

City Council Staff Report



Subject: Use of Electric Assisted Bicycles and Electric Personal Assistive Mobility Devices on City Pathways and Trails
Author: Heinrich Deters
Department: Sustainability Department
Date: May 29, 2014
Type of Item: Informational

Summary Recommendations:

Staff recommends Council hold an initial discussion and provide input for the use of electronic assisted bicycles and electronic personal assistive mobility device (Segways) on public hard surface pathways and natural surface and back country trails.

1. Provide input on proposed edits/updates to the Municipal Code to establish definitions associated with bicycles and bicycle facilities (Attachment I page 17).
2. Provide input on proposed restrictions placed on the use of electronically assisted bicycles and electronic personal assistive mobility devices.
3. Provide input on the recommended one year pilot program to collect data on the use of electronically assisted bicycles and electronic personal assistive devices on public pathways and trails.

Topic/Description: Use of public pathways and trails

Background:

In October of 2013, staff contracted with Fehr and Peers, a professional traffic engineering and transportation planning firm, to draft a technical report on the use and governmental regulation of electric assisted bicycles and electric assisted personal mobility devices (Segways). Fehr and Peers completed the report in January of 2014 and presented it to staff. (Attachment I)

Staff's initial interest in procuring the report was to take a proactive approach to the growing electric bike industry. Additionally, because electric assisted personal devices are often times addressed collectively under the 'motorized/non-motorized' debate, Segways are included in the report.

What are Electrically Assisted Bikes?

E-bikes are classed according to the power that their electric motor can deliver and the control system, i.e., when and how the power from the motor is applied. Also the classification of e-bikes is complicated due to motor vehicle/traffic code definitions of what constitutes a bicycle and what constitutes a moped or motorcycle. As such, the classification of these e-bikes varies greatly across countries and local jurisdictions.

Despite these state code complications, the classification of e-bikes is mainly decided by whether the e-bike's motor assists the rider using a *pedal-assist* system or by a *power-on-demand* one.

The [National Bike Dealers Association](#) shows that Americans bought nearly 19 million bicycles in 2012, of which, electric bike sales accounted for less than 1 percent of that amount. However, the 159,000 e-bikes sold from 2011 to 2012 in the U.S. still show plenty of growth and represent the fastest growing sector percentage.

Staff has provided a few links to articles about the e-bike industry and sales

- http://en.wikipedia.org/wiki/Electric_bicycle
- www.npr.org/blogs/parallels/2013/10/24/240493422/in-most-every-european-country-bikes-are-outselling-cars

Electrically Assisted Personal Devices (Segways)

Segways are single occupant mobility devices, where the user stands on a platform with two non-tandem wheels. The unit is controlled by a gyroscope mechanism and software. While Segways have often been marketed as the future of pedestrian transportation, sales of the units have never truly aspired to those lofty goals. The devices have been utilized by police, during event or city patrols in larger metropolitan areas, as well as, tours. Additionally, it should be noted, that the devices are regulated by the Consumer Product Safety Commission as a consumer product, rather than by the National Highway Traffic Safety Administration.

Staff has provided a link to the Segway wikipedia page for more information

- http://en.wikipedia.org/wiki/Segway_Inc.

Analysis:

Park City Municipal Code

Park City's Municipal code currently does not address or define bicycles, electrically assisted personal mobility devices, electrically assisted bicycles and/or bicycle related facilities. Instead, the city relies on existing Utah State Code to address these items. If Council were to direct staff to further define and/or restrict uses associated with bicycles and bike related infrastructure, the Municipal Code would need to be amended. Sample language associated with such changes is provided. (Attachment I page 17). **Staff would return at a later date to provide the exact code language for recommended amendment.**

Electrically Assisted Bicycles

Electric Assisted Bikes on Public Pathways and Trails

Staff finds that the proposed uses associated with electric assisted bicycles and electric personal assistive devices on public pathways and trails is at minimum worthy of further

discussion and a possible one year pilot program to garner additional data. Furthermore and most importantly, staff finds that electric bicycle use, if appropriately regulated, supports and enhances Council's alternative transportation goals. The use will provide an opportunity for users to select the bicycle, when aspects such as topography, fitness and or health concerns previously inhibited the option.

Utah State Code Electric Assisted Bicycles

Under current Utah State Code, electrically assisted bicycles are defined as a bicycle/moped. (Attachment I page 2) The devices are allowed on roads, sidewalks, bike lanes and pathways unless prohibited by a traffic control device (signage) or ordinance. Furthermore, Utah Code limits electric assisted bicycle to a device with less than 1,000 watts and a maximum operating speed of 20 mph. Utah requires users to have driver's licenses¹, but does not require registration. ***Utah State Code allows local authorities to adopt ordinances to regulate or restrict electrically assisted bicycles.***

Utah State Code Pedestrian and Bicycle safety

Section 1106 of Title 41 Chapter 6a of the Utah State Code outlines how bicycles and human powered vehicles or devices interact with pedestrians on sidewalks, paths, and trails. This language remains sufficient to provide parameters for uses within Park City and need not be amended to the Municipal Code unless directed by Council.

How are Peer Cities addressing this issue?

As noted previously in the report, staff procured a technical report, which reviewed existing policies and ordinances in place within peer cities, such as Boulder, CO., Aspen, CO., Ketchum, ID. In these instances, only Boulder, CO. has taken a firm direction on clarifying this new technology and the appropriateness of its use on public property. With that in mind, staff is recommending to take a very similar approach as Boulder, by providing public input opportunities, draft ordinance changes and a one year pilot program. For more information on the Boulder, CO. draft ordinance and pilot program: <https://bouldercolorado.gov/goboulder/electric-assisted-bikes-policy-review>

Park City Electrically Assisted Bike Recommendations

At a high level, staff is recommending that Park City initiate public hearings regarding consideration of the following additional restrictions:

1. Council adoption of changes to the Municipal Code to define bicycle and bicycle related infrastructure which will allow for electrically assisted bicycles under the following conditions:
 - i. Allow use on public, hard surface multi-use pathways, eight feet in width or greater and further defined in (Exhibit A map)
 - ii. Maximum speed of 20 mph
 - iii. Maximum of 750 watts
 - iv. Users must have a valid driver's license

2. Council adoption of changes to the Municipal Code to prohibit electrically assisted bicycles under the following conditions:
 - i. Prohibit use on public sidewalks and/or pathways less than eight feet in width or further defined in (Exhibit A map)
 - ii. Prohibit use on natural surface and backcountry recreational single-track trails.

How do local Stakeholders and Jurisdictions find these recommendations?

