

NCUTCD Bicycle Technical Committee Meeting, Wednesday, January 19 2011

Minutes prepared by John S. Allen
Final version, March 1, 2011

Attendance:

Committee Members

John Allen
Bill DeSantis
Shawn Dikes (arrived during recess)
Cindy Engelhart
Bill Fox

David Gleason
Michael Jackson
Dwight Kingsbury
John LaPlante (took over chair at 4:30)
James Mackay (attended another committee meeting after recess)
Richard Moeur, chair (left at 4:30 for R&W TC to discuss 2B.39, returned shortly before 5 PM)
Tim Oliver
Theo Petritsch
Bill Schultheiss (attended Signals TC meeting after recess)
Ron Van Houten (left 4:16 PM to attend another committee meeting)

Guests:

Andy Clarke, League of American Bicyclists (attended Signals TC meeting after recess)
Charles (Ted) Curtis, City of Columbia, MO, potential BTC member
Faria Emamian, Oklahoma DOT
Don Ethier, ATSSA
Bruce Friedman, FHWA (arrived 4:16 PM)
Eric Gilliland, National Association of City Traffic Officials (attended Signals TC meeting after recess)
William Klyczek, Traficon USA (attended Signals TC meeting (??) after recess)
Dan Lang, Flint Trading (potential BTC member)
Craig Williams, Alta Planning and Design (formerly Illinois DOT, potential BTC member)

BTC Business, Transitions

Richard Moeur called the meeting to order shortly after 1 PM.

James Mackay having retired as Secretary, John Allen volunteered, at least for the present meeting.

A plaque and gift were presented to Mackay for his 16 years of service. The gift was a book *Waiting on a Train*. Mackay gave a short speech about poor passenger rail service in the USA as an impediment to

bicycling, compared with Europe where rail stations are hubs of bicycle activity.

Membership: we are now at 10 government members, 9 non-government, but when Mr. Mackay leaves following this meeting, we will no longer meet the NCUTCD criterion of 50% plus 1 government/emeritus government members.

Oliver: we need more practicing professional engineers on the committee.

Engelhart: We need also to be looking also for diversity in geography and interests.

Guest Ted Curtis is bicycle coordinator, Columbia, Missouri, and is a potential member. This is his first meeting as guest; he might be inducted at the next meeting. FYI, Columbia is one of the four Non-Motorized Pilot Project communities (each community is receiving ~\$22M to show whether a mode shift can be induced by providing bicycle facilities and encouragement).

Craig Williams worked for the Illinois DOT for 23 years including 10 years as bike-ped coordinator, and so he qualifies as a government representative. He has been on the private side for 10 years. attended last summer's meeting and can be inducted tomorrow following review by the NCUTCD Board of Directors.

Mike Ferrell from the Metropolitan Washington Council of Governments is another potential new member.

Michael Jackson knows of one additional potential member, who works for government, and would contact him.

Guest Dan Lang, is interested but is non-government., as are Joe Stafford, from Pennsylvania, and Ryan Snyder, from Los Angeles, California.

Moeur will send out e-mails to ASCE and ITE soliciting potential members. We had an invitation nearly prepared but it didn't go out.

He will forward a recommendation for Craig Williams, and then we will be at 11 and 9 for 1 day, tomorrow.

Remote Access to Meetings

John Ciccarelli had hoped to attend the meeting via Skype. The Hilton hotel where we hold winter meetings gives us a good deal on lodging and meeting rooms but not on Internet access in this room. There is a jack in the room but it's \$150/day and \$75 for each additional computer. We will explore this issue looking forward to the summer meeting. Remote access will require adjustment in the attendance fee process. This issue will be discussed in the Board of Directors meeting tonight.

Updates

AASHTO Guide

Project is wrapped up, states had a bit over 1000 comments on the final version. Conference call within the next few weeks: AASHTO asked investigator to review, then panel, then out for vote, and the new guide will hopefully be in place by late next year. The review was not brought before this committee because money ran out, though we did provide input.

Bicycle lane width

Another NCHRP committee is examining bike-lane width for various kinds of roadways. The work is being conducted by the Midwest Research Institute and is to be research based, in Chicago and Cambridge, Massachusetts. Bike lane data is being compared with that for shared-lane markings.

Schultheiss: is there a role for BTC in this?

Moeur: No. We do have representation (Richard Moeur and Dwight Kingsbury on the Panel; Ron Van Houten and John LaPlante on the Research Team).

