don't fall into the scope of this particular project, but should be considered for future study. The first is the issue of banning cars on a portion of the heavily-used pedestrian and bicycle routes of the State and Liberty area. Similar case studies include the Boulder, CO pedestrian thoroughfare along Pearl Street and the State Street area of Madison, WI.

The second issue is examining the conversion of one-way to two-way traffic along Division Street and 5th Avenue. This decision requires extensive analysis beyond the scope of this study, however, an initial investigation of the impacts on bike and pedestrian traffic will be considered.

State Street Area Bicycle and Pedestrian Plan

May 21, 2003 Alternatives Workshop, 12:00 Noon, Michigan Theater Screening Room:
Public Input Comments

Pedestrian Issues

Greenway Collaborative Slide Summary:

- Bicyclists and Skaters on Sidewalks
- Vehicles Blocking Crosswalks
- Poor Visibility at Crosswalks
- Poor Visibility of Crosswalks
- Failure of Motorists to Yield at Crosswalks
- Right-on-Red Conflicts
- Construction Detours
- Indiscriminate Sidewalk Blockage

Attendee Comments:

- There is a conflict with pedestrian and bicyclists' lack of understanding of laws and lack of enforcement by police of those laws.
- There needs to be more implementation of detectable warning strips and other accessible design measures. There is a lack of accessible design in the city.
- Safe conditions need to be created for all abilities.
- The boundary of study area should be extended to Katherine and Miller.
- Conflicts often occur because there is a completely different set of rules and expectation occurring on campus than off-campus. Bikes are allowed on sidewalks and students don't have to worry about car traffic on campus.
- Snow removal at crosswalks needs to occur more diligently.
- State Street area sidewalks are often blocked by café tables.

Bike Issues

Greenway Collaborative Slide Summary:

- Low Quality / Level of Service in Roadway
- No Designated Facilities
- One-way Streets / Out-of-Direction Travel
- Poor Linkages Between Good Roads
- Subject to Congestion
- Ill-informed Disgruntled Motorists
- Covered / Secure Parking Limited
- Abuse of Covered / Secure Parking

Attendee Comments:

- Police are not following common bike laws, they are setting a poor example for bikers to follow.
- There is a lack of enforcement by the police of laws governing bike and pedestrian safety.
- More bike parking is needed downtown.
- There is a lack of education of pedestrian and bicyclists as to how to behave.
- There is a lack of informational signage in the downtown area.
- Accommodate bicyclists of all abilities.

Motor Vehicle Issues**Greenway Collaborative Slide Summary:**

- Jay Walking, Especially when Making a Right-on-Red Turn
- Wrong-way Bicyclists
- Slow Bicyclists
- Barely Visible Bicyclists at Night

Attendee Comments:

- At blind alleys, cars should stop and beep.
- Spaces issues: car doors and bikes in the street don't mix.
- All ages must be accommodated safely- consideration for young children and seniors.
- Congestion and parking issues for motorists.
- Bicyclists are not understanding or not obeying rules of the road.
- There is a lack of understanding of pedestrian and bike safety laws.
- Again, there is a different set of expectations regarding bike behavior in town vs. on campus.
- Don Todd noted that during rush-hour traffic motorists will often try and squeak through a yellow light, only to get caught in the intersection, blocking oncoming traffic and often the pedestrian crosswalk as well.

General East-West Comments**Attendee Comments:**

- North University and South University are good potential bikes routes.
- Accommodating bike lanes safely with car door swings will be an issue. This is especially the case with two-door cars. One door has been measured to extend 4.5' when open.
- Consider different direction bike lanes on different streets, similar to 1-way pairs.
- Consider narrower travel lanes for cars.
- The individual uses of parking spaces should be considered- i.e. for retail or for special events.
- If the bike lanes are too wide, there is a danger of cars driving down them.

- Parking ramps should include digital displays that advertise number of parking spaces open in the ramp to attract people to ramp parking.
- A study of the effect of loss of parking on retail success is needed.
- People on bikes are more likely to patronize business downtown.
- Lane width is measured from the center of the lane markers, not from line to line.

