

TPCBAC June 8, 2016 Packet Guide

1 – June 8 TPCBAC Agenda

2 – Draft minutes of the TPCBAC May 11 meeting

3 – Rolling Attendance Chart

4 – Correspondence concerning Skyline/Sunrise intersection (The ones your chair was included on and/or part of)

5 – Draft Bike Share support letter

6 – Urban Core May Draft minutes

7 – Santa Cruz Valley BAC May 5 minutes

8 – Most cyclists are immigrants, not hipsters (Houston) Article contributed by Collin (Remember folks, any member or staff who would like to may send me articles of interest to add to the packet)

9 – Mapping how Stressful Streets can Limit Cycling Article contributed by Ian



*Pursuant to A.R.S. § 38-431.02, notice is hereby given to the members of the **Tucson-Pima County Bicycle Advisory Committee** and to the general public that the **Tucson-Pima County Bicycle Advisory Committee** will hold the following meeting which will be open to the public:*

Meeting Date: **Wednesday, June 8, 2016 at 6:00 PM**

Meeting Location: **Himmel Park Library Meeting Room**

Please arrive by 5:50 PM. If a quorum of 12 members is not reached by 6:10 PM all staff are required to leave and the meeting will be canceled.

AGENDA

Agenda Item	Projected Duration
1. Call to Order; approval of February 10th meeting minutes.	5 min
2. Call to Public This is the time when any member of the public may address the BAC. Due to time constraints, the total time allocated for this is 10 minutes. Individuals are allowed three minutes each. If additional time is needed to address the BAC, it may be considered as an agenda item for a future meeting.	5 min
3. Law Enforcement Staff Reports from TPD and PCSD	10 min
4. Yearly Awards	15 min
5. Skyline/Sunrise Update	15 min
6. Bike Share Update and letter of support: Ann	10 min
7. Road Diets and Safety in City of Tucson: Ann or Andy	15 min
8. Share the Road New Guides: Matt	15 min
9. Review Report Card from LAB Gold Designation	10 min

10. Summer Schedule And Retreat **5 min**

11. Staff Reports **15 min**

Andrew Bemis, City of Tucson;
Matt Zoll, Pima County;
Nancy Ellis, Oro Valley;
Brian Varney, Marana;
Adelina Martin, Sahuarita
Sam Sanford, Pima Association of Governments,
Vacant, UA

12. Subcommittee and Related Entities Reports **10 min**

Facilities (Adam Wade/Brian Beck)
Urban Core Facilities (Robin Steinberg)
Education (Elaine Mariolle)
GABA (Eric Post)
Living Streets Alliance (Kylie Walzak)
SCVBAC
PBAA (Richard DeBernardis)
CASA (Wayne Cullop)

13. Announcements **2 min**

14. Adjournment **5.1 sec**

Next Meeting date is Wednesday, July 13 or August 10, at the regular Himmel Park Library location.

If you require an accommodation or materials in accessible format or require a foreign language interpreter or materials in a language other than English for this event, please notify the Tucson Department of Transportation Office at 791-4391 at least five business days in advance.

April potential agenda items: expanding ourselves to include pedestrians (matching COT's Bicycle Pedestrian Committee), having subcommittees become more important and have the main BAC meet only quarterly, Vision Zero, ? **None of these are guaranteed, just food for thought.** Please feel invited to add other items to future agendas. We will honor all requests from committee members.



The **Tucson-Pima County Bicycle Advisory Committee** conducted a public meeting on **May 11, 2016** at the Himmel Park Library, 1035 N Treat Ave, Tucson AZ.

DRAFT Meeting Minutes, NOT APPROVED

prepared by Collin Forbes

1. Call to Order; approval of April 13th meeting minutes

David Bachman-Williams called the meeting to order at 6:00 pm.

Motion: by Robin Steinberg to approve the April minutes as amended. Seconded by Josefina Ahumada. **Passed with unanimous voice vote.**

2. Call to Public

Matt Harmon introduced himself as the vice president of GABA. They are looking for programming for their monthly membership meetings. The upcoming June 6 meeting is a chance to interact with GABA's membership as a part of a panel discussion of emerging priorities of cycling infrastructure in the area. Email matt.harmon@bicas.org if you are interested.

Howard Strause gave us a "heads up" about a bail hearing on Friday. The driver charged with the deaths of two cyclists while under the influence of drugs is asking for a bail reduction. The concern is the person has not received any substance abuse treatment or counselling since the crash and he is likely to do drugs again after his release. The hearing is at 110 W Congress, in the old superior court building, courtroom 672.

David Bachman-Williams relayed the news about an email he and others received from the League of American Bicyclists. They decided our status will remain a gold community for the next 4 years. David said most of us expected that, but it's very nice to keep our status. The main issues are that we don't have enough commuters and still have too many fatalities.

David also welcomed Jessica Hersh-Ballering. She's the new Alternative Modes Program Coordinator for the University of Arizona.

3. Law Enforcement Staff Reports from TPD and PCSD

Deputy Roher reported for the Sheriff's Department.

Canada St & Mission, it's the second there in a few months. The rider was headed south on Mission, the driver was eastbound on Canada and stopped, looked left, then looked right and did a northbound turn onto Mission in front of the cyclist. The cyclist swerved to the left which probably made the crash worse. The driver was cited for failure to yield at the stop sign. He was also cited for causing serious injury and then finally for driving on a suspended license.

Bear Canyon/Snyder Rd. A 16 year old riding in the bike lane. He said there was a vehicle coming up behind him leaving no room and he jumped off his bike to avoid being hit. The rider said it was a Toyota Tacoma Pickup, clean and a newer model. No driver or plate. The deputy is planning to follow up with the rider to see if he can remember more information.

Swan/Skyline. The rider was going one way, and the vehicle was going the other way. The rider say the vehicle starting a left turn in front of him. There was no contact, but the rider laid his bike down to avoid the car. There is no citation listed, so deputy Roher isn't sure what happened afterward.

Finally, regarding Ann Day's collision. Of the people who stopped to assist, one was a medical doctor out for a bike ride. Another cyclist who stopped was a marine with medical training.

Sergeants Mike Allen and Mike Molina reported for Tucson Police Department.

In the month of April, the police investigated 7 crashes with personal injuries.

- Failure to yield from a private drive from a business complex
- Rider cited for one where he was riding on sidewalk opposite traffic
- Rider riding wrong way, wasn't cited because he was in hospital for awhile
- Driver cited for left turn at intersection, left hook on cyclist.
- 2 hit & runs. Rider had no information other than it was a white car. Second one, rider hit the rear of a car and wasn't sure the driver knew he had hit him.