Bike lanes at intersections

We submitted a research problem statement on bike lanes at intersections. It did not score with the SCOR (AASHTO Standing Committee on Research) and will not be pursued, so there will still be all three types of treatments (discontinued, dashed, solid line to intersection).

Compliance dates

There was a request for information by FHWA, asking whether compliance dates are feasible. Small towns and counties complained that they could not comply under their current budgets. MUTCD is defined in the US Code as a national standard, based on 1966 law and since the 1971 edition, and compliance issues became a problem in 2000. Examples: Compliance in Arizona would cost \$400M spread out over a number of years. Compliance date can require replacement of signs, markings, signals before the end of their service life. Federal unfunded mandates review is 7 years, and many compliance dates were set 8 or 9 years out to get around that. The upshot for the BTC is that the onus is on us that standards and mandates must be absolutely justified. See Richard's presentation to TRB at <http://www.richardmoeur.com/pres/trb2011s354-moeur.pdf>.

The National Committee Council had a teleconference with FHWA Administrator Victor Mendez: the 2009 MUTCD said that standards can not be modified, and this doesn't sit well with the states. This has to change.

Project priority list

(The list is online at <http://members.cox.net/ncutdbtc/future/btcpriority.pdf>)

Bicycle signals

Mr. Mackay's assignment, bicycle signals, was reassigned to Mr. Schultheiss.

SLMs

There are special problems with SLMs' being used in unintended ways. There is a vacuum of guidance.

How to disseminate information on this? Not in the MUTCD. It could be in the ITE handbook, or we just send the information out, or other professional organizations could. This could amount to a 30-page document. We need to work on this in the spring so we can finish it up at the summer meeting.

The MUTCD is down to 816 pages from 1000 in 2000; other countries may have as few as 30 pages. Some people think we might want to go back to a smaller manual relying on guidance in auxiliary documents. Part 9 is succinct compared with others because otherwise we don't get things through the National Council.

Selective Exclusion signs

We need to get this to the Regulatory and Warning Signs committee. In 2B.39, we want a change in paragraph 6, adding wording to clarify; also remove paragraph 8.

The BTC voted to approve to send these changes to the R & W committee.

9C.04 revisions: bike lanes

We thought we had solved this, signs optional, markings mandatory. 3D.01 creates confusion; you should need longitudinal markings and symbol markings. So we are changing 9C.04.

The BTC approved the proposal.

Recess

The BTC recessed at 3 PM for cookies, coffee and conversation with other NCUTCD members in the hallway.

Following recess, several BTC members were attending other committees.

Committee members Bill Schultheiss and James Mackay, also Andy Clarke from LAB and Eric Gilliland from NACTO visited the Signals Technical Committee;

Priority list, continued

New treatments

We have two more cycles, spring and fall, (maybe three) before getting critical items in for the next MUTCD. Are we realistically looking at a 2015 MUTCD? We have harvested all the low-hanging fruit. Now we go to bike box, bike signals and colored bike lanes.

Oliver: We need direction from FHWA on First Do No Harm if no positive results have come in on a proposed treatment.

Moeur has been contacted on interim approval of a couple of these treatments. FHWA needs specifics on color of paint and design of signal. The ASL already is permitted, as an existing device.

DeSantis: We need to look at every standard in Part 9 and try to come up with every possible problem, decide whether to keep it as is, change to guidance, add wording to clarify, or delete. Guidance: reduce to option or upgrade to standard. Assume that existing wording will remain, that no engineering judgment or study can change a standard.

M1-8: We have no data on the “pogo stick” bicyclist image (Bikes in Lane sign, bike above car with plaque, “bikes in lane”, sign first used in Santa Cruz, California, now also in Long Beach)

Flagstaff, Arizona sign for 3 foot minimum spacing is being interpreted as bikes stay 3 feet to right of cars.

Ongoing reviews

Bicycle Service Signing – review is pending.

Revise bicycle symbol. Leave this for now.

Bikes at rail/light rail: not going to Council this time, will get further review including from us.

Door zone markings – Bill Schultheiss is to review but he is in another meeting so we will pass on discussion for now.

Active devices at path/roadway: Problem with rectangular rapid flashing beacons at intersections - signs were blocking the beacons. There have been requests to use a RRFB with detection at intersections on sidepaths, but there are no data to determine if they would have any effectiveness."

"Bike lane ends" sign – needs additional guidance as to what happens next. Could be like 2G-4. Bill DeSantis is assigned to the "bike lane ends" treatment issue. We may be developing a proposal in spring 2011 (although from the post-meeting e-mail discussion, Moeur doesn't think we're anywhere near consensus).

