Agenda



Meet		Tra		etro Technical Advisory Committee (MTAC) and ansportation Policy Alternatives Committee (TPAC) orkshop meeting			
	Place Webi	Time: 1 Place: N Webinar ID		Vednesday, April 15, 2020 D:00 a.m. – 12 noon irtual conference meeting 606 694 105 Password: 557290 Click the link to join the meeting: <u>https://zoom.us/j/606694105?pwd=R2IORVVxS0dPTFF0SDF6T205N2Zodz09</u>			
	Or Te	lepho	one	669 900 6833 or toll free 888 475 4499			
10:00	am	1.		Call To Order, Meeting Format Overview and Introductions	Tom Kloster, Chair		
10:10	am	2.		Committee and Public Communications On Agenda Items			
10:20	am	3.	*	Minutes Review from MTAC/TPAC Feb. 19, 2020 workshop			
10:25	am	4.	*	Regional Mobility Policy Update Background Research Report Purpose: Provide a brief update on the project and report on background research completed by a Portland State University graduate assistant and lead TREC researcher in support of the project.	Kim Ellis, Metro Lidwien Rahman, ODOT Jennifer Dill, TREC Max Nonnamaker, PSU		
11:15	am	5.	*	Metro Parks & Nature Updates Purpose: Understanding the parks and nature bond and its general implementation process.	Beth Cohen Metro		
11:35	am	6.	*	 Housing Bond Measure, Implications and Communications Update Purpose: Emily Lieb will provide an update on implementation progress of the regional affordable housing bond. Jes Larson will provide a brief overview of public opinion research that explored voter support for 'affordable housing in my neighborhood' that can help inform how jurisdictional partners engage the public and stakeholders to support future affordable housing projects across the region. 	Jes Larson Emily Lieb Metro		
12:00	pm	7.		Adjourn	Tom Kloster, Chair		
				Next MTAC Meeting: May 20, 2020 Next TPAC/MTAC Workshop Meeting: June 17, 2020			
				*Material will be emailed with meeting notice To check on building closure or meeting cancellation call 503-797-1766 or email <u>marie.miller@oregonmetro.gov</u>			

Metro respects civil rights

Metro fully complies with Title VI of the Civil Rights Act of 1964 and related statutes that ban discrimination. If any person believes they have been discriminated against regarding the receipt of benefits or services because of race, color, national origin, sex, age or disability, they have the right to file a complaint with Metro. For information on Metro's civil rights program, or to obtain a discrimination complaint form, visit <u>www.oregonmetro.gov/civilrights</u> or call 503-813-7514. Metro provides services or accommodations upon request to persons with disabilities and people who need an interpreter at public meetings. If you need a sign language interpreter, communication aid or language assistance, call 503-797-1890 or TDD/TTY 503-797-1804 (8 a.m. to 5 p.m. weekdays) 5 business days before the meeting. All Metro meetings are wheelchair accessible. For up-to-date public transportation information, visit TriMet's website at <u>www.trimet.org</u>.

Thông báo về sự Metro không kỳ thị của

Metro tôn trọng dân quyền. Muốn biết thêm thông tin về chương trình dân quyền của Metro, hoặc muốn lấy đơn khiếu nại về sự kỳ thị, xin xem trong <u>www.oregonmetro.gov/civilrights</u>. Nếu quý vị cần thông dịch viên ra dấu bằng tay, trợ giúp về tiếp xúc hay ngôn ngữ, xin gọi số 503-797-1890 (từ 8 giờ sáng đến 5 giờ chiều vào những ngày thường) trước buổi họp 5 ngày làm việc.

Повідомлення Metro про заборону дискримінації

Metro з повагою ставиться до громадянських прав. Для отримання інформації про програму Metro із захисту громадянських прав або форми скарги про дискримінацію відвідайте сайт <u>www.oregonmetro.gov/civilrights</u>. або Якщо вам потрібен перекладач на зборах, для задоволення вашого запиту зателефонуйте за номером 503-797-1890 з 8.00 до 17.00 у робочі дні за п'ять робочих днів до зборів.