In May, they are planning 72 hours of additional grant-funded bicycle enforcement. It began with the Light the Night event earlier in the week.

One or both sergeants will attend our meetings as a regular liaison. David Fernandez was promoted to lieutenant.

4. Miramonte Neighborhood Proposal: 3rd St./Richey Changes

Andy Bemis has been working with the Miramonte Neighborhood Association about changes to the intersection at 3rd St and Richey Blvd. He presented it to the Urban Core subcommittee last week and is now presenting to the TPCBAC as a whole.

The changes are to improve safety for bicycles and pedestrians and improve the livability of neighborhood. They are trying to reduce traffic volumes on 3rd Street by restricting 3rd at Richey. This is meant to keep cars on Richey and not let them turn onto 3rd Street.

One reason for reducing traffic volume is because of the repaving on 3rd between Palo Verde & Alvernon. It increased traffic speeds. Also a big complex is being planned at Miramonte & Speedway with mixed use and this may add traffic in the area.



The rendering shows two different versions of a semi-diverter. One is a narrowing spot with a contraflow bike lane. The other is a floating island with a channel for bikes on the other side.

Robin Steinberg asked whether there would be stop signs for the cyclists on 3rd? Andy said not necessarily. They have evaluated with traffic engineering and they don't think that the stop signs need to be changed. Robin thinks this is cool!

Kylie Walzak mentioned asked about the high density housing on 3rd. How will people get in and out of their apartments? Andy said they can still go on 3rd Street for a little and turn onto Richey or Dodge.

Any noted this will still need to go through the residential approval process. 60% of the residents need to be in favor of this.

Motion: by Robin Steinberg that the BAC support the efforts of the Miramonte Neighborhood Association and whichever design they decide to support. Seconded by Ryan Fagan. **Passed with unanimous voice vote.**

5. City of Tucson Speed Limit Policy and Procedure, Diahn Swartz

Diahn Swartz, Traffic Engineering Manager, TDOT. "The Speed Limit Lady."

Some speed limits are set by the state of Arizona.

- 65/75 mph on Interstates
- 25 mph in business or residential districts
- Local authorities may alter speed limits, and can lower to 15 mph for dust control

Tucson Speed Limits

- The speed limit on alleys is 15 mph when posted
- There is a separate ordinance for every other speed limits: 30, 35, 40, 45, 50 & 55 mph

85% percentile speed

- Speed that 85% of the drivers are operating at or below
- It assumes that 85% of the drivers are reasonable and prudent while the 15% are crazy outliers
- MUTCD says speed limits should be set within 5 mph of the 85th percentile speed
- The 85% percentile speed is determined by a spot speed study, direct observation of how fast drivers are going.
- Note: California has a lot more about speed limits than we do.

Spot Speed Study

- Conducted during off-peak hours when motorists are choosing their own speeds
- 125 samples (in each direction)
- Select drivers at the beginning of “platoons” (they are selecting their own speed)
- Speed values are put into bins for statistical analysis to determine the speed of the 85%

Speed Limits Change

- New construction
- New annexation
- Not previously “ordinanced” (annexed before, but forgotten)
- Matching a change to the county speed limit
- Results of a speed study

Diahn says she has usually lowers the speed limit as a result of a speed study. For instance, Old Spanish trail near Wrightstown Road.

Speed Zoning Practices

- 85th percentile
- Accident Experience
- Roadside Development
- Pedestrian Activity
- Functional Class
- Traffic Volumes
- Pavement Width
- Lane Width

Design Speed...

- Distances of Clear Zone (ability to get back on road after running off)
- Horizontal and Vertical Curves
- Sight Distance
- Presence of Curb (not recommended for high-speed roadways, because of unpredictable nature of high-speed vehicles when they strike the curb)

Other considerations

- Signal Density and signal progression
- Pedestrian facilities adjacent to the road
- Urbanization and increasing access density friction
- Presence of street lighting

Speed Limit settings are approved by mayor and council, every speed limit is a political decision.

On sign placement, there is a rule of thumb. The 35 mph sign is 350 feet past the signalized intersection. Sign Distance (in feet) = MPHs * 10. If traffic signals are more than a half mile apart, then have a sign at or near the half mile mark.

Robin Steinberg is disturbed by the inconsistency of the speed limits on Columbus Blvd. Between Grant & Speedway, it's 25 mph. Then it's 30 mph between Speedway and 5th Street, this is where 3rd Street Bike Route uses Columbus.

What's the way to promote the lowering of speed limits on Columbus? TDOT would need to do a spot speed study to establish the 85% percentile there. The BAC can write a letter to ask this.

Diahn said she has inherited a lot of speed limits. Speed limits are a dance between the engineering part and the political part. Ultimately the mayor and council respond to their constituents so they need to think broadly about speed limits.

David Bachman-Williams noted, rather than pushing a speed limit, we want to apply changes to the street to make it more attractive to go slower. We need to concentrate on physical changes rather than legal/political changes. Changes that would prompt the political change for the speed limit.

Traffic Calming on Bicycle Boulevards are an example of the physical changes to reduce speeds. These are tools used only on the residential streets. Also the Broadway restructuring uses tools to slow the traffic. It is scheduled for 11 foot lanes rather than 12. The lane adjacent to the median is 11 feet to the curb rather than the line. Effectively, it's going to be a 10 foot lane.

TDOT policy states administratively they can drop from 12 feet to 11 based on an engineer's recommendation. To go to a 10 foot lane, they need the director's approval. On a route like Broadway Boulevard with the buses, they are 10 foot from mirror to mirror. It would be hard to go to 10 foot lanes all across Broadway.

Thinking beyond Broadway, what about specifying narrow lanes for all new road projects? Diahn said she has had good support from the TDOT director and from Mayor/Council. She's feeling better about supporting narrower lanes on future projects.

Setting Speed Limits is like a three-legged stool. There are three "E"'s for traffic safety. Enforcement, Engineering and Education. We need all 3 legs for the stool. Better enforcement and need to know what the speed limit is and why the speed limits are.

6. Voting for Yearly Awards

Staff/Advocate/Commuter awards. Nominations and biographies are in the packet.

Staff person: Andy McGovern has majority of hands.

Advocates: both Ken Viera and Emily Yetman by unanimous voice vote.

Male commuter: Gary Bahmen by a majority of hands.

Female commuter: Anna Jiminez by a majority of hands.