Staff has reached out to the following stakeholders, in addition to members of the general public, to better understand their thoughts and/or concerns with proposed recommendations

- *Bike Utah*
 - Bike Utah is still exploring the item and does not have a position. Bike Utah is also unaware of another municipality within Utah that has previously or is currently addressing the issue.
- *Mountain Trails Foundation (MTF)*
 - The Mountain Trails Foundation supports the use and restrictions as recommended by staff. However, State Parks, who owns all of the Rail Trail except the first 1000 feet, has prohibited use per current policy.
- *Summit Lands Conservancy (SLC)*
 - Summit Lands Conservancy's has approved use on the Rail Trail Easement pathway but prohibited use on the McPolin pathways for the one year pilot program.
- *Park City Mountain Resort and Deer Valley Resort*
 - Both resorts support the use and restrictions as recommended by staff and propose to implement similar measures on their private property.
- *Snyderville Basin Special Recreation District (SBSRD)*
 - *SBSRD supports the use and restrictions as recommended by staff; however, must present the proposals to their board and County prior to execution.*
- *National Ability Center (NAC)*
 - *NAC is supports the use and restrictions as recommended by staff; specifically as it notes the caveat of mobility impaired conditions associated with Segway use.*
- *Bike Shops*
 - *Staff was able to briefly discuss the item with Jans Mountain Outfitters, who felt clarity per the electric bike use on pathways and prohibition on natural surface trails seemed appropriate but would like to see the pilot program results*

Electronically Assisted Personal Mobility Devices- Segways

Electronically Assisted Personal Mobility Devices on Public Pathways and Trails

Staff is unaware of any current Segway use on public pathways and trails in Park City. The last known personal user in Park Meadows is believed to have ceased use after an accident. However, Dennis Levine, a potential commercial tour vendor, has repeatedly inquired as to permit/license requirements for a “Park City History Tour” using rented Segways. Staff referred Mr. Levine to Title 4, Chapter 3 of the Municipal Code which would require a franchise/concession to use public property for his commercial tours, unless the Code is amended. Based upon a the report and a preliminary survey, staff does not find that the device represents a viable mode of alternative transportation consistent with Council goals and would have negative impacts on the pathways and sidewalks due to the steep, narrow and uneven nature of most of pathways, combined with the steep learning curve/control for new users. Furthermore, staff has concerns with the safety of the devices due to stopping distances, tipping or potential falls as even flat trails often have steep grades directly adjacent to them and the fact that trail designs such as expansion gaps, lack of curb cuts and surfaces were not implemented with Segway use in mind.

Utah State Code Segway

Utah State Code defines Segways differently than bikes, however, allows the usage of electric-assisted mobility devices on streets, and pathways or trails designed for the use of a bicycle. (Attachment I page 3) *Utah State Code allows for local authorities to adopt ordinances to regulate or restrict the use of electric personal assistive mobility devices.*

Park City Electrically Assisted Personal Mobility Device Recommendations

At a high level, staff is recommending that Park City initiate public hearings regarding consideration of:

1. Council adoption of changes to the Municipal Code to define bicycle and bicycle related infrastructure which will allow for electrically assisted personal mobility devices under the following conditions:
 - i. Allow use for mobility impaired users on all public, hard surface multi-use pathways and sidewalks.
2. Council adoption of changes to the Municipal Code to prohibit electrically assisted mobility devices under the following conditions:
 - i. Prohibit use on public sidewalks and/or pathways.
 - ii. Prohibit use on natural surface and backcountry recreational single-track trails

Department Review:

This report has been reviewed by the Sustainability, Legal and Executive Departments.

Significant Impacts:

Any changes to existing uses, whether due to new technologies or social trends should be addressed carefully, for real and/or perceived impacts. Most importantly, safety concerns should be at the forefront of and decision making process prior to implementation.

	World Class Multi-Seasonal Resort Destination (Economic Impact)	Preserving & Enhancing the Natural Environment (Environmental Impact)	An Inclusive Community of Diverse Economic & Cultural Opportunities (Social Equity Impact)	Responsive, Cutting-Edge & Effective Government
Which Desired Outcomes might the Recommended Action Impact?	Accessible and world-class recreational facilities, parks and programs Safe community that is walkable and bike-able	~ Managed natural resources balancing ecosystem needs		Engaged and informed citizenry
Assessment of Overall Impact on Council Priority (Quality of Life Impact)	Positive 	Positive 	Neutral 	Positive 
Comments:				

Funding Source:

Funding for the pilot program is projected to come from the Trails Master Plan.

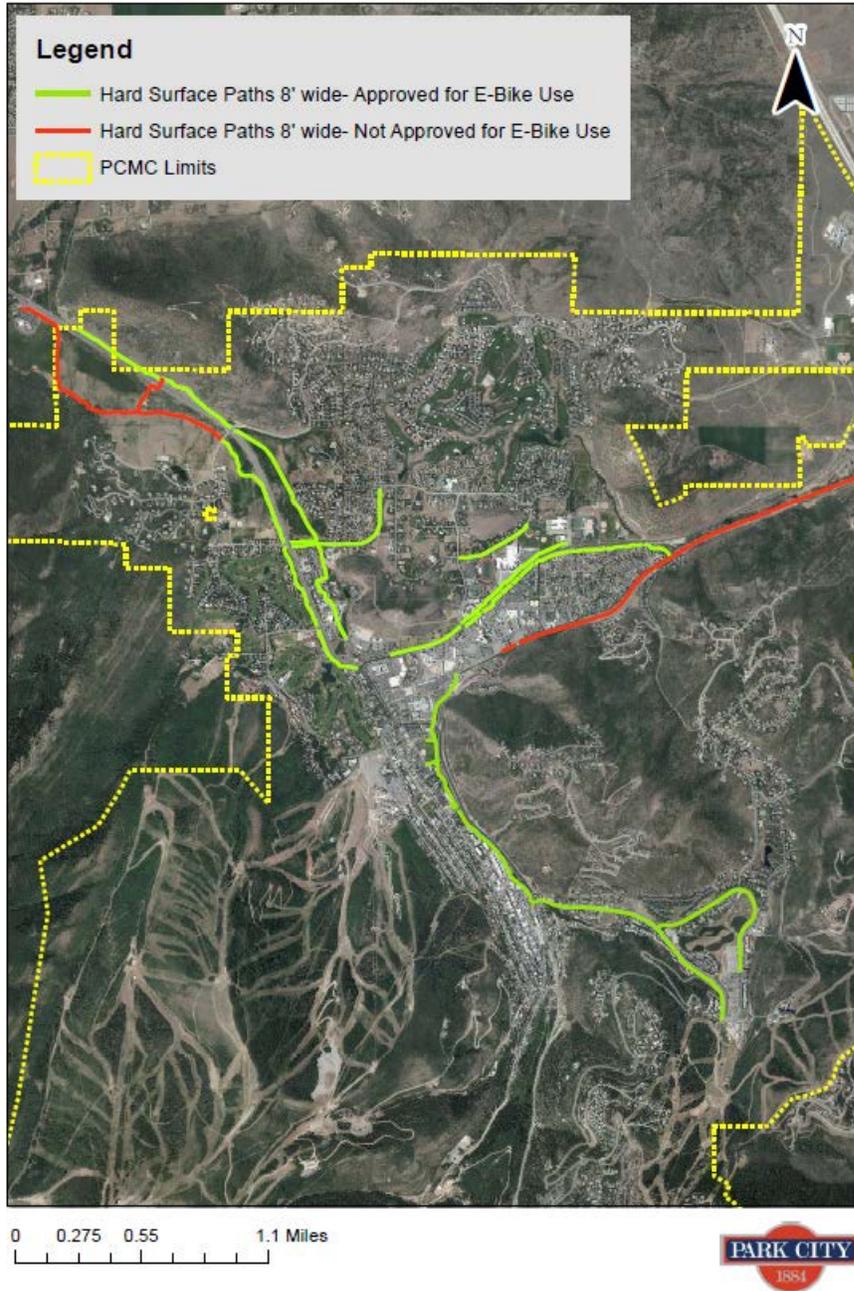
Recommendation:

Staff recommends Council hold an initial discussion and provide input for the use of electronic assisted bicycles and electronic personal assistive mobility device (Segways) on public hard surface pathways and natural surface and back country trails.

1. Provide input on proposed edits/updates to the Municipal Code to establish definitions associated with bicycles and bicycle facilities (Attachment I page 17)
2. Provide input on proposed restrictions placed on the use of electronically assisted bicycles and electronic personal assistive mobility devices outside of current Utah State Code
3. Provide input on the recommended one year pilot program to collect data on the use of electronically assisted bicycles and electronic personal assistive devices on public pathways and trails.

Exhibit A- PCMC Electric Bicycle Use Pathway Map

Electrically Assisted Bicycle Pathway Map



Attachment I- Fehr and Peers Technical Report

Park City Ordinance for Motorized, Electric, and Pedal-Assist Vehicles on Sidewalks and Pathways

TECHNICAL MEMORANDUM

To: Heinrich Deters, Park City Municipal Corporation

Date: January 2014

From: Julie Bjornstad, AICP, Fehr & Peers

Subject: Existing Ordinance Research

UT13-1008

Electric, motorized, and pedal-assist vehicles are increasing in popularity. However, many communities, including Park City, have not formally enacted rules and regulations to dictate how these vehicles can be used. This memorandum documents a sampling of communities and states that have enacted laws defining the type of and use of electric, motorized, and pedal-assist vehicles.

Utah State Code

Utah limits electric assisted bicycle to a device with less than 1,000 watts and a maximum operating speed of 20 mph. Utah requires users to have driver's licensesⁱ, but does not require registration.

Utah State Code Title 41, Chapter 6a defines the traffic code regarding motor vehicles in the state of Utah. Table 1 shows the definitions of different vehicles per the Utah State Code. A motor vehicle, per the state code, is a vehicle that is self-propelled and does not include vehicles moved solely by human power. By this definition, a bicycle is not considered a motor vehicle. An electric-assisted bicycle could be argues as motorized or non-motorized – they can be self-propelled, but they are included as bicycles in state code and therefore could be considered non-motorized. An electric personal assistive mobility device (Segway) is not considered a motor vehicle.

TABLE ERROR! MAIN DOCUMENT ONLY. UTAH STATE CODE DEFINITIONS

Vehicle	Definition
Motor Vehicle	(a) "Motor vehicle" means a vehicle that is self-propelled and every vehicle which is propelled by electric power obtained from overhead trolley wires, but not operated upon rails. (b) "Motor vehicle" does not include vehicles moved solely by human power, motorized wheelchairs, or an electric personal assistive mobility device.

Bicycle



Source: Trek Bikes

- (a) "Bicycle" means a wheeled vehicle:
 - (i) propelled by human power by feet or hands acting upon pedals or cranks;
 - (ii) with a seat or saddle designed for the use of the operator;
 - (iii) designed to be operated on the ground; and
 - (iv) whose wheels are not less than 14 inches in diameter.
- (b) "Bicycle" includes an electric assisted bicycle.
- (c) "Bicycle" does not include scooters and similar devices.

Electric assisted bicycle



Source: EcoVelo,
<http://www.ecovelo.info/2010/11/19/e-bikes-and-accessibility-an-argument-for-electric-assist/>

- "Electric assisted bicycle" means a moped:
- (a) with an electric motor with a power output of not more than 1,000 watts; and
 - (b) which is not capable of:
 - (i) propelling the device at a speed of more than 20 miles per hour on level ground when:
 - (A) powered solely by the electric motor; and
 - (B) operated by a person who weighs 170 pounds; and
 - (ii) increasing the speed of the device when human power is used to propel the device at more than 20 miles per hour;
 - (c) has fully operable pedals on permanently affixed cranks; and
 - (d) weighs less than 75 pounds."

Electric personal assistive mobility device



Source: CPSC.gov,
<http://www.cpsc.gov/en/Recalls/2003/CPSC-Segway-LLC-Announce-Voluntary-Recall-to-Upgrade-Software-on-Segway-Human-Transporters/>

- (a) "Electric personal assistive mobility device" 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.

Moped



Source: Runner1221,
http://commons.wikimedia.org/wiki/File:Moped_Stadion_S11.JPG

- (a) "Moped" means a motor-driven cycle having:
- (i) pedals to permit propulsion by human power; and
 - (ii) a motor that:
 - (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.

Motor assisted scooter



Source: <http://motorizedscooter.net/>

- "Motor assisted scooter" means a self-propelled device with:
- (a) at least two wheels in contact with the ground;
 - (b) a braking system capable of stopping the unit under typical operating conditions;
 - (c) a gas or electric motor not exceeding 40 cubic centimeters;
 - (d) either:
 - (i) a deck design for a person to stand while operating the device; or
 - (ii) a deck and seat designed for a person to sit, straddle, or stand while operating the device; and
 - (e) a design for the ability to be propelled by human power alone.

Motor-driven cycle

- (a) "Motor-driven cycle" means every motorcycle, motor scooter, moped, electric assisted bicycle, motor assisted scooter, and every motorized bicycle having:
- (i) an engine with less than 150 cubic centimeters displacement; or
 - (ii) a motor that produces not more than five horsepower.
- (b) "Motor-driven cycle" does not include an electric personal assistive mobility device.

Source: Utah State Code, Chapter 41¹.

Section 1106 of Title 41 Chapter 6a of the Utah State Code outlines how bicycles and human powered vehicles or devices interact with pedestrians on sidewalks, paths, and trails.

- 41-6a-1106. Bicycles and human powered vehicle or device to yield right-of-way to pedestrians on sidewalks, paths, or trails -- Uses prohibited -- Negligent collision prohibited -- Speed restrictions -- Rights and duties same as pedestrians.
 - (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:
 - pedestrian; or
 - person operating a:
 - bicycle; or
 - 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

Electric-assisted Mobility Devices

Electric-assisted Mobility Devices are commonly known as Segways. Utah State Code allows the usage of electric-assisted mobility devices on a path or trail designed for the use of a bicycle. However, State Code section 41-6a-1116.5 allows for local authorities to adopt ordinances to regulate or restrict the use of electric personal assistive mobility devices.