Metro 的不歧視公告

尊重民權。欲瞭解Metro民權計畫的詳情,或獲取歧視投訴表,請瀏覽網站 www.oregonmetro.gov/civilrights。如果您需要口譯方可參加公共會議,請在會 議召開前5個營業日撥打503-797-

1890(工作日上午8點至下午5點),以便我們滿足您的要求。

Ogeysiiska takooris la'aanta ee Metro

Metro waxay ixtiraamtaa xuquuqda madaniga. Si aad u heshid macluumaad ku saabsan barnaamijka xuquuqda madaniga ee Metro, ama aad u heshid warqadda ka cabashada takoorista, booqo <u>www.oregonmetro.gov/civilrights</u>. Haddii aad u baahan tahay turjubaan si aad uga qaybqaadatid kullan dadweyne, wac 503-797-1890 (8 gallinka hore illaa 5 gallinka dambe maalmaha shaqada) shan maalmo shaqo ka hor kullanka si loo tixgaliyo codsashadaada.

Metro의 차별 금지 관련 통지서

Metro의 시민권 프로그램에 대한 정보 또는 차별 항의서 양식을 얻으려면, 또는 차별에 대한 불만을 신고 할 수<u>www.oregonmetro.gov/civilrights.</u> 당신의 언어 지원이 필요한 경우, 회의에 앞서 5 영업일 (오후 5시 주중에 오전 8시) 503-797-1890를 호출합니다.

Metroの差別禁止通知

Metroでは公民権を尊重しています。Metroの公民権プログラムに関する情報
 について、または差別苦情フォームを入手するには、www.oregonmetro.gov/
 civilrights。までお電話ください公開会議で言語通訳を必要とされる方は、
 Metroがご要請に対応できるよう、公開会議の5営業日前までに503-797 1890(平日午前8時~午後5時)までお電話ください。

ការម

Metro

ការគោរពសិទិធលរងយស់ ។ សំរាប់ព័ត៌មានអំពីកមមិរីសិទិធលរងរយស់ Metro ឬដេម៊ីធទួលពាក្យបណ្ដើរើសអេងីសូមចូលទស្សនាគេហទំព័រ

<u>www.oregonmetro.gov/civilrights</u>^q

បេណើកអ**ន**រភូវការអ**ន**បកប្រែភាសានៅពេលអងគ

របងុំសាធារណៈ សូមទូរស័ព**ទ**កលេខ 503-797-1890 (ម៉ោង 8 រពីកងល់ម៉ោង 5 ល្ងាច ៤**ងឆា**ង៊ីរ) ប្រាំពីរថៃង

ថៃរភាភីរ មុនថៃរយដុំដេម៌ិ៍អាចឲ្យគេសម្រួលតាមសំណេរប៊ស់លោ[ំ]កអន**ក**

إشعارب عدالهت مي يز من Metro

تحترم Metro الحقوقالمدنية تللمزيد من المعلومات حولبرنامج Metroلوحقوقالمدنية أو لإيداع ش كوى ضلابتم ييزي رجى زيارة الموقع الإلكتروني www.oregonmetro.gov/civilrights. إن كانت بحاجة إلى مساعدة في اللغة، يجبعليك الاتصال مقدم بكرق الماتف 1890-797-50 من الساعة 8 صباحاً حتى الساعة 5 مساءاً ، أي ام الاثنين إلى الجمعة في بل خطىة () أيام عمل من موعد الاجتماع.

Paunawa ng Metro sa kawalan ng diskriminasyon

Iginagalang ng Metro ang mga karapatang sibil. Para sa impormasyon tungkol sa programa ng Metro sa mga karapatang sibil, o upang makakuha ng porma ng reklamo sa diskriminasyon, bisitahin ang <u>www.oregonmetro.gov/civilrights.</u> Kung kailangan ninyo ng interpreter ng wika sa isang pampublikong pulong, tumawag sa 503-797-1890 (8 a.m. hanggang 5 p.m. Lunes hanggang Biyernes) lima araw ng trabaho bago ang pulong upang mapagbigyan ang inyong kahilingan.Notificación de no discriminación de Metro.

Notificación de no discriminación de Metro

Metro respeta los derechos civiles. Para obtener información sobre el programa de derechos civiles de Metro o para obtener un formulario de reclamo por discriminación, ingrese a <u>www.oregonmetro.gov/civilrights</u>. Si necesita asistencia con el idioma, llame al 503-797-1890 (de 8:00 a. m. a 5:00 p. m. los días de semana) 5 días laborales antes de la asamblea.

Уведомление о недопущении дискриминации от Metro

Metro уважает гражданские права. Узнать о программе Metro по соблюдению гражданских прав и получить форму жалобы о дискриминации можно на вебсайте <u>www.oregonmetro.gov/civilrights.</u> Если вам нужен переводчик на общественном собрании, оставьте свой запрос, позвонив по номеру 503-797-1890 в рабочие дни с 8:00 до 17:00 и за пять рабочих дней до даты собрания.