General Comments

Attendee Comments:

- Look at a possible N-S connector through the University by the Power Center.
- Take out parking near the intersection to allow cyclists to pass on the right.
- Consider a walk-your-bike lane on sidewalk
- When considering lowering the auto speed/timing of the lights, consider that the average speed may be significantly lower already.
- Consider a licensing requirement for cyclists
- The area along State Street by Angel Hall is not a good spot to lose parking because there is no deck nearby.
- Existing ordinances are not enforced.
- Consider pedestrian rules on sidewalks, just as there are rules for bikes.
- Consider pedestrian scramble signal phasing.
- Bike lanes should be considered on the rest of Packard- ability to pass cars is an important benefit/incentive for riding a bike.
- Are 2-ways being considered for Division and Fifth Street? This would have benefits for parking and bikes.
- Perceived benefit of where there is parking or not parking for businesses. Economic data needed.
- There needs to be a creation of bike culture. Bike lanes are first step towards the “Validation of bikes”.
- Cyclists have a legal right to use the road, but many don’t feel they have that right so they use the sidewalks. Bike lanes will help bikers feel safer and more legitimate in the roadway.
- If the travel lane is less than 12 ft., cyclists can legally use the full lane according to MUTCD. Therefore, bike lanes help motorists by keeping bikes to the side and help cyclists by giving them a designated spot to ride.
- Law enforcement is critical component (i.e. enforcing tickets for delivery vehicles blocking crosswalks).
- The city should fine jaywalkers
- Consider a “Bikes Dismount” sign in State Street area.
- Passing stopped cars on right is legal.
- Cyclists rights differ in the crosswalk if they are mounted. This amounts to a legal grey zone.

- Boulder and Madison have banned cars on State and Pearl Streets. Please consider banning cars as an option in the State Street area.
- Transit is an important link- a greater encouragement of bus use is needed.
- There are concerns about the “Yield to Pedestrian Here” sign w/ english text and the large international population in Ann Arbor. Jane Kent has seen them used effectively in Cambridge, MA where there is also a large international population.

State Street Area Bicycle and Pedestrian Plan

October 15, 2003 Preliminary Plan Workshop Public Input Summary

Summary of Workshop Feedback:

Bicycle Accommodations

Results of the feedback tallied from the forms handed out during the presentation showed that the majority of people attending the workshop agreed that conflicts between pedestrians and cyclists is a significant problem downtown. The majority of people also agreed that the shared-use arrow pavement markings and additional bicycle warning signs were an appropriate solution.

Sidewalk Bicycling Restrictions

When asked what type of bicycle restrictions on the sidewalk should be implemented, the “Walk Your Bike” option got the most votes. The option of posting bicycle speed limits and “Yield to Pedestrians” signs was also a popular choice. However, the comments received in the open forum at the end of the workshop indicated that this was an extremely important issue for many of the people attending the workshop. The report recommendations were changed to support the “Walk Your Bike” signage based on the arguments presented in favor of this policy at the workshop.

Signal Phasing

The response to the question of the inconvenience of the current signal phasing at the intersections of State/Liberty and State/North University varied widely. An equal number of people disagreed as strongly agreed while for most the response was neutral. However, everyone agreed that the suggested solution of the leading pedestrian phase balanced the needs of pedestrians and motorists.

Education and Enforcement

All of the participants agreed that existing city regulations related to bicycles and pedestrians are poorly understood. Most responses indicated that the various educational measures proposed such as the banner and the flyers would be somewhat to very helpful. Many of the additional comments stressed the need for collaboration with the University on this issue.

Bicycle Parking

The large majority of the audience agreed that additional bike parking was needed in the downtown area. Maynard Street was the most common place suggested as a location for new bike parking. The University campus, the new bus station, and Main Street were also other areas that were mentioned more than once.

The following pages include an example of the workshop feedback form, a tally of the responses and written comments included, and the recorded oral feedback received in the “open mike” section of the workshop.

State Street Area Bicycle and Pedestrian Plan
 October 15, 2003 Preliminary Plan Workshop, 12:00 Noon, Michigan Theater Screening Room

Preliminary Plan Feedback Form

Please use this form to let us know what you think the most important issues are and how well they are addressed in the Preliminary Plan.

