CITY OF BOULDER
OPEN SPACE BOARD OF TRUSTEES AGENDA ITEM

MEETING DATE: September 25, 2013

AGENDA TITLE: Consideration and recommendation to the city manager and City Council on the prospect for holding a stage of the USA Pro-Cycle Challenge that could impact Open Space and Mountain Parks managed property.

PRESENTER/S
Michael D. Patton, Director, Open Space and Mountain Parks

EXECUTIVE SUMMARY

The City of Boulder is being considered for a stage of the USA Pro-Cycle Challenge (USA PCC) bicycle race to be held during August of 2014. The proposed stage would be similar to that held in 2012 and would end with travel up Flagstaff Road, turn into Realization Point with the finish line in the parking area NW of Sunrise Amphitheater. It is anticipated that staging in and around the finish line would be similar to that of 2012 with VIP seating and food tents located around the area.

Estimates for 2012 spectators along Flagstaff Road from Gregory Canyon to the finish line vary widely from 30,000 to 40,000 reported by race organizers to fewer than 15,000.

Staff established monitoring protocols to measured environmental impacts attributable to the 2012 race and concluded there were no long-term impacts.

STAFF RECOMMENDATION

Staff requests the Open Space Board of Trustees consider providing a recommendation to the City Council and city manager on the prospect for authorizing a stage of the USA Pro-Cycle Challenge Race similar to that held for 2012.

COMMUNITY SUSTAINABILITY ASSESSMENTS AND IMPACTS

- Economic – It is anticipated that the overall economic impacts of the race on the community will be positive. Exact revenues will depend on how many spectators actually come to Boulder. The 2012 race had a small but positive economic impact in terms of increased revenue and was considered very positive in promoting return visits to Boulder.
- Environmental – If the precautions are similar to those developed for 2012 and spectators cooperate, the overall environmental impacts on the city's Open Space along the route are expected to be minor. For the majority of the route along Open Space, spectators and race support will be on asphalt and hardened surfaces. During late August near summer's end, vegetation senescence (dormancy) occurs and should allow for rapid recovery next spring if spectators remain on hardened surfaces. Trash and recycling containers will be placed at locations where spectators are expected to gather. Evidence from last year's race suggests that littering was minimal.
- Social - Because Open Space and Mountain Parks (OSMP) lands, facilities and programs are equally accessible to all members of the community, it helps support the city's community sustainability goal because all residents "who live in Boulder can feel a part of and thrive in" this aspect of their community. Viewing the Pro-Cycle Challenge Race will be accessible to all who wish to participate.

OTHER IMPACTS

- Fiscal – OSMP received $12,000 in additional sales tax revenue and was reimbursed $102,000 by the General Fund to offset cost associated with the race. If spectator numbers are similar to those of 2012, it is possible that costs for OSMP could be reduced based on experiences gained from last year.
- Staff time – The race is not associated with the OSMP work plan. OSMP will track all staff time associated with the race.

PUBLIC COMMENT AND PROCESS

This item is being heard at this public meeting, advertised in the *Daily Camera* on Sept. 22, 2013.

ANALYSIS

The City of Boulder was selected to hold a stage of the 2012 USA Pro-Cycle Challenge Race. The finish for the stage was set at the Flagstaff Summit which has been managed by OSMP. OSMP regulations prohibit competitive events. The city attorney was asked to consider the question and while the decision was much more complex and extensive, essentially it was determined that the Summit Road was not Open Space and that a competitive event could be held.

Given the compressed time frame for the race, the Open Space Board of Trustees (OSBT) was not able to consider the race in the same fashion it would other significant events effecting OSMP-managed lands.

The race was held on Aug. 25, 2012 and was considered the most successful to date based primarily on the Boulder stage that featured an arduous climb up Flagstaff Road and finish at the Flagstaff Summit. Race organizers estimated that as many as 30,000 to 40,000 spectators lined Flagstaff Road as the racers passed by while other "counts" reported significantly fewer.

Open Space and Mountain Parks had never been associated with such an event and began planning for the race in January of 2012. Staff made two presentations to City Council based on OSBT recommendations for providing spectator safety and enjoyment as well as resource protection. On the day of the race more than 130 OSMP staff and volunteers provided services to spectators and protected OSMP land. Bottled water was secured and made available to spectators as they began the climb up Flagstaff Road at Gregory Canyon. Fencing was installed to divert spectators from especially dangerous or environmentally sensitive areas. Nearly 100 portable restrooms were made available and over 86 waste and recycle containers were located along Flagstaff Road.

The Open Space and Mountain Parks Department received reimbursement of $102,000 from the General Fund as well as $12,000 in additional sales tax revenue to offset expenses associate with the race.

Staff learned a great deal about what is required to manage the Flagstaff finish of the race and believes that the planning and management costs could be reduced for 2014 presuming a similar-sized crowd.

Staff reviewed environmental impacts on OSMP lands along Flagstaff Road and on trails used by spectators. Only minimal vegetation trampling was noted and impacts were considered minimal since much of the vegetation was beginning senescence. Staff recommended that no restoration activities were required as a result of the race. Wildlife disturbances were more difficult to quantify, however, a mother bear and two cubs were seen fleeing the meadow SW of Panorama Point as a large group of spectators filled the area. A link to the Resource Condition Assessment Summary Report from the 2012 race is included below.

Submitted by:

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Michael D. Patton, Director

ATTACHMENTS:

Link to Pro-Cycle Monitoring Summary

https://www-static.bouldercolorado.gov/docs/2012-pro-cycle-monitoring-summary-1-201304101150.pdf

CITY OF BOULDER
OPEN SPACE BOARD OF TRUSTEES AGENDA ITEM

MEETING DATE: September 25, 2013

AGENDA TITLE Consideration of a recommendation to City Council for an Open Space and Mountain Parks supplemental appropriation to provide for repair and reconstruction of land damaged by the recent storm.

PRESENTER/S
Michael D. Patton, Director, Open Space and Mountain Parks
Michael Orosel, Financial Services Manager

EXECUTIVE SUMMARY

During the week of Sept. 8, 2013, the City of Boulder experienced an historic rainfall that in the latter half of the week caused flooding and substantial damage to both the Open Space and Mountain Parks (OSMP) system and city infrastructure. At the time of the writing of this memorandum, department staff was completing an onsite assessment and analysis of the damage. Preliminary reports from staff performing the onsite assessment are that the damage to the system is both extensive and severe. Costs associated with the damage have not been determined; however, the City Council will be requested to approve a 2013 supplemental appropriation to provide funds for repairs to the system.

STAFF RECOMMENDATION

Staff requests the Open Space Board of Trustees recommend that the City Council approve a supplemental appropriation of between $500,000 to $1,000,000 to the Open Space and Mountain Parks 2013 budget for necessary repairs and reconstruction of resource damage caused by the September storm and floods.

COMMUNITY SUSTAINABILITY ASSESSMENTS AND IMPACTS

- Environmental: Open Space and Mountain Parks is a significant community-based program that preserves open space land contributing to the environmental sustainability goal of the City Council.

- Economic: The Open Space and Mountain Parks program contributes to council's economic sustainability goal because it provides the physical context for the diverse and vibrant economic system that supports services for residents. The land system and the quality of life it represents attract visitors and help businesses to recruit and retain quality employees.
- Social: The Open Space land system is accessible to all members of the community and therefore helps support council's community sustainability goal because all residents "who live in Boulder can feel a part of and thrive in" this aspect of their community.

OTHER IMPACTS

- Fiscal: Funds for the supplemental appropriation would come from Open Space Fund balance.
- Staff Time: Staff time to prepare the supplemental budget is budgeted as part of the department's work plan. Staff time to monitor and perform the work related to the storm damage will be diverted from other projects within the department's work plan.

PUBLIC COMMENT AND PROCESS

This item is being heard at this public meeting, advertised in the *Daily Camera* on Sept. 22, 2013.

ANALYSIS

During the week of Sept. 9, 2013, the City of Boulder experienced a rainstorm and subsequent flooding that has been described variously as anywhere from a 100- to 1,000-year storm and flood. Extensive damage occurred on the OSMP land and to city infrastructure. The severity of the damage to system resources was such that the system was closed to the public by city manager executive order.

Certain staff reported to work during the flooding and prior to Sept. 16, 2013 to develop a plan to perform a field assessment of the system. On Sept. 16, 2013 the assessment teams met at the Cherryvale campus for a brief training prior to going into the field. The field assessment took two to three days for teams to complete depending on the accessibility of areas. The data collected was submitted to the Resource Information Systems group for mapping.

Subsequent to the field data collection and mapping, project priorities and costing will be determined. At this time, there is no estimate of the cost of work that will be contracted for and commenced in 2013. At the present time, there are balances of approximately $650,000 in the visitor infrastructure CIP and $150,000 in Lottery CIP. These funds are available for storm damage repair.

Council can only appropriate funds on an annual basis, i.e., the 2013 supplemental appropriation would provide funds for only 2013. However, any CIP funds that are appropriated for 2013 and remain unencumbered and unexpended may be carried over to and made available for the next year. In addition, the 2014 recommended budget for

OSMP has $1,210,000 allocated for visitor infrastructure CIP projects; these funds may be utilized for flood damage repair projects. Funds for flood damage repair for 2015 and beyond will be included when developing the CIP for those years.

Because the estimated 2013 flood-related costs are unknown at this time, the department is proposing that its supplemental appropriation for 2013 flood damage repair be in the range of $500,000 to $1,000,000. At the time the actual request is made, a specific dollar amount will be identified.

