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To: Members of the Portland Planning Commission
From: Ellen Vanderslice and Roger Geller, Bureau of Transportation
Subject: Response to Planning Commissioners' request for additional information regarding the draft *Portland Bicycle Plan for 2030*

On Tuesday, October 27, 2009, the Planning Commission heard testimony regarding the proposed *Portland Bicycle Plan for 2030*. This memorandum addresses some of the questions raised during testimony and afterward by the members of the Planning Commission.

Specifically, this memo addresses the following questions:

1. Is this plan bold enough?
2. Implementation strategy and priorities:
 - a. Should the implementation tiers be eliminated, or at least renamed?
 - b. Why is there an emphasis on low-traffic shared roadways?
 - c. Do bicycle boulevards work?
 - d. Why was one route selected over another?
 - e. Can the cost-effectiveness of trails and bicycle boulevards be compared?
3. Integration of the Bicycle Plan for 2030 into the *Portland Plan*:
 - a. Does the plan address bicycle-oriented development in centers?
 - b. Does the bicycle plan address equity and leverage other efforts in the fastest-growing areas of Portland?
4. Should "Off-street Path" be eliminated as a bicycle classification?
5. Will the plan address safety and bicyclist behavior through education and enforcement?
6. Should this plan recommend user-based fees?
7. How will the performance of this plan be measured?

1. **Is this plan bold enough?**

The *Portland Bicycle Plan for 2030* offers a far-reaching vision for bicycle transportation in Portland, in which bicycling is recognized as a pillar of our city's transportation system. The plan then establishes the framework that will allow Portland to support and achieve that vision. This framework reflects bold thinking in four significant areas: policies, recommended network, bikeway design and an implementation strategy that initially emphasizes a facility type this is proven to attract people to bicycling and recommends developing such facilities so that 80% of Portlanders have proximate access to them.

The plan's policy framework promotes a reorientation of the city's approach to transportation that, for the first time, requires that one mode of transportation supersede another. The main recommended policy calls for the city to create conditions that make bicycling more attractive than driving for trips of three miles or less. This is a significant leap from the existing policy, which calls for the city to make bicycling an integral part of daily life in Portland. A second set of principal policy recommendations create new bicycle classifications: Bicycle Districts and Major City Bikeways. These classifications, coupled with new bikeway designs that recognize the cycle track as the "platinum standard" for commercial main streets, will allow for the creation of comfortable cycling conditions in some of the city's main commercial districts. They also set the stage for the future trade-offs that will be required on major roadways to carve out sufficient space to create comfortable cycling conditions.

The plan recommends a dense network of bikeways that will triple the size of the existing bicycle transportation network and increase the network of low-traffic shared roadways and trails (the 'low-stress' network) more than ten-fold. This plan also adds bikeway classifications to almost all Portland streets that carry commercial zoning. The expanded network proposed in this plan, and the new identified facility types directly address the concerns of the majority of Portlanders who would ride a bicycle if bicycling both felt safer and operated more efficiently than at present.

Finally, our strategic implementation strategy, while directing us to immediately develop low-stress bikeways in close proximity to more of our citizens than exist in any other North American city, also allows us the flexibility to seek opportunities to change tactics should current politics, public support and available funding change.

2a. **Should the implementation tiers be eliminated, or at least renamed?**

Several people testified (and many more have commented during the public comment period) expressing disappointment that the North Portland Greenway and Sullivan's Gulch trail projects were placed in Tier 2. The Bicycle Transportation Alliance suggests renaming the plan's implementation tiers. The East Portland Action Plan requests that all recommended projects in Far Northeast Portland and Far Southeast Portland be placed in Tier 1. All these suggested seem rooted in the concern that projects not listed in Tier 1 will not be considered until all Tier 1 projects are complete.

The three tiers of projects were never intended to be rigid but are instead intended to be flexible to respond to future opportunities. Staff is open to renaming the tiers. In addition, since the public comment draft was completed there has been additional work on identifying the work to be done in the first four years, and staff would like to integrate this work into the implementation chapters in Part Five. Staff suggests describing the plan's projects in terms of the following strategies: Currently Funded Projects; Immediate (four-year) Funding Strategy; Moderate Funding Strategy; High Funding Strategy; and World-Class Funding Strategy.