We will give out the awards at the meeting next month. Normally we'll give them out in April during Bike Fest.

7. TPCBAC Election of Officers

Nominees:

- Chair: David Bachman-Williams
- Vice-Chair: Eric Post & Kylie Walzak
- Secretary: Collin Forbes
- Parliamentarian: Ed Yasenchack

Eric Post has withdrawn his name from consideration. The vice-chair position is no longer contested.

Voting by show of hands:

- David Bachman-Williams for chair: 14/14
- Kylie Walzak for vice chair: 14/14
- Collin Forbes for secretary: 14/14
- Ed Yasenchack for parliamentarian: 14/4

8. Skyline/Sunrise Update

David Bachman-Williams was at a meeting at Pima County Traffic Engineering Offices by Mission & 22nd. He has information about the proposal backed at the meeting.

There are the two speed tables we talked about in the past, one at either end of the turning lane/on ramp. The second one has to be back far enough so that when someone finishes going over the first speed hump, they have time to focus and react to what is in front of them.

The speed tables should get the 85th percentile speed down from 37mph to 25 mph. Currently the average speed is 31 mph.

However, there won't be any yield signs for drivers merging onto the main road from the turning lane and it's not in the AASHTO guidelines to have yield signs for the bicycles crossing the merge lane.

They will also be covering the blue lane with a black covering and adding a "green ladder" for the bike lane at a shorter angle for the crossing. The green ladder is consistent with other markings in the county and it still gives the drivers the sign that there might be bikes there.

Matt Zoll said we'll still have the diamond bicycle sign on the merge lane so there's a warning.

Why isn't there a 'yield to bicyclists' on skyline? The AASHTO guidelines don't have it. They don't prohibit it. The drivers are coming into a lane and staying in that same lane, so it's different from the usual yield situation. The bicyclists are actually crossing that driver's lane.

The county has been doing vehicle counts for speeds and bicycle counts and simultaneous arrivals when driver and cyclist are near each other on the ramp. There are 3000 vehicles per day going through and they are estimating bicycles are 2% to 5% of the vehicle count.

Is the intersection urban enough in context for NACTO guidance. Matt would prefer to get rid of the intersection altogether. But cost and expediency are a part of the decision. Reworking the intersection will be expensive and won't happen soon.

Howard Strause stated removing the yield signs on Skyline would be a disservice for the bicycle community. It's a race to the intersection and the cyclists will be out in the road with vehicles coming up from behind and to the right. Cyclists now believe there are yield signs on Skyline because there always have been. Also, he said he has had cyclists ask him if he's seen the orange dots and if this is to make cyclists attempt a sharp turn at speed.

Matt responded that sign changes are going to need “traffic control change” signs for a certain amount of time. Collin Forbes noted a generic sign might not be useful, because the cyclists on Sunrise won’t be seeing any change and might think it’s a misplaced sign.

David noted the speed tables should drop the speeds enough that the cyclists and motorists will be arriving at the intersection at about the same speeds. This will help it a lot, especially if people aren’t paying attention to the yield signs.

At the PCDOT meeting David was looking for what will work. Ideally they would like to get rid of the free-flow right turns, but there’s no funding for that, and in the time frame.

Howard Strause reiterated we will be lulling the bike community into a false sense of safety. Especially with the pavement markings, cyclists are going to believe they have the right of way on Sunrise.

Wayne Cullop asked, if a cyclist is hit, who is going to be at fault? Matt said the cyclist has the yield sign and would need to yield to the traffic behind him. The proposed change would be a small yield sign for the bike lane itself. Part of the changes are to cut back on the pork chop there so there’s more buffer and cyclists who wanted to stop could. They are crossing the lane at that point, so it’s like a lane change.

Matt told us to look at 22nd & Kino as an example. The bicyclists end up yielding to cross the on and off ramps. They do it at a right angle. Following same treatment for regional consistency. David responded, at Kino, to cross one street you need to cross four lanes separately. For bicyclists, it feels like you are a mouse in a maze.

Aaron Lien said he’s terrified to use the Skyline/Sunrise intersection now and he’ll ride any road. He thinks the proposal seems like it improves safety.

Motion: by Rob Steinberg to support the placing of the speed tables and to urge the county to give the right of way to the bicycles, indicated by yield signs on the road. Seconded by Aaron Lien. Majority voice vote with One abstention.

Kylie Walzak explained her abstention. She’s tired of having a cyclist's life being equivalent to 3000 cars per day. She’d rather get rid of the free right turn altogether. David noted that would be our ultimate preference and he’s going to add it to the letter.

9. Enforcement Committee Restart: John Rossman

John Rossman has resigned from the BAC.

10. The New Education Committee: Elaine Mariolle

Tabled for lack of time. Elaine will give a brief update during the subcommittee updates.

11. Broadway Widening update

Broadway Widening. We sent the letter in the packet, but haven't received a response. It turned out we had bad information on that, the lanes are going to be 11 feet rather than 12. Still, our position isn't different.

12. Staff Reports

Andy Bemis, TDOT

- 4 new HAWKS under construction: 9th/Campbell. Olive/Old Nogales Highway. Grant/Sahuara. Fort Lowell/Craycroft at Fort Lowell Park.
- Fort Lowell/Treat: HAWK is under design. The rest of the Treat Bike Boulevard is under conceptual design.
- Corral for 4th Ave in front of the Food Coop is being fabricated. Antigone books is also restoring theirs.

Matt Zoll, PCDOT

- One last Skyline/Sunrise comment. His preferred treatment is very similar to that southbound Campbell at Grant. It will force drivers to make a true right turn at 10 or 15 mph.
- Walk & Roll School Day on April 29. 24,500 students involved
- Finished Harrison Bikeway, from Catalina to Sabino High School. There's a connection to McDonald Park
- The UA Bike Station served 7,900 cyclists this year.
- Loop Outreach programs are continuing.
- New School Pathway out in Vail School District. It's about a mile long and, will connect neighborhoods and have a HAWK

Nancy Ellis, Oro Valley

- Bike Swap was a success, going to do it again next year

Brian Varney, Marana

- Curb cuts on Twin Peaks Road to get between the bike lane and the shared use path. It's a very good correction.

Jessica Hersh-Ballering, UA

- Started 2.5 weeks ago. Doing all things Bike, Pedestrian, Car Share, Bike Share and Buses
- Doesn't have Glenn Grafton's old position. This is a new position. His old position is open, and there's someone else running CatTrans.
- There will be a small bike detour on the UA Mall around work for Southwest Gas. It's short and well-signed and you can stay on your bike.

