



PORTLAND OFF-ROAD CYCLING MASTER PLAN

Project Advisory Committee Meeting #6

Meeting Summary

MEETING DATE: THURSDAY, JUNE 23, 2016
LOCATION: BUREAU OF PLANNING AND SUSTAINABILITY, 1900 SW 4TH AVENUE, PORTLAND
TIME: 4:00 PM – 6:00 PM

In Attendance

CAC Members Present

Kelsey Cardwell
 Erin Chipps
 Matthew Erdman
 Jocelyn Gaudi
 Mike Houck
 Adnan Kadir
 Carrie Leonard
 Torrey Lindbo
 Jim Owens
 Nastassja Pace
 Evan Smith
 Bob Salinger

CAC Members Absent

Punneh Abdolhossieni
 Kelly McBride
 Renee Meyers
 Michael Whitesel

Agency Representatives and Resource Members

Astrid Dragoy, *Portland Parks & Recreation*
 Shannah Anderson, *Bureau of Environmental Services*
 Lucy Cohen, *Portland Parks & Recreation*
 Michelle Barker*, *International Mountain Bike Association*
 Abra McNair, *Portland Bureau of Transportation*

Staff and Consultants

Tom Armstrong, *Interim Project Manager, BPS*
 Lori Grant, *Associate Planner, BPS*
 Adrian Witte, *Toole Design Group*
 Rob Burchfield, *Tool Design Group*
 Adrienne DeDona, *Facilitator, JLA Public Involvement*
 Jamie Harvie, *JLA Public Involvement*

Audience / Members of the Public

Marcy Houle
 Andy Jansky

Catherine Thompson
 Matthew Weintraub

*Attended by phone

Overview

The committee:

- Continued discussion on best practices and impacts, including reviewing sections on health and human safety and economics.
- Learned about the site suitability criteria/screening process, explored the process using example sites, and provided feedback and recommendations for refinement.
- Received an update on community outreach activities.

Welcome, Agenda Review & General Announcements

Adrienne DeDona, JLA Public Involvement, welcomed everyone to the meeting and reviewed the agenda. She explained the meeting would continue the discussion on the Impacts Assessment and Best Practices research, with a focus on the health and human safety and economics sections, and the committee would learn about and complete an exercise to test the screening process for site selection. Staff, committee members and agency representatives introduced themselves.

Meeting 5 Summary

Adrienne asked for any comments or questions about the Meeting 5 summary, noting there had been an error in the attendance which had been fixed between meetings. A committee member said the environmental mitigation hierarchy of “avoid, minimize, mitigate” had been deemphasized in the summary. Adrienne said the project team would review this.

Impact Assessment & Best Practices: Focus on Health and Human Safety, Economics

Lori Grant, Bureau of Planning and Sustainability, presented about the Impact Assessment and Best Practices, focusing on the Health and Human Safety, and Economics sections (presentation attached). The research found off-road cycling provides all three primary types of physical activity (aerobic, muscle strengthening and bone strengthening) and had benefits to the health and fitness of youth, and to mental health. The research found that off-road cycling injury rates were similar to other highly physical sports and that health risks were able to be mitigated in various ways. Research found that conflict on trails, including hazardous encounters between bikes and pedestrians, could be caused by poorly designed trails or riding in unsanctioned areas, and that there were a number of reasons why walkers may feel endangered even if trails weren't found to be hazardous. Lori reviewed best practices to reduce user conflicts on trails, including specific recommendations for shared-use, preferred-use and single-use trails. She showed examples where trails had been built to replace nuisance activities. She reviewed findings regarding the economic benefits of off-road cycling, which included revenue from bike-related products and services, and bicycle-related and off-road cycling specific tourism, including racing events.

Discussion

- A question was asked about off-road cycling signage that had recently been updated at Powell Butte. A committee member was concerned that the City had agreed to post signage as part of environmental stewardship of the site but that it had taken several years to put them up. Astrid Dragoy, Portland Parks & Recreation representative, replied that the City was currently completing construction of the trails and that

signage was part of that. The committee member expressed concern that delays in putting up appropriate signage could be an issue that comes up during the current process and could result in more user conflicts on trails.

- A committee member noted that studies have looked at the reduction of greenhouse gas emissions due to bicycle ridership and that she would provide this information to the project team.
- A committee member asked what types of trail surfaces were considered during the research. Lori replied that each study varied, which made comparisons of study results more challenging.
- A committee member suggested reviewing research out of the Netherlands and AARP on benefits to human health to people of all ages, including seniors.

Site Suitability/Screening

Adrian Witte, Toole Design Group, presented about the Site Suitability Criteria Development and Site Screening Process (presentation attached). He explained the Site Screening Process was intended to narrow down the list of more than 5,000 City-owned properties. He reviewed the screening process shown in a handout (attached). He reviewed the five steps of the screening process: completing a fatal flaw analysis, reviewing existing access, identifying whether off-road cycling opportunities exist on the site, categorizing those opportunities, and creating a list of candidate properties and opportunities. He noted that just because a site made it through the screening process it would not necessarily mean it was appropriate for an off-road cycling facility. Adrian said that considering the network as a whole would be the next step once the screening process was complete.

Discussion

Questions and comments from the committee are listed below. Adrian's replies are shown in italics.

- Would some environmental criteria remove some sites from consideration? *A number of factors, such as extensive wetlands or extremely steep slopes, would remove a site from consideration. The categorization of off-road cycling opportunities will rank the level of constraint based on the City's Natural Resources Combined Rankings Map.*
- Who will be completing the screening process? *Toole Design Group will complete the initial screening process based on a GIS analysis and the first list will be reviewed by City bureaus with knowledge of the sites. The refined list will be vetted more broadly with, the committee and other interest groups and stakeholders.*
- Are gravel roads being considered? *Any City-owned gravel roads that are included in the City's property inventory would likely make it through the screening process as a wide trail in the purpose-built hiking trail category.*
- Will linking City-owned properties with other jurisdictions, such as Metro or Multnomah County, be considered? *A feedback loop is being developed in which BPS could speak with regional partners after the initial screening when deciding which opportunities to pursue.*
- Why is the current use relevant when considering the type of use a particular site would be appropriate for? *In an area where trails already exist, there may be opportunities to adapt existing facilities or trails for off-road cycling.*
- Would current use exclude a site from consideration? *Probably not because the project team want to err on the side of keeping properties under consideration for more in-depth analysis.*
- Step 4 states, "These features should not exclude consideration of these properties for off-road cycling." *This statement is included as a caveat but indeed some would be excluded.*

- It's good to be as objective as possible; however, decisions will eventually come down to best professional judgement. Creating a world-class system given the current available land base is unlikely. Need to recognize that these types of systems get built over a long time. It is important to consider connections with other regions and jurisdictions.
- Need to include cultural resources, including Native American sites, in the criteria. Locations of cultural sites are included in a city inventory but are not available to the public to prevent disturbance.
- Need to consider whether sites are available by bike. Connections within the system may not be off-road trails but could include transit or on-road facilities.

