

Tolley, Sabrina

From: Perry Sandstrom [perry.sandstrom@gmail.com]
Sent: Thursday, December 06, 2012 1:16 PM
To: Maniaci, Bridget; aaron.crandall@yahoo.com; Johnson, Jill; Subeck, Lisa; lydmaurer@gmail.com; hiwayman@chorus.net; robbie@robbiewebber.org; ronsteinhofer@yahoo.com; devos@ssc.wisc.edu; Soglin, Paul; Tolley, Sabrina; Fernandez, Anthony; ALL ALDERS
Cc: Mary Rouse; Karen Sage; Susan Robinson; Perry Sandstrom; trush@uli.com
Subject: Southwest Path Lighting Project.
Attachments: SW path Lighting Proposal-Safety.pdf; Facebook online pole taken NOV 11.pdf

Dear PBMVC Members, Alders

I realize that many people have already made up their minds on this, but I cling to the hope that people that serve Madison through the PBMV Commission and the Common Council have open minds and are willing to consider all the facts.

Please stand up for this path. It is a remarkable natural treasure that warrants careful thought. The current plan is an expedient hack from the world of motor vehicles that honestly greatly *degrades* vision on the path, and unnecessarily degrades the environment there. It is unbelievable to me that anyone who has carefully looked at the test lights at Council Crest would consider them even close to being appropriate for users on this path. Even a casual comparison to the WisDOT standards for Bike-Ped paths shows this design to be fundamentally lacking for *every* main recommendation that is given there for safe lighting.

It is particularly galling that those pushing this project are not daily or even regular users of this path (let alone at night) and are apparently completely unaware that a large contingent of current path users would likely get "disenfranchised" because of this project. I am talking about a large number of people who bike, walk and run there *because* it is naturally lit and therefore not only naturally beautiful, but also easier to see and therefore safer. Despite some exaggerations by lighting proponents, It is easier to navigate on this path than in many other areas because true uniformity of lighting is provided by a modest bike or headlamp in the absence of competing glare of any adjacent artificial lights.

This project is a slap in the face to the entire cadre of non-daylight users who were never surveyed or contacted about this project. It is a slap in the face to the large number of predawn and sunset walkers and runners who were never even counted by Traffic Engineering's "usage counter" and whose absence if this project were to go through would never even be detected. There was also no effort to ascertain the views of people that live in the neighborhoods near the path. It was simply assumed they would not like it, so let's have some meetings and respond to the single issue about light trespass and get on with it anyhow.

Because of a false framing of this as a "local residents vs the greater good" issue, many proponents feel they are engaged in an important fight for alternative transportation in the face of self-serving NIMBYism. The fact that the majority of "local residents" who are vocal opponents of this plan are also avid path users is usually sidestepped by the professional advocates, as is the fact that most regular path users (regardless of where they live) are against this lighting plan as well. Most people on both sides of this issue have forgotten the fundamental question of whether the proposed design would even fulfill it's purported (e.g. safety, comfort, security) mission in the first place, let alone do it well.

The chronic negative impact of this lighting project on neighbors and the environment would be significant, though in some ways it pales in comparison to the acute negative impact of the project on the after-dark path users themselves. Most people that have seen the test lights report significant glare that is uncomfortable to be

around. Because of this glare and the non-uniformity of surface light yielded by the proposed design, it would also likely be *less* safe for navigation than leaving the path as it is. This conclusion was independently arrived at by a number of path users and lighting experts, including David Liebl, the author of the lighting section of the WisDOT Bicycle Facilities Design Handbook.

I am a daily user (often multi-trip/day, often in dark hours) of the Southwest Path. I also love living near and observing activity on the path (day and night) and think of it as the key transportation asset in our community. I have significant experience in LED lighting design for the space program and commercial applications. I am also an Engineering Manager on large projects that regularly require formal hazard analysis involving human factors. After carefully studying the lighting proposal and the specific impacts that it would have on various types of user, it is my firm conclusion that this lighting project represents about the worst thing we could do to this path and its users on a number of levels, including safety, comfort and security.

There has been basically no night-time crime incidents in the area under consideration during the entire twelve years of operation. Most people assume that "more light = more security" this is usually not the case in visually-isolated public spaces. Although security lighting does have a crime deterrent effect on private property, where criminals might be seen where they don't belong, lighting has no such deterrent mechanism in public spaces, where everyone "belongs". Also, as with most things, it's not just "what you do", but "how you do it". The UW Campus Security Committee convened expert panels to address the outdoor lighting issue in the 1990s and came to the unanimous conclusion that overhead lighting would be counter-effective on certain isolated paths on campus. A professional victim advocate (Amy Streff) spoke against this lighting project at the 7/19 Edgewood meeting, noting that bright overhead lighting down the center of this otherwise dark corridor would likely benefit a potential assailant more than a potential victim. A fear-mongering description of a strong-arm robbery that was created just prior to the Edgewood meeting is also not logically supportive of this lighting project because the incident actually happened a half mile away from the SW path and it occurred during daylight hours.

