2012 General Session

House Bill 327

Operation of Bicycles on Roadways

Background Material

9 February 2012

Representative Johnny Anderson

Summary and Intent

Over the past years cycling use on our roadways has evolved. In the mid 70's many states adopted the "as far right as practicable" (FRAP) language we currently have in Utah Code at section 1105. Since then there have only been a couple of revisions to the code. About 10 years ago some modifications and clarifications were made to Utah's code such as being able to use your right hand to signal a right turn and equipment requirement revisions and clarifications for hazards regarding FRAP.

Since then the variety of the types of vehicles with more than two wheels in tandem are being utilized on the roadways in addition to bike lanes popping up everywhere.

About seven years ago, Utah was one of the first states to adopt a three-foot rule for motorists passing cyclists. Since then, other states have followed suit. Many of the other states have included an allowance for passing motorists to cross the double yellow line to pass a cyclist when it is safe to do so. Local law enforcement reports that this is one of the chief complaints they get from motorists when questioned on passing to close on two lane roadways (and then fail to ticket the motorist).

Utah does not have a state-wide definition of a bike lane. As such, some municipalities are creating their own language, and others are installing bike lanes without any definition causing the enforcing of parking and the use of these lanes by motorists problematic. This creates confusion on everyone's part from law enforcement, judges, motorists to cyclists as the legal treatment of the lane varies from jurisdiction to jurisdiction, sometimes along the same continuous bike lane. Many of the UDOT bike lanes installed in the past few years are in areas where there is no legal definition of a bike lane.

After only a couple of years, Bike Utah and cyclists in Utah are one of the few groups who have managed to surpass the 500 plate minimum enacted in 2011 for special group plates for the "Share the Road" license plate.

Below are notes to the changes to Utah code to make them more applicable to current uses.

Notes by Section

41-6a-102(4)

Updating the Bicycle Definition

This section is updated to recognize vehicles generally referred to bicycles. The old language restricted the definition to just standard bicycles with only two wheels. Three and even four-wheel recumbent are becoming more common, but currently are not classified. These bikes although are a bit lower but are more stable since the operator does not have to put a foot down when stopping and is much less susceptible to falling over if struck, close passes by motorists, hitting hazards, etc.

Although these trikes quads are wider, while being operated, they generally do not have a wider profile than that of a standard two wheeled bicycle since the shoulders is typically the widest part of the operator/bicycle combination. The wheel-track is about the same as a wheelchair around 30 inches.

The AASHTO Guide already includes three and four wheeled cycles in its definition of a bicycle.

Electric Motors

The electric motor described is basically an "electric assist" motor to assist those less fit to better utilize bicycles. These have been increasing in their popularity and can be fitted to both bicycles and trikes alike. When we saw gas prices go over $4.00 per gallon, there was sharp increase in interest in these efficient forms of transportation.

Both the assist motors and the trikes are becoming more popular amongst our aging society as it affords more mobility without a motor vehicle with ease of use and in the case of the trike a more stable platform where balance issues become more of an issue.

The motor depicted in this addition follows the Federal Product Safety definitions of a bicycle. It differs from a "moped" which are generally purpose built and have a gasoline engine and much heavier and require a license to operate.

Since pedals must be part of the device, push scooters with motors would not be part of this description. This definition is more restricted than a moped since they are typically used on pathways and other locations you would also typically see bicycles, are capable of about the same speed as a bicycle and are relatively quiet. (A strong/regular commuter cyclist is typically capable of 18-20mph while commuting, 22-25 on a "racing bike."

Currently the Electric Assisted Bicycle is classified as a moped, so it requires an operator's license to operate, but not a motorcycle license according to DPS. Mopeds up to 50cc do not currently require vehicle registration, but if over 40cc does require a m/c license.

This updated definition will bring Utah Code more in line with Federal Regulations and reclassify an electric assisted bicycle as a **bicycle** rather than a **moped** (thus allowing use on shared use paths subject to 41-6a-1106 and not requiring an operator's license)