Avizul Metro privind nediscriminarea

Metro respectă drepturile civile. Pentru informații cu privire la programul Metro pentru drepturi civile sau pentru a obține un formular de reclamație împotriva discriminării, vizitați <u>www.oregonmetro.gov/civilrights.</u> Dacă aveți nevoie de un interpret de limbă la o ședință publică, sunați la 503-797-1890 (între orele 8 și 5, în timpul zilelor lucrătoare) cu cinci zile lucrătoare înainte de ședință, pentru a putea să vă răspunde în mod favorabil la cerere.

Metro txoj kev ntxub ntxaug daim ntawv ceeb toom

Metro tributes cai. Rau cov lus qhia txog Metro txoj cai kev pab, los yog kom sau ib daim ntawv tsis txaus siab, mus saib <u>www.oregonmetro.gov/civilrights</u>. Yog hais tias koj xav tau lus kev pab, hu rau 503-797-1890 (8 teev sawv ntxov txog 5 teev tsaus ntuj weekdays) 5 hnub ua hauj lwm ua ntej ntawm lub rooj sib tham.



2020 Metro Technical Advisory Committee (MTAC) and Transportation Policy Alternatives Committee (TPAC) workshop meetings Work Program As of 4/8/2020

February 19, 2020 – TPAC/MTAC Workshop	April 15, 2020 – TPAC/MTAC Workshop – Virtual mtg.		
Comments from the Chair	Comments from the Chair		
 <u>Agenda Items</u> Regional Emergency Transportation Routes (ETR)	 <u>Agenda Items</u> Regional Mobility Policy Update Background Research		
Update-Draft Criteria and Methodology (Kim Ellis,	Report (Kim Ellis, Metro/Jennifer Dill, TREC/Max		
Metro/Laura Hanson, RDPO/Thuy Tu, Thuy Tu	Nonnamaker, PSU/ Lidwien Rahman/ ODOT; 45 min) Metro Parks & Nature Updates (Beth Cohen; 25 min) Housing Bond Measure, Implications and		
Consulting/ Allison Pyrch, Salus Resilience; 45 min) Regional Barometer (Cary Stacey, 30 min) Regional Transportation Safety Discussion (McTighe;	Communications Update (Emily Lieb/Jes Larson,		
Mickelberry, 30 min)	Metro; 25 min)		
 June 17, 2020 – TPAC/MTAC Workshop <u>Comments from the Chair</u> <u>Agenda Items</u> Jurisdictional Transfer Framework update (John Mermin; 60 min) Regional Mobility Policy Update (Kim Ellis, Metro/Lidwien Rahman, ODOT; 60 min) 	August 19, 2020 – TPAC/MTAC Workshop <u>MTAC/TPAC meeting called if needed</u>		
 October 21, 2020 – TPAC/MTAC Workshop Comments from the Chair Agenda Items Regional Emergency Transportation Routes (ETR) Update-Draft ETR Routes and Report (Kim Ellis, Metro/Laura Hanson, RDPO/Thuy Tu, TTU Consulting; 60 min) Annual Air Quality Year-in-Review (Grace Cho, Metro/Karen Williams, Cory Ann Wind, DEQ; 45 min) 	December 16, 2020 – TPAC/MTAC Workshop <u>Comments from the Chair</u> <u>Agenda Items</u> • Best Practices and Data to Support Natural Resources Planning (Metro Parks and Metro Planning Staff; 2 hours)		

TPAC/MTAC workshops held every other month starting February on the 3rd Wednesday of the month from 10:00 a.m. to 12 p.m.

For agenda and schedule information, call 503-797-1766 or e-mail marie.miller@oregonmetro.gov

In case of inclement weather, call 503-797-1700 by or after 6:30 a.m. for building closure announcements.