41-6a-1116. Electric personal assistive mobility devices – Conflicting provisions -- Restrictions -- Penalties.

- (7) (a) An electric personal assistive mobility device may be operated on:
 - (i) a path or trail designed for the use of a bicycle; or
 - (ii) on a highway where a bicycle is allowed if the speed limit on the highway does not exceed 35 miles per hour.
- (b) A person operating an electric personal assistive mobility device in an area described in Subsection (7)(a)(i) or (ii) is subject to the laws governing bicycles.

41-6a-1116.5. Local ordinances regulating electric personal assistive mobility devices.

- A local authority may adopt an ordinance to regulate or restrict the use of electric personal assistive mobility devices.

Peer City Existing Ordinances

Aspen, Colorado

While Aspen does not specifically define electric assisted bicycle, it has provided City Code to prohibit motorized vehicles such as motorbikes for the Aspen Trail System.

Sec. 24.12.020. Vehicles prohibited.

- No motorized vehicles whatsoever, including automobiles, motorbikes, motorcycles, motor scooters, go-carts, snowmobiles and the like, except City and County maintenance, police, fire, ambulance and emergency vehicles are permitted on the Aspen Trail System. The sheriff's office, Aspen Police Department, City Manager, County Manager, City or County road supervisors,

ambulance service and Aspen Fire Department shall have keys to the trails entrance gates, and, in the event of an emergency, officers and employees thereof are authorized to permit emergency vehicles to enter upon the trails. Special permission may be granted by the City or County Manager for use of motorized vehicles on the trails for special events, and for limited periods (to be specified on permits issued), provided, however, that such special permits shall not conflict with provisions of trail easements given across private property. Horse-drawn vehicles, bicycle-drawn vehicles, sleigh-type vehicles and the like, shall be permitted to use the trails by special permit, such permits to be granted, at their discretion, by the City and County Managers only. (Code 1971, § 22-41; Ord. No. 28-1976, § 1)¹

In addition, Pitkin County created an "Other Power-Driven Mobility Device Management Plan" in 2011 to define policies and procedures to use other-power driven mobility devices (OPDMD) on open space and trails in Pitkin County. OPDMDs were defined as 32" wide or less, having a design speed of 20 mph or less, must be electrically powered, and weigh no more than 60 lbs. However, it is required that the person using the OPDMD is mobility impaired¹.

Boulder, Colorado

Boulder, Colorado recently approved a one-year pilot project (February 2014 to December 31, 2014) to allow e-bikes to use paved, multi-use paths within the city limits¹. E-bikes would continue to be prohibited on sidewalks and natural paths. Part of the pilot program is to evaluate:

- The number of reported traffic collisions involving electric assisted bicycles that result in severe injury or fatality
- The number of reported close call incidents involving electric assisted bicycles;
- Reported and observed unsafe behavior including speeding and other safety concerns on hard-surfaced, multi-use paths by users including electric assisted bicyclists, regular bicyclists, pedestrians, and other users;
- The time spent by Boulder Police conducting enforcement activities and the number of warning and citations issued involving electric assisted bicycles¹.

Boulder defines an electric assisted bicycle as a bicycle with an electric motor of not more than 750 watts and not exceeding 20 mph.

The City of Boulder ordinance:

Definitions:

- "Motor vehicle" means any self-propelled vehicle other than a moped, electric assisted bicycle, or motorized wheelchair.
- "Electric assisted bicycle" means a vehicle having two tandem wheels or two parallel wheels and one forward wheel, fully operable pedals, an electric motor not exceeding seven hundred-fifty watts of power rating, and a top motor-powered speed of twenty miles per hour¹.

Yield Required Before Entering or Leaving Street:

- A driver entering a street at any place other than an intersection shall yield the right-of-way to any pedestrian or bicycle approaching on a sidewalk or path, to any electric assisted bicycle approaching on a multi-use path where such vehicles are permitted, and to any vehicle approaching on a roadway of the street.

- A driver leaving a street at any place other than an intersection shall yield the right-of-way to any pedestrian or bicycle approaching on a sidewalk or path, and to any electric assisted bicycle approaching in a multi-use path where such vehicles are permitted.

Bicycle Must Yield Right-of-Way and Obey Traffic Control Devices on Sidewalk, Crosswalk, or Path:

- A person driving a bicycle on a sidewalk, a crosswalk, or a path, and any person driving an electric assisted bicycle on a multi-use path, shall yield the right of way to any pedestrian and shall give an audible signal before overtaking and passing any pedestrian.
- If any traffic control device is in place alongside of or on a sidewalk or a path, no driver of a bicycle or pedestrian, and no driver of an electric assisted bicycle on a multi-use path where such vehicles are permitted, shall fail to obey the requirements of the device.

Electric Assisted Bicycles:

- No person shall activate the motor of an electric assisted bicycle on any bike or pedestrian path or on a recreational trail except where permitted by a rule adopted by the city manager in accordance with Chapter 1-4, "Rulemaking," B.R.C. 1981. Such rule adopted by the city manager shall not include paths or trails on open space land as defined in the City Charter Section 170ⁱ.

Boulder allows electric personal assistive mobility devices on city streets but not in bicycle lanes, on sidewalks, or on multi-use paths. When operating on city streets, electric personal assistive mobility devices must be used as close as possible to the right-hand curb.ⁱ

Ketchum, Idaho

Ketchum, Idaho has no ordinances specifically about electric-assisted bicyclists or electric personal assistive mobility devices. The City Code defines a bicycle as "a vehicle propelled solely by human power upon which a person may ride and having two (2) tandem wheels, except scooters and similar devices. Also includes three- and four-wheeled human powered vehicles."ⁱ

Jackson, Wyoming

Jackson, Wyoming has no ordinances specifically about electric-assisted bicyclists or electric personal assistive mobility devices. The City Code defines a bicycle as "every vehicle propelled solely by human power upon which any person may ride, having two (2) or more tandem wheels except scooters and similar devices, including adult tricycles and/or cargo bikes."ⁱ

Other Existing Ordinances

Denver, Colorado

Denver, Colorado's electrical assisted bicycle ordinance treats electric bicycles like non-electric bicycles. Denver, like most other cities, has defined electrical assisted bicycles as having a maximum operating speed of 20 miles per hour and maximum power of 750 watts. Denver has specifically called out speed as part of their ordinance.

Definition:

- Electrical assisted bicycle shall mean a vehicle having two (2) tandem wheels or two (2) parallel wheels and one (1) forward wheel, fully operable pedals, and electric motor not exceeding seven-hundred and fifty (750) watts of power, and top motor-powered speed of twenty (20) miles per hour.

Scope:

- The provisions of this article applicable to an electrical assisted bicycle shall apply whenever an electrical assisted bicycle is operated upon any street, roadway or highway, subject to those exceptions stated herein.