> *(From Public Law 107-319 Requirements for Low Speed Electric Bicycles; 16 CFR 1512 Consumer Product Safety Commission)*
>
> *SUMMARY: Public Law 107-319, 116 Stat. 2776 (the Act), enacted December 4, 2002, subjects low-speed electric bicycles to the Commission's existing regulations at 16 CFR part 1512 and 16 CFR 1500.18(a)(12) for bicycles that are solely human powered. For purposes of this requirement, the Act defines a low-speed electric bicycle as ``a two-or three-wheeled vehicle with fully operable pedals and an electric motor of less than 750 watts (1 h.p.), whose maximum speed on a paved level surface, when powered solely by such a motor while ridden by an operator who weighs 170 pounds, is less than 20 mph.'' Public Law No. 107-319, section 1, 116 Stat. 2776 (2002). The Commission is issuing this immediately effective amendment to its requirements for bicycles at 16 CFR part 1512 to promptly inform the public of the newly enacted statutory requirement on low-speed electric bicycles.*

Trailers

The current definition of a trailer in the vehicle code 41-6a-1634 does not differentiate between attaching to a non-motorized vehicle or motorized vehicle, it only states that it must have a hitch and safety chains. This is not practicable for attaching to a bicycle. It also could be added to this section at (3)(c): "*, or (3)(c) a bicycle."* Although the "trailer" definition in section 102 indicates that it is a device attached to a motor vehicle, this change would clarify that a trailer attached to a bicycle would not need the safety chains not applicable to one attached to a bicycle.

41-6a-1634. Safety chains on towed vehicles required -- Exceptions.

(1) A towed vehicle shall be coupled by means of a safety chain, cable or equivalent device, in addition to the regular trailer hitch or coupling.

(2) Except as provided under Subsection (3), a safety chain, cable or equivalent device shall be:

(a) securely connected with the chassis of the towing vehicle, the towed vehicle, and the drawbar;

(b) of sufficient material and strength to prevent the two vehicles from becoming separated; and

(c) attached to:

(i) have no more slack than is necessary for proper turning;

(ii) the trailer drawbar to prevent it from dropping to the ground; and

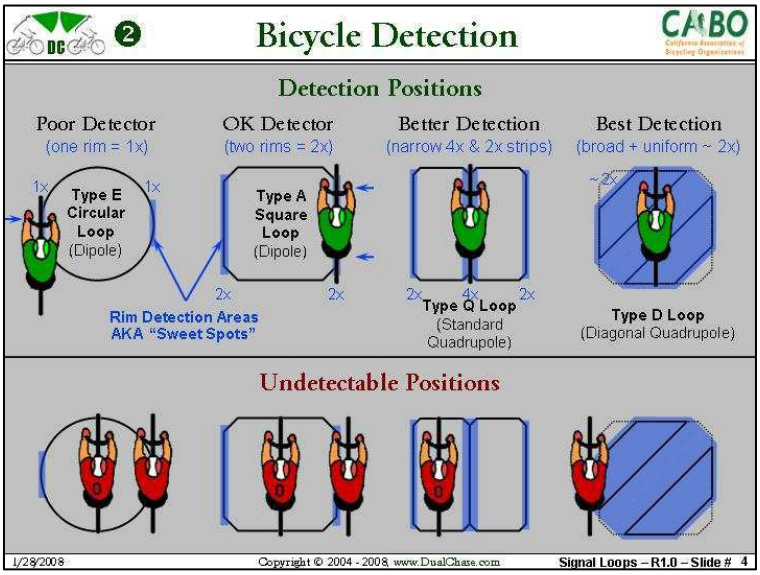
(iii) assure the towed vehicle follows substantially in the course of the towing vehicle in case the vehicles become separated.

(3) The provisions of Subsection (2) do not apply to a:

(a) semitrailer having a connecting device composed of a fifth wheel and king pin assembly; or

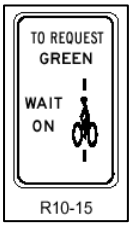
(b) pole trailer.

41-6a-305(7) & 41-6a-1105(5)



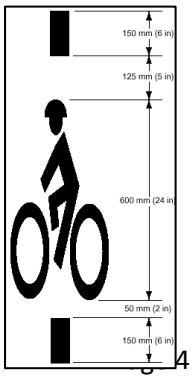
These sections recognizes that many signals which have electromagnetic sensors are either not properly calibrated to detect lighter vehicles such as motorcycles or bicycles, or due to other environmental factors cannot be calibrated for such uses. Although there is now technology to accomplish the detection of these vehicles, changing out the thousands of signals is expensive and time consuming.

Even if properly calibrated and unless the loops were placed in after the last paving, the operator of these narrow vehicles don't know exactly where to stop to have the best chance to trigger the device and most don't know where to stop their vehicle from an engineering standpoint. It is common practice with new installations of bike specific sensors, to mark the pavement which has not caught-on here in Utah.



