

CITY OF MERCED
Planning Department

TO: Bicycle Advisory Commission
FROM: Bill King, Principal Planner
DATE: April 28, 2015
SUBJECT: Use of sharrows on M Street

BACKGROUND

Over the course of the last year, the BAC has been discussing the challenge for cyclists to use M Street, particularly over the Bear Creek Bridge, and for ways to improve conditions for bicyclists such as appropriate signage and street markings. At the February BAC meeting, BAC members offered ideas and comments concerning the use of sharrows for staff's consideration.

Upon review of those comments and other information provided by the BAC (Attachment 1), while Planning Staff concurs that there are challenges for pedestrians and cyclists, and that sharrow markings can improve cycling conditions, placement of sharrows on M Street in the near-term is not the best approach. An alternate resolution, as described below, could be implemented successfully.

DISCUSSION

As acknowledged in the adopted *2013 Bicycle Transportation Plan*, directing cyclists to use a sidewalk which is designed and constructed for pedestrian use is not a good practice, and should occur under limited circumstances. Yet, the "traffic culture" of Merced is otherwise. For example, the Merced Municipal Code allows cyclists to use sidewalks except in a small part of downtown, and, many cyclists in Merced utilize sidewalks even where adequate on-street bikeways are provided. The mindset of many cyclists and motorists in Merced is that sidewalks are appropriate places to ride a bicycle.

Pursuant to the siting guidelines and standards for sharrows included in the *2013 Bicycle Transportation Plan*, M Street and its choke points would not be a place that would normally have sharrows. If traffic congestion gets to a point where traffic speeds are slower, and if the "traffic culture" in Merced were to change to view cyclists as a part of the roadway system, then sharrows could be considered.

Posted traffic speeds are not arbitrarily set. By law, they must be within a certain percentage of the actual speeds vehicles travel on the road. Thus, except near schools, the City can't lower the posted speed limit as a way to minimize conflicts between vehicles, pedestrians and cyclists.

ALTERNATIVE RESOLUTION

If it can be said that Mercedian motorist's love their roads, then it can also be said that, on whole, Mercedian cyclists love their sidewalks. Placement of a sharrow marking on a roadway will not change this, and could actually create a backlash that could marginalize other positive actions to promote and improve the conditions for cyclists. This is not to say that change should not occur, however.

Change can occur through a multi-pronged approach deployed over several years, which could end in the successful installation, use and respect of sharrows markings throughout the City. The first and primary approach is a deep and prolonged public outreach and education program about all bikeways, with a special focus on sharrows. The second or concurrent prong is the installation of sharrows on roadways identified by the public and which have a high potential for actual use. Lastly, improve a limited set of existing cyclist/pedestrian choke points, for example, the M Street Bridge. Removal of the planters, addition of railings, and upgrading the sidewalk ramp connections to the roadway, will improve conditions for cyclists and pedestrians crossing Bear Creek on M Street.

ACTION

Consider Staff's recommendation to form a temporary working BAC sub-committee to identify and secure grant funding for the City to hire a consultant to develop and implement the multi-pronged approach described above, or if that is not possible, for the sub-committee in partnership with Staff, to establish an education outreach program and to identify appropriate sidewalk improvement sites. The first step of any successful plan is to garner community support to resolve a community problem.