2020 Metro Technical Advisory Committee (MTAC) Work Program As of 4/8/2020

January 15, 2020 – MTAC Meeting	March 18, 2020 – MTAC Meeting CANCELLED		
 <u>Agenda Items</u> <u>Missing Middle Housing/HB 2001 implementation</u> (Oregon Department of Land Conservation & Development staff, Ethan Stuckmayer; 30 min) Beaverton's Housing Options Project (Anna Slatinsky, 40 min) Portland's Residential Infill Project (Tom Armstrong, 40 min) 	 <u>Comments from the Chair</u> Fatal Crashes Update (Lake McTighe) <u>Agenda Items</u> Metro Parks & Nature Updates (Jonathan Blasher; 45 min) Housing Bond Measure, Implications and Communications Update (Jes Larson and Emily Lieb, Metro; 45 min) 		
May 20, 2020 – MTAC Meeting <u>Comments from the Chair</u> <u>Agenda Items</u> • Prosper Portland Economic Development Investments & Programs (Tory Campbell & Lisa Abuaf, 45 min) • Transportation Regional Investment Measure Update (Andy Shaw, Metro; 45 min)	 July 15, 2020 – MTAC Meeting <u>Comments from the Chair</u> <u>Agenda Items</u> Regional Mobility Policy Update (Kim Ellis, Metro/ Lidwien Rahman, ODOT, 30 min) 2040 Planning and Development Grants Program (Lisa Miles/Tim O'Brien; 30 min) Multnomah County Drainage Districts and Levee Ready Columbia (Colin Rowan/Mark Wilcox, MCDD and US Army Corps of Engineers TBD, 45 min) 		
 September 16, 2020 – MTAC Meeting <u>Comments from the Chair</u> <u>Agenda Items</u> Regional Mobility Policy Update (Kim Ellis, Metro/Lidwien Rahman, ODOT, 30 min) Missing Middle Housing/HB 2001 implementation updates(Oregon Department of Land Conservation & Development staff, Ethan Stuckmayer; 30 min) 	November 18, 2020 – MTAC Meeting Comments from the Chair Agenda Items		

MTAC meetings held every other month on the 3rd Wednesday of the month from 10:00 a.m. to 12 p.m. For MTAC agenda and schedule information, call 503-797-1766 or e-mail <u>marie.miller@oregonmetro.gov</u>

In case of inclement weather, call 503-797-1700 by or after 6:30 a.m. for building closure announcements.

Meeting minutes



Meeting: Metro Technical Advisory Committee (MTAC) and Transportation Policy Alternatives Committee (TPAC) workshop meeting

Date/time: Wednesday, February 19, 2020 | 10 a.m. to 12 p.m.

Place: Metro Regional Center, Council chamber

Members and Guests Attending	Affiliate				
Tom Kloster, Chair	Metro				
Jae Douglas	Multnomah Co. Health Dept., Environmental Health				
Katherine Kelly	City of Gresham				
Jeff Owen	TriMet				
Jennifer Donnelly	Department of Land Conservation & Development				
Anne Debbaut	Department of Land Conservation & Development				
Chris Deffebach	Washington County				
Ramsey Weit	Housing Affordability Organization Representative				
Marlee Schuld	City of Troutdale				
Erika Palmer	Washington County, Other Cities				
Lynda David	SW Washington Regional Transportation Council				
Erin Wardell	Washington County				
Mike Foley	STAC				
Jaimie Huff	City of Happy Valley				
Cole Grisham	Oregon Department of Transportation				
Glen Bolen	Oregon Department of Transportation				
Steve Williams	Clackamas County				
Wilson Munoz	TPAC member				
Shaun Brown	Columbia County				
Erica McCormick	Cascade GIS and Consulting				
Kari Schlosshauer	Safe Routes to School Partnership				
Carol Chesarek	Multnomah County Citizen Alternate MTAC				
Adam Barber	Multnomah County				
David Lentzner	Multnomah County Emergency Management				
Brendon Haggerty	Multnomah County Health				
Mike Weston	King City				
Laurie Lebowsky	Washington State Department of Transportation				
Eric Hesse	City of Portland				
Laura Hanson	RDPO				
Thuy Tu	Thuy Tu Consulting				
Allison Pyrch	Salus Resilience				
Metro Staff Attending					
Kim Ellis, Principal Transportation Planner	Jeff Frkonja, Research Center Director				
Lake McTighe, Senior Transportation Planner	Cary Stacey, Project Manager				
Noel Mickelberry, Associate Transportation Planner Eliot Rose, Transportation Tech Strategy					

Marie Miller, TPAC & MTAC Recorder

Jake Lowell, Planning Intern

1. Call to Order and Introductions

Chairman Tom Kloster called the meeting to order at 10 a.m. Introductions were made.

2. Committee and Public Communications on Agenda Items

• Glen Bolen introduced Cole Grisham with the Region 1 Oregon Department of Transportation office, who will serve as interim liaison to MTAC for a temporary period.

3. Minutes Review from January 15, MTAC meeting

No corrections or additions were noted to the January 15, 2020 Metro Technical Advisory Committee (MTAC) meeting.