Sam Sanford, PAG

- He noticed from the minutes last month there was a comment about the long range transportation plan not listing bicycle fatalities. At the time of the publication, Tucson was designated a pedestrian focus city and now have designations for both pedestrian and bicycle focus. PAG will be collecting the data and putting it on their website.

13. Subcommittee and Related Entities Reports

Education Committee, Elaine Mariolle

- First meeting was April 27. Talked about history and background.
- The main point of discussion was engaging the numbers. Education of motorists is a prime point.
- Next meeting on May 16. After that, it'll be the first Monday of the month. June 6 would be after that.

Enforcement Subcommittee

- John Rossman just sent in his resignation. Starting from scratch

Facilities, Brian Beck

- Draft minutes are in the packet.

Urban Core, Robin Steinberg

- Miramonte Neighborhood
- Speed Limit Stuff

14. Announcements — None

15. Adjournment — 8:14 pm.

Attendance:

Josefina Ahumada, South Tucson
David Bachman-Williams, Pima County
Brian Beck, Pima County
Wayne Cullop, Pima County
Raphael Duarte, Pima County
Ryan Fagan, Ward 6
Collin Forbes, Pima County
Bruce Hermes, Ward 2
Aaron Lien, Mayor's Rep
Elaine Mariolle, Pima County
Anne Padias, Ward 5
Robin Steinberg, Pima County
Edward Yasenchack, DMAFB
Kylie Walzak, Ward 3

Audience:

Mike Allen, TPD
Ann Baldwin, Miramonte Bike Committee
Andy Bemis, TDOT
Steve Brown
Sarah Daley, Miramonte Bike Committee
Nancy Ellis, Oro Valley
Matt Harmon
Mike Molina, TPD
David Reichten, Miramonte Bike Committee
Ryan Roher, PCSD
Sam Sanford, PAG
Howard Strause, Cactus Cycling Club
Diahn Swartz, TDOT
Brianda Torres, COT Ward 3
Brian Varney, Town of Marana
Matt Zoll, PCDOT

Note to TPCBAC list: The following contains copies of email letters sent from various parties involved back and forth since the last TPCBAC meeting, May 11. In addition I met with Ms. Cornelio and Mr. Chalmers on Friday, June 3. I was assured the yield signs would stay with the free flow lane, NOT be switched to the bicyclists.



May 12, 2016

To: Mr. Seth Chalmers

Re: Skyline/Sunrise Redesign

Dear Seth,

This letter may be surprising to you. I presented and Matt supported the compromise design we agree to at the meeting in your offices concerning the Skyline/Sunrise intersection. However, after intense discussion a motion was made, seconded and passed overwhelmingly to give you a different recommendation for this intersection.

Simply put, the TPCABAC wishes to commend you and the design team on the speed tables and their locations. We agree that this will do a lot to make the intersection safer. Matt explained that the compliance with the yield sign now is low and we both emphasized that the speed of the vehicles using the free flow lane would be significantly reduced. However, the TPCBAC is in opposition to removing the yield-to-bicycles sign for the vehicles using the free-flow lane and placing one for the bicycles coming west on Sunrise onto Skyline. The membership firmly believes it is wrong to make bicyclists the party that needs to yield. We believe the continuation west should give bicyclists the right of way to remain in the bicycle lane ending in the continuation of the bicycle lane. The membership believes to do anything else is to put the bicyclists unfairly at fault for correctly using the bicycle lane and crossing to its continuation.

I should like to relate some of the discussion. It was noted from previous minutes that keeping the yield for the vehicles on the free flow lane was what the BAC supported at the meeting you attended. It was noted that it would be confusing to bicyclists who have always had the right of way to suddenly make them be the ones to yield. There is an expectation if you are on the main road that people entering on a free flow lane, even one that becomes its own lane, are the ones required to yield. It was noted that with vehicles being slowed to 20 to 25 mph by the speed tables that they would be much better prepared to yield.

A very good point was made that we make frontage road vehicles yield to the freeway off ramp people even if their lane continues. This analogy makes a lot of sense. It really is a safety issue that the minor road yield to the major road regardless of whose lane it is initially. Note that this applies to as many as three lanes! Consider a vehicle exiting the I-10 eastbound at Congress who has the right of way across the entire frontage road there.

Further, the TPCBAC would like to re-emphasize that we are opposed to free flow turns for any application other than entry and exit of freeways. This would be our first preference for this particular location. We believe the safest condition for bicyclists going west from Sunrise onto Skyline is to have the traffic from Skyline merging onto westbound Skyline enter the Sunrise/Skyline intersection at a normal 90 degree intersection where they would need to stop and then turn right. We would accept the compromise of the speed tables and retaining the current yield signs as the next best alternative. We expressly reject the compromise our Chair agreed to of reversing the yield signs to favor the vehicular traffic.

Sincerely,

David Bachman-Williams,
Chair, TPCBAC

May 16

Email from Matt Zoll to Robert Fritz

Hi Bob,

We're still working on the design for the intersection so we don't have a pdf at this time to send out. Also we've had four public meetings about the intersection, including three main BAC meetings and one BAC subcommittee meeting. The proposed plan is still to install two speed tables to slow speeds down to around 20 mph at the merge area and to install a new green ladder-type crossing where the bicycle traffic crosses the ramp lane. I've copied Seth who may be able to answer any additional questions you have.

Matthew Zoll, M.Sc., AICP
Bicycle and Pedestrian Program Manager

May 19

Dear Seth, I am requesting a follow through on the Sunrise/Skyline situation with you in person. I wouldn't mind meeting with the same design team that I met with last time. As you know by now this

situation is escalating. Today I was copied an email sent to you by the Cactus Cycling Club. You will have noted they copied Ms. Cornelio and Mr. Huckleberry.

One of the members of the Club attended the last TPCBAC and was a leading critic of the design that Matt and I presented. Obviously, the whole club has been contacted and there has been a decision that they wish to take this issue on. Now it appears as if GABA (Greater Arizona Bicycling Association) may be about to weigh in on the issue, too.

I would be happy to be of use in helping bring about a satisfactory resolution. Thus my request to meet with you and/or the team personally. Please let me know how you would like to proceed.

Sincerely,

David BW

May 19, 2016

To: Mr. Seth Chalmers, Traffic Engineering Division Manager

Re: Skyline/Sunrise Redesign

Dear Seth,

I am the President of Cactus Cycling Club and write this letter with the unanimous approval of the Board of Directors. Our Club consists of approximately 200 members all of whom are active cyclists. We have examined the proposed redesign of the Skyline/Sunrise intersection. While we agree with some of the proposed changes, we are adamantly opposed to others. We believe some of the proposed design changes will make this intersection even more dangerous to cyclists.