If the BPMVC or Common Council can head off this infrastructural blunder, then better options will remain possible for supplemental lighting. There are significant opportunities for simple yet effective visual and behavioral safety improvements on this path (e.g. reflective edge stripes or advisory signs). Innovations that provide supplemental lighting without causing visual discomfort, loss of visual acuity, and unnecessary ecological disturbance are probably both technologically in reach and increasingly in demand in other communities. A simple world-class design based on defined goals and basic engineering requirements is warranted for this well-loved path. The Southwest Path, with its high usage, social/ecological value and its proximity to the UW may be a perfect candidate for a UW/Community/City interaction on this topic. The UW's Morgridge Center for Public Service, for example, often facilitates UW/Community collaborations like this.

Well-informed solutions would be a better way for our city to demonstrate leadership in sustainable transportation than the expedient, technically inappropriate and counter-productive gesture that the current project represents. Please remember that the timing for this particular project has a lot more to do with the re-districting of the alder sponsoring it than with any emerging technical developments or safety issues.

In any event, as a city, we should at least follow this policy: "If it ain't broke, don't break it". This project would destroy the best aspects of this path that users now enjoy, alienate a large percentage of the surrounding community and trash an otherwise blight-free environment. These lights would take an area that would otherwise be beautiful and safe with moderate lighting and turn it into a landscape of fear and isolation. It would also make it harder to see and navigate and less comfortable to be there for just about everyone.

Thanks for reading this far (sorry so long). Please look through the attached report on the obvious technical deficiencies of this design. Feel free to email with any questions or comments.

I am traveling to the South Pole now for the IceCube Project so it may take a couple days to respond.

Also, Here is a Facebook link to the Southwest Path Alliance (note also attached Facebook survey of users).
<https://www.facebook.com/OWLPATH>

Here's an interesting site about responsible outdoor lighting including research on lighting and crime:
<http://www.illinoislighting.org/safety.html>

Here's a movie of a walk-through of the test light pair at Council Crest. The drastic light-dark transition surprises most people that see it.
<http://youtu.be/vIhrtXE0Ty4>

Thanks and
Regards,
Perry Sandstrom BSEE
Southwest Path Alliance

Fundamental Flaws in Southwest Path Lighting Proposal

- On Nov 28, the PWC approved the SW path lighting plan, with most commission members mentioning “safety” as a rationale.
- This report was prepared by members of the Southwest Path Alliance to alert decision-makers to the fact that this particular project goes against DOT recommendations for safe illumination and would, if anything, make path users *less safe, less comfortable* and even potentially *less secure* from (so far, nonexistent) night-time crimes.
- Please do not allow this substandard and counterproductive lighting project to permanently degrade one of Madison’s most unique and valuable transportation and recreational assets!
- For more Info:
 - <http://www.illinoislighting.org/>
 - <https://www.facebook.com/OWLPATH>
 - <http://youtu.be/vlhrtXE0Ty4> (movie of test lights)

SW path Lighting Proposal

Safety-Related Issues:

- Project enacts the *opposite* of main WisDOT recommendations for Bike-Ped path lighting:
 - Extreme glare light directly into user's eyes
 - Highly non-uniform surface light pattern
 - Hot spots are too bright for application
 - Creates deep shadow directly in front of all users
- **Raises collisional risk for all users**
- **Does not enhance personal security**
- ***Bad lighting is worse than no lighting***

WisDOT recommends low glare fixtures; Project uses very **high glare** fixtures:

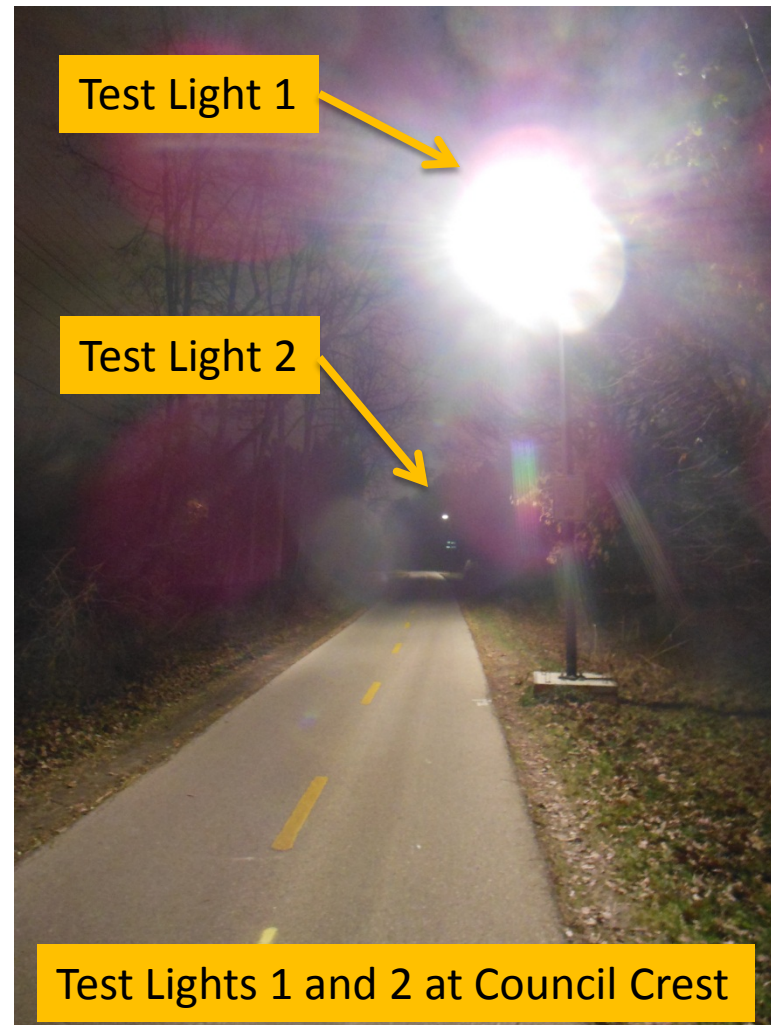
- Point Source Glare from fixture is very uncomfortable to walkers & bikers.
- A traveler looking straight down path from 20' away gets the same light in their eyes as they would looking straight Up into the fixture.
- WisDOT specifically recommends against glare-producing fixtures because they impact good vision at night.