2b. Why is there an emphasis on low-traffic shared roadways?

The core principles guiding the network expansion proposed in the *Portland Bicycle Plan for 2030* are informed by best practices from some of the world's most successful bicycling cities. These principles address five requirements of a bicycling network and facilities – cohesion, comfort, directness, safety and attractiveness. These principles are institutionalized in national bicycle design manuals such as the Dutch Design Manual for Bicycle Traffic (published by CROW) and the Danish Collection of Cycle Concepts (published by the Denmark Road Directorate).

Each of the five requirements must be present to establish a bicycle-friendly system. An approach that focuses exclusively on one or a few of these requirements will have limited effect. For example, a strategy based solely on complete separation of bicycles from routes with motor vehicles will fail to provide the direct access needed to entice residents to choose the bicycle for a wide range of trips.

The *Portland Bicycle Plan for 2030* strategy aims to meet all five requirements by rapidly expanding the 'low-stress' bicycle network on quiet neighborhood streets and off-street pathways. The investments identified in what was called Tier 1 represent a cost-effective initial step towards making bicycling an attractive and convenient choice for a high percentage of Portland residents. These initial network improvements maximize connectivity, offer proximity to key destinations, minimize out-of-direction travel and establish multiple route options to suit riders of all skill levels.

2c. Do bicycle boulevards work?

The *Portland Bicycle Plan for 2030* emphasizes bicycle boulevards and other low-traffic shared roadway environments for bicycling in two ways: by vastly increasing the number of planned bicycle boulevard routes and by emphasizing low-traffic shared roadway facilities in the implementation strategy.

The sole reason for this dual approach is that bicycle boulevards work. There is strong evidence to support this assertion in academic research as well as from feedback received in the early phases of the bicycle plan development. In a 2007 study in which bicycle riders were equipped with Global Position System (GPS) devices, Portland State University Professor Jennifer Dill found that that bicycle boulevards were preferred routes. Although bicycle boulevards represent only 1% of Portland's overall roadway network, they attracted 10% of all the bicycle trips she measured. This 10:1 ratio is higher than the ratio either for streets with bicycle lanes or for off-street paths.

As part of the *Portland Bicycle Plan for 2030's* initial process, open house attendees in 2007 were asked to rate the things that made bicycling 'good' for them. In this survey (in which most respondents were bicyclists) bicycle boulevards received the highest number of 'very important' responses (see Figure 1).

Bicycle boulevards offer a strong combination of attributes that are summarized in Table 1, below. The plan recognizes that a combination of facility types are needed and thus provides for advancing the signature trail projects and implementing cycle track projects.

What Are The Things That Make Cycling Good For You?

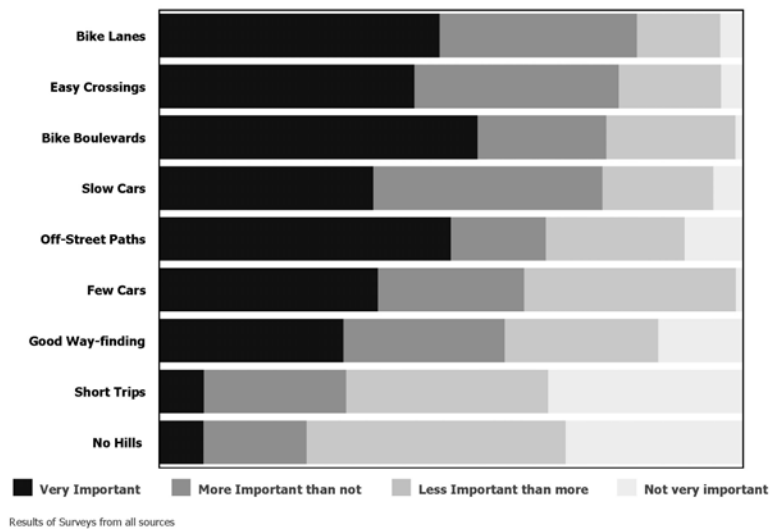


Figure 1. Survey results from 2007 Platinum Bicycle Master Plan open houses

Facility Type	Separation	Proximity	Difficulty to Implement
Shared roadway		XXX	
Sharrow	x	XXX	x
Bike Lane	X	XXX	X
Bike Boulevard	XX	XX	XX
Off-Street Path	XXX	x	XXX
Cycle Track	XXX	XXX	XXX

Table 1. Separation (comfort) versus proximity (access)

2d. Why was one route selected over another?