Riding on roadways:

- Every person operating a bicycle or electrical assisted bicycle upon a roadway shall ride as near to the right-hand side of the roadway as judged safe by the bicyclist to facilitate the movement of such overtaking vehicles unless other conditions make it unsafe to do so.
- Persons riding bicycles upon a roadway shall not ride more than two (2) abreast except on roadways set aside for the exclusive use of bicycles. Persons riding bicycles two abreast shall not impede the normal and reasonable movement of traffic and, on a laned roadway, shall ride within a single lane.
- Persons riding electrical assisted bicycles upon a roadway shall not ride more than two (2) abreast.
- This section shall not apply to a uniformed city, state, or federal employee riding a bicycle or electrical assisted bicycle while engaged in the discharge of his or her duties or to a police officer riding a bicycle or electrical assisted bicycle that is a marked or unmarked official police bicycle or electrical assisted bicycle, while engaged in the discharge of his or her official duties.
- An electrical assisted bicycle shall not be operated on a limited-access highway.

Speed:

- It shall be unlawful for any person to operate a bicycle or electrical assisted bicycle on a roadway or bicycle path at a speed greater than is reasonable and prudent under the conditions then existing or in excess of the posted speed limit.
- It shall be unlawful for any person to operate a bicycle or electrical assisted bicycle on a sidewalk, which is not part of a designated bicycle route, at a speed in excess of six (6) miles per hour.
- This section shall not apply to a uniformed city, state, or federal employee riding a bicycle or electrical assisted bicycle while engaged in the discharge of his or her duties or to a police officer riding a bicycle or electrical assisted bicycle that is a marked or unmarked official police bicycle, while engaged in the discharge of his or her official duties¹.

Denver allows electric personal assistive mobility devices on sidewalks and in bicycle lanes. However, they cannot be operated on sidewalks at a speed greater than six miles per hour or in a bicycle lane at a speed greater than 12.5 miles per hour¹.

Minnesota

Minnesota considers electric-assisted bicycles a "low-powered vehicle" and a subset of bicycles. Electric-assisted bicycles are defined as having a saddle, operable pedals, two or three wheels, and an electric motor of up to 1,000 watts. The motor must disengage during braking and cannot exceed 20 mph. Minnesota does not require users of electric-assisted bicycles to have registration, license, or insurance. However, minimum operating age is 15 years old. Electric-assisted bicycles must follow the same rules as non-electric-assisted bicycles. Electric-assisted bicycles are allowed on road shoulders as well as on bicycle trails, bicycle paths, and bicycle lanes.

Minnesota State Code is as follows:

Electric-assisted bicycle:

- "Electric-assisted bicycle" means a bicycle with two or three wheels that:
 - has a saddle and fully operable pedals for human propulsion;

- o meets the requirements:
 - (i) of federal motor vehicle safety standards for a motor-driven cycle in Code of Federal Regulations, title 49, sections 571.1 et seq.; or
 - (ii) for bicycles under Code of Federal Regulations, title 16, part 1512, or successor requirements; and
- o has an electric motor that (i) has a power output of not more than 1,000 watts, (ii) is incapable of propelling the vehicle at a speed of more than 20 miles per hour, (iii) is incapable of further increasing the speed of the device when human power alone is used to propel the vehicle at a speed of more than 20 miles per hour, and (iv) disengages or ceases to function when the vehicle's brakes are applied¹.

Riding Rules:

- A person may operate an electric-assisted bicycle on the shoulder of a roadway, on a bikeway, or on a bicycle trail if not otherwise prohibited under section 85.015, subdivision 1d; 85.018, subdivision 2, paragraph (d); or 160.263, subdivision 2, paragraph (b), as applicable

Operator age:

- No person under the age of 15 shall operate an electric-assisted bicycle¹.

Minnesota defines an electric personal assistive mobility device as a self-balancing device with two non-tandem wheels, designed to transport not more than one person, and operated by an electric propulsion system that limits the maximum speed of the device to 15 miles per hour. Electric personal assistive mobility devices are not classified as motor vehicles. Minnesota statutes treat a person operating an electric personal assistive device as pedestrians and allow for operation on bicycle paths and on roadways when no sidewalk is present unless that roadway has a speed limit of 35 miles per hour or higher¹.

Oregon

The state of Oregon currently defines electric assisted bicycles as a bicycle, rather than a motor vehicle, except when otherwise specifically provided by statute. However, state code prohibits operation of an electric assisted bicycle on sidewalks.

Oregon State Code relating to electric assisted bicycles is as follows:

Definition:

- "Electric assisted bicycle." "Electric assisted bicycle" means a vehicle that:
 - o Is designed to be operated on the ground on wheels;
 - o Has a seat or saddle for use of the rider;
 - o Is designed to travel with not more than three wheels in contact with the ground;
 - o Has both fully operative pedals for human propulsion and an electric motor; and
 - o Is equipped with an electric motor that:
 - Has a power output of not more than 1,000 watts; and
 - Is incapable of propelling the vehicle at a speed of greater than 20 miles per hour on level ground.

Status of electric assisted bicycle:

- An electric assisted bicycle shall be considered a bicycle, rather than a motor vehicle, for purposes of the Oregon Vehicle Code, except when otherwise specifically provided by statute.

Unsafe operations of bicycle on sidewalk; penalty:

- A person commits the offense of unsafe operation of a bicycle on a sidewalk if the person does any of the following:

- o Operates an electric assisted bicycle on a sidewalk¹.

Oregon defines an electric personal assistive mobility device as a self-balancing device on two non-tandem wheels that is designed to transport one person in a standing position, has an electric propulsion system, and a maximum speed of 15 miles per hour. They are not considered motorized vehicles. Oregon allows electric personal assistive mobility devices to be used on bicycle paths and lanes, as well as sidewalks¹.

Tucson, Arizona

Tucson, Arizona adopted a motorized bicycle ordinance in 2006. The city adopted Arizona State law in the definition of a motorized electric or gas powered bicycle as a bicycle that is equipped with a helper motor that has a maximum piston displacement of 48 cubic centimeters or less, or an electric motor of less than 750 watts, that may also be self-propelled and that is operated at speeds of less than twenty miles per hour¹. Tucson further defined parameters of operation as not needing title, registration, insurance, or license; age minimums of 16 years old for operation; and helmet usage for those under age 18. Tucson allows motorized bicycles on rights-of-way designated for the exclusive use of bicycles, but prohibits usage of sidewalks, multi-use paths, shared-use paths, or pedestrian paths in parks.