Questions and comments from agency representatives included:

- Portland Parks & Recreation has Trail Design Guidelines that they follow for all soft surface trails, which should be considered during this process. Lori replied that the project team has this document and would make sure the consultant team has a copy.
- Will there be an opportunity for bureaus that own each parcel to have input? Adrian replied that this would happen in the step following the GIS screening. The agency representative expressed concern that some properties may need to be excluded due to alignment with agency missions and that allowing them to continue too far into the process could establish unrealistic expectations. Another agency representative said that the city is trying to encourage cross-bureau collaboration and differentiated ownership, so it would be better to keep a property under consideration even if it didn't fit within bureau purviews right now.
- Some City-owned properties would not fit into the three initial categories. Adrian agreed and said the team would consider broadening those categories or adding an "other."

Small group exercise: Testing the site screening process on example sites

The committee broke into small groups and used the draft screening process to consider two site examples: Powell Butte and Sewallcrest Park. Comments are listed below. Replies are in italics.

Powell Butte

- Struggled to categorize this site because it has steep topography and high-value habitat in some areas but potentially appropriate off-road terrain in others.
- Need to have a more sophisticated habitat analysis based on individual sites and habitat value, as well as consider interior habitat.
- Informal trails can do damage to habitat. *Closing an informal trail and building a more appropriate trail may be considered an improvement.*
- Need to plan for biodiversity and complete lifecycles and consult with professional ecologists. Wetlands should not be the only consideration; other linked habitats are important, as well.
- Portland Parks & Recreation has been working to improve the ecological health of some sites. Should consider this during analysis; a property may be considered in poor ecological health and considered for trail development when it is actually in the process of improving.
- Every natural area in Portland has set goals for ecological improvement.
- "Open spaces" is too vague.
- There are differences in opinion as to whether Powell Butte is a natural area or recreation area or both. *Parks has a definition for natural area rather than recreation area. That will help guide decisions.*

Sewallcrest Park

- This site would be categorized as low constraint ecologically, but high constraint socially because it is in the middle of a neighborhood. The social aspects are not considered in the GIS analysis. Consider proximity to neighborhoods and/or whether the site is the only park within 1/2 mile.
- The screening criteria only have an option for trails or no trails when considering a property; might need a third category.
- Bike parks may be a higher priority for this site than trails. Although the two don't need to be mutually exclusive. There is the possibility for trail loops around bike parks.
- Parks could be used as connectors in a larger system.
- What is the definition of an undisturbed site? *A site that doesn't currently have any trails.*

Community Engagement Update

Adrienne provided an update on the community engagement activities. She said the project team was currently in the process of partnering with the Community Cycling Center to expand the outreach opportunities. She said the Community Cycling Center partnership is being pursued because they have strong connections to underserved populations and the groups that serve them. She added that the questionnaire is being translated into Spanish for these engagement opportunities.

Lori said that the project team is continuing to participate in events and get responses to the questionnaire. This includes Sunday Parkways. She said they are continuing to table at Sunday Parkways and will also attend other events around the city, including Concerts and Movies in the Park. She said they are tracking general community events separately from bike-specific events. Adrienne added that the survey had been posted to various community organization social media sites.

- A committee member requested that any events be sent out to the group so committee members could attend. Adrienne said that larger, dedicated project events would be held later in the process to solicit feedback on potential sites; at this point the project team was doing outreach at existing events to promote the needs assessment questionnaire.
- A committee member asked whether the committee would be doing site visits. Lori said they may do this later in the process when potential sites have been identified. Gateway Green was mentioned as a potential site to visit.
- Jocelyn Gaudi provided an update on the Gateway Green property. Friends of Gateway Green was working with Portland Parks to develop temporary access to the site. This could serve as a real-life laboratory. Jocelyn will provide another update at the next meeting.

Public Comment

Catherine Thompson said she wanted to follow up on her comment from previous meeting. She said the intercept survey was the most important to consider. She said the majority of Forest Park trail users were pedestrians, many of them bring children, and that must be considered as a social consideration when planning off-road cycling. She said the existing management plan specified that trails must be eight feet wide. She said good line of sight is also important. She said that she was glad the project team were going to events rather than dedicated cycling events. She added that a recent park project in another community was put on hold due to environmental impacts raised by area neighbors.

Marcy Houle said that the primary management goal in the Forest Park Master Plan was to preserve interior forest habitat. She said this is significant because Forest Park's interior habitat is more pristine than any inner city park in the world.

Next Steps

Adrian summarized some of the feedback he'd heard during the meeting that would be considered when further refining the screening process for site selection. These comments included utilizing the resources they already have, tapping into professional and local knowledge of bureau staff, considering cultural resources and making sure to consider regional opportunities and connections.

Adrienne said the screening process would be fine-tuned based on the feedback received by the committee. She said focus of the next meeting was still being determined, but the team may share initial screening results or talk about facility options and community feedback regarding the needs assessment.

- A committee member said he would like to hear whether there are pump track facilities that hold up to the rain and would also like to learn more about trails along right-of-ways and narrow corridors.
- Another committee member asked whether any types of off-road cycling facilities could be put up seasonally, such as on ball fields during off-seasons.

Adrienne said the next meeting would be July 28 from 4:00–6:00 p.m. She thanked everyone for coming and adjourned the meeting.

Health, Safety and Economic Impacts and Practices



Project Advisory Committee

June 23, 2016

Today's Presentation

1. Health benefits of off-road cycling
2. Safety concerns and best practices
3. Economic benefits of access to off-road cycling



Human Health

Large body of research on benefits of:

- physical activity
- exposure to nature
- “green exercise,” getting that physical activity in nature

Off-road cycling provides all three primary types of physical activities:

- Aerobic
- Muscle strengthening
- Bone strengthening

Bone strengthening superior to road riding; bone density study shows higher density in off-road as more of a weight-bearing exercise

Biking in general is a gateway to other outdoor activity



Youth Fitness

National Interscholastic Cycling Association, which promotes high school mountain biking programs to improve youth fitness, surveyed students, coaches and parents; 96% reported improvements in health and fitness.

Participating students, coaches and parents found participating in NICA program improved youth fitness

Student athletes inspired parents and siblings to start riding

Bicycling a top “gateway” activity to other outdoor activities (Outdoor Foundation, 2011)



Mental Health

Outdoor recreation in natural spaces:

- Reduces acute and chronic stress
- Reduces depression
- Biking outdoors improves cognition, attention, mood, fitness and decreases impulsivity in youth with ADHD

Physical Safety

Off-road cycling is a sport with risk of physical injury to the rider.