WisDOT Handbook:

“care must be taken to avoid glare, which can compromise night vision”.

***“Typical pole mounted roadway lights are a poor choice for illuminating narrow paths..
..Type II horizontal lamps provide more light than is necessary.”***

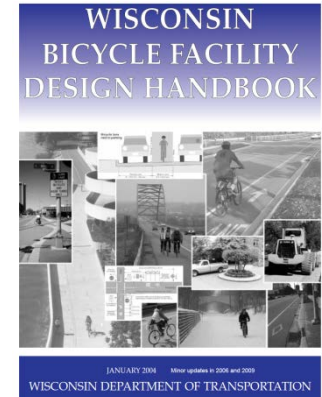
(Project uses type II lights)



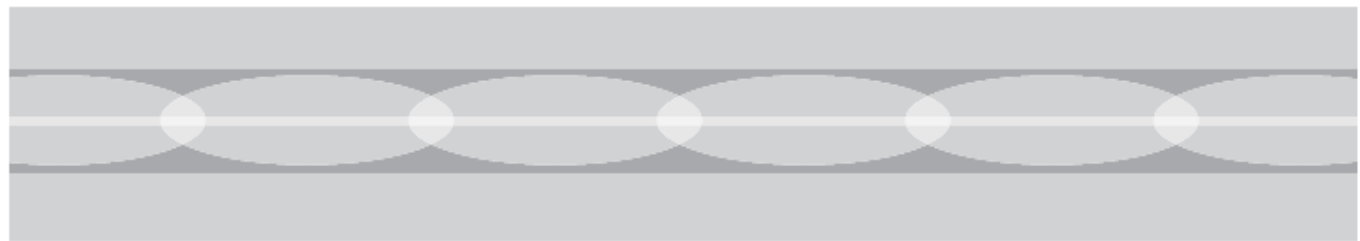
WisDOT Recommends uniformity, but Project is **very non-uniform**:

*“**Luminaire placement**: Uniformity of illumination is particularly important for shared-use paths. Bicyclists moving between “hot spots” from poorly placed luminaires may be unable to see in the interspersed shadows. Providing some overlap allows for a more constant visual environment, and **can help prevent crashes**”.*

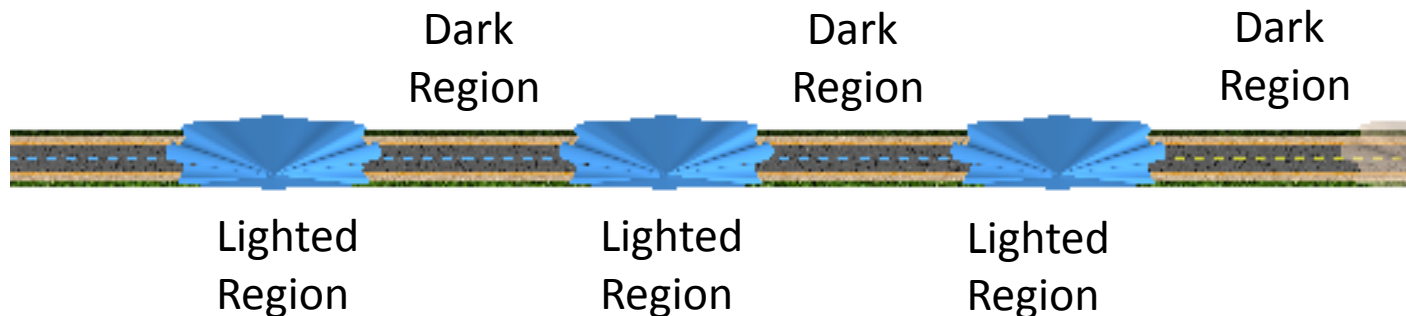
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WisDOT
Handbook:
(overlapping
pattern)