Assistive Markings for Quadrupole Loops

When a roadway is repaved over the loop sawcuts, a cyclist cannot determine the location of the conventional quadrupole sensor's center wires, and as a result may not be able to position the bicycle's rims for detection. Some cyclists may not be aware of the best part of the loop for detection, or may not be aware of the function of inductive sensors in the first place. In order to address this problem, proposed Revision 2 of the 2000 edition of MUTCD specifies roadway markings to identify the center of the loop to cyclists (right-above), and specifies a road sign (left) to educate road users about the purpose of the markings.



The exceptions in this bill make these intersections navigable by operators for bicycles and motorcycles under the current state of the signals. Many states have placed similar language for the same purpose. We are aware of both motorcyclists and

cyclists who have been ticketed after stopping and waiting and were told: “well, you could just make a right then u-turn.” From a safety perspective, a u-turn is one of the more dangerous things you can do (keep in mind this would be on the busier of the two roadways). Regardless, if there is a right turn lane or if you are in the left turn lane, making that right would also be an illegal turn.

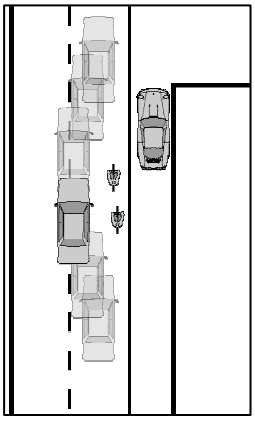
Although a cyclist can dismount, push the walk button and proceed on the green, a motorcyclist this is not very safe or practicable, a cyclist is supposed to have the same “rights” as operators of other vehicles, and there is not always a cross walk button such as at many cross streets crossing Bangerter and Bingham Hwy @ 111 which are on “bicycle routes” and bicycles are not detected.

After review other State's Codes on this subject and speaking with signal engineers, 90 seconds seems a good compromise on a time to wait. Some states such as Wisconsin were as low as 45 seconds which was a concern for some local engineers. At 90 seconds, the waiting would cover most situations which this law is trying to solve. There are a few intersections where the timing phase may be more than 90 seconds, but these are very rare and are generally at intersections with plenty of other traffic (such as CFI's) where the operator would not be able to proceed following the pre-requisite conditions which they are allowed and would likely have other traffic in their lane which would trigger the light.

The coming to a complete stop language is a bit duplicative, but drives home the point that one must stop and wait. Situations where there are traffic signals and railroads (Trax for example) without crossing arms would still require the operator to obey those signals for safety purposes and where there are other vehicles in another lane or behind which should trigger the light for safe passage.

Some stats on the number of traffic signals (from December 2009 UDOT Transportation Commission Meeting report):

- *RADAR units being installed when upgraded.*
- *They replace about 200 per year*
- *Conducting training for signal maintenance workers.*
- *5 major corridors upgraded & evaluated each year (not clear whether or not bicycle detection is evaluated)*
- *Bangerter was used as an example showing better traffic flow, however this was only evaluated/presented for traffic on Bangerter, <u>not the cross traffic.</u>*
- *1400 signals state wide with computer control (UDOT)*



41-6a-701(1)(b) & 41-6a-708(3)(a)

This section is updated to allow passing of a bicycle or moped over the yellow line, but only when safe. Since a bicycle is generally going much slower and/or are easier to pass and see around than a normal vehicle, they take less time to pass and do not usually require completely changing lanes and passing using a straddle pass (see image at the right). This section is referenced by 41-6a-708(3)(a):

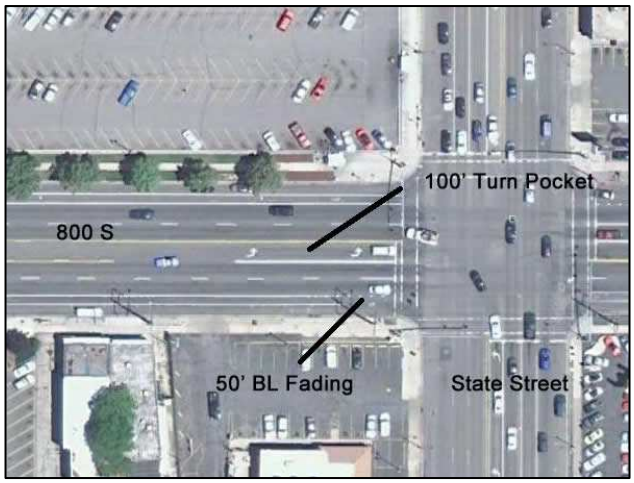
41-6a-710

This adds the definition of a bike lane and its use. Although 41-6a-102 generally has definitions, even the term “lane” is not defined. The definition portion could be placed in <u>either location</u>. The reason for *“preferential use by bicycles”* is that the national standards defines it this way as there are other designs which go beyond a traditional “bike lane” design.