Submitted by:

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Michael D. Patton, Director, Open Space and Mountain Parks

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Michael Orosel, Financial Services Manager

ATTACHMENT:
A. 2013-2019 Open Space Fund Financial

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ATTACHMENT A

CITY OF BOULDER
2012-2019 PROPOSED BUDGET
OPEN SPACE and MOUNTAIN PARKS FUND

OPEN SPACE AND MOUNTAIN PARKS

	2012 Actual	2013 Revised	2014 Projected	2015 Projected	2016 Projected	2017 Projected	2018 Projected	2019 Projected
Beginning Fund Balance	$ 13,219,306	$ 18,917,725	$ 12,214,241	$ 13,104,894	$ 16,917,866	$ 19,533,953	$ 25,397,632	$ 31,939,401
Sources of Funds								
Net Sales Tax Revenue	$ 24,843,163	$ 25,406,420	$ 26,295,672	$ 27,176,894	$ 28,088,010	$ 29,000,132	$ 29,928,588	$ 19,303,939
Investment Income	324,723	325,000	325,000	325,000	325,000	325,000	325,000	325,000
Lease and Miscellaneous Revenue	733,655	485,909	485,909	485,909	485,909	325,000	325,000	325,000
Sale of Property	893,731	-	-	-	-	-	-	-
Funds from CDOT for Granite acquisition		1,300,000						
General Fund Transfer	1,025,753	1,072,174	1,103,384	1,137,095	1,171,553	1,208,122	1,245,832	1,284,720
Grants	222,983	25,500	-	-	-	-	-	-
Total Sources of Funds	$ 28,044,008	$ 28,615,003	$ 28,209,965	$ 29,124,898	$ 30,070,472	$ 30,858,254	$ 31,824,420	$ 21,238,659
Uses of Funds								
General Operating Expenditures	$ 10,061,560	$ 11,750,079	$ 11,723,191	$ 12,490,150	$ 12,546,271	$ 12,922,659	$ 13,310,339	$ 13,709,649
Increase to 2013 base			755,639					
Operating Supplemental and Carryover		260,087						
Vehicle Acqusition	-	-	-	-	300,000	-	-	-
Cost Allocation	1,070,853	1,066,954	1,108,400	1,163,820	1,222,011	1,283,112	1,347,267	1,414,630
Capital-Real Estate Acquisition CIP	1,599,195	3,400,000	5,400,000	5,400,000	5,400,000	5,400,000	5,400,000	5,400,000
Capital-Real Estate Acquisition Carryover		5,571,422	-	-	-	-	-	
Capital-Water Rights Acquisition CIP	21,761	200,000	200,000	200,000	200,000	200,000	200,000	200,000
Capital-Water Acquisition Carryover	-	187,817	-	-	-	-	-	-
Capital-South Boulder Creek Instream Flow	-	100,000	100,000	150,000	2,000,000	-	-	-
Capital-So Bldr Crk Instream Flow Carryover	-	50,000	-	-	-	-	-	-
Capital-North TSA	-	50,000	50,000	50,000	100,000	200,000	100,000	50,000
Capital-Reroute Flagstaff Trail	-	-	120,000	-	-	-	-	-
Capital-Reroute Green Mtn. West Ridge	-	-	60,000	-	-	-	-	-
Capital-Reroute Saddle Rock Trail	-	-	65,000	-	-	-	-	-
Capital- Reroute Ute and Range View Trails	-	-	65,000	-	-	-	-	-
Capital-West TSA	169,486	450,000	500,000	550,000	550,000	450,000	600,000	50,000
Capital-East TSA	-	-	-	-	-	50,000	50,000	200,000
Capital-Mineral Rights Acquisition	-	100,000	100,000	100,000	100,000	100,000	100,000	100,000
Capital-Mineral Acquisition Carryover	-	261,184	-	-	-	-	-	-
Capital-Visitor Infrastructure CIP	826,114	400,000	350,000	300,000	250,000	200,000	200,000	500,000
2nd Supplemental Appropriation		**1,000,000**						
Capital-VI CIP Carryover	-	803,712	-	-	-	-	-	-
Capital-Highway 93 Underpass Carryover	-	1,000,000	-	-	-	-	-	-
Debt Service - BMPA	1,734,407	1,597,457	1,500,969	1,110,243	996,341	395,842	169,282	69,366
Debt Service - Bonds & Notes	6,862,213	7,069,775	5,221,113	3,797,712	3,789,762	3,792,962	3,805,763	2,025,231
Total Uses of Funds	$ 22,345,589	$ 35,318,487	$ 27,319,312	$ 25,311,926	$ 27,454,386	$ 24,994,575	$ 25,282,651	$ 23,718,876
Ending Fund Balance Before Reserves	$ 18,917,725	$ 12,214,241	$ 13,104,894	$ 16,917,866	$ 19,533,953	$ 25,397,632	$ 31,939,401	$ 29,459,184
Reserves								
OSBT Contingency Reserve	$ 5,475,000	$ 5,475,000	$ 3,500,000	$ 2,500,000	$ 2,400,000	$ 2,000,000	$ 2,000,000	$ 1,100,000
Pay Period 27 Reserve	287,270	-	45,000	95,000	145,000	195,000	-	-
Sick/Vacation/Bonus Reserve	490,000	490,000	490,000	490,000	490,000	490,000	490,000	490,000
Property and Casualty Reserve	400,000	400,000	400,000	400,000	400,000	400,000	400,000	400,000
South Boulder Creek Flow Reserve	1,150,000	1,450,000	1,750,000	2,000,000	-	-	-	-
Vehicle Acquisition Reserve	-	-	150,000	300,000				
Facility Maintenance Reserve	-	-	100,000	200,000	300,000	400,000	500,000	600,000
Total Reserves	$ 7,802,270	$ 7,815,000	$ 6,435,000	$ 5,985,000	$ 3,735,000	$ 3,485,000	$ 3,390,000	$ 2,590,000
Ending Fund Balance After Reserves	**$ 11,115,455**	**$ 4,399,241**	**$ 6,669,894**	**$ 10,932,866**	**$ 15,798,953**	**$ 21,912,632**	**$ 28,549,401**	**$ 26,869,184**

CITY OF BOULDER
CITY COUNCIL AGENDA ITEM

MEETING DATE: OCTOBER 1, 2013

AGENDA TITLE: Introduction, first reading and consideration of a motion to order published by title only an ordinance creating a pilot project allowing electric assisted bicycles on certain hard surfaced multi-use paths by amending Definitions in Sections 1-2-1- and 7-1-1 and amending Sections 7-4-16, 7-5-5 and 7-5-9 to specify safety standards that will apply to electric assisted bicycles; adding a new Section 7-5-26 authorizing electric assisted bicycles where permitted by rule adopted by the City Manager, establishing a sunset date of December 31, 2014; and setting forth related details.

PRESENTER/S
Jane S. Brautigam, City Manager
Paul J. Fetherston, Deputy City Manager
Bob Eichem, Chief Financial Officer
Maureen Rait, Executive Director of Public Works
Tracy Winfree, Director of Public Works for Transportation
Michael Gardner-Sweeney, Transportation Planning and Operations Coordinator
Kathleen Bracke, GO Boulder Program Manager
Jeff Haley, Parks Planner, Parks and Recreation Department
Dean Paschall, Communication & Public Process Manager, Open Space and Mountain Parks
Carey Weinheimer, Traffic Commander, Boulder Police Department
Molly Winter, Executive Director of Downtown, University Hill and Parking Services
Marni Ratzel, Senior Transportation Planner

EXECUTIVE SUMMARY

Currently city regulations allow electric-assist bicycles (e-bikes) to operate on the road and use bike lanes, but prohibit e-bikes on multi-use paths and sidewalks. As directed by council, the City of Boulder is considering a potential pilot project to test e-bike use on hard-surface, multi-use paths maintained to a transportation standard. The pilot would evaluate behavior of e-bike users to determine whether these vehicles can co-exist with

current users on multi-use paths. The proposed ordinance is included as **Attachment A**. The ordinance enables the City Manager, under rulemaking authority, to regulate the hard-surface paths where a person may activate the motor of an e-bike and establishes a sunset date of Dec. 31, 2014. The pilot project would begin 30 days after council approval of the ordinance. The pilot project duration allows for data collection, evaluation, community input, and quarterly updates to the City Council on the pilot findings.

The pilot would not include use on facilities that are pedestrian-only or intended to preserve the natural environment. Specifically, the proposed ordinance states that e-bike use would continue to be prohibited on sidewalks and the soft-surface trails in the Open Space and Mountain Park (OSMP) system surrounding Boulder. The pilot would be focused in the urban service area where there is a network of hard-surface, off-street multi-use paths.

Attachment C shows several hard-surface multi-use paths on OSMP fee-property that are integral to the greenway system within the City of Boulder. E-bikes may be in conflict with the Open Space and Mountain Parks Charter values that serve passive recreation and prohibit motorized vehicles on OSMP land.

On Sept. 25, the Open Space Board of Trustees (OSBT) will hold a public hearing and make a recommendation on whether OSMP hard-surface multi-use paths are appropriate to include in the e-bikes pilot project.

Staff will provide a summary of OSBT discussions and recommendation to City Council as an addendum to the final memo, since the memo will have been already been submitted before the meeting has occurred.