Discussion with Bruce Friedman, FHWA

Friedman: 2010 didn't turn out the way he expected. The 816-page manual is too big. Victor Mendez said "this thing is more complicated than the tax code." (Well, not quite.) FHWA is strongly considering a different form of MUTCD containing guidance and standards, but smaller. Overflow could go into a separate document (application guidelines). This could be changed at any time.

Official rulings database is not yet up. A spreadsheet is up.

Oliver: What about treatments with mixed results on research data. What guidance will FHWA will offer? No harm?

Friedman: That's a very low bar. He has learned a lot about bicycling in the past three years. Took a bike ride in DC traffic. There needs to be more than "does no harm." Often, people justify projects by saying "I feel safer."

Petrtsch: At least we can specify a uniform design and use, and avoid a proliferation of variants.

Friedman: FHWA wants good data. There is pressure: sometimes decisions are brought down from above. Secretary LaHood is into livability. It's a 2-edged sword.

Report from Regulatory & Warning Signs:

Richard Moeur returned from the R&W committee, which accepted our advice on freeway ramps. That committee wants to leave the the underpass wording (section 8) in 2B.39. The pedestrian task force will take this issue up.

Adjournment

The BTC adjourned at 5 PM as the Pedestrian Task Force began its meeting.

NCUTCD Bicycle Technical Committee Meeting, Thursday, January 20, 2011

Minutes prepared by John S. Allen
Dwight Kingsbury took notes from 4:55 PM till end of meeting
Final version, March 1, 2011

Attendance:

Committee Members

John Allen (left 4:55 PM)
Bill DeSantis
Shawn Dikes
Cindy Engelhart
Bill Fox (attended the Temporary Traffic Controls meeting before recess)
David Gleason
Michael Jackson
Dwight Kingsbury (took notes after John Allen left)
John LaPlante (took over chair from 1:20 till recess)
James Mackay (at another meeting till shortly before recess)
Richard Moeur, chair (left for another meeting at 1:20, returned after recess)
Tim Oliver
Theo Petritsch
John Schubert
Bill Schultheiss
Ron Van Houten
Craig Williams (new member)

Guests:

Charles (Ted) Curtis, City of Columbia, MO, potential BTC member
Rob Dingess, Mercer Strategic Alliance (after recess)
Faria Emamian, Oklahoma DOT
Don Ethier, ATSSA
Bruce Friedman, FHWA (arrived 1:22 PM)
Eric Gilliland, National Association of City Traffic Officials
Dutin Kuzan, Maryland DOT
Dan Lang, Flint Trading (potential BTC member)

Summary of January 19 meeting on bicycle signals

Bill Schultheiss reported on the discussion of bicycle signals in the Signals Technical Committee. Scott Beard of the STC will continue to co-chair the bike signal task force (and may be reached at

sbeaird@kittelson.com).

There was concern about whether motorists would understand bicycle signals. We need data. There is now a signal at the White House driveway; 12-inch head and there are no mast arms in DC so poles are busy. Schultheiss saw one car start up but then it stopped. The signal is a little blurry from 200 feet. This is not a good example of a typical installation. One proposal is to use white, not green. Would like to have a proposal by June. We will try to get signal people happy before then.

LaPlante: Problem may be that it is too bright, especially with LEDs and this is confusing when too distant to see the symbol.

Petritsch: St. Petersburg is about to put some in at 16th Street where the Pinellas trail becomes a two-way sidepath, the Mayor told him “we're going to do it, have a good day.”

Van Houten: Why not put them in where motorists can't see them?

Allen: Or use a plaque to distinguish them from other signals?

Van Houten: We would be using red and blue for stop and go if it was known originally what to do, with red-green color blindness.

Richard Moeur left to make presentations at Guide and Motorist Information Technical Committee (on the M1-8 proposal) and Markings Technical Committee (on the 9C.04 proposal).

Door-zone buffer treatment

Bill Schultheiss gave a presentation on his door zone buffer proposal, using double lines.

Research? San Francisco has done an informal study, has only produced a PowerPoint presentation, uses parking Ts. Austin has done a study, which we recently got to review. The MUTCD now includes parking crosses with 12-inch legs.

Engelhart: Can't we do this already under the MUTCD?

Gilliland: inquired, was told they are allowed.

Curtis: Hatching in this proposal should be chevrons?