Injury rates at comparable frequency to other outdoor sports:

- Majority are minor
- 60-75% soft-tissue abrasions, lacerations and contusions
- Rates are higher in competitive events
- 1 in 10 severe enough for hospital treatment: fractures, head and neck injuries
- Deaths have been reported, typically in more extreme forms of riding

Reducing Risks:

- Riding within capability level
- Properly functioning equipment
- Using helmet



Trail Experience and Social Interaction

- Shared trails that are not designed and constructed for multiple uses can of course result in user conflicts.
- Narrow trails with limited sightlines, limited shoulder or step-off areas can result in surprise encounters.
- Unsanctioned riding on pedestrian-only trails creates even more uncertainty as there's no expectation for encounters.
- There are anecdotal reports of close encounters and frightening experiences.
- There is limited information of frequency of actual hazardous encounters.
- Many bikers also hike (63%), but fewer hikers also bike (11%). Hikers unfamiliar with the trail riding experience feel more negative toward shared use with cyclists.

Trail Experience and Social Interaction

Hazardous Encounters

- Survey of 40 land managers, one case of reported walker injury (Chavez, 1993)
- 300 accident records on Marin County, CA trails, very few biker-walker collisions (Edger, 1997)

Perceptions and Concerns

Walkers feel endangered if they feel riders are:

- Riding too fast for conditions
- Not slowing at blind corners
- Using poor trail etiquette
- Causing trail degradation
- Using a more mechanized mode of travel
- Changing the customary trail use

Walkers' experience may be influenced by familiarity with trail riding experience (Jellum, 2007)

Best Practices to Reduce User Conflicts

While shared use of trails not designed for multiple users can lead to conflicts, systems can be designed and built to avoid and minimize conflicts.

- Shared use trails designed and constructed for the shared purposes
- Preferred use trails, may be open to multiple users but designed with a particular user in mind
- Single use trails

Shared Use Trails

Numerous design and programming techniques to prevent conflicts.

- Sufficient width: generally designed to have sufficient width to allow users to pass. Portland Parks and Recreation Trail Design Standards require 4' with passing areas, up to 10'. Forest Park Natural Area Master Plan has standards that supersede citywide standards, requires bike trails a min. of 8'.
- Generally are designed to have longer sightlines, fewer sharp turns (although longer straightaways can lead to higher speeds of travel than twisty trails).
- Passing or regrouping areas
- Can be programmed for directionality - bikes in one direction, hikers the opposite, so different users see each other and don't have to pass from behind.
- Clear, consistent signage so users know where they can and can't go, correct direction to travel.
- Alternating use: One user group has sole access on some days, other groups on others. Difficult to manage and has proven unpopular in some circumstances.



Preferred Use Trail

- Preferred use trails reflect that different designs appeal to different users.
- Purpose built, optimized use trails
- Riders are often looking for longer trail experience, loops vs. going to a destination.
- Can work as shared trail in segments. Hikers and bikers can share ascending segments where everyone is moving at same speed. Hikers then return and bikers continue on one-way descent
- Linear trail systems, such as the Springwater Corridor, where a soft-surface, curvy trail could parallel the paved trail. Open to all, but provide an off-road riding experience.

Examples

- Sandy Ridge: Trail system is open to hikers but it was designed and constructed to provide the type of experience many cross-country riders look for, 14 miles of sustainably built, undulating flow, directional
- Maricopa County outside Phoenix has miles of shared trails. Some high level riders ride fast, especially easy because of the open area. County built a series of “competitive loops,” designed as shared use by bikes, runners and equestrians, but using designs for features favored for mountain biking. Result is dramatic reduction in user conflicts on other shared use trails, even though many bikers still ride the larger system



Single Use Trails

Least potential for user conflicts

Can create most desirable experience for intended user

Fewer trails for each user, concentrates users

- or -

Increases overall impacts of more trail surfaces if each user has multiple single use trails



Boxed or Stacked Loop Trails

- May be preferred or single use
- Allow for lengthy trail experience in small areas

Examples:

Highbridge Park in Manhattan (shown right) includes 3 miles of trail, folding back on itself to allow a significant linear surface in a small corner of a 45-block long park overlooking the Harlem River.

Sandy Ridge incorporates this technique on a larger scale.

Tape Worm in Renton, south of Seattle, includes 8 miles of trail in 10 acres of land.



Activating Negative Use Areas

- Trails and users replace nuisance activities
- Brings eyes to the property
- Builds constituency for support and protection

Examples:

Colonnade Bike Park in downtown Seattle. Area under I-5 that was virtual wasteland, full of needles and illegal camping. Area was cleared and a bike park constructed, and in addition to use by bikers, people regularly traverse the area from neighborhoods on either sides of I-5

Cheasty Greenspace in Beacon Hill, Seattle, is in the permitting stages for restoration and trail construction.



Economic Benefits of Off-road Cycling

Contributions:

- Manufacture and sales of bikes and bike-related products and services
- Expenditures by people travelling to bike, in-state and from outside the state

Form:

- Jobs
- Wages
- Sales revenue
- Taxes
- Ripple effect: how sales and income affect other industries

Bicycle Industry

Bike industry:

- Oregon is not home to any of the major bicycle brands.
- Portland: bike-related businesses grew from 22 to 217 since 2002.

Total cyclists in Oregon: 888,655

Estimated number of off-road riders is 484,369 (Multnomah County: 88,545)

Oregon

542 bike-related businesses

2700 jobs

\$84 million in wages

\$440 million in sales

Travel Oregon, 2014

Portland

217 bike related businesses

1469 jobs

\$39.4 million in wages

\$296 million in sales

Ibsen, 2015

Economic Value of Bicycle-Related Tourism

- Number of cyclists
- Types of travel trips – day vs. overnight
- Regional destinations

Travel Expenditures Off-road Cycling Destinations

Off-road cycling is a major economic driver for some communities, especially those surrounded by expanses of public lands.

- Moab, UT - \$1.3 million economic value in 2000
- Jackson Hole, WY - \$18.5 million in expenditures by tourists to trail system, 2011
- Whistler, BC - \$34.4 million (Canadian), 2007
- Oakridge, OR - \$2.5 – 5 million, 2014

All Bicycle Travel Expenditures

Trips to and through the state, 50+ miles one way

Travel Oregon, 2012

Oregon

Total annual day rides: 1,151,000

- 748,000 day trips
- 403,000 overnight trips
- \$400 million annually
- \$1.2 million per day

Portland Metro Region

Total annual day rides: 287,000

- 227,000 day trips
- 60,000 overnight trips
- \$89 million annually
- Supports 700 jobs
- \$18 million in wages
- \$4.1 million in tax revenue

Mountain Bicycling Travel Expenditures

Trips to and through the state, 50+ miles one way

Oregon

Total annual trips: 80,000

- 51,000 day rides
- 29,000 overnight trips
- \$28 million annually

Portland Metro Region

Total annual trips: 20,090

- 15,890 day rides
- 4200 overnight trips
- \$5 million annually

Travel Oregon, 2012

Organized Bicycle Racing

Revenues for venue, lodging, food, services for travelers

2 off-road events in Bend, 1 3-day off-road event at Oakridge:

- 65% from outside Oregon
- Total sales in Bend: \$918,200
- Total sales in Oakridge: \$1.69 million

McNamee, 2013

OBRA sponsors largest cyclocross race series in US, other races

Cross-Crusade series draws 1000's of participants, 50-60% from Portland

Ridership

Ridership is an indicator of demand. Oregon Parks and Recreation Department conducted studies to estimate amount of “unpaved cycling” by Oregon residents.