4. Regional Emergency Transportation Routes (ETR) Update – Draft Criteria and Methodology (Kim Ellis, Metro/Laura Hanson, RDPO/Thuy Tu, Thuy Tu Consulting/Allison Pyrich, Salus Resilience, Erica McCormick, Cascade GIS and Consulting)

The Regional Emergency Transportation Routes (ETR) update project team presented an overview of the project and the draft evaluation framework criteria for feedback. The project is updating regional emergency transportation routes designated for the five-county Portland-Vancouver metropolitan region, which includes Clackamas, Columbia, Multnomah and Washington counties in Oregon and Clark County in Washington. The routes were last updated in 2006.

The project approach was reported as:

- Step 1: Define ETRs
- Step 2: Compile available potential RETR routes
- Step 3: Develop and refine evaluation framework for RETR update
- Step 4: Evaluate potential RETRs
- Step 5: Report back results
- Step 6: Refine and recommend RETR routes

The timeline of the project work plan was provided. In Spring-Winter 2019, the team reviewed the policy framework and best practices, collected data, and engaged with the ETR workgroup. Work continues in Winter 2019- Spring 2020 to design the regional ETR refinement process. The project team compiled ETR definitions, criteria and methodologies based on recommendations and best practices from the workgroup. Briefings on draft criteria and recommended refinement process are scheduled from February through early May 2020 to seek feedback and validation for the draft criteria and refinement process. This Summer 2020, the project team will apply the validated criteria and refinement process to develop proposed designations of updated regional ETRs. By Fall 2020, the final regional ETR maps and documentation will be prepared for endorsement by policymakers, to be completed by February 2021. A dissemination workshop will be held in the first quarter of 2021 to share the updated regional ETR maps, data and project recommendations for follow-on work.

Critical infrastructure and essential facilities were shown grouped into three categories: State/Regional, County/City, and Community/Neighborhood. Critical infrastructure in this case includes lifelines other than the roadway transportation network, such as water, wastewater, electricity, fuel, communications, and intermodal transportation (e.g., transit, rail, air, and waterway). Essential facilities include hospitals and health care facilities; Emergency Operation Centers (EOCs); police and fire; public works facilities; state, regional, and local points of distribution (PODs); designated debris management sites; and shelters and community centers.

The project team defined ETRs as routes used during and after a major regional emergency or disaster to move resources and materials including essential supplies, debris, fuel, equipment, and personnel (first responders) and patients within and across jurisdictional boundaries. The team presented four tiers of ETRs that have emerged from review of existing routes:

1. Statewide Seismic Lifeline Routes (SSLRs)

State-owned roadways pre-designated by the state as priority transportation routes in Oregon and Washington. SSLRs provide key emergency response connections between regions within Oregon and Washington. Their primary function is to provide "a network of streets, highways, and bridges to facilitate emergency services response and to support rapid economic recovery after a disaster".

2. Regional Emergency Transportation Routes (RETRs)

A network of state- and locally owned (county and city) roadways pre-designated by the region as priority transportation routes that can best provide connectivity for emergency operations in the region in the event of a major disaster or earthquake. These routes are priorities targeted during an emergency for rapid damage assessment and debris clearance and used to facilitate life-saving and life-sustaining response activities throughout the region.

3. Local Emergency Transportation Routes (LETRs)

Locally owned roadways, pre-designated by local agencies (county and city) as priority transportation routes intended to provide a local network of arterials, collector and local streets that will connect LERR to RETRs. They are generally used to connect more City/County critical infrastructure and essential facilities either directly or via RETRs.

4. Local Emergency Response Routes (LERRs)

Locally owned roadways intended to provide a network of streets to facilitate prompt response to routine fire, police, and medical emergencies within a single jurisdiction. LERRs also provide a connection from LETRs to Community/Neighborhood facilities and services, such as shelters, medical facilities, and community PODs. These facilities are often not pre-designated and can be defined based on the community needs, scale of the disaster and resulting damage.

The draft regional ETRs evaluation criteria were presented with information about each of the four categories of criteria: (1) connectivity and access, (2) route resilience, (3) route characteristics and (4) community and equity.

The project team also presented emerging recommendations for future work including:

- Plan for management of ETRs and transition from emergency response to recovery;
- Conduct vulnerability assessments of ETRs considering all hazards;
- Integrate ETRs in future transportation and emergency planning efforts and plans;
- Develop public information and messaging about ETRs;

- Consider active transportation, such as bike and pedestrian access needs;
- Evaluate jurisdictional boundaries for continuity;
- Address vulnerable populations in more detailed community-based planning.