Project:
(no overlap)
No Uniformity
More crashes



Project creates visual “Dead Zones”

Council Crest Test Light Pair (1 and 2); Walking NE

← Travel & Camera Direction



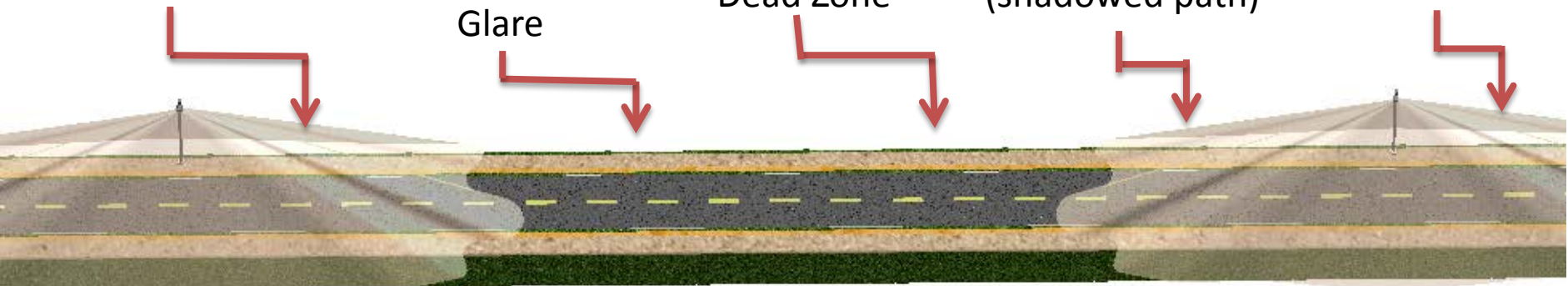
High Glare

Increasing
Glare

Visual
“Dead Zone”

Back-lighting
(shadowed path)

High Glare



Fixture 2

Fixture 1

HYPE: “Project would help cyclists see debris or ice patches in the path”.

REALITY: Project effectively **obscures the path** in regions after each light because it casts a big, **deep shadow** (of path user’s own body) right in the worse place possible; directly in front of walker, runner or biker.