More than 300 new miles of planned bikeways will form a more fine-grained network that emphasizes low-stress bicycle routes and ensures access to common destinations. The proposed network was developed through an iterative process that represents countless hours of field work by staff and citizen volunteers, as well as in-house analysis to evaluate each route based on six criteria: directness, mobility function, connectivity, existing traffic conditions, existing infrastructure and classification conflicts. Corridors selected to become part of the

bikeway network needed to be long enough to serve a mobility function while requiring minimal out-of-direction travel for the length of the corridor and connecting to significant destinations. Based on both public and staff feedback, new routes were added to the network and refinements were made. The plan offers flexibility to continually make adjustments to conceptual alignments during project implementation to respond to local conditions and preferences.

2e. Can the cost-effectiveness of trails and bicycle boulevards be compared?

The project team analyzed four network scenarios using Geographic Information Systems (GIS). In Table 2 below, the ‘Base Case’ is the existing network of low-stress bikeways (low-traffic shared roadways and off-street paths). The ‘Shared Roadway’ scenario adds the low-stress bikeways from what was called Tier 1. The ‘Off-Street’ scenario adds the North Portland Greenway and Sullivan’s Gulch trails. In the final scenario, both the shared roadway and off-street routes were added to the base case. The results suggest that the shared roadway scenario is an extremely cost-effective means of providing a bikeway network that serves Portland’s residents.

	Data				Connectivity
	Population Served w/in 1/4-mi	% Population Served	Cost of NEW facilities	Cost per NEW person served	Citywide Bikeway Network Density (Bikeway-mi/mi ²)
Base Case	157,891	30%	N/A	N/A	0.70
Base + Shared Roadway Scenario	418,228	79%	\$45,801,179.00	\$175.93	1.80
Base + Off-Street Scenario	185,237	35%	\$63,844,602.00	\$2,334.70	0.90
Base + Shared Roadway + Off-Street Scenario	425,675	81%	\$109,645,781.00	\$409.46	1.95

Table 2. Analysis of network performance and cost effectiveness

3a. Does the plan address bicycle-oriented development in centers?

The City of Portland identifies 87 miles of roadways as either Regional Main Streets (RMS) or Community Main Streets (CMS). These two types of roadways are located within primary commercial districts in Portland and contain a mix of uses that are oriented to the street. The current classifications in the TSP identify 67% of these Main Streets (58 miles) as City Bikeways.

The *Portland Bicycle Plan for 2030* recognizes that Main Streets should welcome people on bicycles and proposes to increase the percentage of Main Streets classified higher than Local Service Bikeway (either City Bikeway, Major City Bikeway, or Bicycle District) to 92% (80 miles). It

adds bikeway classifications to almost all the city's principal streets with commercial zoning and creates the Bicycle District classifications for the most intensive commercial centers.

Though our initial implementation strategy does not provide an exclusive focus on their development, we expect future support to raise the prominence of commercial main streets in Portland's overall bicycle network. Our recommended policies, classifications and design treatments are setting the stage to allow us to pursue world-class designs throughout Portland, including on our commercial main streets. The missing necessary elements that would allow us to proceed are strong political and public support for the operations trade-offs and sufficient funding to perform the project work.

3b. Does the bicycle plan address equity and leverage other efforts in the fastest-growing areas of Portland?

As suggested by the Health, Equity and Bicycling Working Group, staff enlisted Portland State University to perform an equity analysis. Staff proposes to include additional discussion of the results of this analysis in the plan to inform future project decisions. Equity should be emphasized in eliminating network gaps, particularly where they inhibit or prohibit bicycle access to essential services by disadvantaged populations.