Comments from the committee:

- Cole Grisham (ODOT) asked how Metro planned to use information from this study. Kim Ellis reported that results will help inform the next update to RTP (due in 2023), including identifying priorities to address needs to increase resilience of the transportation system.
- Adam Barber (Multnomah County) asked if after wildfires triggering landslides was being considered in this study. Allison Pyrch reported that this would likely be recommended for future work as a specific type of hazard most commonly approached with local agencies working on them.
- Jeff Owen (TriMet) noted the good participation from regional partners in this effort. Were there others needed to be contacted? Kim Ellis reported that committee members were encouraged to reach out to public works and emergency management staff in their respective agencies that have been involved with the ETR working group. The project involves cross disciplines involving emergency planning and regional transportation planning with efforts benefiting many levels of planning in the region.
- Jaimie Huff (Happy Valley) asked if the project will include infrastructure modeling to see the effect of changes in the availability of ETRs in the event of a disaster. The team noted that transportation modeling is outside the scope and budget of this project but that recommendations could be made to evaluate such potential effects of a disaster to inform infrastructure upgrades and future resilience and recovery efforts.
- Steve Williams (Clackamas County) noted the City of Portland Bull Run water reservoirs located in Clackamas County, and concern with an emergency response involving an aging bridge that could be damaged affecting accessibility in this area. Allison Pyrch reported the project team is familiar with the vulnerability of the bridge in this area and will consider access to these types of essential facilities as part of the ETR update. Cole Grisham (ODOT) noted that federal funding may soon be available; where States can apply for grant funding for regional priorities. Identifying these types of vulnerabilities as well as having the support from counties, Portland Water Bureau resilience study and other data can help make the case and obtain funding for these types of projects.
- Cole Grisham (ODOT) noted the project study includes Columbia County, outside Metro boundary area raised questions about how has this informed work plans in Columbia County. Laura Hanson noted the county has participated in this project and other RPDO efforts to make the region resilient. The County has a small number of roads that are likely to experience significant impacts. Recommendations for future work including evaluating how the region's waterways can be involved in the event of an emergency or disaster.
- Erin Wardell (Washington County) noted the importance of considering roadway tunnels in the evaluation (i.e. westside) and challenges to landslides in hill areas. It was also noted that people can easily be trapped in local areas where local transportation may not be accessible in emergencies. It was suggested to look at regular occurrences of emergencies encountered in traffic and weather conditions which could provide useful data scenarios to prepare for all emergencies.

- Chairman Kloster (Metro) asked if data on flood maps were useful for emergency planning. Allison noted ODOT working on their climate vulnerability study for transportation system now. However, the region's flood level data and forecasting for future flood areas would prove challenging for Oregon and Washington. Higher flood levels and more frequent flooding could be expected.
- Jaimie Huff (Happy Valley) asked about the criteria with possible separations of biking and walking on emergency transportation routes. Allison Pyrch noted that uses and priorities are being considered for routes, such as freight, bike and pedestrian accessibility, or the possible need to restrict certain routes for emergency response only. The project is concerned with immediate accessibility for getting people home, to work and ongoing work in recovery routes. Future work can involve local agencies and jurisdictions to address bike and pedestrian access needs to support recovery and resiliency efforts.

5. Regional Barometer (Cary Stacey and Jeff Frkonja, Metro)

Cary Stacey and Jeff Frkonja provided information on the Regional Barometer, an online tool that publicly provides information on how the region is doing relative to Metro's six desired outcomes: transportation, economy, ecosystems, climate, communities and equity. It is part of a performance management system called By the Numbers, which will access and communicate how Metro programs support those outcomes. Regional Barometer users will be able to view easy-to-understand facts and figures with accompanying narratives; access links to supplemental information such as relevant strategies, research and reports; and download data for additional analysis.

The project purpose is to improve Metro decision-making through accountability, transparency and results.

- Increasing capacity of Metro's staff and supporting impactful work
- Increasing capacity of community-based organizations and community leaders to advocate for and target investments and services relative to their goals
- Building public trust and solidifying Metro's mandate
- Increasing data-driven policymaking region-wide
- Expanding regional data capacity and accessibility. Metro plans to convene regional partners for future strategic planning on this topic—please stay tuned for those conversations.

Ms. Stacey noted the project phases planned, beginning with the website launch by March 31, 2020. The tool is made public with existing datasets and strategic data plan. During phase 2, a proposed process will develop composite indicators, performance targets and benchmarks; conduct robust community engagement; and build out strategic data plan. The committee was shown the Regional Barometer website pages not yet available to the public for phase 1.