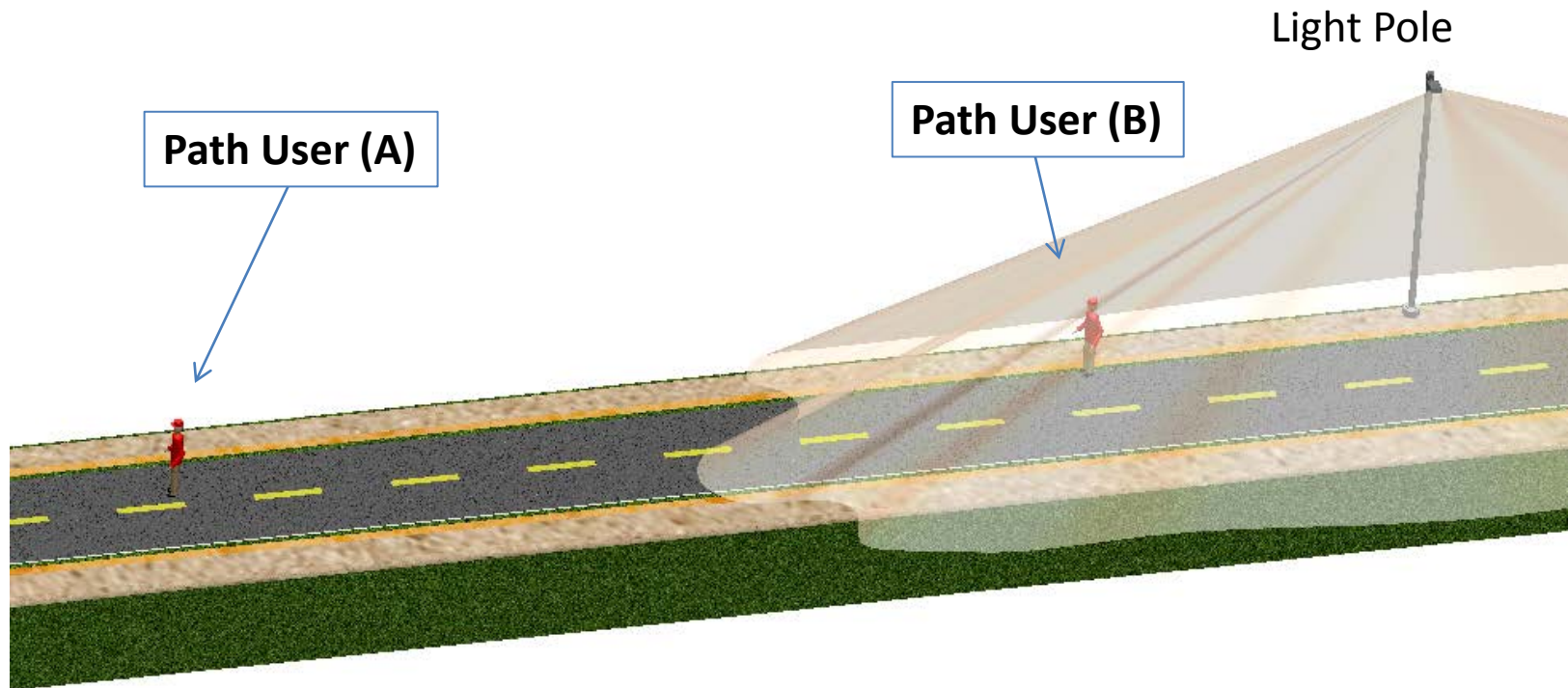


Night vision:** Both bicyclists and pedestrians have specific requirements for nighttime seeing. Both need to see small obstacles and changes in pavement surfaces to feel safe using paths at night. Uniform illumination should be provided that avoids “hot spots” and **deep Shadows...

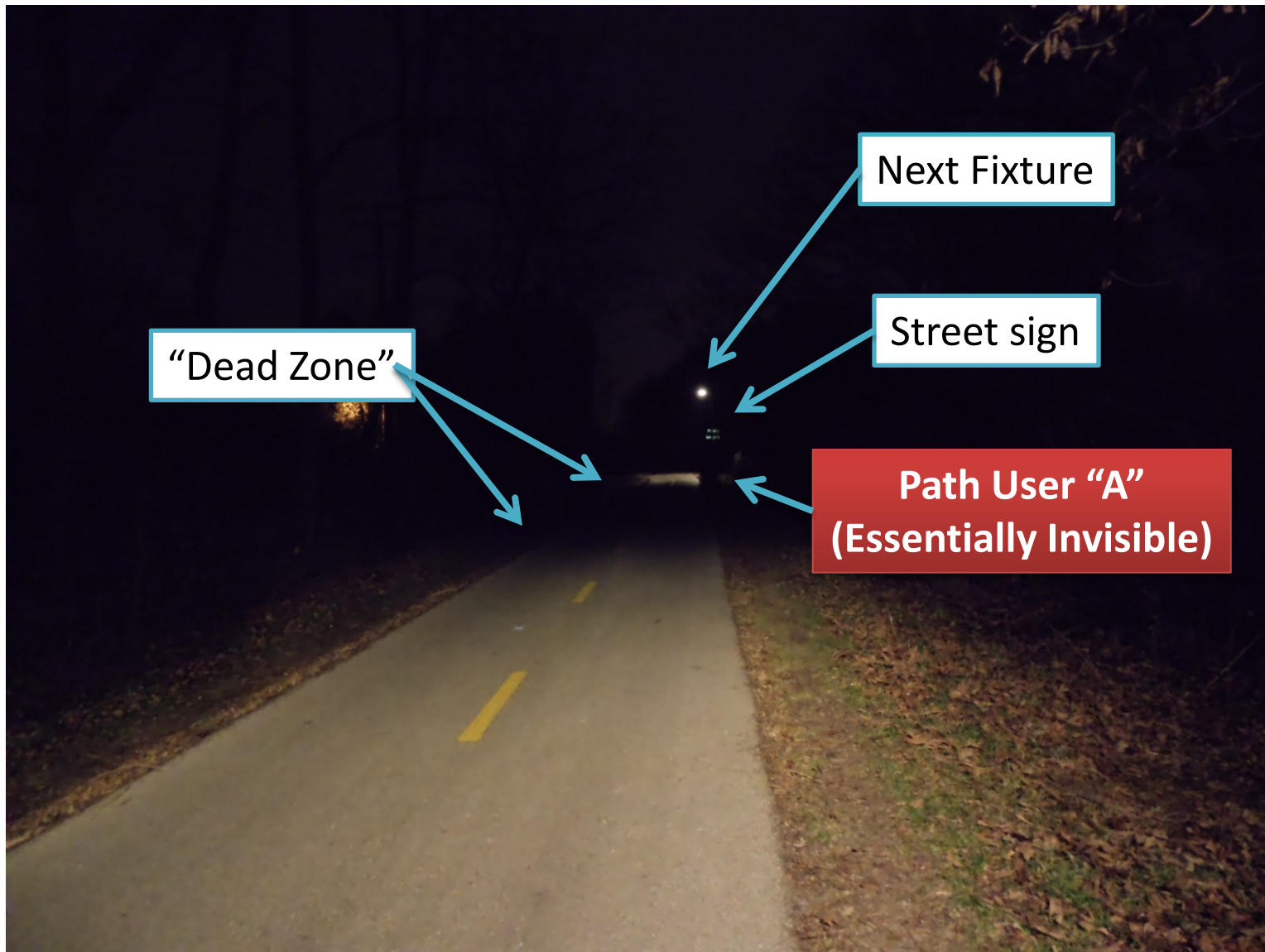
See a clip of a walk-through at Council Crest test pair:
<http://youtu.be/vlhrtXEOTy4>

HYPE: “Project would help cyclists see dark-clothed pedestrians”.

Reality: Project Introduces new visibility hazard:
Path user (A) is difficult for Path User (B) to see because of B’s **loss of dark-adaptation** and A’s **relative darkness**.