Schubert: is concerned with rushing into print something that is interpreted wrongly – chevrons look a bit like an SLM. Given the abysmal understanding of how to ride safely that most of our customers have, bicyclists might think they belong there because nobody belongs there.

LaPlante: Minneapolis did something like that years ago, now fading out. There was no study. But studies do show that the direction of stripes doesn't matter.

Allen: Somerville, Massachusetts also did something like this years ago and I have a photo of it. Indeed, people rode there.

Engelhart: On interchanges without bike lanes, our cyclists want more gore width. SPUIs across Route 28 in Virginia have striped gores. That is where cyclists ride.

Van Houten: Ts and diagonal stripes are expensive compared with longitudinal stripes. We will evaluate how much we can narrow a 5-foot lane. The research is being done by the Midwest Research Institute, NCHRP project 15-42.

LaPlante: We aren't ready yet, as we don't have an option nailed down.

Allen: Education and public outreach are key to the success of any of these proposals.

Petritsch: Disagrees about that, doesn't care why people leave the door zone. Thermoplastic may be more effective for parking crosses because it is bumpy.

Allen: Also doesn't care why but is concerned about effectiveness.

Engelhart: We already have 3 examples of parking space markings. Why not just add the bike lane to them instead of creating new ones?

Petritsch: We need to test visibility from the motorist's perspective. How far does a parking cross need to stick out before it is noticed by a driver who is parking?

LaPlante: we're getting away from parking stalls.

Discussion along these lines continued at length...(add your observations if you would like)...Question at end of discussion: what is the committee's perspective?

Oliver: Make the proposal general, with guidance for bike lanes.

Petritsch: Use with SLMs? why use two markings for the same thing?

The committee voted to explore this type of treatment, generally, and then moved on to issues of the scope of the exploration.

Question: What do we regard as the door zone width?

Schubert: Also consider the startle zone.

Schultheiss: And on the other hand, discomfort of being among 20,000 cars.

LaPlante: We can't go to 100%. Example: design for 3.5 foot pedestrian walking speed won't accommodate his mother with a walker, but slower speed would shut down traffic.

Allen: law says that once a pedestrian has entered a crosswalk legally, traffic must yield. Law and education must account for the 15% that engineering can't.

The Committee now voted to examine only bike lanes, not wide outside lanes for now, in connection with door-zone markings.

Schubert: We are misusing the 85th percentile.

Gleason: will play devil's advocate, we can't design for 100%.

LaPlante: The San Francisco study did arrive at a number.

Van Houten: Only way to get at 100% would be to get bicyclists completely off the road.

Schubert: Ron's speech seemed to make the assumption that bicyclists may not use the travel lane.

The committee voted on a second subordinate question: should we use a number, SF 85th is OK? The motion carried.

Next question, where does it belong: Chapter 9 with cross-reference in 3?

Friedman: Is the width of the door zone flexible?

Allen: Yes, if one car every few blocks sticks out unusually wide or is double-parked, then bicyclists will need to merge out to pass it. They have to merge for many other reasons as well. Hans Monderman said not to treat people like idiots in traffic, because then they will act as idiots. There are other risks, for example people walking out from in front of cars; dimensions of parked vehicles, the door

zone and bicycles are not fixed numbers.

Van Houten: My upcoming study might shed light on these issues.

Gilliland: NACTO review hasn't gotten to this part of the manual. It will address buffered bike lanes and door zone markings. This definitely should be included in the manual as its own design and what about a buffer on the left? There are issues of encroachment, overtaking clearance.

Allen: and of bicyclists' falling and going under moving motor vehicles and of comfort. We never voted on where this should go in the manual.

LaPlante: **This belongs in Chapter 9C with cross-reference in 3, by fiat. (Question settled, nobody objected).**

Jackson: With these treatments, are we accommodating people's fears or improving actual safety?

Tribute to James Mackay

A song was sung to James Mackay, "You Don't Even Call Him". It might have been more tuneful if anyone had brought a guitar, but it brought on smiles and laughter nonetheless.

Recess

The Committee went into recess at 2:40 PM for coffee, cookies and conversation.

Report on meetings with other committees

Moeur: We now have the 9C.04, the 2B.39 and MI-8 ready to go to sponsors.

Bill Fox, James Mackay and Bill DeSantis went to Temporary Traffic Controls, and gave a presentation on adding Typical Applications for bicycle facilities to part 6. got a positive response, project to be assigned to a task force chaired by Mr. Church. Mackay didn't have as positive a response on orange traffic-zone markings, but "lived to tell the tale." The topic was referred to one of the committee's task forces for further consideration.