The frequency of riding unpaved surfaces in Multnomah County is 5 times the rate in Deschutes County, a destination biking area.

Statewide:

- 12.2% of state population ride off-road – 500,000 residents
- Cycled on unpaved surfaces 15 million occasions

Multnomah County:

- 11.4% of county population ride off-road – 90,000 residents
- 6 million occasions (40%)

OPRD, 2012

Multnomah County activity days: 2.5 million occasions

OPRD, 2015

Quality of Life

Access to trails can affect travel decisions, contribute to quality of life for residents, improve travel options, enhance property values (Kaliszewski, 2011, North Carolina University, 2004)

Portland's Platinum rating as Bike Friendly City key to success of local bike industry

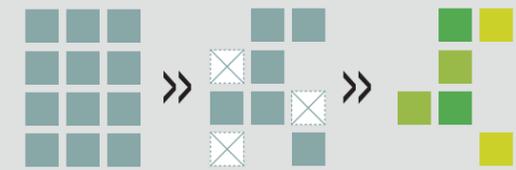
Access to good network of off-road, unpaved trails important to growth of local industry, drawing top talent (Ibsen, 2015)

A PROCESS FOR IDENTIFYING HIGH POTENTIAL SITES

INVENTORY OF ALL CITY OF PORTLAND OWNED PROPERTIES

Explore opportunities for improvement, enhancement, expansion, and addition of off-road cycling opportunities in the City of Portland.

IDENTIFY SITES WITH THE MOST POTENTIAL BENEFITS



1 FATAL FLAW SITE ANALYSIS

>> ANALYZE FOR: ACCESSIBILITY, SIZE, TOPOGRAPHY, ENVIRONMENTAL, AND DEVELOPMENT CRITERIA

NATURAL AREAS & OPEN SPACES

Properties that have significant natural resources that need to be protected or managed when allowing for recreation uses.

DEVELOPED PARKS & RECREATION AREAS

Developed parks and recreation areas where the primary management goal is recreation.

RIGHTS-OF-WAY & GREENWAYS

Rights-of-way and Greenways defined as more linear areas with a length-to-width ratio of at least 4:1, where the primary management goals are utilities, transportation, recreation, or aesthetics.

2 IDENTIFY LEVEL OF EXISTING ACCESS

SITES WITH EXISTING OR PROPOSED TRAILS

Including designated trails for off-road cycling, walking, or other uses.

UNDISTURBED SITES

3 IDENTIFY OFF-ROAD OPPORTUNITIES

>> EVALUATE OFF-ROAD OPPORTUNITIES BASED ON CRITERIA SPECIFIC TO EACH FACILITY TYPE

TRAILS

- > TRAIL WIDTH
- > LENGTH
- > ELEVATION CHANGE
- > TOPOGRAPHY

BIKE PARKS

- > SIZE
- > GRADE
- > ACCESS
- > AMENITIES

TRAILS

- > OPERATIONS REQUIREMENTS
- > ENVIRONMENTAL SENSITIVITY
- > ELEVATION CHANGE
- > TOPOGRAPHY

4 CATEGORIZE OPPORTUNITIES

>> EACH OPPORTUNITY WILL BE CATEGORIZED BY LEVEL OF INTENSITY AND LEVEL OF CONSTRAINT

LEVEL OF INTENSITY

IMPROVEMENT

ENHANCEMENT

EXPANSION

ADDITION

LEVEL OF CONSTRAINT

LOW

MEDIUM

HIGH

Based on the City's Natural Resources Combined Rankings GIS map. Uses wetlands, streams, slope, soil infiltration, special habitat areas, and other variables to determine environmentally sensitive areas.

5

LIST OF CANDIDATE PROPERTIES & OFF-ROAD CYCLING OPPORTUNITIES



PORTLAND OFF-ROAD
CYCLING MASTER PLAN

Site Suitability Criteria Development and Screening of Candidate Sites

Presented by:
Adrian Witte, P.E.
Toole Design Group

06/23/2016



PORTLAND OFF-ROAD CYCLING MASTER PLAN

Outline

1. Overview of the Candidate Site Screening Process

(15 minutes)

2. Discussion

(15 minutes)

3. Site Screening Exercise

(20 minutes)



PORTLAND OFF-ROAD CYCLING MASTER PLAN

Overview of the Candidate Site Screening Process

(15 Minutes)

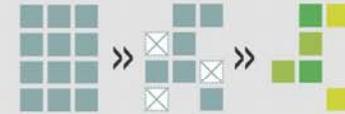


A PROCESS FOR IDENTIFYING HIGH POTENTIAL SITES

INVENTORY OF ALL CITY OF PORTLAND OWNED PROPERTIES

Explore opportunities for improvement, enhancement, expansion, and addition of off-road cycling opportunities in the City of Portland.

IDENTIFY SITES WITH THE MOST POTENTIAL BENEFITS



1 FATAL FLAW SITE ANALYSIS

>> ANALYZE FOR ACCESSIBILITY, SIZE, TOPOGRAPHY, ENVIRONMENTAL, AND DEVELOPMENT CRITERIA

NATURAL AREAS & OPEN SPACES

Properties that have significant natural resources that need to be protected or managed when allowing for recreation uses.

DEVELOPED PARKS & RECREATION AREAS

Developed parks and recreation areas where the primary management goal is recreation.

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2 IDENTIFY LEVEL OF EXISTING ACCESS

SITES WITH EXISTING OR PROPOSED TRAILS

Including designated trails for off-road cycling, walking, or other uses.

UNDISTURBED SITES

3 IDENTIFY OFF-ROAD OPPORTUNITIES

>> EVALUATE OFF-ROAD OPPORTUNITIES BASED ON CRITERIA SPECIFIC TO EACH FACILITY TYPE

TRAILS

- > TRAIL WIDTH
- > LENGTH
- > ELEVATION CHANGE
- > TOPOGRAPHY

BIKE PARKS

- > SIZE
- > GRADE
- > ACCESS
- > AMENITIES

TRAILS

- > OPERATIONS REQUIREMENTS
- > ENVIRONMENTAL SENSITIVITY
- > ELEVATION CHANGE
- > TOPOGRAPHY

4 CATEGORIZE OPPORTUNITIES

>> EACH OPPORTUNITY WILL BE CATEGORIZED BY LEVEL OF INTENSITY AND LEVEL OF CONSTRAINT

LEVEL OF INTENSITY

- IMPROVEMENT
- ENHANCEMENT
- EXPANSION
- ADDITION

LEVEL OF CONSTRAINT

- LOW
- MEDIUM
- HIGH

Based on the City's Natural Resources Combined Rankings GIS map. Uses wetlands, streams, slope, soil infiltration, special habitat areas, and other variables to determine environmentally sensitive areas.