Picture from “Path User B” Location (see previous slide)



Against DOT recommendations? Less safe?, less secure? Really?

The proposed design is contrary to ALL of the main lighting recommendations in this handbook.

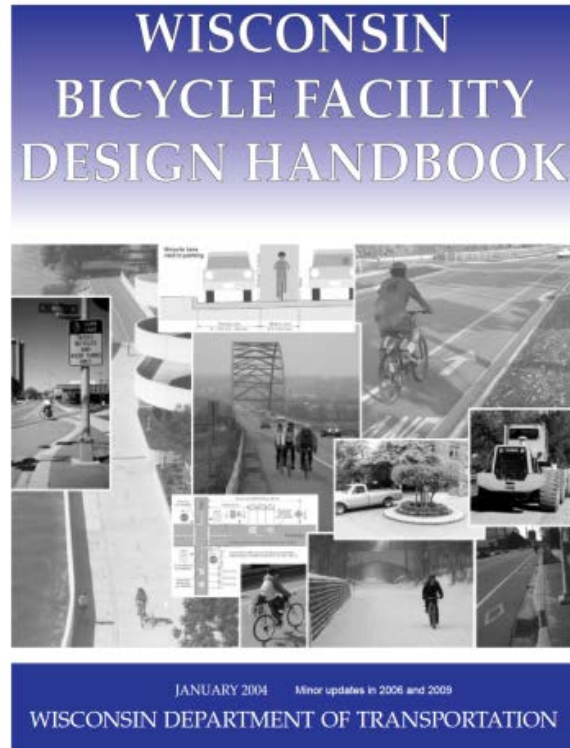
The recommendations exist for a reason: **SAFETY**

The author of the lighting section weighed in on 7/20/12:

“The proposed lighting ...will **create unsafe conditions** for both bicyclists and other path users.”

“..**more hazardous** than if the path were left unlit”

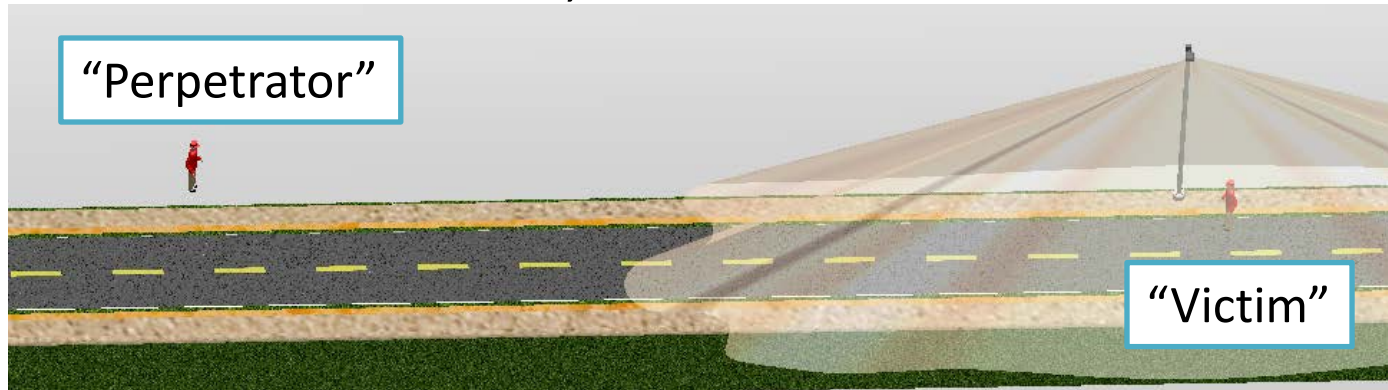
“ Both bicyclists travelling at speed and pedestrians will be confronted by **visual “dead zones”**, as they move from brightly lit to dark sections of the path, **where objects, animals, intruders or other path users may not be seen.**”



David S. Leibl, UW Madison outdoor lighting expert & Author of section 4-13 (Lighting) of the WisDOT *Wisconsin Bicycle Facility Design Manual*;

Myth: Even bad lighting would enhance security:

-Scenario #1, covert victim selection-

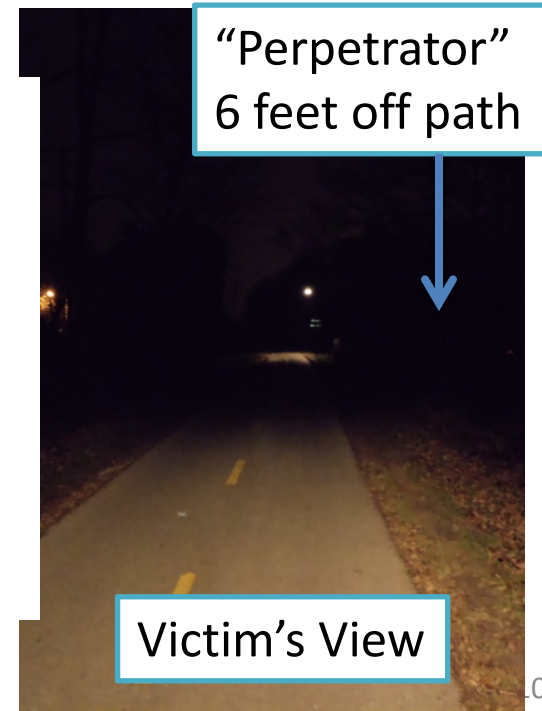


← Dead Zone →



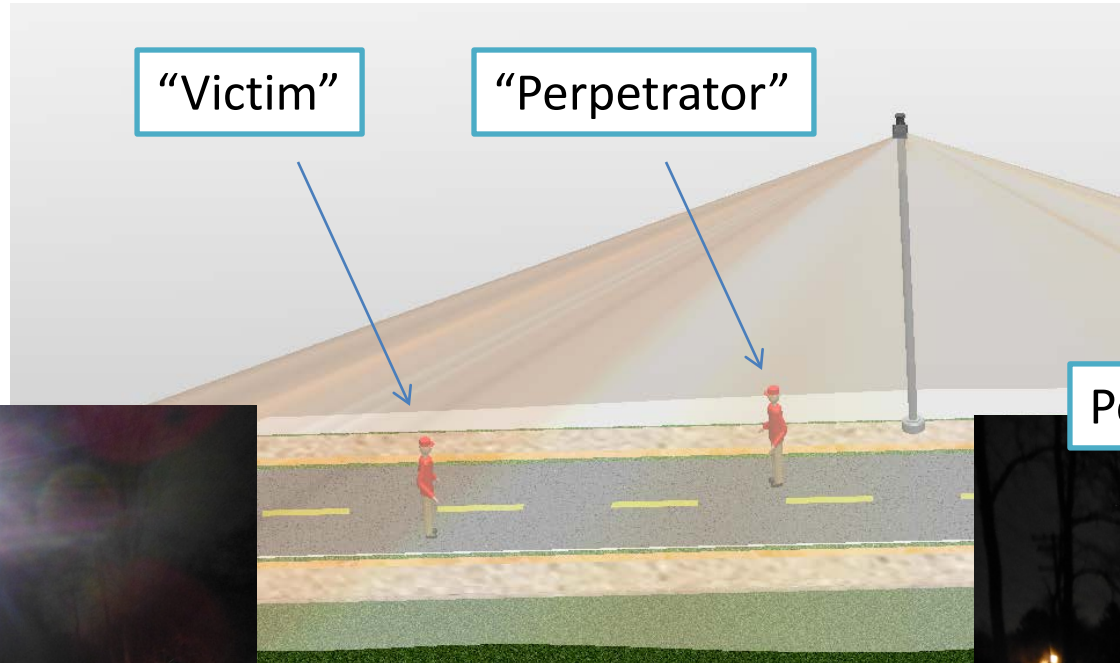
By standing off to the side of the path in any "dead zone", a "perpetrator" can easily view all passersby without being detected.

Dark adaptation of users currently makes this scenario much less possible

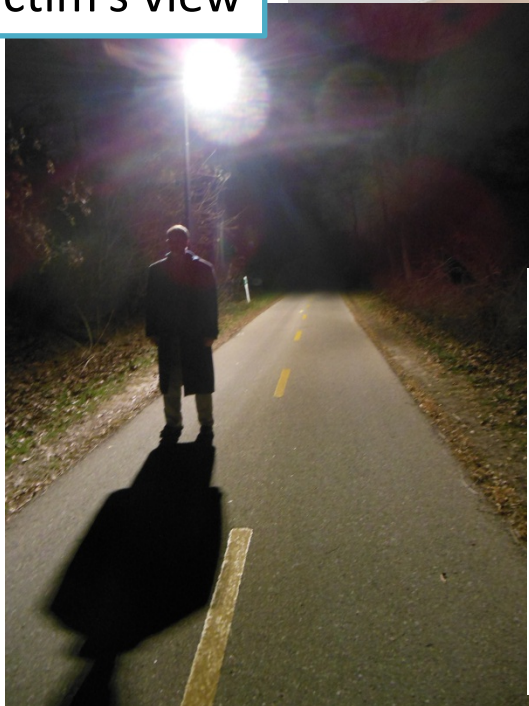


Myth: Even bad lighting would enhance security:

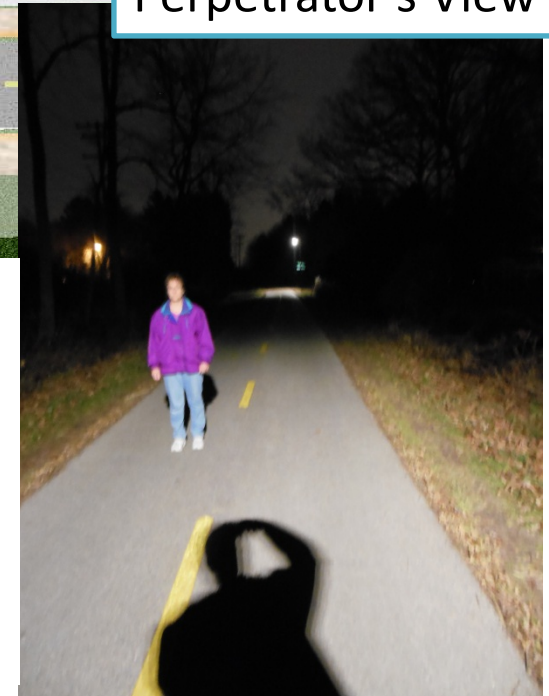
-Scenario #2, overt victim selection-



Victim's view



Perpetrator's View



By standing "down stream" of any light, a person with ill-intent can easily arrange to have a visual advantage over others who are approaching on the path.