Suggested Motion Language:

Staff requests council consideration of this matter and action in the form of the following motion:

Motion to introduce and order published by title only an ordinance creating a pilot project allowing electric assisted bicycles on certain hard surfaced multi-use paths by amending Definitions in Sections 1-2-1- and 7-1-1 and amending Sections 7-4-16, 7-5-5 and 7-5-9 and adding Section 7-5-26 authorizing electric assisted bicycles where permitted by rule adopted by the City Manager, establishing a sunset date of December 31, 2014.

COMMUNITY SUSTAINABILITY ASSESSMENTS AND IMPACTS

- **Economic**: Bicyclists tend to shop local and invest in the local economy. A local survey estimates the direct economic benefit of the bicycling industry in Boulder to be $52 million.

- **Environmental:** E-bikes are an efficient zero emission transportation option, reducing green house gas and vehicle miles traveled. An estimated 40 percent of all car trips are less than two miles away. Reducing the number of trips made by cars reduces congestion and frees up road space for essential motor vehicle trips. E-bikes expand the distance a bicyclist is willing and able to ride, which increases the potential to shift single occupant vehicle trips to e-bike trips.

- **Social:** Testing the use of e-bikes on multi-use paths as a pilot program supports a complete transportation system. E-bikes expand modal choice and helps aging generations stay active and healthy. It is an active transportation mode that addresses health problems related to sedentary behavior.

OTHER IMPACTS

- Fiscal – The budget impacts associated with implementing and evaluating a pilot program are supported by existing transportation funding in the city's 2013 and 2014 budgets. Any voluntary over time employed to conduct enforcement also would be absorbed by the transportation budget.
- Staff time – Enforcement activities could be scheduled as part of normal shift work. This may limit the Boulder Police Department's capacity for extended enforcement due to the need to respond to emergency calls. Voluntary overtime also could be employed to conduct enforcement. The anticipated cost is $55 per officer hour with a minimum of two officers for at least three hours per scheduled overtime event.

BOARD AND COMMISSION FEEDBACK

On Sept. 23, 2013 the Transportation Advisory Board (TAB) held a public hearing to consider the e-bike pilot project. The Board unanimously passed two motions. The first motion was in support of the proposed ordinance. The second motion recommended Option 2 (option details below) for regulating e-bike use on multi-use paths during the pilot with the amendment to allow e-bike use on hard surface multi-use paths on OSMP fee-property.

During the public hearing, TAB members expressed the desire to work in partnership with OSMP staff and the OSBT to allow e-bikes on segments of multi-use paths that are integral to the greenway system and on OSMP-fee property. They also stated that if concerns arise, staff should revisit the scope of the pilot project. Board members also encouraged staff to explore opportunities to redesign segments of the path system impacted by recent flooding to provide better separation between bicyclists and pedestrians.

Other affected boards include the Downtown Management Commission (DMC), OSBT, University Hill Commercial Area Management Commission (UHMC), and Parks and

Recreation Advisory Board (PRAB). In early September, these boards received a staff memorandum with information on the options under consideration and the public process forums for the community to provide input. Each board discussed the item at their respective September meetings.

The OSBT first discussed the e-bike pilot at its meeting on Sept. 11, 2013. Conversation focused on safety concerns and conflict with the OSMP Charter values to serve passive recreation and prohibit motorized vehicles on OSMP land. The OSBT also expressed concerns regarding the need to address corridors where there are holdings on OSMP land that function in another way such as hard surface paths serving a transportation purpose. On Sept. 25, OSBT will hold a public hearing and make a recommendation on whether OSMP hard-surface multi-use paths are appropriate to include in the e-bikes pilot project.

On Sept. 23, the PRAB discussed the e-bike pilot and was supportive of the project. The only concerns raised were related to determining a way to keep e-bike speed at a minimum and congestion on the Boulder Creek Path and other popular corridors. Additionally, one board member would prefer to not have e-bikes on any multi-use paths.

The UHMC is scheduled to discuss the e-bike pilot on Oct. 1, 2013. The meeting was postponed from the regular meeting date of Sept. 18, 2013.

On Sept. 9, the DMC made a motion in support of Option 3 (detailed descriptions below) as the Commission does not want to allow e-bikes on the section of the Boulder Creek Path from Scott Carpenter Park to Eben G. Fine Park. The DMC does not support Option 2 because of the potential of pedestrian and bicycle conflicts. The vote was unanimous.

PUBLIC FEEDBACK

A summary of public input on the options considered for an e-bike pilot project is included in **Attachment B**. Also detailed is a summary of the public engagement process, which included several forums for community input, including two public meetings, an online survey and social media. An intercept survey of multi-use path users scheduled for the week of Sept. 16 was postponed until further notice. Staff also scheduled opportunities for community members to learn more about and test ride e-bikes, including the city-sponsored Boulder Green Streets event that was scheduled for Sunday, Sept. 22. This event has been postponed. A new date is not yet set.

Seven community members also attended the Transportation Advisory Board public hearing on Sept. 23, 2013, to provide testimony during the public hearing. All but one expressed support for a pilot project to test e-bike use on multi-use paths.

To date, comments from more than 250 community members have been received expressing an opinion on the proposed options for a pilot project to test e-bike use on paths. A majority (approximately two-thirds) are supportive of a pilot project. The most common reasons cited were that e-bikes help aging generations stay active and healthy, make longer commutes viable by bike and are an economic and non-polluting alternative to automobiles. Approximately 40 percent of comments received were opposed to testing

e-bike use on paths. The primary concerns raised include congestion on the paths, speed, and safety. The behavior of existing bicyclists and a lack of enforcement were cited as concerns that would be compounded by e-bike users. Some comments suggested that the multi-use path system needs to separate bicyclists from walkers. Increased awareness through an education and outreach campaign followed up with targeted enforcement was expressed as vital components to consider.

In addition to the options being considered by staff, some community members suggested that other options be considered. Most of these were identified at the public meeting held on Sept. 4, 2013. Included were options to define an e-bike based on vehicle weight, vehicle speed or speed/weight based on rider and vehicle. Suggested options to regulate use included allowing e-bikes wherever bikes are allowed (including sidewalks and OSMP trails); allowing e-bikes wherever bikes were allowed except on OSMP natural surface paths; and restricting e-bike use on some weekends (but, allowing them on other weekends along the Boulder Creek Path to test the difference). A summary of comments from the two public meetings held on Sept. 4 and Aug. 7 also are included in **Attachment B**.

BACKGROUND

Considering a trial period to test the use of e-bikes on off-street, hard-surface multi-use pathways raised council interest due to community support expressed through a petition and testimony provided to the council. Several community members attended the City Council meeting on Tuesday, May 21 to support changing city policy to allow e-bikes on paths. In response, the Transportation Division spearheaded an internal review of e-bike regulations. An interdepartmental team comprised of Parks and Recreation, Open Space and Mountain Parks, the City Attorney's Office (CAO), Police Department and Transportation as well as Downtown University Hill Management & Parking Services was involved in the review.

The city is in the process of updating the Transportation Master Plan (TMP).
As part of the TMP update, the Transportation Division is introducing a "Complete Streets Bike and Pedestrian Living Laboratory" to test innovative treatments and programs to see if they are appropriate for Boulder. E-bikes are one bicycle innovation under review by the city as part of the living laboratory. For more information regarding the Transportation Master Plan update and the living laboratory, visit www.bouldertmp.net and select "Complete Streets" or "Living Laboratory".

Current Regulations

Colorado State Law defines an e-bike as a two or three wheeled vehicle with pedals and equipped with an electric motor not exceeding 750 watts of power with a top motor-powered speed of 20 mph. In Colorado, e-bikes may be operated on the road and within bicycle lanes. E-bikes are prohibited from using their motors on bike and pedestrian paths, unless allowed by local ordinance.

The city definition currently differs from state law by further limiting the motor capacity of an e-bike to no more than 400 watts of continuous input power. E-bikes are allowed to use bike lanes. As a motor vehicle, e-bikes are currently prohibited from using multi-use

paths and sidewalks, and OSMP trails. A map of multi-use paths that are on OSMP fee property is shown in **Attachment C**. These are maintained to a transportation standard and integrated into the urban fabric of the greenway system.

ANALYSIS

In developing the staff recommendation, the Transportation Division is considering a variety of factors concerning use of e-bikes on multi-use paths, including compatibility with other users, the speed of e-bikes, alignment with goals in the TMP, experience of other communities, use of OSMP paved trails and public input.

About e-bikes

An e-bike is essentially a bicycle that can be propelled by both human power and electric-assist power. It is designed for people interested in completing trips by bike but concerned about their physical ability to ride longer distances or climb steeper hills. The electric range, speed, and cost of an e-bike are moderate. **Attachment D** provides photos and specifications for some e-bikes, an FAQ and a recent article about e-bikes.

As regulated by the Boulder Revised Code, the speed limit on multi-use paths is 15 mph unless posted otherwise (there are sections where the speed limit is 10 mph). The speed of an e-bike is compatible with this established speed limit. Based on Federal regulations, the speed of an e-bike using only the electric motor or a power assisted option has an upper threshold of 20 mph. Factors such as slope, rider's weight and terrain affect the speed of the bicycle. As the terrain or slope of a bicycle facility becomes more difficult or steep, the speed of the electric power assist will decrease, unless pedal power is used in conjunction with the electric power assist. A more powerful motor will help maintain the maximum power assist speed of 20 mph. Under human power alone, riders of e-bikes (and traditional bikes) are capable of exceeding this threshold.