Many municipalities in Utah and UDOT have been installing Bike Lanes on new and updated roadways. With a couple of exceptions, the localities which these are placed do not have any definition of what the legal use of the lane is for beyond the signage placed on the roadway. Furthermore, many of these laws vary from municipality to municipality. Having a state-wide definition would provide some uniformity to this growing trend.

The intent is to allow a motorist to merge into that lane to make their right turn just as they would any other lane to their right before turning. This allows them to merge with cyclists in the lane and the cyclist to have time to maneuver to the left and pass the now slowing turning vehicle. Not allowing the merge invites a "right hook" where the operator of the motor vehicle passes the cyclist the turns in front of them.

Distances from 50' to 200' were considered for the merging distance which is the standard for intersections in the AASHTO guide. Since the turning distance is governed by the roadway type, speed and what the motorist is turning into, the worst case must be considered here. We also checked with the authors of the language used in section 1105 drafted in the 70's and he felt that 100' to 200' s/b adequate and 200' was put into the California code for turning with bike lanes.



The definition allows recognized transit authorities and schools to briefly stop busses in the bike lane to load/unload passengers. However, it does <u>not</u> permit them to "stage" there.

One may wonder about other "temporary" parking for car-pools and delivery vans: since roadways are primarily for the movement of traffic, public busses serve a public purpose in that regards by more effectively moving people on the roadways; parking of delivery vehicles does not serve the purpose of the movement of traffic and generally stay longer than a bus for a few seconds loading/unloading passengers; car pool vehicles are much smaller and can easily use existing parking or side-roads to load/unload passengers. (See illustrations on next page)

On the subject of "mandatory use:" Section 1105 <u>already requires</u> the use of the rightmost lane as practicable and lists exceptions to that rule. Since the bike lane is a lane available for use by a cyclist, they should still follow that rule if it is safe to use the bike lane. There are too many issues with un-conditionally requiring use of a specific lane by cyclists due to hazards, debris, parked cars, poorly designed lanes etc. There are cases in CA, NY and WA where there is or was a mandatory use law where cyclists were cited for not being in the lane, never mind the fact that that they were on a bridge where the bike lane was un-usable with potholes and broken pavement or double parked cars in NY.

Some states have the following language, but that is only for the "design" of the lane, without exceptions there is no variance for <u>current conditions</u>: (Oregon)

A person is not required to comply with this section unless the state or local authority with jurisdiction over the roadway finds, after public hearing, that the bicycle lane or bicycle path is suitable for safe bicycle use at reasonable rates of speed