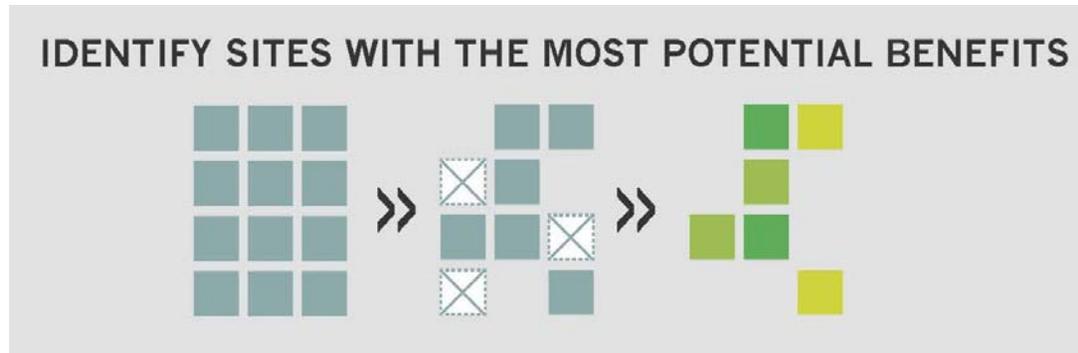
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LIST OF CANDIDATE PROPERTIES & OFF-ROAD CYCLING OPPORTUNITIES





PORTLAND OFF-ROAD CYCLING MASTER PLAN



- Narrow down list of sites.
- Exclude sites that are not appropriate.
- Identify sites with the most potential benefits.



PORTLAND OFF-ROAD CYCLING MASTER PLAN

LIST OF CANDIDATE PROPERTIES & OFF-ROAD CYCLING OPPORTUNITIES

		Wide Trails / Service Roads	Mid-Width Trails	Narrow Trails	Singletrack Trails	Cyclocross Venue	Downhill Trail	Flow Trail	Freeride Trail	Jump Trail	Dual Slalom Trail	Kids Pump Track	Linear Pump Track	Non-Linear Pump Track	Skills Park	Skills Trail	Observed Trails Area	Speed Trails Course	Jump Park	BMX Track	Terrain Park	
Natural Areas & Open Spaces	Property 1	F	E	En	En	N/A	Ad	En	Ad	Ad	Ad	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Property 2	Ex	Ex	E	E	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Property 3	N/A	N/A	N/A	Ad	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Developed Parks & Recreation Areas	Property 4	Ad	En	Im	Ad	N/A	Ad	Ad	Ad	Ad	Ad	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Ad
	Property 5	Ad	Ad	Ad	Ad	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Etc.																					
	Etc.																					
Rights-of-Way & Greenways	Property 4	N/A	Ad	Ad	Ad	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Ad	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Property 5	N/A	N/A	N/A	N/A	N/A	N/A	Ad	N/A	N/A	N/A	N/A	Ad	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Etc.																					



PORTLAND OFF-ROAD CYCLING MASTER PLAN

Five Step Analysis:

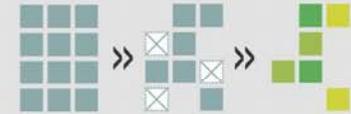
- 1 Fatal Flaw Site Analysis
- 2 Identify Level of Existing Access
- 3 Identify Off-Road Opportunities
- 4 Categorize Opportunities
- 5 List of Properties and Opportunities

A PROCESS FOR IDENTIFYING HIGH POTENTIAL SITES

INVENTORY OF ALL CITY OF PORTLAND OWNED PROPERTIES

Explore opportunities for improvement, enhancement, expansion, and addition of off-road cycling opportunities in the City of Portland.

IDENTIFY SITES WITH THE MOST POTENTIAL BENEFITS



1 FATAL FLAW SITE ANALYSIS

>> ANALYZE FOR ACCESSIBILITY, SIZE, TOPOGRAPHY, ENVIRONMENTAL, AND DEVELOPMENT CRITERIA

NATURAL AREAS & OPEN SPACES

Properties that have significant natural resources that need to be protected or managed when allowing for recreation uses.

DEVELOPED PARKS & RECREATION AREAS

Developed parks and recreation areas where the primary management goal is recreation.

RIGHTS-OF-WAY & GREENWAYS

Rights-of-way and Greenways defined as more linear areas with a length-to-width ratio of at least 4:1, where the primary management goals are utilities, transportation, recreation, or aesthetics.

2 IDENTIFY LEVEL OF EXISTING ACCESS

SITES WITH EXISTING OR PROPOSED TRAILS

Including designated trails for off-road cycling, walking, or other uses.

UNDISTURBED SITES

3 IDENTIFY OFF-ROAD OPPORTUNITIES

>> EVALUATE OFF-ROAD OPPORTUNITIES BASED ON CRITERIA SPECIFIC TO EACH FACILITY TYPE

TRAILS

- > TRAIL WIDTH
- > LENGTH
- > ELEVATION CHANGE
- > TOPOGRAPHY

BIKE PARKS

- > SIZE
- > GRADE
- > ACCESS
- > AMENITIES

TRAILS

- > OPERATIONS REQUIREMENTS
- > ENVIRONMENTAL SENSITIVITY
- > ELEVATION CHANGE
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4 CATEGORIZE OPPORTUNITIES

>> EACH OPPORTUNITY WILL BE CATEGORIZED BY LEVEL OF INTENSITY AND LEVEL OF CONSTRAINT

LEVEL OF INTENSITY

- IMPROVEMENT
- ENHANCEMENT
- EXPANSION
- ADDITION

LEVEL OF CONSTRAINT

- LOW
- MEDIUM
- HIGH

Based on the City's Natural Resources Combined Rankings GIS map. Uses wetlands, streams, slope, soil infiltration, special habitat areas, and other variables to determine environmentally sensitive areas.

5

LIST OF CANDIDATE PROPERTIES & OFF-ROAD CYCLING OPPORTUNITIES





PORTLAND OFF-ROAD CYCLING MASTER PLAN

1

Fatal Flaw Site Analysis

- Remove sites with constraints
- Remove sites with constraints that are inappropriate for off-road cycling.
- GIS analysis where information is available, some quantitative analysis.