4. Should 'Off-street Path' be eliminated as a bicycle classification?

Portland's 1996 *Bicycle Master Plan* included three bikeway classifications: 'Off-Street Paths' 'City Bikeways' and 'Local Service Bikeways.' Because of this structure, bicycle transportation was the only mode that did not have a functional classification when the city's initial Transportation System Plan was developed in 2002.

Functional classifications help delineate the relative function of different routes within a network and suggest design treatments and operational characteristics that respond to anticipated demand. The *Portland Bicycle Plan for 2030* recommends a new functional hierarchy of classifications for bicycle transportation to provide for routes with high volumes of bicyclists and for efficient movement of bicycles.

Accordingly, the plan recommends adding 'Major City Bikeways' as the backbone of the network. Major City Bikeways are to be designed to provide "seamless, efficient travel across and between transportation districts" for the high volumes of cyclists expected on them.

The Bicycle Plan recommends removing 'Off-Street Paths' as a classification because it does not provide enough information about intended function, but rather describes a facility type. Some off-street paths, such as those through city parks or in outlying areas of the city, likely will not carry high volumes of cyclists. These are recommended to be reclassified as City Bikeways. Others will – or already do – carry high volumes. Classifying these as 'Major City Bikeways' will make it easier from a policy perspective to build or rebuild them in a manner that avoids conflicts with pedestrians. The plan states that "Off-street paths designated as Major City Bikeways should have separate tracks for bicycles and pedestrians where practical."

Staff has discussed this proposed change with Portland Parks & Recreation, which has traditionally been the lead agency for funding and developing off-street paths, and they are

comfortable with this change. In addition, there may be some funding advantage to the designation of off-street paths as transportation facilities given that almost all our major trails have been funded wholly or in part with federal transportation funds. It is also worth noting that those pathways of regional significance will still carry a regional designation as off-street pathways.

5. Will this plan address safety and bicyclist behavior through education and enforcement?

The *Portland Bicycle Plan for 2030* includes five recommendations that specifically address this question:

- Continue to raise the awareness of bicycling and reinforce safe bicycling behaviors
- Expand the Safe Routes to Schools program
- Increase safety education and outreach to encourage safe travel behavior for all travel modes
- Regularly assess road safety data to inform design and engineering improvements
- Work with Portland Police and other partners to implement enforcement practices that contribute to the safety and attractiveness of bicycling

6. Should this plan recommend user-based fees?

An issue that has often arisen in bicycle transportation is that of having users pay for bicycle facilities. Bicyclist license fees and/or bicycle registration fees are the commonly suggested methods for raising funds. Proponents of such fees often assert that bicyclists (uniquely among road users) do not pay their way. They argue that these measures could raise funds to pay for bicycle facilities and discount the chilling effect that such measures might have on riding.

The idea of user-based fees for bicycling has floated in the region since the early 1980s. As noted in a 1997 letter by then-Mayor Vera Katz to a constituent, “the city has explored such registration/licensing fees...but what we have found is that administration costs would exceed revenues raised. In every legislative session for the past ten years, bills with some version of these fees have been introduced – and killed – for the same reasons.”

With respect to raising funds, nearly 70% of Portland residents own at least one bicycle. If these 390,000 people were each willing to pay an annual bicycle registration fee of \$10, then Portland could presumably raise \$3.9 million annually. After administration costs the amount available would be notably less, but still a good amount; perhaps \$3 million. That level of funding would pay for approximately 1.5 miles of cycle track or 12 miles of bicycle boulevards. If this could be raised it is not an inconsiderable amount.

However, the concern about such a fee is that it would serve as a deterrent to bicycling, whereas the City strongly wishes encourage bicycling for numerous reasons. Requiring bicycle registration or licensing of cyclists would tend to discourage somebody from spontaneously deciding to ride a bicycle.

Motorists do not pay their way entirely. User fees pay for only a small fraction of most roads and related services. If Oregon's experience is anything like Texas', then the users of any particular road pay for only 32% of the costs of building and maintaining the road.

7. How will the performance of this plan be measured?

Staff is currently developing benchmarks around the following key areas:

- Mode Split
- Access to the Bicycle Transportation System
- Safe Kids
- Bicycle Safety
- Economic Vitality
- Healthy & Livable City
- Environment