ATTACHMENT

- A. Justin Hicks' comments

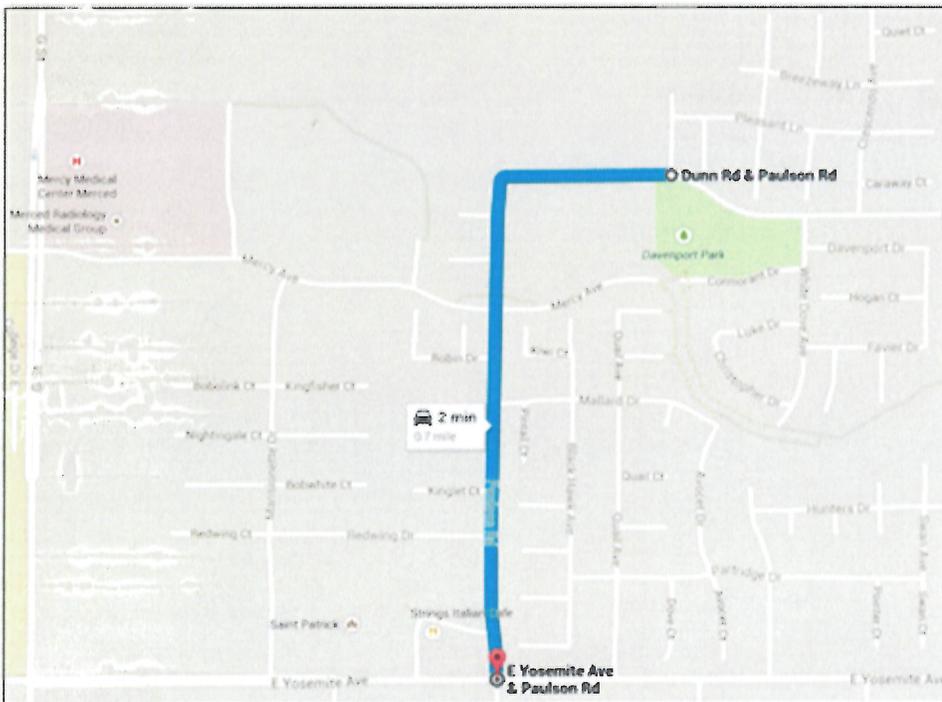
King, Bill

From: Justin Hicks [REDACTED]
Sent: Wednesday, February 25, 2015 7:13 PM
To: King, Bill
Cc: [REDACTED]
Subject: Sharrow utilization and pictures

Hey Bill,

I'm short on time, so this is just a quick and dirty presentation of my ideas and what I've seen, but wanted to show some of the pictures of Sharrow utilization in similar situations (4-lane roads where the bike lane appears and disappears depending upon width, parking etc.). Most of these have a stated limit of 35MPH; as is the norm for most within-city streets (I'm often baffled by our extremely high limits within our city!). In his is in no way an exhaustive search or presentation; and there is much more to consider.

So; I don't have any pictures where the stated limit is 40MPH or higher. However, I don't think that this is due to the fact that they aren't safe in these types of situations; rather that 40MPH within most urban settings is rare. (An example: the posted limit on Paulson north of Yosemite is 40mph! This is a primary artery for kids on their way to Peterson Middleschool! It's insane. This should have an absolute maximum of 25MPH as the marked limit. It's in a neighborhood!)



That being said: If you look at the highways and roads in the following pictures; these sharrow are placed on streets that are very similar to those of R, M and G streets. They key that makes this very doable and safe; M is 4-lane over the bridge. Making the right lane a shared lane still allows for EASY passing on behalf of cars. You'll not be inhibiting the flow of traffic by creating a kink point where cars cannot easily pass cyclists at any point. A key to making sharrow effective: They should NOT be placed in the shoulder. They should be outside the "door-zone" and create a safe cycling thoroughfare where cars are NOT trying to pass cyclists within the same lane that the sharrow is placed.

From the Michigan Complete Streets Coalition:



A sharrow on Michigan Ave in Lansing helps a bicyclist ride in good position.

Why Use Sharrows? Sharrows help bicyclists determine where they should ride on the road. According to the Michigan Manual of Uniform Traffic Control Devices ([MMUTCD](#)), shared-lane markings create safer road conditions for cyclists by:

- Assisting bicyclists with lateral positioning in a shared lane with on-street parallel parking in order to reduce the chance of a bicyclist's impacting the open door of a parked vehicle,
- Assisting bicyclists with lateral positioning in lanes that are too narrow for a motor vehicle and a bicycle to travel side by side within the same traffic lane,
- Alerting road users of the lateral location bicyclists are likely to occupy within the traveled way,
- Encouraging safe passing of bicyclists by motorists, and
- Reducing the incidence of wrong-way bicycling.

When to Use Sharrows: Sharrows can be found on roads under 35 mph. Proper placement of sharrows (per [MMUTCD](#)) is immediately after intersections, and no more than 250 feet apart thereafter. Some factors that influence lateral placement of sharrows on roads are road width, changes in road width, and the presence or absence of on-street parking. Sharrows can also be used to tell cyclists where to ride when bike lanes stop and start again.



Sharrows placed where bike lanes end can help bicyclists with proper positioning when coming back into the flow of traffic

Safety Benefits: Data suggest that sharrows are effective traffic safety measures for cyclists. A [2010 Federal Highway Administration review](#) found that a high percentage of cyclists rode over sharrows, increasing their visibility and protecting them from collisions with parked-car doors. Cars also afforded cyclists more riding room between them and curbs or parked cars. A [2011 Los Angeles DOT study](#) found that sharrows significantly increase vehicle passing distance, and for cars that do not pass, drivers typically exhibited less aggressive behavior and tailgated less. A [2004 San Francisco study](#) found that cars gave cyclists 3-4 more inches of riding room when sharrows were present. Sharrows were also associated with a 25-35% decrease in sidewalk riders, possibly indicating a greater comfort level with riding on a sharrow-marked road.