Non-uniformity = vision inequality

Q: Is there some collision issue that needs to be “fixed” right away?

A: NO

- Sporadic reports of “being surprised” by black-clothed walkers: Existing overhead light-to-dark transitions by ramps are where this is most likely to happen. **This project would repeat a more extreme version of this fundamental lighting flaw between each new fixture, 68 times all along the path.**
- There are no known first-hand accounts of any Bike-Ped collisions on this section of path at night in twelve years of operation.
- Contrary to claims of advocates, **a modest bike light works particularly well on the SW path** because of the lack of spillover light from any adjacent parking lots or streets. A bike light yields the most uniform night-time illumination that is practical today for this path.
- Of twelve emergency responders queried at fire station #4 (closest to the path), **none could recall any night-time accident responses** on the unlighted section of path.

Q: Is there some crime issue that needs to be “fixed” right away?

A: NO

PERCEIVED personal security:

- Currently, great numbers of people of all ages, backgrounds and genders feel perfectly comfortable using the SW path after dark.
 - Many current female users report that they would feel *less* comfortable if they were “on stage” under overhead lights with darkness on both sides.
- There is a consistent flow of (usually lighted) bikers and runners late into the evening and before dawn. There is a large contingent of pre-dawn and after-dinner walkers that make it *feel* safer.
- Many walkers (not counted in any Traffic Engineering data) report that they visit the path BECAUSE there are no lights, installing the harshest fixtures ever used in Madison will likely drive them away.
- High traffic on the SW path makes it *feel* safer than other dark, isolated public spaces.
- Many people have reported that they would use the path *less* if the harsh lights being proposed were actually installed. Put simply, it makes the path look and feel “creepy”.

ACTUAL personal security:

- The only known crime that has occurred on this path section in twelve years of operation is graffiti, and that has only occurred in areas where there are presently overhead lights. Rare muggings and bike stealing attempts have occurred on other paths in Madison, but they have generally occurred in daylight or in areas where there are already overhead lights.
- High traffic makes the SW path actually safer than other dark, isolated public spaces.
- A professional advocate for sexual assault victims stated at the 7/19 meeting that deep shadows caused by this overhead lighting would likely increase risk by aiding concealment.

Does project meet some reasonable objectives anyways?

- **Give greater “detection distance“ for “black-clad” pedestrians.**
 - **NO;** Only when they are situated slightly ahead of the “next” light, otherwise they are more hidden because of reduction in dark adaptation caused by overhead fixture glare.
- **Make path “more inviting” to new users.**
 - **Doubtful;** Users would be squinting and “on stage” in a place with the look and feel of a high crime area. This lighting also feels creepy because it reduces vision off the path.
- **Increase or at least not reduce current level of security.**
 - **Unlikely;** Overhead lighting in isolated corridors can even facilitate victim selection
- **Allow cyclists to see debris/ice on the path.**
 - **NO;** Design actually obscures debris/ice in dark zones, and by deep shadow immediately in front of all users when they pass a fixture.
- **Avoid discomfort glare and squinting.**
 - **NO;** These are blindingly harsh “deterrent lights” for all practical purposes.
- **Retain visual cue for pedestrian of bike approaching from behind.**
 - **NO;** Overhead lights wash out cues from ALL other lights and reflectors
- **Make it so people won’t have to use high-powered front lights.**
 - **Not likely;** bikers will need more light than before for “fill in” deeper shadows.

How did we get here?

- Compromises made for cost and acceptance along with Traffic Engineering's constraint on fixture style (to one already being used on streets) yielded a compromised design that is completely inappropriate for a bike-pedestrian path.
- Conflation of endorsements of “a lighting project” with endorsement of “**this** lighting project”.
- Agenda-driven advocacy for Bike Path “infrastructure” presumes *beneficial* lighting; No advocates are lighting experts. Few advocates and decision makers have seen the test fixtures for themselves. NO main advocates are daily users of the SW path.

Conclusion:

- This project is poorly designed and ill-conceived and should be dropped.
- All claims that this project would enhance safety are basically appeals to people's knee-jerk expectations about 'light vs darkness'.
- Claims of safety improvements are easily refuted by careful observation of the test lights at Council Crest.
- Pursuit of this project would be a shameful example of agenda-driven politics outweighing responsible stewardship of a valuable transportation corridor that is also a unique wildlife corridor.