As you are aware, the proposed redesign is as a result of a cyclist being recently killed at this intersection. From our point of view, this death resulted from excessive driver speed, a driver failing to keep an adequate lookout, and most importantly a faulty design. Any design changes should remedy all of these problems.

We believe everyone is in agreement, certainly everyone in the cycling community, that this intersection should be redesigned so that vehicles entering Sunrise from Skyline should be required to stop before proceeding. This could be accomplished in a couple of ways. First, the free flowing right right off of Skyline could be removed entirely and a "T" intersection created. Alternatively, and probably the most cost efficient, a STOP sign could replace the present YIELD sign. This alternative would be consistent with some of the interstate on-ramps that require entering traffic to STOP before entering the interstate.

We wish to commend you and the design team on the proposed addition of speed tables and their locations. We agree that the speed of the vehicles using the free flow lane would be significantly reduced with the addition of these speed tables.

Cactus Cycling Club is adamantly opposed to removing the yield-to-bicycles sign for the vehicles using the free-flow lane and placing one for the bicycles heading west on

Sunrise. Our membership firmly believes it is wrong to make bicyclists the party that needs to YIELD. This appears contrary to statute that states cyclists are to be treated the same as motorized vehicles. Cyclists heading west on Sunrise would be required to YIELD, while motorized vehicles heading in the same direction would not be required to YIELD. We believe cyclists heading west on Sunrise should be given the right-of-way over vehicles merging onto Sunrise from Skyline. Our membership believes to do anything else is to put the cyclists unfairly at fault for correctly using the bicycle lane and crossing to its continuation.

The proposed change of removing the YIELD sign for motor vehicles, would be confusing and unsafe to cyclists. Cyclists have always had the right-of-way at this intersection. To suddenly make them be the ones to YIELD would be dangerous. There is an expectation if you are traveling on a through road that people entering are the ones required to YIELD. Vehicles being slowed to 20 to 25 mph by the speed tables are much better prepared to YIELD, as they should.

The proposed redesign also changes the angle of the bike lane. This change would not be necessary if the YIELD sign removed on Skyline or if a STOP sign was installed. This proposed redesign will be even more dangerous as debris gathers on the road. We know the location of the island causes debris to gather on the west end of it.

There are other reasons the YIELD sign changes will be dangerous to cyclists. Cyclists many times are traveling up to 25 mph on Sunrise due to the downhill nature of that section. Many cyclists may not notice a new YIELD sign that is there only for cyclists and is contrary to all other rules of the road. Other cyclists may believe it is safer to proceed straight with the flow of traffic instead of making the sharp right angle as proposed.

Further, Cactus Cycling Club would like to emphasize that we are opposed to free flow turns for any application other than entry and exit of freeways. We certainly do not want the proposed redesign of this intersection to serve as a template for other intersections with free flow turns.

Sincerely,

Shawna Strause, President Cactus Cycling Club

cc: Chuck Huckleberry
Matt Zoll
Priscilla S. Cornelio, Pima County Transportation Director

Reply from Seth Chalmers:

Please make folks aware that it is not my intent to piecemeal our approach on the free flow rights.

Everyone has their right to express their opinion, but to simply focus all attention on Sunrise/Skyline to “solve” this issue all at once may not have the outcome we all desire. It is only one spot. There are many locations that have a very similar issue with bike, (and/or ped)and vehicle conflict. But they simply have not had a crash yet. Perhaps lots of near misses, but nothing to generate a reportable crash. This is called the Regression to the mean, see page 1 of the attached handout for a good explanation of this. This is why I have asked Matt and our SMS Section to review all of these locations.

Our intent is to try and develop a systematic project not only to address Sunrise and Skyline but to do all such locations with similar issues all at once. We are hoping to develop this project using Highway Safety Improvement Project (HSIP) funds. The reason being is we simply do not have the resources to achieve this systematic project without a federal grant. To achieve this federal grant will take time. In the meantime we are continuing to collect data on these locations. We have learned a lot from our data collection. One of the biggest lesson is that we need to improve our data collection technology capabilities and methods to one that is geared for bikes and pedestrians.

Certainly we will mitigate specific issues as we can using whatever resources we have available. That is why we were approaching the Sunrise/Skyline with a speed table mitigation. We know this is not the permanent solution. But it is an intermediate solution that will give us time to develop our more systematic program that will enable us to have additional resources to not only do this location but other locations as well.

Seth W. Chalmers, P.E.

Pima County Department of Transportation

May 20
Hello David,

I am hoping you can send me details of the Skyline/Sunrise redesign that you presented to BAC a few weeks ago. As the details leak out, including your letter that was forwarded to me by Wayne Cullop, there is growing widespread opposition in the cycling [community.to](#) the design. Matt Zoll has told me that no plan has been agreed upon, and that may be the case, but I would like the details of what was discussed.

Though I only have one near-miss record at that intersection on my website, many people have told me that they have had near misses there. I have had several myself. That particular intersection is so dangerous that there needs to be transparency in the planning stages, including public meetings beyond the BAC meetings.

Thanks,
Robert Fritz, Cactus Cycling Club

Reply: Good morning Bob, Briefly, the history of the redesign process is this. The County DOT has a strong policy, which is good, to take a close look at any intersection where a fatality occurs. In this case of Sunrise/Skyline the facts are that other than the fatality earlier this year there has been only one other crash involving a cyclist in the last seven years and that one was with minor injury. Nonetheless the county decided to study the intersection. The study revealed that the free flow lane has a 85 percentile speed of 37 mph, unacceptably high. So the county is planning on two speed tables, each with a design speed of 20 mph. This should slow the traffic significantly. Where the controversy comes in is the issue of the yield sign. The national guideline book, ASHTO (Association of State Highway Traffic Organizations) does not have a situation like this that shows a yield sign for the free flow lane. Therefore, the county wanted to remove the current yield sign. Along with Matt, Mr. Seth Chalmers, Matt's immediate supervisor, they came to the TPCBAC and listened to us. We encouraged them to not switch the yield to the bicyclists on Sunrise. Later I personally was invited to a meeting at County DOT engineering where we talked about it. I was reluctantly convinced that they would not give on the yield signs. Frankly, everything I have learned in two decades on the TPCBAC and attending a world wide bicycle summit in Vancouver four years ago has convinced me that the source of greatest danger to cyclists is speed differential with vehicular traffic. Other factors are important but speed is the greatest factor. So I acquiesced.