Potential users of an e-bike include commuters and persons who prefer to travel by bicycle but may not be physically able to complete the trip intended without an electric power assist. This travel option could expand the bicycle user base, attract interested but concerned cyclists to ride more and be an opportunity to work toward the goals contained in the TMP.

Peer City Review

Staff researched experience in other communities that have allowed or, in some cases, not allowed e-bikes from using off-street, hard surface paths similar to Boulder's off-street pathway/greenways network. **Attachment E** provides a summary of this research. Based on the experience of other communities that have allowed e-bikes, there has not been a resulting increase in conflicts on multi-use paths or other bicycle facilities.

Paved paths on OSMP property

Attachment C shows in red those hard surfaced trails that are identified as being "owned" by OSMP but are maintained by the Transportation Division. This relationship came about when, over the years, transportation proposed that these OSMP trails be hardened to provide a better bicycling surface. Bicycling was considered an open space

purpose so an agreement was made to harden the surface and to have transportation maintain the trails. These paths are typically on the periphery of the OSMP land and connect with other transportation managed paths.

Modifications can be made to temporarily amend ordinances addressing the Visitor Master Plan and Long Range Master Plan. However, the Charter/passive recreation question raises a more difficult hurdle. The paved paths are part of the city's greenway system and are intended to serve both a recreation and transportation purpose. OSBT input and action at the Sept. 25 meeting will help guide a staff recommendation on how to handle e-bike use on these paths.

Integrating a comprehensive program of the 5 E's

The City of Boulder's approach to support bicycling and walking is to achieve a comprehensive program that includes Engineering, Encouragement, Education, Enforcement and Evaluation initiatives. As part of the TMP update, staff is refining strategies to address concerns raised by community members for congestion and conflicts on the bicycling system today.

Independent of a pilot project to test e-bike use on paths, staff will be taking action to encourage cyclists to ride at appropriate speeds on the path system. This action will include the installation of 15 mph speed limit signs at key path locations and will be supported by an outreach campaign to raise public awareness on user rights and responsibilities as well as the rules of the path, including 15 mile per hour speed limit and walk right/pass left. Field observations to record unsafe behavior including speeding and other safety concerns along the path system will be conducted. Formal Police enforcement activities may be scheduled as resources allow and based on the findings of the field observations.

If approved by council, the proposed e-bikes pilot project for the off-street multi-use paths (non- OSMP) will be an opportunity to enhance this comprehensive approach, including additional efforts for education and enforcement. Results will be evaluated as part of the living laboratory analysis. This evaluation would include field observations to track user behavior and guide formal police enforcement activities. Based on results and as resources allow, targeted enforcement efforts may be conducted to record time spent and observations of safety concerns by various users including e-bikes, regular bikes, pedestrians as well as issuance of summonses / warning.

PROPOSED ORDINANCE REVISION

The CAO has drafted a proposed ordinance for City Council consideration to pilot e-bike use on hard-surface, multi-use paths maintained to a transportation standard. This is included as **Attachment A**. The ordinance amends the definition of an e-bike to be consistent with state law. The pilot would evaluate behavior of e-bike users to determine whether these vehicles can co-exist with current users on multi-use paths. The ordinance authorizes the rulemaking authority of the City Manger to offer flexibility in determining the hard-surface multi-use path segments that allow e-bikes. This approach offers the opportunity to adjust to the scope of the pilot project in response to findings of the on-

going evaluation. A sunset date of Dec. 31, 2014 would allow data collection, evaluation and quarterly updates to the City Council on the pilot project findings.

OPTIONS
Below is a list of options considered for defining and regulating e-bikes in the City of Boulder:

Option 1: No change to the existing e-bike Definition (BRC 7-1-1 Definitions): "Electric assisted bicycle" means a bicycle with a battery powered electric motor with a capacity of *no more than four hundred watts* continuous input power rating which assists the person pedaling and which is not capable of propelling the bicycle and rider at more than *twenty miles per hour* on level pavement.

Option 2: Amend e-bike definition to conform with Colorado State Law* CRS 42-1-102(28.5): "Electrical 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, and a top motor-powered speed of *twenty miles per hour*.
**Denver and Fort Collins also uses this definition.*

Options for regulating an e-bike

Option 1: Clarify the existing law regulating e-bikes. E-bikes may operate on the roadway and within designated on-street bike lanes but are prohibited from using the motor on multi-use paths, trails and sidewalks.

Option 2: Adopt an ordinance to test e-bike use on multi-use paths for a pilot period. This ordinance would sunset on Dec. 31, 2014. E-bike use on the following would continue to be prohibited:

- OSMP trails, including those that currently allow bikes; and
- Sidewalks, except those designated as multi-use paths.

The above option would allow the city to evaluate the impacts of allowing e-bike riders to operate the motor while bicycling on hard-surface, multi-use paths, with the exception of those on OSMP fee-property. Signs to inform path users of the pilot project and the current 15 mph speed limit would be installed at select locations along the pathway system to educate users. Formal police enforcement activities may be scheduled as resources allow and based on the findings of the field observations. Automatic in-pavement loop detectors will track bike volume. Manual counts would be conducted to collect volume data by user type (pedestrian, bike, e-bike, other). Additionally, an online survey and intercept surveys of multi-use path users would be conducted to gather input on the pilot program and use of e-bikes on multi-use paths.

Option 3: Adopt an ordinance to test e-bike use on multi-use paths, except for a segment of the Boulder Creek Path, for a demonstration period. This ordinance would sunset on Dec. 31, 2014. E-bike use on the following would continue to be prohibited:

- OSMP trails, including those that currently allow bikes;
- Sidewalks, except those designated as multi-use paths; and
- The Boulder Creek Path between Eben G. Fine Park and Scott Carpenter Park

Public input on the potential pilot program to test e-bike use on hard-surface, multi-use paths has expressed concern for impacts to the pedestrian experience and safety. This option would restrict the use of the electric-assisted motor on an e-bike along the Boulder Creek Path from the western city limit (west of Eben G. Fine Park) to 30th Street (Scott Carpenter Park). As the spine of the greenway system, this segment of the Boulder Creek Path is a well-publicized tourist destination and serves as a linear park along the Boulder Creek riparian corridor. In addition to the comprehensive program outlined in Option 2, additional strategies would likely be required to regulate the use of e-bikes as non-motorized vehicles along the prohibited segment of the Boulder Creek path.

NEXT STEPS

If the proposed e-bikes pilot project is approved by City Council, staff will proceed with implementation, including on-going community outreach, education, enforcement, and evaluation throughout the year long demonstration project.

For more information regarding e-bikes, please see the city's webpage and links from www.GOBoulder.net

ATTACHMENTS

Attachment A Proposed Ordinance
Attachment B Public input summary
Attachment C Paved paths on OSMP property
Attachment D E-bikes FAQ, specifications and information
Attachment E Peer city review

DRAFT

ORDINANCE NO. _____

AN ORDINANCE CREATING A PILOT PROJECT ALLOWING ELECTRIC ASSISTED BICYCLES ON CERTAIN HARD-SURFACED, MULTI-USE PATHS BY AMENDING DEFINITIONS IN SECTIONS 1-2-1 AND 7-1-1; AMENDING SECTIONS 7-4-16, 7-5-5, AND 7-5-9 TO SPECIFY SAFETY STANDARDS THAT WILL APPLY TO ELECTRIC ASSISTED BICYCLES; ADDING A NEW SECTION 7-5-26 AUTHORIZING ELECTRIC ASSISTED BICYCLES WHERE PERMITTED BY A RULE ADOPTED BY THE CITY MANAGER; ESTABLISHING A SUNSET DATE OF DECEMBER 31, 2014; AND SETTING FORTH RELATED DETAILS.

WHEREAS, THE CITY COUNCIL OF THE CITY OF BOULDER, COLORADO, FINDS AND RECITES THE FOLLOWING:

A. The 2013 Transportation Master Plan (TMP) update builds on a strong foundation of success through policy refinement, using a collaborative approach and addressing the current and future transportation needs of the community while integrating with the city's broader sustainability planning initiatives.

B. As part of the TMP update, the Transportation Division is introducing new strategies to increase bicycle and pedestrian mode share. It includes a "Complete Streets Bike and Pedestrian Living Laboratory" that provide test facilities and pilot programs to better understand the community's transportation choices and identify potential opportunities, barriers, and ultimately strategies to encourage more people to walk and bike.

C. The purpose of this ordinance is to establish a one-year electric assisted bicycle demonstration Pilot Project (the "Pilot Project"), which would allow and test use of electric assisted bicycles on off-street, hard-surfaced, multi-use path system within the City of Boulder limits.

D. The Pilot Project is focused on the urban service area where there is a network of hard-surfaced, off-street, multi-use paths maintained to a transportation standard.

E. The Pilot Project would not include use on facilities that are pedestrian only or intended to preserve the natural environment. Specifically, electric assisted bicycle use would continue to be prohibited on sidewalks and the natural surface Open Space and Mountain Park (OSMP) trail system surrounding Boulder.

F. The Pilot Project will evaluate behavior of electric assisted bicycle users to determine whether these vehicles can co-exist with current uses on these multi-use paths.

G. The Pilot Project is part of a Living Laboratory being implemented to introduce new strategies to increase bicycle mode share and encourage more people to complete trips by bicycle.