Specific Tucson code is as follows:

Regulating motorized bicycle or tricycle; purpose and intent:

- The state has granted municipalities express authority to regulate or prohibit the operation of motorized electric or gas-powered bicycles or tricycles. It is the purpose and intent of this article to provide for the regulation of motorized electric or gas-powered bicycle or tricycle ("motorized bicycle or tricycle") to protect the safety of pedestrians, bicyclists, motor vehicle drivers and operators of motorized bicycles or tricycles. The mayor and council find it is in the public interest to regulate the operation of motorized bicycles or tricycles by prohibiting their use on sidewalks, multi-use paths, shared use paths and pedestrian paths, and by imposing age restrictions and safety requirements for the riders of motorized bicycles or tricycles.

Definition:

- As used in this article "motorized bicycle or tricycle" means an electric or gas-powered bicycle or tricycle that is equipped with a helper motor that has a maximum piston displacement of forty-eight (48) cubic centimeters or less or an electric motor of less than seven hundred fifty (750) watts (1 h.p.), that may also be self-propelled and that is operated at speeds of less than twenty (20) miles per hour.

Applicability of traffic laws:

- In the City of Tucson, a person riding a motorized bicycle or tricycle is granted all of the rights and is subject to all the duties applicable to a bicycle rider under state and local law.
- Motorized bicycles or tricycles that are operated at speeds in excess of nineteen (19) miles per hour are regulated by state law and must comply with state law requirements.

Prohibited operation:

- It shall be unlawful for a person under sixteen (16) years of age to operate a motorized bicycle or tricycle.
- It shall be unlawful to operate a motorized bicycle or tricycle on any public sidewalk, multi-use path, and shared-use path or on any designated pedestrian path in any public park.
- It shall be unlawful to use a motorized bicycle or tricycle to carry more persons at one time than the number for which it is designed and equipped.
- It shall be unlawful to ride a motorized bicycle or tricycle through any underpass or at any other location where signs are posted prohibiting bicycling.

Helmet use requirement:

- No person under eighteen (18) years of age shall operate a motorized bicycle or tricycle or be a passenger on motorized bicycle or tricycle, ride in a restraining seat attached to a motorized bicycle or tricycle, or ride in a trailer towed by a motorized bicycle or tricycle unless the person is wearing a properly fitted and fastened bicycle helmet which meets the current standards of the American National Standards Institute for protective headgear.

Nighttime use requirements:

- A motorized bicycle or tricycle that is used at nighttime shall have a lamp on the front that emits a white light visible from a distance of at least five hundred (500) feet to the front and a red reflector in the rear of a type that is visible from all distances from fifty (50) feet to three hundred (300) feet to the rear where the reflector is directly in front of the upper beams of head lamps on a motor vehicle. A motorized bicycle or tricycle may have a lamp that emits a red light visible from a distance of five hundred (500) feet to the rear in addition to the red reflector.

Responsibilities of parents, guardians, and legal custodians:

- The parent, guardian, or legal custodian of any minor shall not authorize or knowingly permit such minor to violate any of the provisions of this article.
- If a fine is imposed upon a minor who is found to be in violation of this section, the parents or legal guardian having custody or control of the minor shall be jointly and severally liable with the minor for payment of the fine, whether or not the parents or guardian knew of, or anticipated, a violation of this section.

Violation declared a civil traffic violation:

- Violation of this article shall constitute a civil traffic violation punishable by a mandatory minimum fine of one hundred dollars (\$100.00).
- All complaints for violations of this article shall be issued and adjudicated in accordance with the Arizona Rules of Procedure in Civil Traffic Violation Cases and applicable state and local law¹.

Tucson does not have city code pertaining to electric personal assistive mobility devices and instead relies on state code. State code in Arizona classifies electric personal assistive mobility device as pedestrians and limits that use of the vehicles to persons 16 of age and older.

Summary

Table 1 summarizes the comparison between existing ordinances.

TABLE ERROR! MAIN DOCUMENT ONLY. EXISTING ORDINANCE COMPARISON

City/State	Definition	Type of Vehicle	Max Speed	Max Power	Allowed on Sidewalk	Allowed on Pathway	Electric personal assistive mobility device
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Utah	Electric assisted bicycle	Bicycle	20 mph	1,000 watts	Yes, except where prohibited by traffic-control device or ordinance	Yes, except where prohibited by traffic-control device or ordinance	Allowed on bicycle pathways and trails but local authorities can adopt ordinances to regulate or restrict use
Aspen, CO	None	N/A	N/A	N/A	N/A	No, unless used by mobility impaired individual	Not allowed on pathways unless used by mobility impaired individual
Boulder, CO	Electric assisted bicycle	Bicycle	20 mph	750 watts	No	Paved, multi-use	May be operated on city streets but not bike lanes, sidewalks, or paths.
Ketchum, ID	None	N/A	N/A	N/A	N/A	N/A	N/A
Jackson, WY	None	N/A	N/A	N/A	N/A	N/A	N/A
Denver, CO	Electrical assisted bicycle	Bicycle	20 mph	750 watts	No, unless the sidewalk is part of a designated bicycle route	Not specified	Allowed on sidewalks and bicycle lanes
Minnesota	Electric-assisted bicycle	Bicycle	20 mph	1,000 watts	Yes, unless except in a business district or when prohibited by a local unit of government	Yes	Allowed on sidewalks, bicycle path, and any road where there is no sidewalk and the posted speed is 35 mph or less
Oregon	Electric assisted bicycle	Bicycle	20 mph	1,000 watts	No	Yes, except when otherwise specifically provided by statute	Allowed on sidewalks, bicycle lanes and paths
Tucson, AZ	Motorized bicycle	Bicycle	20 mph	750 watts	No	Only on paths that are bike-exclusive	N/A

Source: Fehr & Peers.

Recommendations

Utah State Code allows for electric assisted mobility devices to be used on bicycle paths and roadways. However, the State Code allows for municipalities to adopt ordinances to restrict the usage of these devices. Utah State Code treats electric assisted bicycles as bicycles and thus allows them wherever a

bicycle is allowed, unless prohibited by traffic control device or ordinance. There is precedence at the local level to regulate electric assisted bicycles and electric assisted mobility devices. Peer cities of Park City, both Aspen and Boulder, have regulated these usages on sidewalks, bicycle paths, and multi-use trails.

If Park City would like to restrict the usage of electric assisted bicycles or electric assisted mobility devices, an ordinance specifically where they would and would not be allowed should be implemented. The recommendations in this section are outlined in three categories: pilot program, sample code language, and location within Park City code to implement the ordinances.