Comments from the committee:

• Jeff Owen asked how frequently the data is expected to change. Ms. Stacey and Mr. Frkonja reported the data received varied by source, but internal standards provide for quarterly updates of data. When asked how data included from Clark County was utilized, this was reported as part of the data tool that will have more long-term discussions with partnerships from the different agencies.

- Ramsey Weit asked if the data collection lines were maxed out (full) or available to take more data tied to strategic planning. Ms. Stacey reported there is capacity to add more data to the site and are open to input.
- Steve Williams asked if the documentation was planned beyond sources of data and calculation used for results. Agencies and jurisdictions might use similar approaches to analyze for measureable results and need specific data. It was noted more is being developed to fully document the data, but there are sometimes limitations to quotations from sources. It was acknowledged the data was downloadable.
- Carol Chesarek acknowledges the easy access to data with the tool. It was suggested that similar to what the City of Portland has, showing the percent of population to walking distance to parks would be useful. It was noted under environmental hazards only heat and flooding seems to be listed. It was suggested that data on landslides, earthquakes and wildfires be added to the list of hazardous situations.
- Eric Hesse asked if the agencies and jurisdictions will have opportunities to prioritize the data for future analysis and regional strategy. It was agreed that with downloadable data, frequent updates and further discussion on the importance of implementing relevant data this was possible.

6. Regional Transportation Safety Discussion (Lake McTighe, Noel Mickelberry, Metro/ Kari Schlosshauer, Safe Routes to School Partnership)

Lake McTighe, Noel Mickelberry and Kari Schlosshauer provided an update on traffic fatalities and serious injuries in the region, provided examples of regional activities focused on safety, an overview of Safe Routes to School Program activities and provided an opportunity for participants to discuss additional ways that Metro and the technical committees could highlight safety.

A Draft annual factsheet with data from 2018 was presented that show the trend for traffic fatalities and serious injuries trending upwards and indicate the region is not on track to meet Vision Zero goals. The Draft fact sheet included information on contributing factors. Consistent with previous years, speed and impairment were two of the leading factors in fatal and serious injury crashes in 2018. Aggressive behavior and failure to yield are also common causes. It was noted that there are typically several factors that contribute to crashes. Other factors not included in crash statistics, such as economic factors, roadway design, vehicle size and education also influence the number and severity of crashes.

Examples of Metro efforts underway and planned to address safety include:

- Safe Routes to School programs and policy committee
- Regional Transportation Plan: 132 safety projects and 551 projects with a safety benefit planned
- Regional funding prioritizing safety projects: RFFA safety is key criterion, possible regional transportation investment measure - corridors and safe and livable streets programs
- Supporting new speed setting methods at ODOT
- Aligning Metro equity actions to safety actions

 Tracking progress: Monthly deadly crash updates at TPAC, annual fact sheet, annual update to JPACT, annual reports to ODOT and FHWA on targets, and safety data on Regional Barometer

Kari Schlosshauer provided information on Safe Routes to School (SRTS) programs. Dedicated funds to SRTS were launched last year with over \$1 million from seven organizations, agencies and local jurisdictions. Through partnerships, every school district in the region now has a SRTS coordinator or dedicated district staff member for the program. In addition, a Policy Advisory Committee is being developed this year to discuss safe streets around schools.

A slide showing how other cities and countries were making progress was presented. Examples and best practices from these areas help Metro develop strategies for improving on safety issues locally. Tools from the new Designing Livable Streets and Trails Guide will be included in safety strategies. It was noted that many cities plan "heart zones" around schools, which are car-free zones for safety with school buses and drop-off/pick-ups for students. Adapting similar planning and aligning to infrastructure needs in our region's planning efforts will be part of safety discussions.

Comments from the committee:

- Katherine Kelly appreciated the formation of the Safe Routes to School Policy Advisory Committee. Given the impact of individual names impacted with fatalities and serious crashes read each month at TPAC, it was suggested the same be provided to JPACT as well. MTAC could also receive this information, with the emphasis on individual people as more than a statistic.
- Ramsey Weit commented from the communication viewpoint these graphs and trends in data are not encouraging. It was suggested that stories to encourage better outcomes from strategies, steps taken that show what is making improvements, and evaluations that show results of steps taken with specific safety measures included in updates and presentations.
- Carol Chesarek noted that some of the graphs gave confusing data with recent data of fatalities going upward, while trends appear to go downward, partly used from previous (older) data. This could lend interpretation to more positive messages.
- Cole Grisham noted that the safety measures were useful. It was suggested that other programs outside SRTS, and outside Metro, could benefit on efforts with this data.