H. The city's ordinances do not permit any self-propelled vehicle to be driven on any paths.

I. In order to provide assurance that the use of electric assisted bicycles as an alternate mode of transportation contemplated by this program is safe, prudent, and in the best interest of all users of the city's hard-surfaced, multi-use path system, city staff will evaluate the following factors and data on an ongoing basis:

1. The number of reported traffic collisions involving electric assisted bicycles occurring on hard-surfaced, multi-use paths that result in severe injury or fatality;
2. The number of reported close call incidents involving electric assisted bicycles occurring on hard-surfaced, multi-use paths;
3. Reported and observed unsafe behavior including speeding and other safety concerns along the hard-surfaced, multi-use path system by various users including electric assisted bicyclists, regular bicyclists, pedestrians and other users;

4. The time spent by Boulder Police officers conducting enforcement activities along the hard-surfaced, multi-use path system and the number of warnings and citations issued involving electric assisted bicycles.

J. The greater Boulder community and affected Advisory Boards considered options and provided input to guide a staff recommendation on the Pilot Project.

K. On September 23, 2013, the Transportation Advisory Board held a public hearing to consider the staff recommendation on the Pilot Project and make a formal recommendation to City Council.

L. This program will sunset and be of no further force and effect after December 31, 2014, unless extended by affirmative council action.

BE IT ORDAINED BY THE CITY COUNCIL OF THE CITY OF BOULDER, COLORADO:

Section 1. Section 1-2-1, B.R.C. 1981, is amended to read:

1-2-1 Definitions.

. . .

"Motor vehicle" means any self-propelled vehicle other than a moped, electric assisted bicycle or motorized wheelchair.

Section 2. Section 7-1-1, B.R.C. 1981, is amended to read:

7-1-1 Definitions.

. . .

"Electric assisted bicycle" means a ~~bicycle~~ vehicle having two tandem wheels or two parallel wheels and one forward wheel, fully operable pedals, an ~~with a battery powered~~ electric motor not exceeding ~~with a capacity of no more than four~~seven hundred-fifty watts of ~~continuous input~~ power rating, ~~which assists the person pedaling and which is not capable of propelling the bicycle~~ and a top motor-powered speed of ~~rider at more than~~ twenty miles per hour ~~on level pavement~~.

"Motor vehicle" means any self-propelled vehicle other than a moped, electric assisted bicycle or motorized wheelchair.

Section 3. Section 7-4-16, B.R.C. 1981, is amended to read:

7-4-16 Yield Required Before Entering or Leaving Street.

(a) 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.

(b) 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.

Section 4. Section 7-5-5, B.R.C. 1981, is amended to read:

7-5-5 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 all 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.

Section 5. Section 7-5-9, B.R.C. 1981, is amended to read:

7-5-9 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 and 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.

Section 6. Chapter 7-5, "Pedestrian, Bicycle and Animal Traffic," B.R.C. 1981, is amended by the addition of a new section to read:

7-5-26 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."

Section 7. The city manager shall report to the City Council at least quarterly, and shall present a program evaluation after the program concludes.

Section 8. This ordinance shall be effective until December 31, 2014. The City Council suspends the prohibition against operating a motorized vehicle on hard-surfaced, multi-use paths until that time for the limited purpose of implementing the Pilot Project described by this ordinance. For all other purposes, the regulations governing electric assisted bicycles remain in full force and effect.

Section 9. This ordinance is necessary to protect the public health, safety, and welfare of the residents of the city, and covers matters of local concern.

Section 10. The City Council deems it appropriate that this ordinance be published by title only and orders that copies of this ordinance be made available in the office of the city clerk for public inspection and acquisition.

INTRODUCED, READ ON FIRST READING, AND ORDERED PUBLISHED BY TITLE ONLY this ____ day of _____ 2013.

. _____
Mayor

Attest:

_____
City Clerk

READ ON SECOND READING, PASSED, ADOPTED, AND ORDERED PUBLISHED BY TITLE ONLY this _____ day of _____, 20__.

. _____
Mayor

Attest:

_____
City Clerk

Electric Assist Bike Project Public Process

The public process included several forums for community input:

- Project Webpage
- Online survey linked through City of Boulder project webpage
- Inspire Boulder
- Public meetings (Aug. 7 & Sept. 4, 2013)
- Test ride event (Sept. 4)
- Intercept Surveys (Sept 16 – 22) - postponed
- TMP Community Feedback Panel
- Emails and phone calls
- Transportation Advisory Board meetings (Aug. 12 and Sept 23, 2013)
- City Council meetings
  - First reading Oct. 1
  - Second reading/Public Hearing Oct. 22

Details on these community input forums are included below.

E-bike Policy Review Project web page – provides information on this effort and will be updated with information on upcoming public meetings.

Electric-Assist Bike Online Survey – this survey asks questions about pubic opinion on the potential demonstration project and seeks input on suggestions for how to address concerns with testing e-bike use on multi-use paths.

Inspire Boulder (MindMixer) is an idea collaboration website that allows community members to share and discuss ideas about city projects, issues and programs. Click on the **View Topics** link under **Transportation** to interact with others and provide input on the Living Laboratory demonstration projects, including the potential changes to regulations regarding e-bikes.

Public Meetings – Public input is being sought at two public meetings.

- On Wed. August 7, a public meeting was held from 4 to 6 p.m. at the Boulder Public Library, Boulder Creek room located at 1001 Arapahoe Avenue. At this meeting Transportation staff presented the potential e-bike pilot project concept and gather public input.

- On Wednesday, Sept. 4 a public meeting was held from 5 to 7 p.m. at the County Clerk and Recorder Building located at 1750 33rd Street. This purpose of this meeting was to

present an update on the options being considered for the e-bike pilot project and provide community members an opportunity to provide input on these options.

E-bike test ride events - Staff scheduled two opportunities in September for community members to learn more about and test ride e-bikes. Details of these events are:

- On Wednesday, Sept. 4, from 4 to 5 p.m. at the County Clerk and Recorder building located at 1750 33rd Street. A public meeting will follow from 5 to 7 p.m.
- On Sunday, Sept. 22, from 10 a.m. to 4 p.m. at the city-sponsored *Boulder Green Streets* event. Visit the *Connected Mobility Zone* at 13th Street and Alpine. This event was postponed due to the flood event. A new date has not yet been set.

Intercept surveys – Staff planned to conduct a survey of users traveling along multi-use paths during the week of Sept. 16, as part of a national bicycle data collection effort. Users will be stopped and asked to answer questions about their familiarity with e-bikes and opinion of the potential pilot project to test e-bike use on multi-use paths, as well as their other multi-use path related questions. This survey effort was postponed due to the flood event. A new date has not yet been set.

Community members also were encouraged to attend the Transportation Advisory Board (TAB) public hearing on Sept. 23, 2013, as well as the Council meetings where the e-bike policy changes will be considered, on October 1 and October 22.

Sign Up for the TMP Community Feedback Panel - This is an initiative of the TMP and an opportunity to be queried on TMP-related issues, receive updates including meeting announcements, and volunteer for various events associated with the TMP update. By design, most of the inquiries submitted to the TMP Community Feedback Panel will be online. But, Panel members also will be recruited for focus groups and other in-person groups, especially where we need to reach a specific demographic group, like in-commuters and interested but concerned cyclists. Panel members complete a profile with information about themselves and their travel patterns so that outreach and queries to the Panel can reach specific target audiences. Inquiries will be planned throughout the year as the TMP work continues and evolves. Over 400 people have signed up for the Panel as of September.

Key Findings from the Public Input

Against testing E-Bikes

Paths are too congested

Speed and Safety

Behavior and enforcement

Support testing E-Bikes

Makes longer distance commutes more viable by bike

Helps aging generations stay active

Economic & non-polluting alternative to automobiles

Public Input to date Overview

Public Input Forums

Inspire Boulder

E-Bike Online Survey

Email/Phone

Public meetings (8/7 & 9/4)