Colored pavement

We have research from Austin, Portland (two reports – Birk on colored bike lane segments through intersections, Monsere on colored pavement in and leading up to bike boxes). There also is research from St. Petersburg (Florida), Long Beach, Copenhagen. Bill Schultheiss has a synopsis report and there is a study from Florida on colored shoulders. There is one from Burlington, Vermont on colored pavement in conflict areas.

Gleason: Chicago has experimented, has video but no data have been extracted.

Schultheiss: Toole has designed some in Boston without permission to experiment; the client wouldn't pay for research. Let's start with things we can agree on – cyclists love it. He has noticed that colored pavement is attracting riders from other locations on the roadway, to filter forward.

Petritsch: can call Jen Duthie in Austin and ask for data. He would like to separate bike boxes from other applications of colored pavement.

Moeur: We can't deal with all applications at once.

Allen: we need to keep distinction clear between drawing people into good places and bad places.

Colored pavement can amount to “rules of the road don't apply, motorists and bicyclists must travel at pedestrian speed or else risk a crash.”

Van Houten: Many of the studies are poor, including the recent Austin study.

Petritsch: The St. Petersburg study is deeply flawed because the cohort was different for the before and after data. The before data used the Joe Average Cyclist but brought in the bike club when not enough Joes showed up. The after cohort consisted of bike-club members only.

Engelhart: Can we treat this like a colored crosswalk? Red brick pavement in crosswalks is not a traffic control issue.

Petritsch: Colored crosswalks are not traffic control, bike lanes are, this decision made before 2002.

Friedman: As long as colored pavement is between the white lines of a crosswalk, it is not a traffic-control device. If only colorized and not reflectorized, it might be allowable in a bike lane.

Moeur: Is the visual impact of a transverse crosswalk and longitudinal bike lane comparable?

Petritsch: AASHTO endorses contrasting pavement for auxiliary lanes and shoulders.

Friedman: Crosswalks are generally not expensive. Bike lanes are more so. Are we putting them in for aesthetics or for behavior? Nashville is using colored pavement around the bicycle symbol only.

Dan Lang (vendor): Skid resistance is more important than retroreflectivity.

Schultheiss: If you just went according to what people want, you would be coloring everything. What is the purpose: aesthetics, operation, safety? A fourth purpose in Boston is to reclaim large areas with weird geometry (I call these “football field intersections” – where space is shared by vehicles coming from unexpected directions. We also have “musical chairs” intersections with lane drops immediately following – John Allen).

Oliver: did we see negative effects from colored pavement?

Engelhart. Results were not as good in the weave location as in the perpendicular treatment in Austin, which led to a recommendation to use only in perpendicular situations.

Review of the Austin study

Moeur: Ramps at Dean Keeton are designed for high-speed uninterrupted travel.

Allen: and in addition, the colored bike lanes on Dean Keeton are at a very low angle to the ramps, so bicyclists are crossing for an extended time.

Oliver: But these are the data we have.

Petritsch: If we're reducing shoulder checks by bicyclists, not good.

Moeur: We didn't see an increase in crashes.

Allen: John Franklin in the U.K reports high fatality rates for on-ramps where cyclists maintain the vehicular position.

Moeur: We need US studies.

More general discussion of use of colored paint

Petritsch: Why did Portland remove bike boxes at two specific locations?

Schultheiss: We might be able to calculate some rates from Portland. Bike lane in Oregon is not part of the roadway, so that changes the law and the favored treatments.

Engelhart: Copenhagen study showed that colored pavement when painted in one leg of an intersection reduced crashes, and in more than 1 or 2, increased them.

Moeur: was contacted by Hari Kalla of FHWA in September. If FHWA moved forward with colored pavement for bicyclists, what sort of criteria would avoid “I want every mile painted” and other technical issues? How do we specify green paint so it is durable and effective, and doesn't give unfair advantage to one vendor?

Friedman: We do have color coordinates.

Petritsch: Think of coloration as supplement rather than traffic control. Skid resistance is easy, retroreflectivity harder – white glass beads will reflect white even when embedded in colored paint.

Van Houten: Right-hook crashes went down 3 to 2 in unpainted bike boxes in Portland, up from 4 to 7 in those with paint. This is not statistically valid, but still... Not sure which 2 bike boxes were taken out. Thinks he knows. We need more attention to RT conflicts on green in bike boxes.

Straw poll: is colored pavement a TCD? All voted yes except Engelhart.