Background

Please check all that apply:

- | | |
|---|--|
| <input type="checkbox"/> I am a resident of Ann Arbor | <input type="checkbox"/> I own or manage a business downtown |
| <input type="checkbox"/> I work downtown | <input type="checkbox"/> I regularly bicycle downtown |
| <input type="checkbox"/> I live downtown | <input type="checkbox"/> I regularly walk downtown |

1. Bicycle Accommodations:

Conditions for bicycling in the roadway need to be improved.

- Strongly Disagree Disagree Neutral/Unknown Agree Strongly Agree

The shared-use arrow and shared lane signs are an appropriate implementation measure at this time.

- Strongly Disagree Disagree Neutral/Unknown Agree Strongly Agree

Comments:

2. Sidewalk Bicycling Restrictions:

Conflicts between pedestrians and bicyclists are a significant problem in the State Street area.

- Strongly Disagree Disagree Neutral/Unknown Agree Strongly Agree

Please choose one.

Along downtown sidewalks, signs should be posted that indicate bicyclists are required to:

- | | | |
|--|---|---|
| <input type="checkbox"/> Walk Bicycles | <input type="checkbox"/> Limit speed and Yield to Pedestrians | <input type="checkbox"/> Yield to Pedestrians |
|--|---|---|

Comments:

3. Signal Phasing:

The pedestrian signals at Liberty/State, Liberty/North University, Liberty/William, and Liberty/Thompson are noticeably more inconvenient than other pedestrian signals downtown.

Strongly Disagree Disagree Neutral/Unknown Agree Strongly Agree

The proposed leading pedestrian interval balances the need of pedestrians and motorists

Strongly Disagree Disagree Neutral/Unknown Agree Strongly Agree

Comments:

4. Education and Enforcement:

Existing city regulations related to bicycles and pedestrians are poorly understood.

Strongly Disagree Disagree Neutral/Unknown Agree Strongly Agree

How effective do you feel the following measures are for improving conditions for bicyclists and pedestrians downtown?

Very Helpful	Somewhat Helpful	Not Effective	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	A. "Same Road, Same Rights, Same Rules" banner
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	B. Bicycle Safety Flyer
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	C. Share the Road Flyer

Please include any additional education or enforcement campaigns regarding bikes and pedestrians that you would like to see implemented:

5. Bicycle Parking:

There are inadequate short-term bicycle parking options downtown.

Strongly Disagree Disagree Neutral/Unknown Agree Strongly Agree

Additional covered parking and bicycle lockers are needed in the downtown area.

Strongly Disagree Disagree Neutral/Unknown Agree Strongly Agree

In your opinion, where are more new spots most needed?

Please leave this form in the completed forms box on your way out. **THANK YOU!**

State Street Area Bicycle and Pedestrian Plan

October 15, 2003 Preliminary Plan Workshop, 12:00 Noon, Michigan Theater Screening Room

Preliminary Plan Feedback Results

Background

Please check all that apply:

- | | |
|--|--|
| 32 I am a resident of Ann Arbor | 3 I own or manage a business downtown |
| 11 I work downtown | 11 I regularly bicycle downtown |
| 9 I live downtown | 24 I regularly walk downtown |

1. Bicycle Accommodations:

Conditions for bicycling in the roadway need to be improved.

- 0** Strongly Disagree **3** Disagree **3** Neutral/Unknown **15** Agree **9** Strongly Agree

The shared-use arrow and shared lane signs are an appropriate implementation measure at this time.

- 0** Strongly Disagree **1** Disagree **4** Neutral/Unknown **14** Agree **11** Strongly Agree

Comments:

(Strongly Agree) I love the signs/markers. The biggest aspect of the effort to me is getting acceptance from the cars that bikes belong in the road. This enforces that idea.

(Strongly Agree) It is a good start of a solution. I never quite know where to ride and if there were signs and arrows it would provide some legitimacy for bikes in the road.

(Agree) Agree that it should be strongly considered.

(Neutral) Bikes need to follow traffic rules

(Strongly Agree) The raising of awareness to motorists, if effective, will raise the comfort levels of bikes. I would be more comfortable with such measures.