PORTLAND OFF-ROAD CYCLING MASTER PLAN

1

Fatal Flaw Site Analysis

Criteria	Description
Accessibility	Inaccessible sites such as islands and other sites that currently have no public access will be removed from consideration.
Size	Sites with less than 2,500 square feet of open space will be removed (i.e., the minimum space required for the smallest off-road facility type).
Topography	Sites with extremely steep topography, i.e., sites with an average grade of more than 70% should be avoided because of difficulty to access the site and the potential for disturbance to destabilize the slope.
Environmental	Sites with significant presence of water resources, wetlands, riparian areas or other significant environmental constraints, such as with high hazard (flood risk, steep slopes, poorly infiltrating soils).
Development	Sites that are already fully developed and not being considered for reprogramming, e.g., gardens, cemeteries, etc. It is important that this analysis does not exclude sites that are currently programmed but that the City would consider reprogramming space from other uses (e.g., an under-utilized tennis court in an existing city park).



PORTLAND OFF-ROAD CYCLING MASTER PLAN

1

Fatal Flaw Site Analysis



A PROCESS FOR IDENTIFYING HIGH POTENTIAL SITES

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IDENTIFY SITES WITH THE MOST POTENTIAL BENEFITS



1 FATAL FLAW SITE ANALYSIS

>> ANALYZE FOR ACCESSIBILITY, SIZE, TOPOGRAPHY, ENVIRONMENTAL, AND DEVELOPMENT CRITERIA

NATURAL AREAS & OPEN SPACES

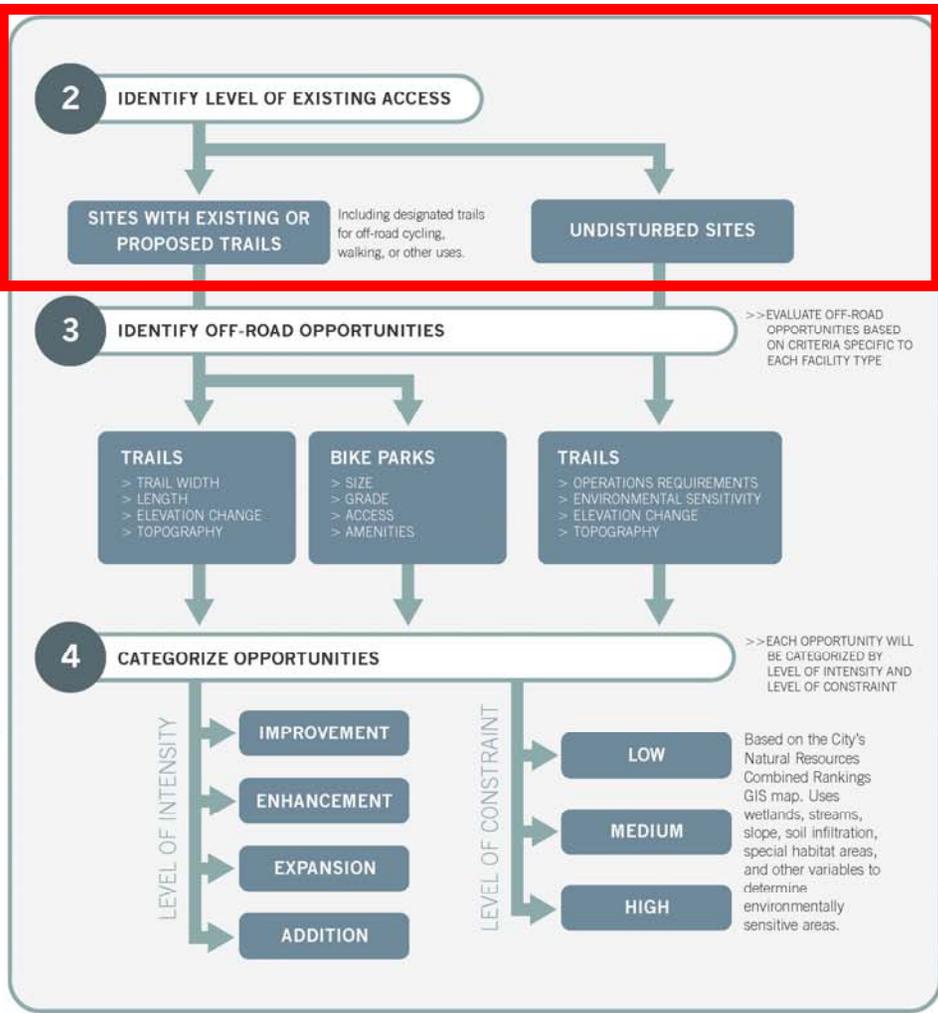
Properties that have significant natural resources that need to be protected or managed when allowing for recreation uses.

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5

LIST OF CANDIDATE PROPERTIES & OFF-ROAD CYCLING OPPORTUNITIES





PORTLAND OFF-ROAD CYCLING MASTER PLAN

2

Identify Level of Existing Access

Four categories of access:

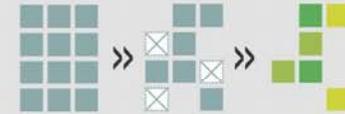
- Purpose-built off-road cycling trails
 - Purpose-built hiking trails
 - Informal hiking trails
- Areas without trail access

A PROCESS FOR IDENTIFYING HIGH POTENTIAL SITES

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UNDISTURBED SITES

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LIST OF CANDIDATE PROPERTIES & OFF-ROAD CYCLING OPPORTUNITIES





PORTLAND OFF-ROAD CYCLING MASTER PLAN

3 Identify Off-Road Opportunities

- Trail opportunities
- Bike park opportunities



PORTLAND OFF-ROAD CYCLING MASTER PLAN

	Sites with Existing Trail Access	Sites with no Existing Trail Access
Cross-Country Trails		
Surface Type	Natural surface trails	n/a
	<u>Criteria</u> Existing Trail Width	<u>Criteria</u> Operations Requirements, Environmental Sensitivity
Wide Trails / Service Roads	>10'	Maintenance and service access required, suitable for less sensitive locations.
Mid-Width Trails	6'-10'	Maintenance and service access required, suitable for less sensitive locations.
Narrow Trails	3'-6'	Maintenance and service access required, suitable for less sensitive locations.
Single track Trails	1'-3'	Hand built trail construction required, most suitable for more sensitive locations
Gravity Trails		
	<u>Criteria</u> Minimum Length (miles), minimum elevation change (feet), topography	<u>Criteria</u> Minimum elevation change (feet), topography
Downhill Trail	0.25, 100, mountainous/steep	100', mountainous/steep
Flow Trail	0.5, 100, rolling/moderate	100', rolling/moderate
Freeride Trail	0.5, 100, rolling/moderate	100', rolling/moderate
Jump Trail	0.1, 100, rolling/moderate	100', rolling/moderate
Dual Slalom Trail	0.25, 100, rolling/moderate, width for side-by-side riding	100', rolling/moderate, width for side-by-side riding