Sharrows are often accompanied by signage alerting drivers to be aware of bicyclists

What Drivers Should Know: While it may be tempting to think that the main purpose of sharrows is to denote a shared-space between bicyclists and motorists, sharrows are more about where cyclists should ride on the road—bicycles and vehicles must always share the road in Michigan, regardless of markings. Sharrows do tell

motorists where bicyclists are likely to ride, and where bicyclists may be reentering the roadway where bike lanes end.

Cost Considerations: Using sharrows is a cost effective way for municipalities to increase roadway safety. The treatment does not require road widening or repaving, and applying the marking is relatively inexpensive. Material costs for shared-lane markings are around \$150 per pavement marking, and around \$200-250 depending on the application method. Per the MMUTCD, sharrows are used about every 250 feet and after each intersection. On a two way street, this means around 40 markings per mile at a cost of \$6,000. Based on block length and intersection location, though, it is unlikely that a community would need this many sharrows, so costs would likely be lower.

Sharrows are low-hanging fruit that can make a significant and immediate impact. Michigan communities have taken notice, and sharrows are becoming more common as complete streets policies have gained steam. [Flint](#) holds the distinction being the first Michigan community to have sharrows, and [Michigan State University](#), [Grand Rapids](#), [Royal Oak](#), [Elk Rapids](#) and many others have followed suit.

Examples from Seattle (What I meant when I said: put signage everywhere so that there's no chance of misunderstanding on behalf of cyclists, drivers or pedestrians where they should be.)





Arlington, VA: Where I lived and commuted for a year both with fast moving traffic (though I do not know what the posted limit is... I KNOW that cars do significantly greater than 35 at many times):



I LOVE THIS ONE from Portland: IT's really great and will get both drivers and cyclists to do what is predictable; and that's the whole point! Predictable + Visible = Safe!



Using Sharrows to link areas with and without bikelanes to create a safe cycling thoroughfare (Boston in first two and Ottawa) respectively below:

CLICK TO SEE LARGE VERSION:





You direct where people should go to connect people through areas where there are bike lanes vs. not (This is San Francisco):



More linking through areas where the bike-path disappears: Kansas City



Baltimore:



More on 4-lane "faster" highways:



More "overkill" to make sure it's understood:



Another city that realized that there's a better way: Newport Beach, CA



More examples for sharrows as a “stop-gap” to help navigate kink-points where the bikelane can’t be segregated (Portland, OR) on high-speed roadways where cars are not inhibited because of the existing 4-lane structure:



San Francisco:



Good primer on safe sharrow placement vs. bad utilization (FYI; this was developed in a response to bad sharrow placement on a faster moving road: :

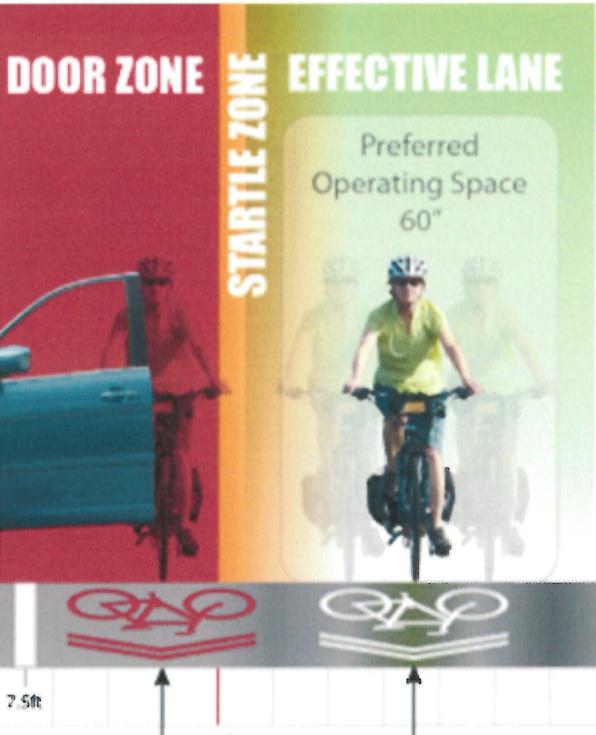
SR 40, Ormond Beach Sharrow Placement

Door Zone

~ 11ft from the curb
Strike zone: extension of a car door.

Startle zone: the area in which a suddenly-opened door would startle a bicyclist into automatically swerving into overtaking traffic (minimum of 1'; varies by individual).

Being struck and swerving to avoid a door are both common causes of severe injury and death.