(Agree) We need to keep tabs on it and see if it works.

(Strongly Agree) Fantastic Idea

(Agree) Bikes should be able to share lanes downtown because cars are going slowly enough. Bike lanes should not displace parking lanes ever in a downtown.

(Agree) Caution/ Go slow approach is appropriate.

(Agree) I like to ride my bike in the road, but too many bikers disobey stop signs and traffic signals, this causing resentment among drivers. For effective mixing, bikers need to adhere to the rules of the road if the “Same Road/ Same Rules” is going to be successful.

(Agree) Enforcement to keep bikes off the sidewalk will be necessary.

(Strongly Agree) Excellent idea. I have ridden with these and they are great.

(Agree) Because too many cyclists are on sidewalk. I actually feel ok on the road.

(Agree) There are still thousands of students arriving from the suburbs every year who have been used to sidewalk-riding and would have to learn the new signs.

(Strongly Agree) Really like shared use/lane approach.

2. Sidewalk Bicycling Restrictions:

Conflicts between pedestrians and bicyclists are a significant problem in the State Street area.

0 Strongly Disagree **5** Disagree **4** Neutral/Unknown **11** Agree **10** Strongly Agree

Comments:

(Neutral) I haven’t been down here often enough to see it- I haven’t had any problems.

(Disagree) Not a significant problem.

Along downtown sidewalks, signs should be posted that indicate bicyclists are required to:

19 Walk Bicycles **8** Limit speed and Yield to Pedestrians **4** Yield to Pedestrians **1** None

Comments:

(Yield) Asking cyclists to walk or limit speed is unenforceable and will not work.

(Yield) I disagree because I feel that it is not a problem with informed/educated cyclists. I believe the signage will solve many of the problems.

(Yield) IF this does not take away legitimacy of bikes in the street.

(Yield) It would be nice not to entirely eliminate bikes- I don’t know think that would be so enforceable anyway.

(Yield) Signs should indicate where the appropriate bike path is located. Ok, if I had to choose one I would say “Yield to Pedestrians”.

(None) No signs should be placed. There are simply too many signs and other distractions already. There are laws in the books.

(Limit) “Bike at walking speed” would be better instead of “Walk your bike”

(Limit) People will likely not comply with “No sidewalk” restrictions. Ex.- U of M archway near E. University and S. University there is a “Walk your Bike” sign and no compliance.

(Walk) People will not walk their bikes unless it is enforced.

(Walk) The bottom line is: People/Traffic = Chaos

(Walk) There is no other reasonable option.

(Walk) Do not like graphics on non-standard-not clear. How about a graphic for this showing a person walking a bike (all ages, languages, barriers). Even careful bikers have people run out in front of them and the collision is more injurious to the walker than if bike were to walk.

(Walk) I am not sure how the other methods would really be enforced. Does a officer actually clock the speed of a bicyclist? Walking your bike gives more of a distinction in terms of following the law.

(Limit) In some locations bicycling on the sidewalk is possible. Either sign can be used depending on the situation-assuming all of downtown.

(Walk) Leave Division and Fifth as one way street. You can add parking on one side to pay for bike lane.

(Walk) If people aren’t comfortable in the streets, they probably shouldn’t be riding their bikes on sidewalks.

(Walk) Or “Ride in the Road”

(Walk) Chicago has an ordinance requiring 12 year olds and older to ride in the street.

(Walk) Requiring bikes to be walked in this area is essential. Your recommendations are wrong!

(Walk) I like “Yield to Peds” but for enforcement and safety reasons for all people, I would support “Walk Bicycles”

3. Signal Phasing:

The pedestrian signals at Liberty/State, Liberty/North University, Liberty/William, and Liberty/Thompson are noticeably more inconvenient than other pedestrian signals downtown.

0 Strongly Disagree **7** Disagree **8** Neutral/Unknown **8** Agree **7** Strongly Agree

The proposed leading pedestrian interval balances the need of pedestrians and motorists

0 Strongly Disagree **0** Disagree **1** Neutral/Unknown **14** Agree **14** Strongly Agree

Comments:

(Agree) Peds are notorious for not acknowledging any signals in this area. Peds who do are used to using traffic (auto) lights as a cue to walk. Signs should be posted to clarify unique light scenario.