Pilot Program

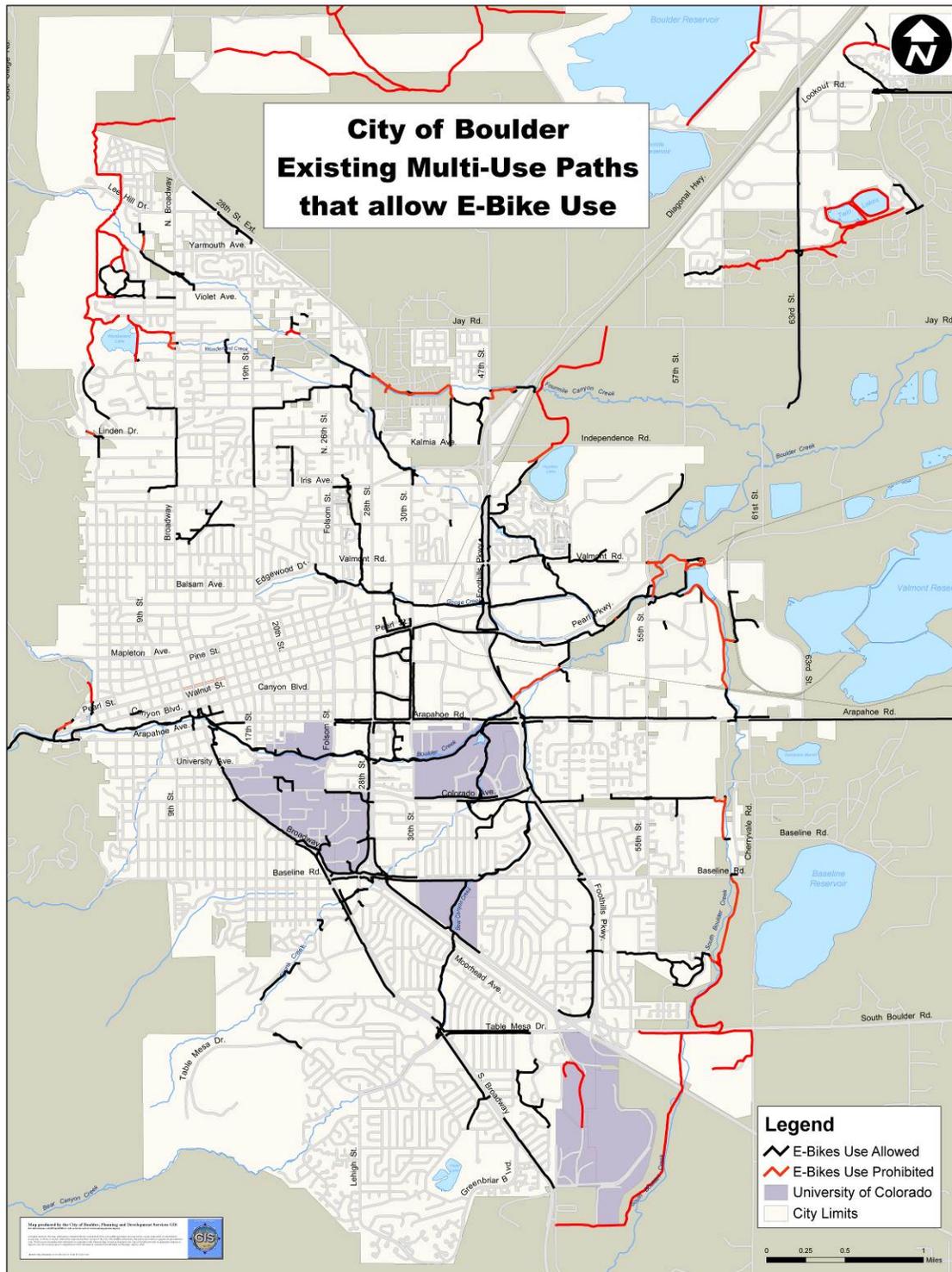
Boulder, a peer city of Park City, provides a good case study for Park City. They are currently conducting a one-year pilot study to determine if electric-assisted bicycles should be allowed on multi-use trails. A pilot program such as this could be implemented by Park City.

A pilot program would work by allowing the city to temporarily allow electric-assisted bicycles on paved, multi-use paths for one year. Nordic trails, sidewalks, bicycle lanes, mountain bike trails, etc. should be prohibited. A map outlining paths where electric-assisted bicycles would be allowed should be created. Boulder's map of multi-use paths that allow electric-assisted bicycles is shown in Figure 1.

There were four public meetings over a three-month period. The first was an initial public meeting to introduce the potential pilot project, the second meeting provided more information and an opportunity to ride an e-bike, the third meeting was a public hearing and formal recommendation to Council, and the last meeting was a City Council meeting to consider the ordinance change. In addition, Boulder sought public comment over a 15-day period before the pilot project was enacted. On-going comments are received on-line on the City's public feedback website (<http://www.inspireboulder.com/2013-bike-innovations-living-laboratory/electric-assist-bike-policy-on-multi-use-paths>). Boulder is also implementing a public information campaign for safety, courtesy, and awareness among multi-use path users.

The ordinance enacted for the pilot project is located in Appendix A.

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Sample Code Language

Below is sample code language for an ordinance that would allow electric-assisted bicycles on multi-use paths but would not allow electric personal assistive mobility devices on sidewalks or paths.

Definitions

"Bicycle" means a vehicle propelled solely by human power applied to pedals upon which any person may ride having two tandem wheels or two parallel wheels and one forward wheel, all of which are more than fourteen inches in diameter.

"Bike lane" or "bicycle lane" means that portion of a roadway designated for use by bicycles and distinguished from the portion of the roadway for other vehicular traffic by a paint stripe and other traffic control device. It extends from the stripe to the right-hand edge of the roadway, unless a second stripe delineates a parking lane or lane of vehicular travel adjacent to the right-hand edge of the roadway, in which event the bicycle lane extends from stripe to stripe.

"Electric assisted bicycle" means a vehicle having two tandem wheels or two parallel wheels and one forward wheel, fully operable pedals, an electric motor not exceeding 750 watts of power rating, and a top motor-powered speed of twenty miles per hour. (750 is less than current state code)

"Electric personal assistive mobility device." "Electric personal assistive mobility device" means a device that (1) Is self-balancing on two non-tandem wheels; (2) Is designed to transport one person in a standing position; (3) Has an electric propulsion system; and (4) Has a maximum speed of 15 miles per hour.

"Multi-use Trail" means a way publicly maintained that has been designated for use by bicycles only or by bicycles and pedestrians by a traffic control device or other sign or by regulation and that is separated from the roadway for other vehicular traffic by open space, a curb, or another barrier. A multi-use trail must be 8 feet in width or larger.

"Traffic control device" means any traffic control sign, signal, marking, or device, not inconsistent with this title, placed or displayed by authority of the traffic engineer or of any public official or public body having authority over a street, drive, way, or parking area for the purpose of regulating, warning, or guiding traffic or the parking of vehicles. Where this title does not prescribe the meaning of a device, it has the meaning ascribed to it by the state traffic control manual, and where no such meaning is given, it has the meaning a reasonable person would give it.

New Title , Chapter 1 – Bicycles and Electric-Assisted Bicycles

Sec. 0. Application of Traffic Laws to Bicycles.

Every person driving a bicycle or electric assisted bicycle has all of the rights and duties applicable to the driver of any other vehicle under this title except as modified by this chapter.

Sec. 1. Required Method of Riding Bicycle.