Over 250 Comments expressing and opinion

About 40% are against testing E-bikes on Multi-use paths

About 55% are supportive of testing E-bikes on Multi-use paths

About 5% are undecided

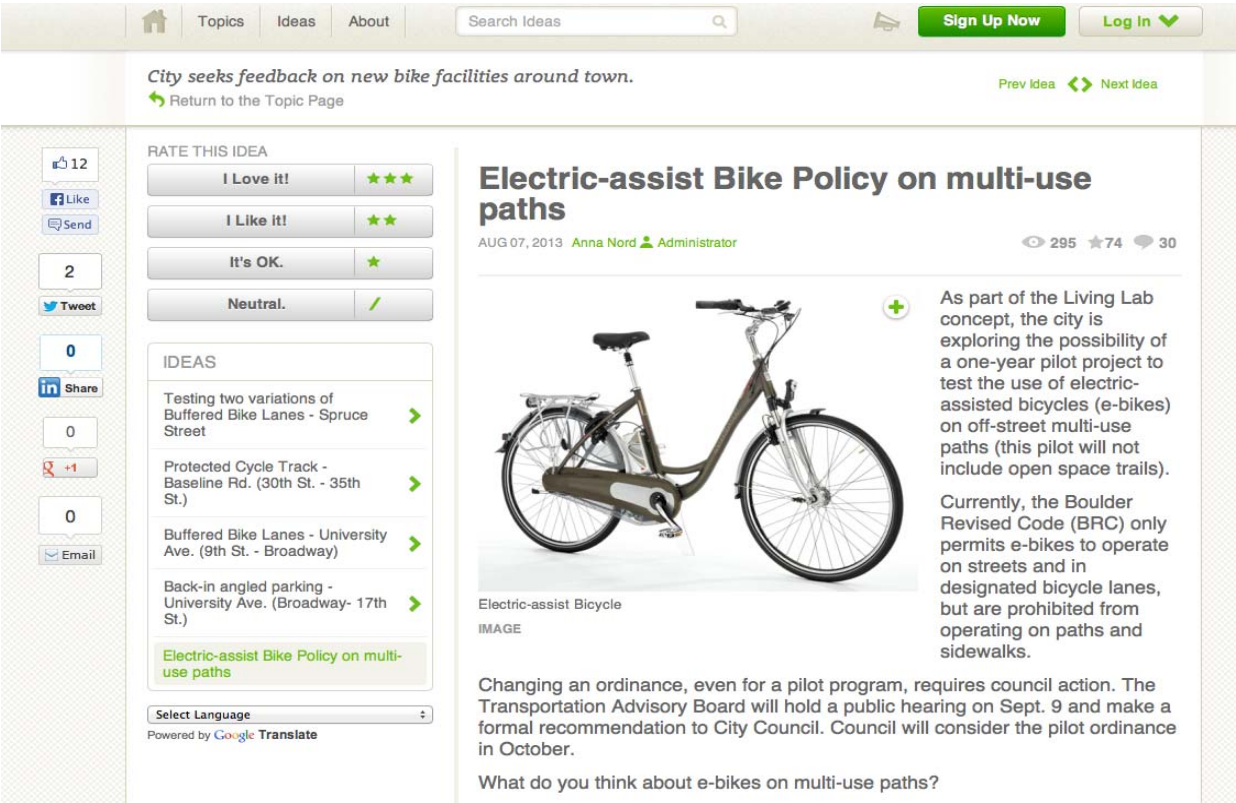
Inspire Boulder

337 Views

23 People Commented

6 Do not Support testing E-bikes on Multi-Use Paths

17 are Supportive of testing E-Bikes on Multi-Use Paths



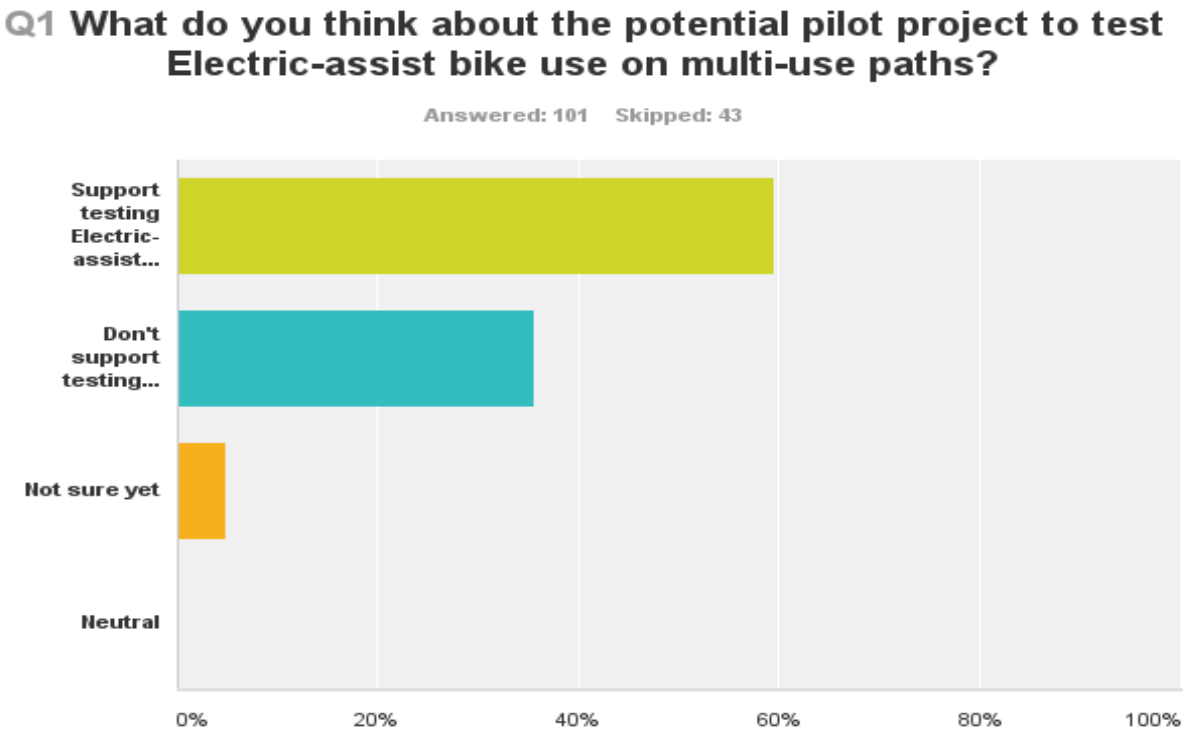
E-bike Online Survey

144 Participants (of that 101 answered Q1)

36% do not Support testing E-bikes on Multi-Use Paths

60% are Supportive of testing E-Bikes on Multi-Use Paths

4% are unsure



Emails/Phone

12 do not Support testing E-bikes on Multi-Use Paths

12 are Supportive of testing E-Bikes on Multi-Use Paths

5 are unsure

Comments from Public Meetings

September 4, 2013 Public Meeting

Definition:

- Clarify the definition of speed – power assist not exceeding 20 mph – motor for 170 lb person be complete.
- Use multiple definitions like in Europe
    - 20 mph – no restrictions
    - Expanded capability for motor assist, might need license/insurance
        - 20 mph not on multi-use path
- No power limit or 1000 watt limit
- CO law excludes tricycles – two wheels in front (tadpole)
- Gross vehicular weight
    - E-bikes under "x" lbs
    - Motorcycles over "x" lbs

Other Options:

- Allow e-bikes wherever bikes are allowed
- Allow e-bikes wherever bikes allowed except soft surface/natural surface paths
- Option 3 – on weekends on creek path excluded but test on several weekends
- Reduced speed on Boulder Creek Path – especially in the congested area around downtown. Make speed limit 10-12 mph for all bikes.
- 250 pedal assist only like in Europe – over 250 requires registration of bike

Long Term options to explore:

- Segregate electric and non-electric based on speed (China)

Five E's:

- Enforce regulations. Keep them simple and easy to enforce
- Education – police may not know the rules, need consistent messaging of rules
- Education and enforcement – especially Boulder Creek of all multi-use users (dog walkers, skateboarders, peds walking abreast, long boarders)
- Engineering – Re-engineer design for the section between Eben Fine and Arapahoe
- Education – teach bike riders of all types to be predictable. Don't be unpredictable.
- Fix acute corners on creek path west of Scott Carpenter
- Engineering – increase the capacity of Boulder Creek Path in the downtown area to help alleviate congestion.

Option 2:

- E-bikes be treated like other bikes
    - Also sidewalks and trails
- Test Boulder Creek congested area
- If we don't try it, we won't know.

Option 3:

- OSMP might kill pilot to include
- Along Boulder Creek, dismount zones or slow zones for safety – all users

Bicycling is going to increase. What public information and safety measures are critical regardless of council's actions on E-bikes?

- Speedometers on bikes or a way to monitor speed
- Govern/control on speed
- Yellow yield sign to show who yields to whom
- Video – welcome to safe cycling in Boulder – transient population (education)
- Speed indicators on paths
- Engineering – E-bikes separate modes of travel.

August 7, 2013 Public Meeting

1. **Definition – Do you have any comments about the proposed definition of electric-assist bicycles?**
    - Clarify: 20 mph capable without pedaling.
    - Yes, pedals only.
    - Only speed is important. Cars are not limited in power, only speed. Injury is related to the mass and speed, not the power of a motor. No power limit.
    - No matter what legal definition the city decides on, to the average pedestrian e-bikes are motorized vehicles. Just as "60% of cyclists are not comfortable sharing the road with motor vehicles" it is common sense that a majority of pedestrians will be uncomfortable sharing the MUP with motorized e-bikes.
    - 750 watt or less or ≥ 20 mph.

2. **Location – Do you have any comments about the potential demonstration project to allow e-bikes on off-street multi-use paths, not including open space trails?**
    - Speed limit enforcement is critical for both bicycles and e-bikes. Pedestrians are under threat now and more bicycles of any kind will increase the danger.
    - Be equitable: anywhere bikes are allowed.
    - With all bikes – use of cell phones while riding should be outlawed.
    - Throughout Boulder.
    - I am opposed to the demonstration project because I think pedestrians will be put at safety risk, the city will not be able to enforce the e-bikes ok, but not mopeds, segways. The city will not be able to enforce 20 mph speed limit (it doesn't enforce now). E-bikes are motorized vehicles. They are terrific for commuting, pollution, getting disabled out… but they should be separate from pedestrians because they go faster, weigh more, and are more intimidating than regular bikes. Restrict their use to Boulder's roads and designated bike lanes.
    - Anywhere bikes are allowed.

3. **Demonstration Project – What suggestions do you have for conducting an effective Demonstration Project in terms of…**
    - **Evaluation – In how the Demonstration Project is evaluated?**

    - Measure speed with sensors. Volunteer monitors.
    - Observe behavior between bikers and e-bikers
- **Engineering – Through engineering design, including signage and pavement markings?**
    - Sure, make it clear it is a pilot project.
    - None – no need.
- **Enforcement – Through enforcement of regulations, including the existing speed limit of 15 mph?**
    - Paint "15 mph" on paths everywhere.
    - Yes.
- **Education – How community members are informed and involved in the demonstration?**
    - Talk to the ped advocates.
    - Please provide education on how legal e-bikes are no faster than regular bikes and how quiet they are.