(Neutral) APS have yet to be replaced

(Disagree) If peds are told how it works, they will wait for go.

(Agree) With education, signage, and audible signals.

(Neutral) In terms of sheer numbers of trips, making signals very responsive to peds would increase intersection efficiency. Prop intervals still favor auto trips b/c far more peds go thru State St. intersections each day.

(Neutral) What are other options?

(Neutral) It is not clear when to cross.

(Neutral) Scramble or all-ped phasing works extremely well when the public is informed. Leading ped phases may cause driver confusion b/c the peds will not be acting as anticipated.

(Neutral) 5 seconds may not be quite enough. Perhaps 10 seconds exclusively for peds would be better. Its tough for slow walkers to start walking and clear the intersection in just 5 seconds. It sounds like a good idea though.

(Agree) With people moving, if you spend all your time waiting and not walking, it discourages walking. Even with signage, don't like the signal as it is in these areas.

(Disagree/Agree) UB(?) and State was also exclusive. Human behavior is the factor. Worth the try.

(Agree) I am in favor of anything that gives peds more time.

(Disagree) Walk signs should have countdown "5,4,3,2,1..."

(Agree) There are hundreds of signal timing plans available. Motorists and peds do not know the difference and should not care. They should just follow the proper message.

(Agree) I have not experienced more inconvenience, but I have been told.

(Neutral) The crosswalk at Liberty and Maynard is also problematic because there is no signal. Not sure that we need one on Thompson and Liberty.

(Agree) It seems like it would help- I have noticed they are rather long.

4. Education and Enforcement:

Existing city regulations related to bicycles and pedestrians are poorly understood.

0 Strongly Disagree **0** Disagree **1** Neutral/Unknown **14** Agree **14** Strongly Agree

Comments:

(Agree) May just be ignored.

How effective do you feel the following measures are for improving conditions for bicyclists and pedestrians downtown?

Very Helpful	Somewhat Helpful	Not Effective	
14	13	3	A. "Same Road, Same Rights, Same Rules" banner
7	15	7	B. Bicycle Safety Flyer
7	15	6	C. Share the Road Flyer

Please include any additional education or enforcement campaigns regarding bikes and pedestrians that you would like to see implemented:

Repeated education and enforcement needed for both bikes and peds.

Only as effective as its distribution.

Make logo for Bikers Wanted larger- as large as it's the law.

Make sure that education information is widely circulated at the University- orientation, etc.

More communication with student groups! www.umich.edu/~bikes cycling-club@umich.edu

The marks on the pavement might be even more effective. Also, put up educational signs at Campus parking locations.

Effective cycling classes- contact info or bike safety flyer. Ticket bad cyclists.

Recently the City of Pittsburgh had a huge jaywalking campaign. The media coverage alone was a huge educational tool. This may be a good idea.

Perhaps police and U of M safety officers could give more warnings to bike riders in the downtown and around town when they are seen breaking laws or riding unsafely. Drivers could also get warnings.

Focusing on the students is a great idea. Students seem to have caused most of the mishaps/accidents that I have seen. Enforcement is key! Street furniture needs to be enforced- it seems to have gone crazy in the past year or so.

Banner is simple- you don't have to 'read' it, and it reminds people.

Things printed on things I regularly use like phone books or AATA route guides or places where I am stuck waiting- bus shelter-etc. People will stand and read a sign to pass time. I don't feel flyers are read, just thrown out. Posters yes, flyers, no. Waiting rooms: doctors, car dealership, repairs, muffler shops, etc.

Banner = visual clutter and temporary. Since signage on poles re bike use is proposed, can signage and/or painted message on roadway be tried instead?

Education and Enforcement.

The more we can get of coordinated education, the better. There is never too much education. Media outlets- catchy message on Wuof M and other stations.

Media, newspapers, bike club participation.

Perhaps teaming with the University during freshman orientation to help incoming students understand rules and benefits of biking downtown and to class.

Get bike groups to cooperate directly and others will hopefully follow their lead.

Partner with school system to train kids early and repeatedly.

Newspaper articles, public announcement on radio.