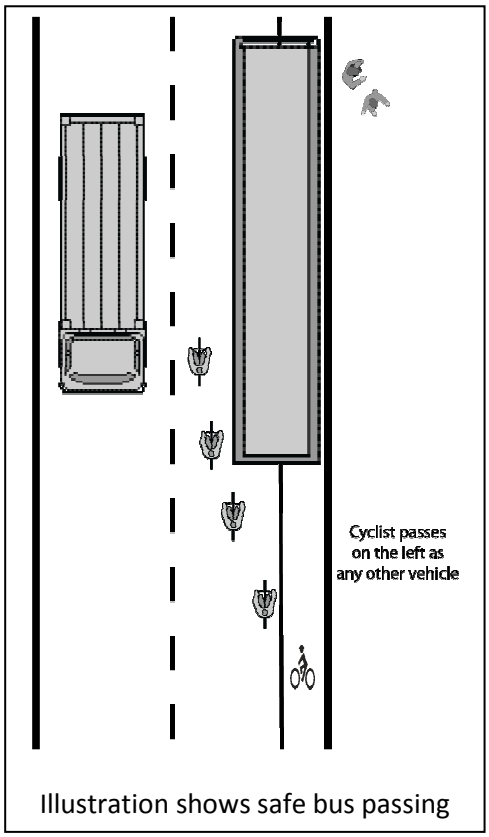


Illustration shows safe bus passing

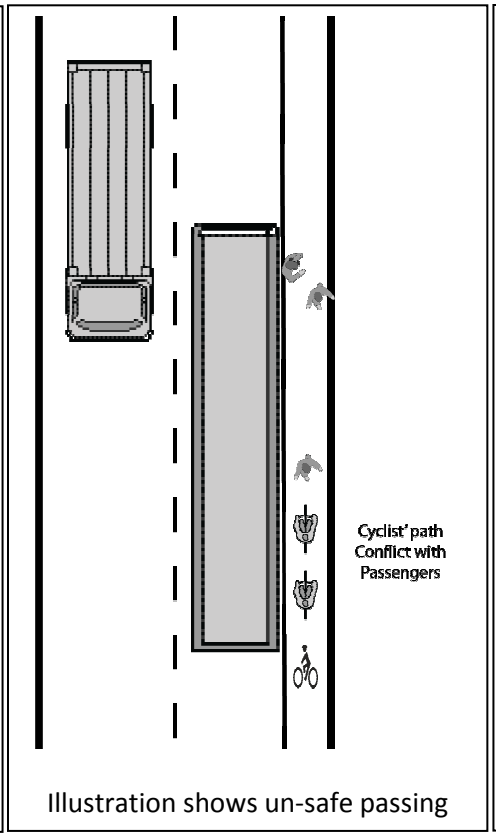
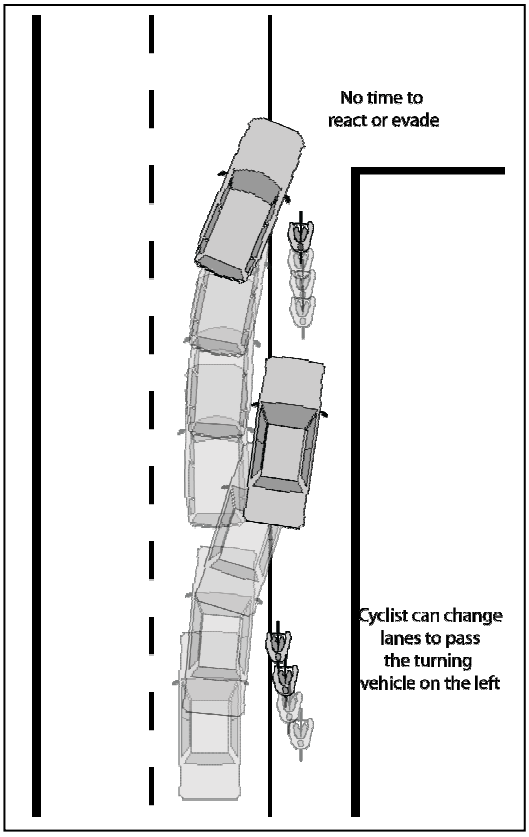


Illustration shows un-safe passing



Stakeholder Groups Consulted

Over the past three years, various versions and revisions of these proposed code changes have been presented to various groups, provided input formally and informally, and research conducted including both formally and informally:

- Bike Utah (Utah Bicycle Coalition)
- UDOT
- Local Bicycle and Transportation Engineers
- Salt Lake City Mayor's Bicycle Advisory Committee
- Salt Lake County Mayor's Bicycle Advisory Committee
- League of American Bicyclists
- Utah Municipal and County law enforcement agencies
- Community Councils
- Bicycle Safety Instructor user groups (similar to the motorcycle safety foundation courses)

- Association of Bicycle and Pedestrian Professionals
- Survey of other state's codes
- Transportation Alliance
- Discussions with many cyclists and motorists

Other Changes Considered

- Modifying 10-8-69 and 41-6a-208 adding restrictions on when the powers of local authorities may restrict classes of vehicles and other conditions (such as requiring that they be based on engineering or safety studies)
- Updating 41-6a-1105 changing the default position/view of the lane position of the cyclist from the side of the road with exceptions to the right of the full use of the lane and share the lane when the cyclist feel's it is safe. Clarifying that riding two abreast is permissible on an otherwise narrow lane. Also considered removing section 1105 all together as there is already slower-than-traffic language elsewhere and it is a bit duplicative.

  This section was removed in-part due to the discussions at the 2010 interim Transportation Committee hearings and due to pending certiorari petition (Supreme Court) in Colorado the "Black Hawk" case, Colorado was where the new language was derived from.