4. **What best practices from other cities should Boulder consider?**
    - I think the wattage restriction on the bike lanes should be lifted, perhaps to a full 1,000 w.
    - Don't allow motorized vehicles on our MUP, like 11 other communities on the list.
    - All

5. **Path usage – Do you have any concerns about allowing use-bike on multi-use paths?**
    - I am already concerned about lack of speed limit signage and enforcement. E-bikes will raise the average speed that pedestrians encounter bicycles. I'm concerned that I've already seen electric motorcycles on the MUP going well over the speed limit. Once any motors are allowed, it will be much more difficult to keep motorcycles off the MUP.
    - Yes – Pedestrian safety enforcement of some motorized vehicles but not others. Enforcement of speed limits, expenditure of nonexistent city funds on a project that upends a working system (e-bikes can already operate on roads – why do they need to have access to MUP?) They don't!!!!
    - None

6. **Public Outreach – Please share any comments you have on the proposed outreach to obtain public input during the next month as we draft an ordinance for City Council's consideration.**
    - I am left thinking that the deck is stacked in favor of the demonstration project. Staff seems inclined at the outset. I would hope that staff actively solicits pedestrian opinions by surveying pedestrians on the MUPs with an unbiased questionnaire.
    - Work with local e-bike retailers to offer 1st hand.

7. **Experience – What is your personal experience with electric-assisted bicycles? Check all that apply.**

- ☐ My business sells e-bikes
- ☐ I own and ride one (2) (Leonard Sitongia, sitongia@onebeam.net is happy to give demos)
- ☐ I have limited experience riding e-bikes (1)
- ☐ I have a friend or family member with an e-bike (3)
- ☐ I have never ridden an e-bike (1)
- ☐ My experience with e-bikes is as a pedestrian (2)
- ☐ Other_____ (1)
    - Want to offer charging station.

8. **General Comments**
    - Don't forget: allow e-bikes on public bike parking.
    - The pedestrian lobby is anti-bikes, they should be educated that this is about e-bikes, not all non-pedestrian transportation. The safety risk is not specific to e-bikes. Please make this clear so that they stop wasting our time.
    - I think e-bikes are nifty and have a role to play for commuting, recreation, congestion reduction etc. I just think they belong on roads or bike only paths as they are motorized and thus intimidating (for good reason) to pedestrians.
    - Enforcement – Would suggest considering cell phone enforcement combined with displayed registered numbers on all bikes travelling on MUPs. Violations can be reported to data center where after xx number of reports a citation is issued. This along with video camera distribution would support safety.

Paved Paths On OSMP Land

Greenway On OSMP Fee Property

Paved Path On OSMP Fee Property

Greenway On OSMP Fee Property

Paved Path On OSMP Fee Property

Greenway On OSMP Fee Property

Greenway On OSMP Fee Property

OSMP Managed Paved Path On OSMP Fee Property

Greenway On OSMP Fee Property

Greenway On OSMP Fee Property

Boulder Cr. Path On OSMP Fee Property

Paved Path On OSMP Fee Property

Cenntennial On OSMP Fee Property

S. Boulder Cr. Bicycle On OSMP Fee Property

OSMP Managed Paved Path On OSMP NIST Easement

Olde Stage Rd.
Longhorn Rd
Trailhead
BVR Pond 1
Trailhead
Boulder Reservoir
Lake
63rd St.
Diagonal - South Hwy.
Mesa Res.
Foothills Trailhead
Sixmile Reservoir (Private)
Diagonal - North Hwy.
Lee Hill Dr.
Four Mile Creek Trailhead
Twin Lakes
28th St. Ext.
Yarmouth Ave.
51st St.
Violet Ave.
Wonderland Lake Trailhead
Wonderland Lake
Jay Road
Jay Rd.
Linden Dr.
57th St.
Andrus Rd.
28th St.
Diagonal - West Hwy.
Hayden Lake
Pit D
Iris Ave.
Broadway
19th St.
Folsomst.
47th St.
61st St.
Valmont Dr.
Valmont Rd.
Foothills Pkwy.
KOA Pond
Balsam Ave.
63rd St.
Leggett-Owen Reservoir (Private)
Sunshine Canyon Dr.
20th St.
Pine St.
55th St.
Pearl Pkwy.
Mapleton Ave
Centennial Trailhead
Sprucest.
15th St.
17th St.
Pearl St.
11th St.
Walnutst.
Canyon Blvd.
Settler's Park Trailhead
Boulder Canyon Dr.
Arapahoe Ave.
Arapahoe Rd.
Sombrero Marsh
Halfway House Trailhead
Panorama Point Trailhead
Colorado Ave.
9th St.
30th St.
Crown Rock Trailhead
Baseline
Bobolink Trailhead
Flagstaff Rd.
Chautauqua Trailhead
Baseline
Gregory Canyon Trailhead
Enchanted Mesa Trailhead
27th Way
Moorhead Ave.
Denver-Boulder Turnpike
Baseline Reservoir (Private)
South Boulder Rd.
Cherryvale Trailhead
Cherryvale Rd.
NCAR Trailhead
Table Mesa Dr.
Lehigh St.
Viele Lake
Greenbriar Blvd.
South Boulder Creek Trailhead

Legend

- OSMP Trailhead with Designated Parking
- OSMP Managed Paved Path on OSMP Fee Property
- OSMP Managed Paved Path on OSMP Easement
- Other COB Managed Paved Path on OSMP Fee Property
- Other COB Managed Paved Path on OSMP Easements
- Other COB Managed Paved Paths Not on OSMP Land
- OSMP Fee Property
- OSMP Easement Property
- NCAR/NIST

N W E S

0 0.25 0.5 1 Miles

CITY OF BOULDER Open Space & Mountain Parks

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Path: E:\MapFiles\Trails\Paved_Trails\PavedPathsOnOSMPland.mxd

About e-bikes

An electric-assisted bicycle is most often powered by a lithium battery and controlled by a console that tracks speed and offers different power options. These power options include a human power only and several ranges of power assist options (Pedelec). Some models also offer a throttle option that does not require the rider to pedal in order to propel the bicycle. The distance a rider can travel on an e-bike before charging the battery is estimated to be 15 to 60 miles, depending on the size of the motor and batter as well as the power option selected by the rider when traveling. An e-bike generally weighs between 35 and 55 lbs. The cost of an e-bike generally ranges from $1,500 to several thousand dollars.

A regular bicycle can be transformed into an e-bike by installing a conversion kit comprised of an electric motor and battery. BionX, a Canadian company reputed to be a leading manufacturer of e-bike conversion systems, sells kits that range in price from $1,100 to $2,100.

Federal regulations

Federal regulations govern the safety requirements and standards for e-bikes in the United States. The Consumer Product Safety Commission 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. It further defines a bicycle to include the above definition. States and local jurisdictions regulate the use of e-bikes and may adopt a more restrictive definition of an e-bike. An e-bike is distinguished from other higher powered personal mobility devices vehicles such as a moped or scooter by definition. Specifically, e-bikes are defined as having fully operable pedals, an upper threshold for the power assist of the motor that ranges between 750 and 1000 watts of power and top motor-powered speeds of 20 mph.

Questions & Answers

Source: http://www.hybrid-cycles.com/faqs.php

How fast can electric bikes go?

On motor power alone, our electric bikes can travel up to 20 mph, depending on the weight of the rider and the difficulty of the terrain. Downhill and/or with the rider pedaling, higher speeds may be achieved.

How far can an electric bike go on a single charge?

Different models have different ranges. Hybrid Cycles offers several models that can travel up to 25 miles on a single charge in pedal-assist mode, while others can travel up to 40 miles on a single charge in pedal-assist mode. These ranges assume a 150-pound rider traveling on flat ground and may vary based on rider and terrain.

How do the different modes work?

Hybrid electric bicycles use batteries to power a quiet, efficient electric motor. In pedal-assist mode (electric-motor-assist mode), the bike senses the torque applied while pedaling, and the motor kicks in as needed to help the rider, making it easier to pedal up hills or on long rides. In throttle mode (electric motor power mode), the motor does all the work and the rider need not pedal at all. In manual mode (traditional mode), the rider shuts off the motor completely and pedals the bike just like a conventional bicycle.

The throttle / electric motor power mode requires the least exertion and provides the most speed on flat terrain, while the pedal-assist / electric-motor-assist mode provides the furthest range on a single charge.

How do you charge the battery?

Simply plug the charger into any standard wall outlet and insert the battery into the charger.

How long does it take to charge the battery completely?

Charge times vary depending on the charge depletion, the manufacturer, model, and battery type. The initial charge should take between 6-12 hours. A fully depleted SLA battery takes between 6-8 hours to charge, while NiMH & Li Ion batteries take between 4-6 hours. Electric bikes cost very little to charge.

What is the battery life?

With normal usage and proper maintenance, the battery should last 800 charge cycles.

How often should I charge the battery?

For longest life, charge the battery after each ride (or daily, if you ride more than once a day). If your bike is out of use for a long period of time, you should charge the battery at least once every three weeks.

Does the battery recharge while riding?

On most bikes, no. The Easy Motion Neo bikes employs a regenerative braking system, which recharges the battery while you are coasting or braking. While this does extend the power-assist range somewhat, you will still need to plug in the battery for a full charge.

Do I always need to pedal?

No. Throttle mode requires no pedaling at all. Pedal-assist mode requires pedaling, but provides more power for climbing.

What sort of maintenance does an electric bike require?