PORTLAND OFF-ROAD CYCLING MASTER PLAN

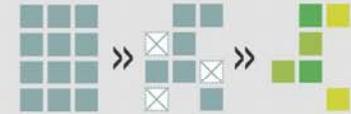
	Size (minimum available unprogrammed or reprogrammable space)	Other Criteria
Kids Facilities (pump track, skills trail)	2,500 SF	Level grade, close proximity to parking/park access, close proximity to restroom (not required, but ideal)
Linear Pump Track	10,000 SF	Level-moderate grade
Non-Linear Pump Track	10,000 SF	Level grade
Skills Park	10,000 SF	-
Skills Trail	8,000 SF	-
Observed Trails Area	2,500 SF	-
Speed Trails Course	12,000 SF	-
Jump Park	30,000 SF	-
Jump Trail	8,000 SF	-
BMX Track	25,000 SF	Level grade
Dual Slalom Track	30,000 SF	Minimum 25-foot elevation change
Terrain Park	30,000 SF	Minimum 25-foot elevation change

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LIST OF CANDIDATE PROPERTIES & OFF-ROAD CYCLING OPPORTUNITIES

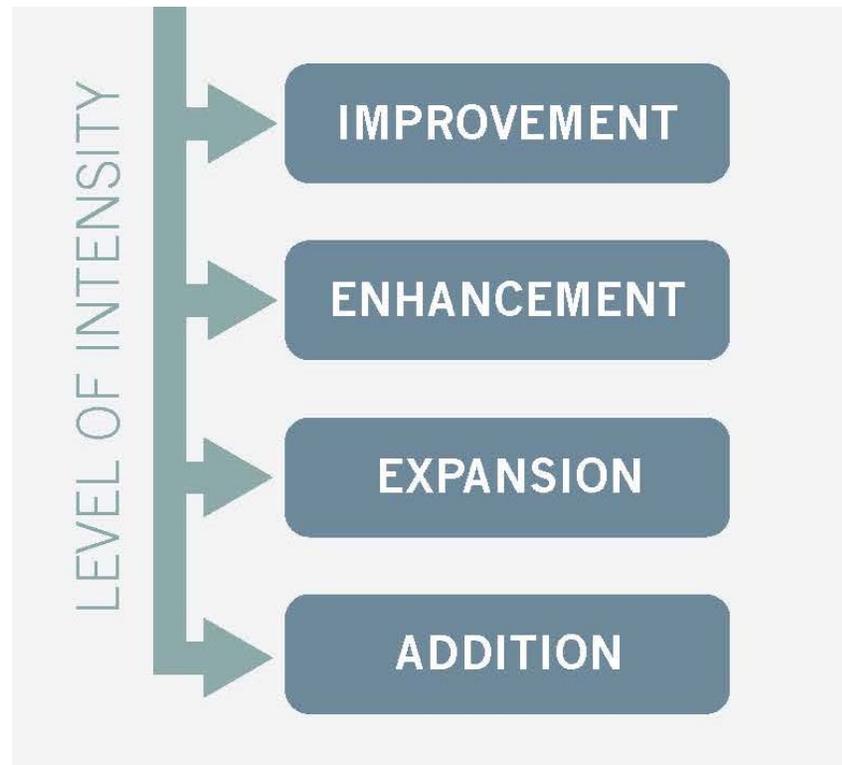




PORTLAND OFF-ROAD CYCLING MASTER PLAN

4

Categorize Opportunities

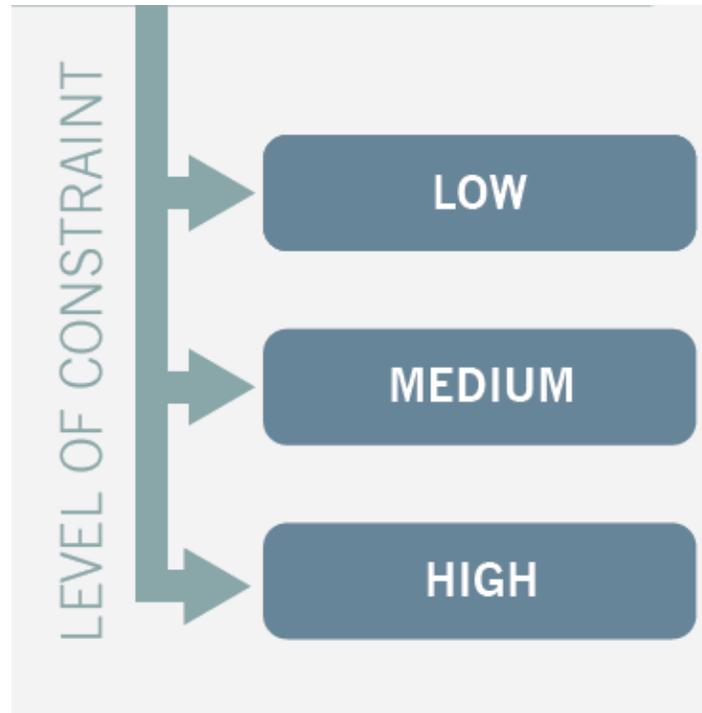




PORTLAND OFF-ROAD CYCLING MASTER PLAN

4

Categorize Opportunities



- Based on the City's Natural Resources Combined Rankings Map.