Misc. Related Definitions (Emphasis Added):

- **Highway**: 41-6a-102(21) "Highway" means the entire width between property lines of every way or place of any nature when any part of it is open to the use of the public as a matter of right for vehicular travel. *(The entire ROW)*
- **Roadway**: 41-6a-102(51)(a) "Roadway" means that portion of highway improved, designed, or ordinarily used for vehicular travel. (b) "Roadway" does not include the sidewalk, berm, or shoulder, even though any of them are used by persons riding bicycles or other human-powered vehicles. (c) "Roadway" refers to any roadway separately but not to all roadways collectively, if a highway includes two or more separate roadways. *(Roadway does not include the shoulder, even though cyclists may use them)*
- **Shoulder**: 41-6a-102(55) "Shoulder area" means: (a) that area of the hard-surfaced highway separated from the roadway by a pavement edge line as established in the current approved "Manual on Uniform Traffic Control Devices"; or (b) that portion of the road contiguous to the roadway for accommodation of stopped vehicles, for emergency use, and lateral support. *(Shoulder includes the parking area and everything to the right of the fog line)*
- **Crosswalk**: (9) "Crosswalk" means:
  (a) that part of a roadway at an intersection included within the connections of the lateral lines of the sidewalks on opposite sides of the highway measured from:
  (i) (A) the curbs; or
  (B) in the absence of curbs, from the edges of the traversable roadway; and
  (ii) in the absence of a sidewalk on one side of the roadway, that part of a roadway included within the extension of the lateral lines of the existing sidewalk at right angles to the centerline; or

(b) any portion of a roadway at an intersection or elsewhere distinctly indicated for pedestrian crossing by lines or other markings on the surface.

- **Moped**: 41-6a-102 (32) (a) "Moped" means a motor-driven cycle having:
  (i) pedals to permit propulsion by human power; and
  (ii) a motor which:
  (A) produces not more than two brake horsepower; and
  (B) is not capable of propelling the cycle at a speed in excess of 30 miles per hour on level ground.
  (b) If an internal combustion engine is used, the displacement may not exceed 50 cubic centimeters and the moped shall have a power drive system that functions directly or automatically without clutching or shifting by the operator after the drive system is engaged.
  (c) "Moped" includes an electric assisted bicycle and a motor assisted scooter.

- **Electric personal assistive mobility device**: 41-6a-102(14)(Segway) means a self-balancing device with:
  (i) two nontandem wheels in contact with the ground;
  (ii) a system capable of steering and stopping the unit under typical operating conditions;
  (iii) an electric propulsion system with average power of one horsepower or 750 watts;
  (iv) a maximum speed capacity on a paved, level surface of 12.5 miles per hour; and
  (v) a deck design for a person to stand while operating the device.
  (b) "Electric personal assistive mobility device" does not include a wheelchair.

- **41-6a-1106**
  Bicycles and human powered vehicle or device to yield right-of-way to pedestrians on sidewalks, path
  (1) A person operating a bicycle or a vehicle or device propelled by human power shall:
  (a) yield the right-of-way to any pedestrian; and
  (b) give an audible signal before overtaking and passing a pedestrian.
  (2) A person may not operate a bicycle or a vehicle or device propelled by human power on a sidewalk, path, or trail, or across a roadway in a crosswalk, where prohibited by a traffic-control device or ordinance.
  (3) A person may not operate a bicycle or a vehicle or device propelled by human power in a negligent manner so as to collide with a:
  (a) pedestrian; or
  (b) person operating a:
  (i) bicycle; or
  (ii) vehicle or device propelled by human power.
  (4) A person operating a bicycle or a vehicle or device propelled by human power on a sidewalk, path, or trail, or across a driveway, or across a roadway on a crosswalk may not operate at a speed greater than is reasonable and prudent under the existing conditions, giving regard to the actual and potential hazards then existing.
  (5) Except as provided under Subsections (1) and (4), a person operating a bicycle or a vehicle or device propelled by human power on a sidewalk, path, or trail, or across a roadway on a crosswalk, has all the rights and duties applicable to a pedestrian under the same circumstances.

Mandatory Use of a Bike Lane example websites:

http://bicycledriving.org/bikeways/bike-lanes

http://saltlake.mybikelane.com/

http://greatergreaterwashington.org/tag/bike+lanes/

http://gothamist.com/2011/09/30/cyclist_psa_cops_ticketing_bikers_n.php

http://labreform.org/blunders/b5.html

http://bicyclecolo.org/articles/black-hawk-bike-ban-pg1118.htm (Black Hawk road rights case)

Check for updates and more background information at:
www.safe-route.org
urban-rider.blogspot.com

For questions and comment:
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