(a) No person driving a bicycle or electric assisted bicycle shall ride other than astride a permanent and regular seat attached thereto.

(b) No bicycle or electric assisted bicycle shall be used by either the driver or any passenger to carry more persons than the number for which it is designed or equipped.

Sec. 2. Carrying Articles.

Every person driving a bicycle or electric assisted bicycle shall keep at least one hand on the handlebars at all times and shall not carry any package, bundle, or article that obstructs the driver's vision or prevents the use of both hands in the control and operation of the bicycle. ????????

Sec. 3. Bicycle to be Driven to Right.

(a) Every person driving a bicycle or electric assisted bicycle upon a roadway at a speed so slow as to impede or block the normal and legal forward movement of traffic proceeding immediately behind such bicycle shall drive within the right four feet of the right-hand through lane of the roadway, except under any of the following conditions:

- (1) When driving in a bike lane;
- (2) When preparing for a left turn;
- (3) When reasonably necessary for safety because of debris or other obstruction on or a defect in the surface of the pavement, but the bicyclist shall continue to drive as close to the right side of the roadway as is practicable;
- (4) When overtaking and passing on the left of another vehicle; or
- (5) On a one-way street, when driving in the left four feet of the left-hand through lane.

(b) A bicycle or electric assisted bicycle may be driven on a paved shoulder if such driving does not violate any section of this title for passing or direction of travel.

Sec. 4. Use of Crosswalk.

(a) No person shall immediately approach, enter or traverse a crosswalk which spans a roadway at a speed greater than eight miles per hour.

(b) Persons driving bicycles across a roadway upon and along a crosswalk from a sidewalk or path, and persons driving electric assisted bicycles across a roadway upon and along a crosswalk from a multi-use path where such vehicles are permitted, shall have the duties applicable to pedestrians under the same circumstances.

(c) Such persons similarly have the rights of a pedestrian, but only if the bicyclist was entitled to use the sidewalk or path, and the approach, entry and traversal of the crosswalk are made at a speed no greater than a reasonable crossing speed so that other drivers may anticipate the necessity to yield when required.

Sec. 5. Driving More Than Two Abreast on Path Prohibited.

No person shall drive a bicycle upon a path adjacent to more than one other bicycle.

Sec. 6. Bicycle Turn Signals.

The driver of a bicycle is excepted from giving the hand and arm signal continuously if the hand is needed in the control or operation of the bicycle or electric assisted bicycle, but it shall be given for a substantial period while stopped waiting to turn. The driver of a bicycle or electric assisted bicycle may signal a right turn by extending the right hand and arm horizontally.

Sec. 7. Bicycle Must Yield Right-of-Way and Obey Traffic Control Devices on Sidewalk, Crosswalk, or Path.

(a) A person driving a bicycle on a sidewalk, a crosswalk, or a path, and any person driving an electric assisted bicycle on a multi-use path, shall yield the right of way to any pedestrian and shall give an audible signal before overtaking or passing any pedestrian.

(b) If any traffic control device is in place alongside of or on a sidewalk or a path, no driver of a bicycle or pedestrian, and no driver of an electric assisted bicycle on a multi-use path where such vehicles are permitted, shall fail to obey the requirements of the device.

Sec. 8. Bicycle Headlight and Reflector Required.

(a) No person shall drive a bicycle or electric assisted bicycle between sunset and sunrise unless it is equipped with a red rear reflector mounted on the bicycle so located and of sufficient size and reflectivity to be visible for six hundred feet to the rear when directly in front of lawful lower beams of headlamps on a motor vehicle.

(b) No person shall drive a bicycle or electric assisted bicycle between sunset and sunrise or at any other time when, due to insufficient light or unfavorable atmospheric conditions, persons and vehicles are not clearly discernible at a distance of one thousand feet ahead, unless it is equipped with a lamp mounted on the front of the bicycle and emitting a white light visible from a distance of at least five hundred feet to the front.

Sec. 9. Bicycle Brake Required.

No person shall drive a bicycle or electric assisted bicycle unless it is equipped with a brake system which will enable its driver to stop the bicycle within twenty-five feet from a speed of ten miles per hour on dry, level, clean pavement.

Sec. 10. Electric Assisted Bicycles.

No person shall activate the motor of an electric assisted bicycle on any sidewalk or on a recreational trail or on any multi-use path of a width of four feet or less.

New Title , Chapter 2 - Electric Personal Assistive Mobility Device

Sec. 0. Regulating electric personal assistive mobility device; purpose and intent.

The state has granted municipalities express authority to regulate or prohibit the operation of electric personal assistive mobility device s. It is the purpose and intent of this article to provide for the regulation of electric personal assistive mobility device to protect the safety of pedestrians, bicyclists, motor vehicle drivers and operators of motorized bicycles or tricycles. The mayor and council find it is in the public interest to regulate the operation of electric personal assistive mobility device by prohibiting their use on roadways, sidewalks, multi-use paths, shared use paths, pedestrian paths, and recreational trails. Add exhibit allowing in certain areas without grade issues

Sec. 1. Prohibited operation.

It shall be unlawful to operate an electric personal assistive mobility device on any roadway, public sidewalk, multi-use path, shared-use path, pedestrian, or recreational trail. Again possibly exhibit

Park City Code

The Park City code does not include references to bicycles or bicycle facilities. Therefore, the following locations would need to be updated with an adoption of electric-assisted bicycle or electric assisted mobility device ordinances.

TABLE 2 AMENDMENTS TO THE PARK CITY MUNICIPAL CODE

Title	Chapter	Amendment
1 – General Provisions	1 – In general	Include definition of: <ol style="list-style-type: none"> a. Bicycle b. Bike lane c. Electric assisted bicycle d. Electric personal assistive mobility device e. Multi-use trail f. Traffic Control Device

<p>New Title – Bicycles, Electric-Assisted Bicycles and Electric Personal Assistive Mobility Devices</p>	<p>1 – Bicycles and Electric-Assisted Bicycles</p>	<p>Section 0 - Application of Traffic Laws to Bicycles. Section 1 - Required Method of Riding Bicycle. Section 2 - Carrying Articles. Section 3 - Bicycle to be Driven to Right. Section 4 - Use of Crosswalk. Section 5 - Driving More Than Two Abreast on Path Prohibited. Section 6 - Bicycle Turn Signals. Section 7 - Bicycle Must Yield Right-of-Way and Obey Traffic Control Devices on Sidewalk, Crosswalk, or Path. Section 8 - Bicycle Headlight and Reflector Required. Section 9 - Bicycle Brake Required. Section 10 - Electric Assisted Bicycles.</p>
<p>New Title – Bicycles, Electric-Assisted Bicycles and Electric Personal Assistive Mobility Devices</p>	<p>2 – Electric Personal Assistive Mobility Devices</p>	<p>Section 0 - Regulating electric personal assistive mobility device; purpose and intent. Section 1 - Prohibited operation.</p>

Source: Fehr & Peers.