Care for your hybrid bicycle as you would any other high-end bicycle. Keep it clean and dry, keep your battery charged, and take it into a bike shop periodically for tune-ups.

Are electric bicycles considered bikes, or are they motor vehicles?

Electric bikes are considered bikes (not motor vehicles), under federal law, unless your state or local entity has passed a law otherwise. Normal bicycle laws apply. Be sure to check your state and local laws for any recent changes.

Do electric bikes require a license or registration?

The rules vary from state to state. Check with your local DMV for information about electric bikes for your state. Rider age minimums and helmet laws also apply to electric bikes in some states.

Some models of electric-assisted bicycles

	Emotion Diamond • 36V / 8Ah battery • 250 Watt mid-drive motor • Range up to 62 miles per charge • 8 Speed • Pedelec • Motor assist up to 20 mph • 46 lbs • Retail: $2950 *Source: petesbikes.com*
	Pedego 2013 City Commuter Classic • 36/10, 36/15 or 48Watt/10Ah • 400/500 Watt rear Hub Motor • Range up to 28 miles per charge • 7 speed • Pedelec/Throttle • Motor assist up to 20 mph • 40 lbs • Retail: $2395+ *Source: smallplanetvehicles.com*
	Yukon Navigator • 24V 10Ah battery • 250 Watt rear Hub Motor • Range up to 28 miles per charge • Single Speed • Pedelec • Motor assist up to 15 mph • 77 lbs • Retail: $500+ *Source: bing.com & Amazon.com*
	Currie IZIP E3C • 36V 11.4Ah lithium icon battery • 500 Watt rear Hub Motor • Range up to 30+ miles per charge • 27 Speed • Pedelec/Throttle • Motor assist up to 20 mph • 50 lbs • Retail: $2499+ *Source: bing.com & REI.com*

The Coming Battle Over Electric Bicycles

Henry Grabar 9:00 AM ET
source: http://www.theatlanticcities.com/commute/2013/09/coming-battle-over-electric-bicycles/6763/

Around this time last year, Andy Clarke, president of the League of American Bicyclists, was pedaling home when he experienced a quirky moment of convergence.

Just as he passed a fellow cyclist mounted atop a jaunty penny-farthing bicycle, with its comically mismatched wheels, an electric bicycle zipped past them both. Technologically speaking, it was the past, the present, and the future of the bicycle, all riding side by side, if only for a second.

"To the core cyclist, it's cheating."

The electric bicycle has so far remained a novelty item in the United States, but manufacturers, retailers, and analysts say that will soon change. Fueled by soaring numbers of bike commuters and rapidly evolving battery technology, the electric bicycle is poised for a breakthrough, if it can only roll over legal obstacles and cultural prejudices.

The market "has been growing very consistently since about 2008," says Larry Pizzi, the president of Currie Technologies, one of the nation's largest distributors of e-bikes, as they're called. "They haven't become mainstream. But they're getting closer."

Sleeker and cleaner than the clunky rides of yore, the newest wave of commuter e-bikes are nearly indistinguishable from regular bicycles. Many have motors located in the hub of the rear wheel, which on the best models, can sense the pressure on your pedals and contribute assistance accordingly. A full charge at a standard wall outlet can take a rider dozens of miles at the federally mandated speed of 20 mph.

For potential riders, there are two main drawbacks: cost and weight. A nice electric bicycle tends to cost around $2,000, and to weigh roughly 50 pounds, twice as much as a normal bike. Both metrics figure to get smaller as the bikes grow more popular and technology improves.

Because e-bikes are a generic consumer product, like pens or lamps, there's no firm data on how many are sold in the U.S. But Pizzi says Currie's sales have grown around 20 percent each year. Other e-bike companies, like Florida's ProdecoTech, report that their business has doubled over the last year. With a $1.5 million grant from the San Francisco Municipal Transportation Agency, Berkeley and San Francisco will launch a pilot e-bike sharing program next spring. Copenhagen will also debut an electric bike-share program.

The consulting group eCycleElectric estimated that the overall market for e-bikes in the United States doubled between 2012 and 2013. A more conservative analysis, by Navigant Research, has annual sales crossing the 100,000 mark in 2018.

Legally, the electric bicycle landscape is messy. The New York City Council voted in May to ban all electric bicycles (for the second time, no less), which has left owners in the city confused and cautious. Even a local bicycle retailer told me he was unsure about the law's scope.

Across the United States, too, electric cyclists are caught in a web of conflicting ordinances. Few legal codes properly distinguish between "throttle" bikes, which operate like motorcycles, and "pedal assist" bikes, which send power to the wheels only when the cyclist pedals. Access to infrastructure also varies from city to city. E-bikes are for the most part permitted in bike lanes (where they are permitted at all), though banned from multi-use paths in cities like Denver and Boulder.

Looking for lessons abroad, which proved a successful tactic for U.S. cities researching bicycle infrastructure, yields few obvious suggestions. In the bike-mad Netherlands (pop. 17 million), over 100,000 electric bicycles are sold each year, to little controversy. Singapore's boom in electric bike consumption, meanwhile, has activists calling for more regulation.

In China, where some estimate the electric bike count at 120 million, the battle over the "silent killer" — so-called for the e-bike's quiet approach that leaves pedestrians oblivious — has raged for over a decade. Citing pedestrian safety, Beijing banned electric bikes in 2002, only to repeal the prohibition in 2006. In Shenzhen, where e-bikes were reportedly responsible for 15 percent of all traffic accidents and 64 deaths in 2010, banned electric bikes in 2011. Guangzhou banned them in 2007, but police confiscating e-bikes sparked riots this summer.

In the U.S., where e-bike speed and horsepower regulations are tightly enforced, there's no evidence that electric bicycles are more dangerous. Advocates point out that man-powered bikes routinely exceed the 20 mph limit of the e-bike.

While many cycling advocacy groups in the U.S. see e-bikes as a lure for drivers, the elderly, and the sweat-averse, a certain suspicion remains. "To the core cyclist, it's cheating," Loren Mooney, the editor of *Bicycling Magazine*, has said. City governments are wary, and some "regular" cyclists fear that the spread of electric bicycles could stoke pedestrian vitriol, as it did in Chinese cities.

Bias narrows the market, advocates say. "The biggest challenge for the e-bike industry is that distribution points are few and far between," says Larry Pizzi. Out of more than 4,500 bicycle shops in the United States, fewer than one in six sell e-bikes.

That could be a huge missed opportunity for independent outfits. "Bike shops and traditional bike retailers need to get their heads out of the sand and realize that electric bikes are a huge opportunity, and a huge potential market we have struggled to reach," Clarke, of the League of American Bicyclists, says. "I don't think it takes a genius to realize these things are selling like hotcakes in both Denmark and Germany."

Clarke posits that this obstinacy may be due to the unusually self-conscious nature of cycling in the U.S. Even as bicycle commuting is entering the mainstream, its core acolytes have continued to treat the bike as a cult-like object rather than a regular consumer product. How can supporters dispel the sense that, as the *Guardian*'s Steve Caplin wrote in a defense of the mode, the electric bicycle is "masquerading as a bike"?

I asked Clarke if he didn't feel some resentment when his electrically powered comrade sped past in the bike lane.

"For a fleeting second," he conceded. "But I'd rather have someone riding that bicycle than not."

Top image: Timur Emek/Associated Press

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Peer City Review

Davis, California

VC Section 406 Motorized Bicycle

(a) Classifies an e-bike with “motorized bicycle” or “moped”. But distinguishes it from these vehicles as...

(b) A "motorized bicycle" is also a device that has fully operative pedals for propulsion by human power and has an electric motor that meets all of the following requirements:

(1) Has a power output of not more than 1,000 watts.
(2) Is incapable of propelling the device at a speed of more than 20 miles per hour on ground level.

Electric bicycles are to be operated like conventional bicycles in California, with the following exceptions:

•A person must be at least 16 years old,
•Anyone riding an electric bicycle must wear a bicycle helmet.
•Motorized bicycles may not be operated on dedicated bicycle paths unless allowed by local government ordinance.[44]
•Additional laws or ordinances may apply to the use of electric bicycles by each city or county

Seattle, Washington

RCW 46.04.169

"Electric-assisted bicycle" means a bicycle with two or three wheels, a saddle, fully operative pedals for human propulsion, and an electric motor. The electric-assisted bicycle's electric motor must have a power output of no more than one thousand watts, be in capable of propelling the device at a speed of more than twenty miles per hour on level ground, and be incapable of further increasing the speed of the device when human power alone is used to propel the device beyond twenty miles per hour.

Electric bicycles are to be operated like conventional bicycles, with the following exceptions:

•A person must be at least 16 years old,
•Anyone riding an electric bicycle must wear a bicycle helmet.
•Motorized bicycles may be operated on dedicated bicycle paths unless restricted by local government ordinance.
•Additional laws or ordinances may apply to the use of electric bicycles by each city or county

Portland, Oregon

814.405 - Status of electric assisted bicycle

•Considered a bicycle, rather than a motor vehicle, for purposes of the Oregon Vehicle Code, except when otherwise speciffically provided by statute
•Has fully operative pedals for human propulsion and an electric motor with power output not more than 1,000 watts.
•Not capable of going faster than 20 mph on level ground.
•Approved lighting must be used when operating under limited visibility

E-Bikes on Multi Use Paths

Permitted	Prohibitied
Portland, OR	City of Boulder
Seattle, WA	Fort Collins
	City and County of Denver
	Davis, CA*

*not enforced planning to change local ordinance to allow on paths