When Matt and I presented this addition of speed tables, clearing of some sight-line vegetation, shortening of the point of the porkchop separating the free flow lane from the main road and the switching of the yield signs the TPCBAC reacted strongly. The issue, as you know, is the yield signs. That resulted in the letter you allude to. I would like to note that I have sincerely changed my opinion on the yield signs for all of the reasons noted in the letter. Matt has of course been trying to convince his co-workers of this. I am dialoguing with Mr. Chalmers myself. I am very hopeful that we can convince County DOT to leave the yield sign as it exists now along with taking the other measures planned.

I agree that there is a need for transparency. I would like to note that this situation is the first time ever in the history of the TPCBAC that a high ranking employee has been to two TPCBAC meetings specifically for one situation. The solution agreed to at the meeting I attended at County DOT was brought back and presented at the next TPCBAC meeting. It is fair to say the County DOT is working openly with us. It is my intention to continue that open friendly exchange. Please feel free to share this letter with whomever. As you can see I have shared it with Matt and Mr. Chalmers, too.

Lastly, I really appreciate your and everyone else's interest in this particular issue. It does, as you note, touch on the issue of free flow turns being used anywhere other than freeway on and off ramps. I and the rest of the TPCBAC agree strongly that they should not be used. This case is very important for us to make that case to our local DOTs and our local governments they work for. It would be helpful if we can keep the bicycling community active in making the point.

Sincerely,

David BW

May 21
Dear Mr. Chalmers,

You may now realize that many in the cycling community are vehemently opposed to at least one portion of the plan for redesign of the Skyline/Sunrise intersection where a woman visiting from Vermont was

killed by a motor vehicle in February. For many years cyclists have known that this is a very dangerous intersection when cars enter the intersection from East Skyline and merge with the flow of traffic from Sunrise. I have had several near misses at this intersection where cars do not yield as they are supposed to do at present.

The fundamental flaw with this intersection is it is a free flow intersection similar to merge lanes on highways. I understand that one of the aspects of the redesign plan presented to BAC is that a Yield sign would be placed along the bike lane on Sunrise and apply only to cyclists. This is unacceptable for several reasons. 1) It is a violation of the rights of cyclists to use the road in a manner similar to other traffic and for which the bike lane was designed. 2) It shifts actual and legal responsibility from the motorist to the cyclist who is legally using the road. 3) Only cyclists and not motor vehicles would be required to yield.

Since this is a free flow intersection onto which motor vehicles from Skyline East merge typically at a speed in excess of 30 mph, their failure to yield makes it very dangerous to cyclists. Therefore, the issue needing to be addressed is the speed at which the motor vehicles enter the road. The best solution to the problem is to have all motor vehicles come to a complete stop before entering the merged road. This virtually assures that cyclists will be seen and would be permitted to cross the lane safely. I understand that speed tables are also being proposed, which should slow traffic to about 20 mph. This may help, but cyclists being hit by cars at that speed will also be killed or seriously injured. Requiring motor vehicles to come to a complete stop is the answer.

After the unanimous opposition by BAC to the plan and the opposition by the Cactus Cycling Club, of which I am a member, I believe it is incumbent upon PDOT and the county to present a plan at an open meeting where all stakeholders can be present to voice their opinions. I have asked Matt Zoll for copy of the plan, and I was told that it was not available. However, I saw yesterday that some work was being done to mark the area was taking place at the intersection. Please explain to me, how work can be taking place without at plan that can be shared with the public?

I also asked Matt Zoll when public hearings were going to take place. He told me; "Also we've had four public meetings about the intersection, including three main BAC meetings and one BAC subcommittee meeting." To me and the rest of the cycling community, these meetings while open to the public, are not in fact public hearings since they were not widely announced and publicized. In the service to the public, PDOT must to a better job to be transparent in their planning and in soliciting public comment.

Sincerely,

Robert Fritz

May 23, 2016

To: Mr. Seth Chalmers

Re: Skyline/Sunrise Redesign

Dear Seth,

I have read several letters written to you and other county officials vigorously voicing opposition to the redesign plans for the Skyline/Sunrise intersection. We all know the circumstance that has led to this outpouring of concern for safe passage

for cyclists through this intersection. Simply put, a cyclist was killed where westbound traffic begins to merge from these roadways.

The county's plan to install speed tables is a good move to slow the merging traffic, as motorists have a tendency to approach the merge lane by accelerating as they would on the entry ramp to an interstate highway. However, slowing motorists down momentary is not going to solve the problem as human errors are going to be made and additional crashes will occur. Slow the vehicles with the speed tables if you wish, but the safest passage for a cyclist will be to stop the westbound Skyline traffic. As far as signage on Sunrise, "keep left merging traffic" should be the message to the motorist already westbound on Sunrise approaching the Skyline juncture. The addition of yield signs directed to vulnerable cyclists westbound on Sunrise is totally unacceptable and would further increase the potential for human error to cause a crash. As others have cited in their letters to you, I question the legality of asking cyclists to yield to motorists joining them westbound on Sunrise.

We must implement a redesign at this intersection that has zero potential for a crash. Yes, I believe zero must be the goal here. I cannot imagine designing this with the thought that, if we only have one crash or one fatality, it's a successful design.

Let's have a public discussion where we can share ideas, listen to one another's concerns and come up with a solution that we can all support.

Sincerely,

Doug Bauman
Cycling Advocates of Southern Arizona

June 1

Dear Ms. Cornelio and Mr. Chalmers,

Greetings to you both. I have thought long and hard about the Skyline/Sunrise intersection and have read all the emails that have been flying around on this subject. I would like very much to have a meeting with the two of you at your earliest convenience. The of purpose of my request is to make the case for keeping the yield sign for the cars on the free flow turn lane instructing cars to yield to bikes. Keeping the current yield sign is near and dear to the hearts of the cycling community. I believe we all agree that the speed tables will be very helpful in reducing the speed of the cars. I would be speaking on behalf of the TPCBAC.

I am free to meet with you both at your convenience. Since I am retired I have a very flexible schedule. I look forward to hearing from you on this request. It is important that we find an acceptable and workable solution to this intersection.

Sincerely,

David Bachman-Williams

TPCBAC Chair

Reply: Yes Seth and I are willing to meet with you to discuss this issue. My assistant Diane Garcia will contact you regarding a convenient time.