Sharrow placement from Understanding Transportation

Basic Bicycle

Body/Handlebar
Minimum Operat
Preferred Operat
Does not include
from fixed or m
Source: AASHTO Gu
Development of Bi
Edition (2012)



The lane is too narrow to for a bicyclist + car + safe passing clearance, let alone the door zone. The current sharrow placement instructs bicyclists to ride where they can be struck by a door and in a position that invites motorists to squeeze past illegally instead of changing lanes. Bicyclists should be encouraged to control the lane as allowed by statute: FS 316.2065 (5)(a)(3)

CURRENT PLACEMENT
In the Door Zone (10ft)



accompanied by
Share the Road signs.

RECOMMENDED PLACEMENT
Centered in Effective Lane (14

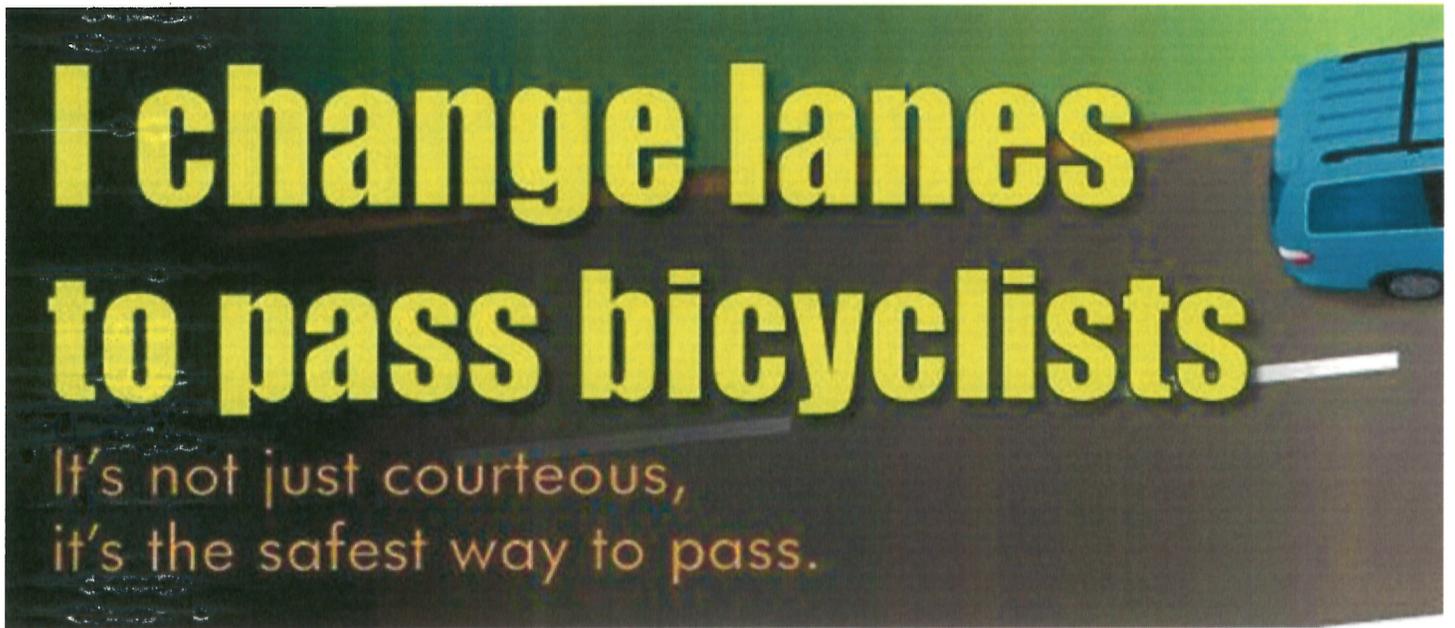


accompanied
BMUFL sign

Here's the "new" corrected version with signage ever 100 to 125ft:



There are actually groups of motorists that have started this group:



Again, it's not an "us vs. them" ... I own a car (two in fact)... my wife is a runner...

This is purely a goal to make all forms of moving from A-to-B safer, predictable, and desirable! If you can make it so cyclists ride predictably, motorists will be much more happy to give them the lane or yield. It's the nutty unpredictable riding that gets everyone in trouble. Good direction and signage can help eliminate this type of behavior from bad cyclists too!

Also: For what it's worth according to the DOT's list of regulatory signs and plaques for bicycle facilities includes sign R4-11 and Heavy utilization of R4-11 (Bicycles may use full lane) would be needed on both the north and south bound #2 lanes on M.

Again a key to making this work and safe is an overkill of signage:



I don't know if all of this helps, but I hope so.

Best regards,
Justin Hicks, Ph.D.