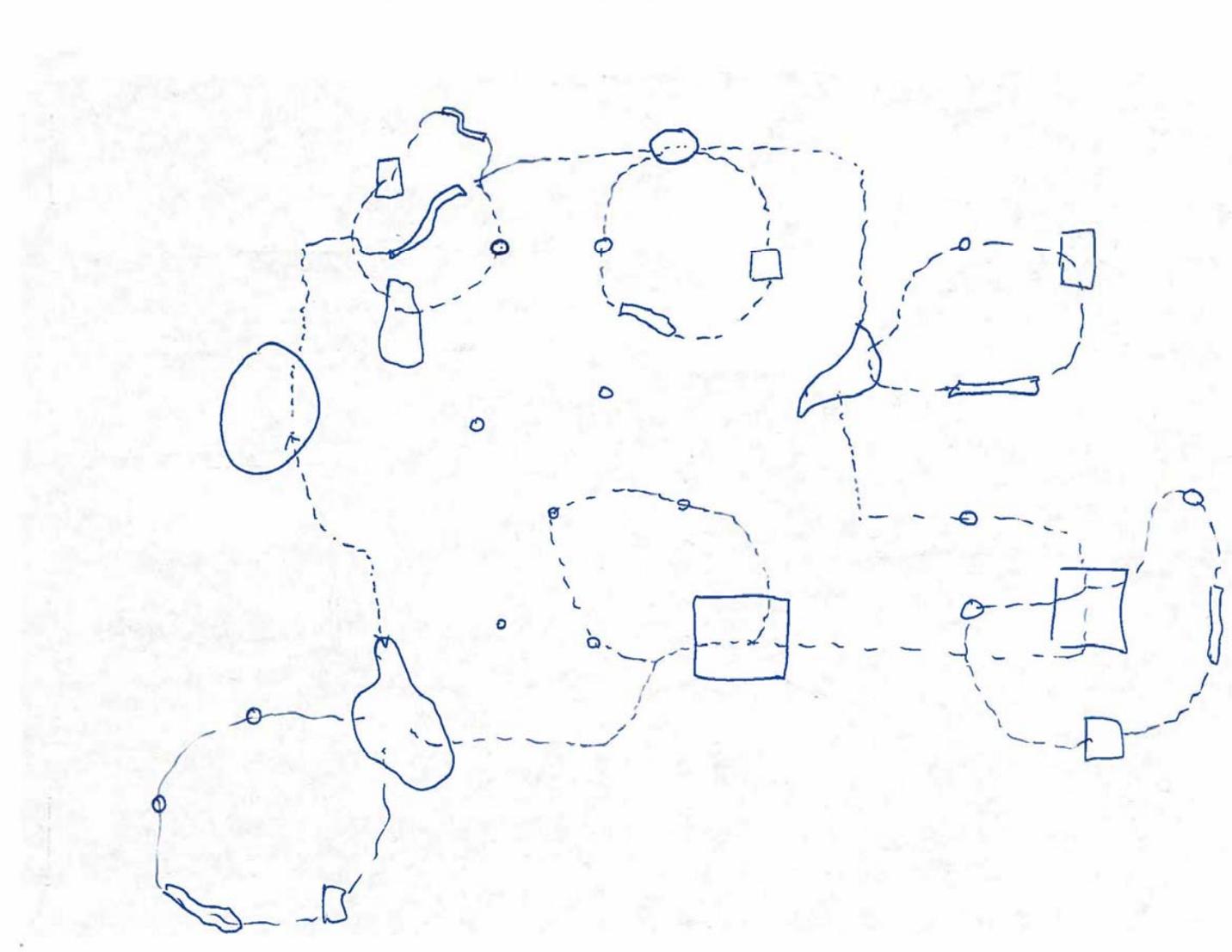


PORTLAND OFF-ROAD CYCLING MASTER PLAN

Future Steps – Network Building



PORTLAND OFF-ROAD CYCLING MASTER PLAN





PORTLAND OFF-ROAD CYCLING MASTER PLAN

Discussion

(15 Minutes)

2



Site Screening Exercise

Example Sites

(20 Minutes)



 **PORTLAND OFF-ROAD
CYCLING MASTER PLAN**

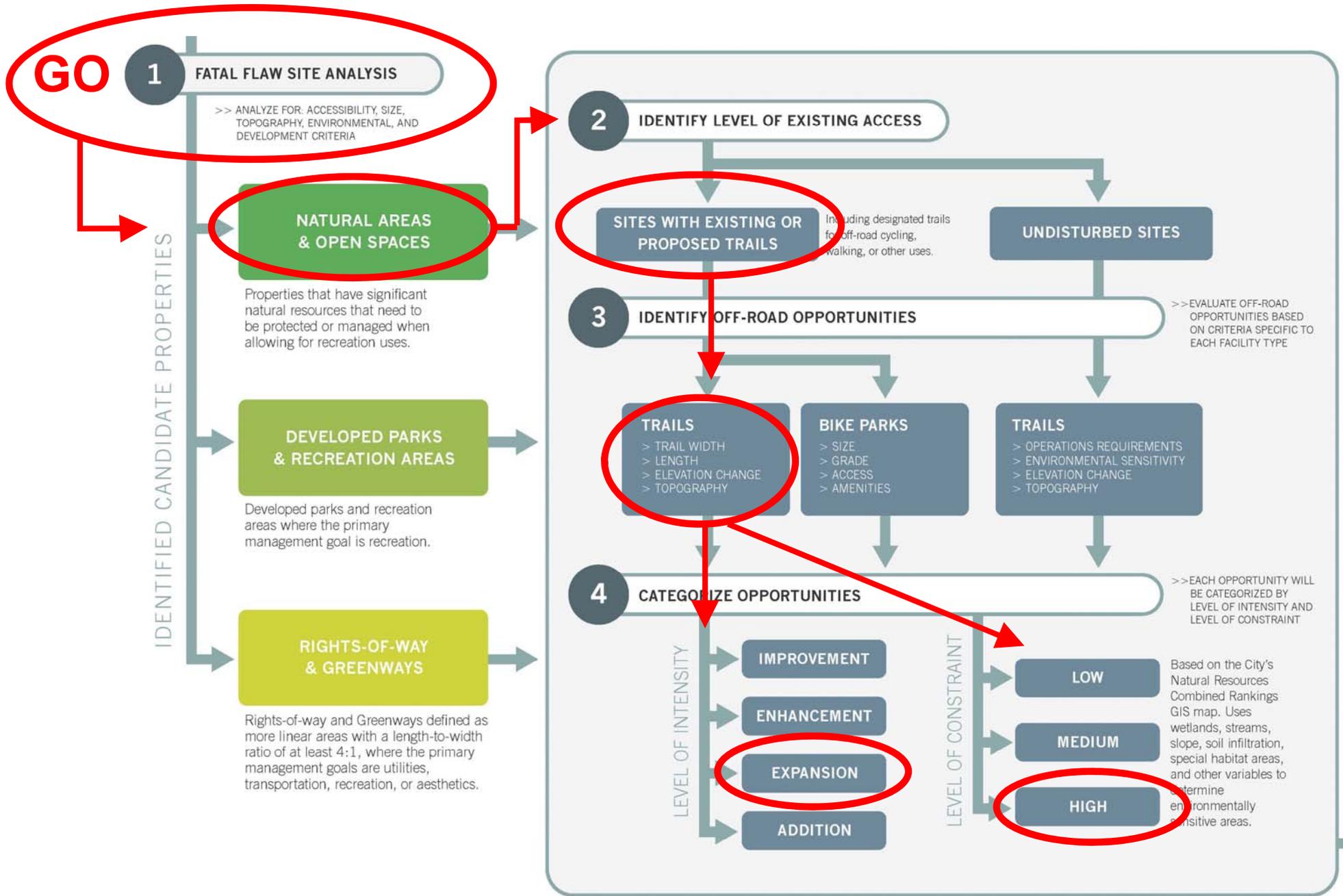
Powell Butte

16160 SE Powell Boulevard

- 611.98 acres
- Meadowland and forest
- Has 10 miles of existing trails, some purpose built for off-road cycling.
- Fair ecological health, high natural resource function and value
- Has favorable topography for expanding off-road trails



Powell Butte





PORTLAND OFF-ROAD
CYCLING MASTER PLAN

Sewallcrest Park

SE 31st & Market

- 5.09 acres
- Developed park
- Mix of unprogrammed grass and trees with developed facilities
- City would consider adding programming to underutilized spaces
- Adjacent to elementary school



Sewallcrest Park