Priscilla S. Cornelio, P.E., Director

Pima County Department of Transportation

June 6, 2016 in response to the front page article in the Arizona Daily Star by Murphy Woodhouse:

Wow! Bicycling concerns make the front page! Above the fold! Thank you for a well written article. Thank you for highlighting that the county leadership has worked well with the TPCBAC. A great job.

With great sincerity and lots of smiles,

David



Tucson-Pima County Bicycle Advisory Committee

Wednesday, June 8, 2016

Dear Mayor Rothschild and Councilmembers,

We are writing to urge you to support the **City of Tucson Bike Share Program** currently under design by the Tucson Department of Transportation.

A safe, efficient and equitable transit system is a system of options. We see the City of Tucson Bike Share Program project as a key investment to supporting a healthy community by encouraging biking and walking, supplementing transit ridership, providing a critical "last mile" connector to and from transit, and advancing Tucson's bicycling transportation network.

Tucson has made significant bicycle transportation investments that allow for as much as 5% of our trips to be taken by bicycle. This investment has reduced our emissions, preserved road capacity for goods, services, transit and emergency vehicles, and reduced transportation costs for many of Tucson's residents. Bike sharing is not a new concept and is in fact just one of the many highly successful examples from the sharing economy that are taking urban areas by storm. Phoenix, San Diego, San Antonio, and El Paso, Texas all have implemented successful bike share programs in the last five years. Each of these these cities have implemented a bike share program *without* a well-developed bicycle facility network like ours.

Increasingly, large employers view bike share programs as necessary to attract and keep highly skilled and creative workforces who can live wherever their expectations for quality of life will be met. Increasingly, executives from Tucson travel out of state for professional development or industry conferences, see and try out bike share programs in host cities, and ask the TPBAC when Tucson will be implementing such a program. Increasingly, we hear feedback from the League of American Bicyclists on our Platinum bicycle friendly community applications that adding a bike share program is a lighter, quicker, and cheaper approach to get more people bicycling, walking and using transit and is necessary to achieve a higher designation.

Like other cities, the bulk of bike share program users will be Tucson residents. But Tucson stands to gain more prominence as a destination vacation by tourists who

are choosing to visit our region because of our reputation as a bicycle friendly community.

We urge you to support this project because it goes beyond a bike share program, essentially creating a health promotion program, reducing transportation costs for our residents, reducing our transportation system's impact on our environment, and bolsters Tucson's ability to draw visitors and new residents alike by making us an attractive destination. Bike share systems have proven successful at increasing the number of bicycle trips taken in cities across the globe by providing access to bicycles at low cost, increasing the visibility and presence of bicycles on streets and providing a transportation option that connects residents, employees and tourists to work, home, transit, and attractions. Bike share systems are also safe. To date not a single fatality has been recorded by any bike share system around the world.

Sincerely,

A handwritten signature in blue ink that reads "David Bachman-Williams". The signature is written in a cursive, flowing style.

David Bachman-Williams
Chair, Tucson Pima County Bicycle Advisory Committee



Tucson-Pima Bicycle Advisory Committee

DRAFT

The URBAN CORE FACILITIES SUBCOMMITTEE conducted a meeting at 6:00 P.M., Tuesday, May 17, 2016 at Pima Community College, Downtown Campus cafeteria, 1255 North Stone Avenue.

AGENDA

1. Call to Order / Roll Call / Call to the Public:

Present: David Bachman-Williams, Robin Steinberg, Anne Padias, Kylie Walzak, Andrew Bemis.

Call to the Public: None

2. Approval of minutes from previous meetings:

Approval of minutes from the March meeting. David moved to approve the minutes, Anne seconded, minutes approved, 4-0.

3. Update on Court House Situation (Robin):

The County will not re-do the path that cuts diagonally cuts through the Court House property to accommodate bicyclists and connect with the Cycle Track on Stone. Robin, Matt and Nicole Fyffe had discussed the possibility of creating a bike path on the sidewalk along Toole. However, the County has decided that the liability issues are too great. (Sidewalks belong to the City, but the adjacent property owners are usually liable.) Andy is going to take this to the City and feels confident that the solution can be found. There are precedents for bike riding on City sidewalks.

4. Signage on St. Mary's (Robin)

This issue was raised in an email sent to Robin. She forwarded it to Andy. There are several difficulties in the situation. The ride is widened for a bus pullout, there is a large driveway into Burger King. All of these things "encourage" drivers to move over sooner to what becomes the right turn onto the frontage road. In general, freeway entrances and exits are very dangerous for cyclists. Andy and Diahn looked at the situation and

have proposed a solution. They are suggesting extending the second dotted line to better define a bike lane. Also possibly move yield to bikes sign further west.

5. Update on Limberlost (if available)

No Update available.

6. Continued discussion of Urban Core. How do we want to focus our attention?

We talked about possible re-organization of the TPCBAC. There is a need to put more attention on urban issues.

7. Staff/Member Updates

We want to have the statistics on the Park and 36th St. road diets presented at the next BAC. Andy or Ann will present. Coop bike corral will go in soon.

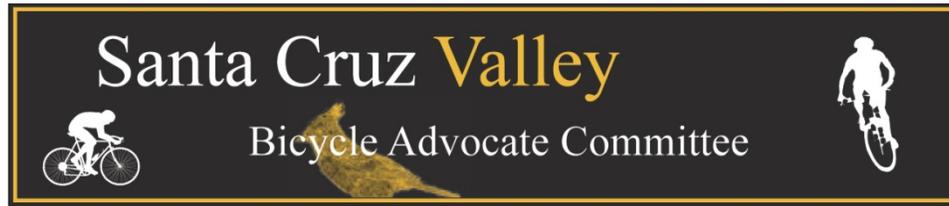
8. Topics, Date and Location for Next Meeting:

We will meet at this location again next month. However, we want to look again at the possibility of meeting at 3:00 Tuesdays downtown. Robin will send out a "survey" to see if this works for those who usually attend. There will be no meeting in July.

We want to look at the possibility of ramps to the loop from Cushing St. Robin will contact some of the individuals who would be involved with this.