Bike safety flyer especially helpful in poster form. It would help if the police on bikes helped enforce but especially if they followed the rules themselves, which they don't currently.

This is the key issue IMHO. If this were to be addressed, I really think many of the other issues would clear up.

Many cyclists in the State St. area are University students. The U-M has a responsibility to educate freshman students.

5. Bicycle Parking:

There are inadequate short-term bicycle parking options downtown.

0 Strongly Disagree **5** Disagree **13** Neutral/Unknown **10** Agree **1** Strongly Agree

Additional covered parking and bicycle lockers are needed in the downtown area.

0 Strongly Disagree **1** Disagree **7** Neutral/Unknown **19** Agree **1** Strongly Agree

In your opinion, where are more new spots most needed?

Covered spots besides Maynard.

Maynard St. in or near the structure.

Add to the University area.

Where they are most practical (i.e. in front of destinations) replacing other street furniture and useless bike parking like William between Main and Ashley. More parking regulations!

Main Street. Under Maynard structure is great.

Bikers need to be cognizant as they follow their path- peds may be approaching the corner- a crash could happen- what can you do to prevent crashes?

Under grad library. In Forst St. structure, Long term- new AATA bus station should have a large number of spots and storage lockers. Convert some of the spaces in 4th St, Washington, and 4th/William structures to bike spaces. Maybe fire stations around town could have bike parking areas added to help commuters.

I am not a bicyclist (downtown) but I have heard comments from others about unfavorable conditions in terms of parking.

State Street area- better now where fully installed. Bike lockers- carefully located-ugly/large. Covered parking is a good thought for under the garage. But not black-use color.

State, Liberty, Main, S. University

Identify "high use" areas to see if there are enough bike racks. Simple hoop racks the best.

Main Street, bus station

Aren't most bike lockers not used?

Are all existing lockers being used to capacity?

A uniform set-back of stuff should be applied.

I perceive there is inadequate short-term parking options for bikes but not sure. Bike lockers are needed to encourage more use and to plan for future.

Some more covered spots closer to Main.

Enclosed, short term secure bike locker would be a huge addition. Many A2 residents own bikes in the \$2000+ range. I would be thrilled if there were a safe place to park a bike like this.

State Street Area Bicycle and Pedestrian Plan

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Public Comments

Support for the Shared-use arrow policy included the following comments:

- Pavement markings help clarify existing laws. It is less likely for cyclists to pass on right with markings.
- Shared use arrow allows better freedom of movement vs. a bike lane for turning movements
- Clearly defining where bikes should be and giving them a legitimate place in the road is a “win-win”
- Traffic in the State Street area is moving slow so conditions are safer for bikes in the road.
- Conflicts between bikes and peds affect people of all ages, abilities

Support for the “Walk Your Bike” policy included the following comments:

- Increases safety for bikes
- Minor time inconvenience of walking your bike is outweighed by safety benefits for peds
- Anything we can do to help bikes ride in the street is a positive thing.
- Example of effective use of “Walk Your Bikes” around the state.
- Bikes on sidewalk makes for stressful conditions.
- Not wise to have bikes on sidewalks, but that must be paired with safe conditions for biking in road.
- Other options are unenforceable.
- “City officials support it”

General comments:

- Support for publishing rules of the road for bikes.
- Support for audible warning when passing peds
- From a merchant’s point of view, phasing in bikes in the street with a gradual approach is more favorable than removing spots for bike lanes.
- What is the average speed of cars moving in the area after the two-way change?
- There is the issue of student influx at the beginning of the year that have to learn the new rules.
- Merchants should be consulted about signal phasing
- As a merchant, don’t remove parking spots.
- Bikers and pedestrians should not be treated as homogenous groups. Who are the pedestrians that are feeling most threatened? Who are cyclists who resist regulations? Looking into these issues may help fine-tune the policies and target educational efforts.
- Education of the transient population is necessary (includes football weekends)
- Bike lockers should include a rent-by-the hour option.
- In addition to the other accessibility options mentioned, the city should revise its policy on snow removal to provide better removal during the winter. Excessive street furniture should also be removed.
- Exclusive pedestrian phase is the safest and works in Europe.