Dan Lang (vendor): There are three types of paint, retro, 50/50 (Visigrip), high-skid.

Petritsch: has been using high retro 15 years, no problem.

Schultheiss: Goal is to increase yielding, awareness a surrogate for yielding, increase volume of cyclists.

DeSantis: Intent is valid criterion for a TCD?

What we need from studies

Friedman: Is it possible for the committee to say what we want to see in a study? Then one of two things could happen, maybe we could steer a city to do an experiment.

Moeur: explained the need for a staged installation to Austin researchers, before start of the Austin study. Austin instead installed yield signs and colored paint at the same time, making it impossible to separate out the effect of each.

Friedman: Problem could be we send a proposal for research on, but response from the community is “we don't have the money.”

Moeur: What happened to the San Francisco study with the colored bike lanes?

Van Houten: Austin study statistical analysis is poor. numbers are too small. Problem with lack of staged installation also applies to other Austin studies.

Gilliland: Key studies have Federal support?

Moeur: Monsere was honest in reporting results of the Portland research, but the public thinks “why aren't we moving.” Are we going to lead or be led by the process?

(John Allen left at this time; notes from here onward were by Dwight Kingsbury).

Go ahead with color?

Moeur: Should we go forward with very limited application of color?

Engelhart: Just for more complex conventional crossroads and perpendicular intersections.

Friedman: FHWA has synthesized our listserv comments on colored markings, and is seriously considering interim approval of green markings between standard white BL lines.

Comment on draft minutes from Dwight Kingsbury: in any final "actions taken" minutes posted on BTC website, this should be worded very carefully. (i.e., definitely not the same thing as just plain "approval"...for example, an IA does not include any degree of recommendation for use of the device or application, it's just an option, and subject to stated conditions.)

LaPlante: consider limited applications, not across ramps or across intersections, but where a bike lane crosses an area where a right-turn lane is introduced with a taper.

Friedman: What about with standard solid bike lane lines?

LaPlante: That's okay, although not really useful.

Petritsch: Even with dotted white lines, if the jurisdiction is prepared to mark them.

LaPlante and Engelhart: A "carpet lane" is not a TCD; in conflict zones, it would be.

Williams: Would Support for skid resistance need to become Guidance if this were done?

Friedman: would need BTC input for interim approval by early March.

Moeur: Does BTC support application for conflict zones?

Schultheiss: Put no figures into the manual, stress that color is only supplemental.

Petritsch: Use only where motorist path crosses bicyclist's path, not where bicyclist's path crosses motorist's path.

Moeur: **let's get something to the FHWA by March 1.**

Engelhart: In our District over 5 years there were very few bicycle crashes at ramps, most were at intersections; save colored treatment for intersections.

Schultheiss and Moeur: Color will not solve other problems, add Support to this effect.

Friedman: suggested that it would not be a TCD unless it were retroreflective, as with colored crosswalks (coloring is not reflective and not considered TCD). The BTC could recommend that coloring be a TCD, and make separate recommendation re reflectivity (option? guidance?).

Moeur: Use of application authorized in Interim Approval is optional, with no degree of recommendation. Any guidance must be of form: If used, then...

The BTC will submit suggestions to FHWA on colored pavements, with David Gleason taking the lead on coordinating this activity.

NACTO

Gilliland introduced himself as representative of NACTO. He doesn't own car, and is a League Cycling Instructor. NACTO has 15 member city transportation departments. The smallest is Minneapolis.

Gilliland is the only paid staff; there are some volunteers. NACTO was formed in the late 90s, provides a forum for peer-to-peer exchange. It runs the Cities for Cycling program; speakers talk to cities about

what member cities are doing. NACTO is working on an urban bikeway design manual, with 22 innovative treatments to be covered, about half done, and working toward launch for the National Bike Summit with 11 treatments finished and a Web site open, hard launch later this year. See it as a supplement to AASHTO BG. Some things will require FHWA experimental approval (signals, use of color, advanced stop lines). About 80% of treatments are consistent with the MUTCD.

Moeur: Bikes Belong asked for more guidance on the experimental process.

Van Houten: Reality is that studies just don't provide the level of statistical quality to support good decisions; there are confounding variables.

Adjournment

Moeur: We need to wrap up the meeting. The Research Committee meeting begins at 6 PM. We will defer the bike box discussion to June, Van Houten is leading our effort to get more, better data.

There was standing ovation for James Mackay.

The meeting adjourned at 5:50 PM.