9. Adjournment:

7:10 PM



www.scvbac.org

Meeting Minutes May 4, 2016

Attendance: John (JP) Pilger, Tony Crosby, Tom Hausam, Jim Jordan, Bill Adamson, Jane Lateer, Chuck Hill, Bill Hill

- 1) JP called the meeting to order at 3:00PM. The minutes of Mar 2, 2016 meeting were accepted.
- 2) Status of Projects and Advocacies:
 - a) Sheriff Auxiliary - Bill H said the SAV bike patrol will have 5 or 6 riders on the Ride of Silence and the PCS will provide two motor units. One bike patrol in April but the BP is now providing security at the local farmers market during the vulnerable setup and tear down activities.
 - b) Town of Sahuarita - JP said the town is looking for a 'brand' to help provide a town identity.
 - c) GVC Traffic and Arroyos - Jim reported new solar lights are now planned for three intersections on the west side frontage road and that the right turn striping from Esperanza west bound to Desert Bill will be extended for clarity. JP commented two closely spaced right turn lanes on east bound Esperanza and how drivers turning right on to I-19 frequently get in to the right turn lane for the Green Valley Village. Jim said Rick Robinson (TOS) is aware of the need for bicycle lanes on the new Pima Mine Rd bridge.
 - d) Roundabout Task Force - Jim said the committee is currently three to two against a roundabout near La Posada. Any solution must be viable for at least 15 years. The SCVBAC policy is open but against a traffic signal at that intersection.
 - e) Road Issues - GVC has told Bill that Pima Co will fix the Duval Mine Rd damage he has identified. There was no word on bike safety signage or paved shoulders. Tom will document the sections of White House Canyon Rd recently covered with gravel spilled from dump trucks and another serious pot hole on Camino de la Canoa.
 - f) ANZA Trail - Bill had no update on ANZA trail progress. The Freeport McMoRan grant being applied for by PCNRPR is to add to funding from PC and FICO and will be for about \$40K. This grant, if awarded, will complete funding to construct a 1.9 mile trail connecting the Anza Trail to the Canoa Preserve Park. It goes under a UPRR trestle which requires a protective canopy. SCVBAC and BAJA have committed to provide volunteers to assist in construction and future maintenance. Bill also mentioned that the new access point to the ANZA trail south of Santa Rita Springs appears usable but has no official opening date yet.
 - g) West Desert Trails. The water pipe construction should be done in June and access restrictions removed. Chuck mentioned he had explored some of the previously open lands south of the WDT and found that access has been curtailed into and through mine property via previously open roads.

3) Publicity/Events/Education/Website:

- a) Website - Chuck said the website is getting frequent access, that he has renewed the site registration for two years, and will be renewing the web hosting contract.
- b) Ride of Silence - Chuck has put out press releases about the Green Valley ROS scheduled for May 18th. He expressed disappointment that the information was not included in the May GABA Pace Line. Assignments for pre-ride refreshments were made.
- c) Jerseys - JP said he, Jane, and Mary Fisher would be meeting with artist Sherry Darrah to begin artwork, design, and theme.
- d) AZ Bicycle Summit - JP and Bill attended the workshop in Mesa. Steve Farley, a state congressman from the Tucson area, spoke on difficulties he has encountered in the Arizona Legislature.

The meeting was adjourned at 4:00 PM. The next meeting will likely be Oct 5, 2016.

Tony Crosby, Scribe

INFRASTRUCTURE & ENVIRONMENT

Most Cyclists Are Working-Class Immigrants, Not Hipsters

BY [THE KINDER INSTITUTE FOR URBAN RESEARCH](#) | OCTOBER 26, 2015

By [Andrew Keatts](#)

Houston resident Veon McReynolds rides his bicycle everywhere he can.

Through his nonprofit organization Tour de Hood, he leads weekly bike ride groups through neighborhoods many Houston residents would never otherwise see. On his own, he's taken long-distance rides as far as 4,000 miles that crisscross the country.

Everywhere he goes, he says, he sees a particular type of cyclist: a working-class person – usually a minority and often a recent immigrant – riding to work on whatever type of bike he can get his hands on. Those cyclists are men and women for whom biking isn't an environmental cause or a response to an urban trend but a means of transportation that's cheaper than a car and faster than walking.

“You can just tell they're using the only transportation option they've got,” McReynolds said. “Those people are pretty much invisible.”

The 'urban chic'

He means “invisible” both figuratively and literally. Those cyclists often aren't seen in City Hall or other venues where people advocate for bike lanes and other bike-friendly policies.

But they're also harder to see on the streets.

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[Bicycle Stress Map](#)

Few cycling thoroughfares in Washington, D.C., are fully protected from traffic. They're packed with rushing cars, people backing out of driveways, and shape-shifting bike lanes, when any actually exist. As a daily bike commuter, I can attest that these factors can make cycling pretty harrying, which in turn [discourages a lot of other people](#) from doing it. And research shows that [fewer cyclists means riskier streets](#).

Just north of D.C., transportation planners in Montgomery County, Maryland, are taking a systematic approach to breaking this vicious cycle. With a new [Bicycle Stress Map](#), county planners have quantified and mapped the "traffic stress level" of the county's bike network, assigning a numeric value and corresponding color to every street and bike trail.

Based on methodology developed by the Northeastern University transport scholar [Peter Furth](#), the planners calculated those "TSL" values based on traffic speed and volume, the number and width of car and bike lanes, parking turnover, how easy it is to get through intersections, and [other characteristics](#). A quiet, residential road with a low speed limit—which Montgomery County is full of—would be rated low-stress (blue), comfortable enough for most adults and kids. On the other end of the spectrum, a broad, multi-lane boulevard with a 40-mile-per-hour speed limit—even with a bike lane—would be rated high-stress (red) and might deter all but the most hardcore cyclists.

Cyclists can adjust the map to view the streets that fit their personal comfort levels. And local transportation planners are using the map as they develop the county's Bicycle Master Plan. As [explained](#) on the map's website: "When a street has a moderate or high level of stress, it may be a sign that bicycle infrastructure, like separated bike lanes or shared-use paths, is needed to make it a place where more people will feel comfortable riding."

The map makes one thing strikingly clear: Most Metro stations in Montgomery County are accessible only to cyclists who can tolerate relatively high stress levels. The same is also true for Capital Bikeshare stations (though those aren't visible on the map). Working with the map and the underlying data, Stephen Tu, a planner with Montgomery County, and Alex Rixey, of the transportation consultancy Fehr & Peers, have identified a number of only moderately stressful streets that, with the addition of just a few low-stress connections (likely in the form of protected bike lanes), could significantly expand connectivity and accessibility to Metro and bikeshare stations for cyclists. Though their work is still in the preliminary stages, it points to a more data-driven approach to creating reliable bike transit.

"Knowing the level of traffic stress gives you a way of evaluating how successful your bike infrastructure projects will be," Rixey tells CityLab. "We can show what kind of connectivity you can get from a few million dollars of investment."