7. Adjourn

There being no further business, meeting was adjourned by Chair Kloster at noon. Respectfully submitted, Marie Miller, MTAC and TPAC Recorder

Attachments to the Public Record, MTAC and TPAC workshop meeting, February 19, 2020

ltem	DOCUMENT TYPE	Document Date	DOCUMENT DESCRIPTION	DOCUMENT NO.
1	Agenda	02/19/2020	02/19/2020 MTAC and TPAC workshop meeting agenda	021920M-01
2	MTAC Work Program	01/29/2020	MTAC Work Program, as of 01/29/2020	021920M-02
3	MTAC/TPAC Workshop Work Program	02/11/2020	MTAC/TPAC workshop Work Program, as of 02/11/2020	021920M-03
4	Minutes	01/15/2020	Meeting minutes from January 15, 2020 MTAC meeting	021920M-04
5	Memo	02/12/2020	TO: MTAC & TPAC members and interested parties From: Kim Ellis, Metro Project Manager and Laura Hanson, Regional Disaster Preparedness Organization (RDPO) RE: Regional Emergency Transportation Routes (RETRs) Update	021920M-05
6	Handout	Winter 2020	Regional emergency transportation routes (RETR) update	021920M-06
7	Handout	02/11/2020	Regional emergency transportation routes update; Policy and Technical Discussions, 2020-2021	021920M-07
8	Memo	02/11/2020	TO: Laura Hanson, RDPO and Kim Ellis, Metro From: Thuy Tu, Thuy Tu Consulting, LLC/Allison Pyrch, Salus Resilience/Erica McCormick, Cascade GIS & Consulting, LLC RE: Process and Proposed Evaluation Framework for Updating the Regional Emergency Transportation Routes	021920M-08
9	Handout	1/30/2020	Performance management project; Regional Barometer	021920M-09
10	Handout	Feb. 2020	The Regional Barometer; Phase 1 Measures	021920M-10
11	Presentation	02/19/2020	Regional ETR Update Project	021920M-11
12	Presentation	02/19/20	Traffic deaths and serious injuries; update and discussion	021920M-12
13	Handout	Feb. 2020	Annual factsheet: Traffic deaths and serious injuries, 2018	021920M-13
14	Handout	Feb. 2020	Metro average annual safety targets and performance, 2014-2018	021920M-14



Investing in parks and nature April 15th, 2020

What we've done with voter support: 1995 and 2006 bonds

- Natural area land acquisition (\$278 million)
 - 14,000+ acres
 - 100 miles of streams
- Local community investments (\$84 million)
 - Local parks, trails and natural areas
 - Nature in Neighborhood grants
- Metro capital projects (\$33 million)
 - Nature parks
 - Regional trail projects
 - Fish habitat restoration



Approval of 2019 bond

- \$475 million bond measure overwhelmingly approved in November
- Foundational commitments and principles
 - racial equity
 - community engagement
 - climate resilience



Quick review – Six Program Areas

- Land investments and restoration, \$155 million
- Metro park improvements, \$98 million
- Nature in Neighborhoods capital grants, \$40 million
- Local parks and nature projects, \$92 million
- Walking and biking trails, \$40 million
- Complex community projects, \$50 million

Racial equity criteria

Metro staff will work with each jurisdiction to clarify and help meet criteria.

Racial equity criteria

- Focus on communities of color, Indigenous communities, and other historically marginalized groups.
 - Prioritize projects and needs.
 - Document impact of investments.

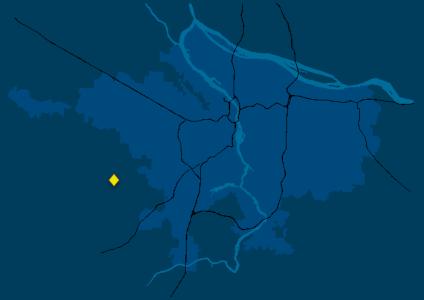
Meaningful engagement criteria

Meaningful engagement criteria

- Strategies to engage communities of color, Indigenous communities, and other historically marginalized groups.
- Inclusion of communities of color, Indigenous communities, and other historically marginalized groups in decision-making/prioritization.
- Documenting engagement.

Acquisition – protecting rare habitat

Quamash Prairie Natural Area





Acquisition – securing headwaters

Chehalem Ridge Natural Area

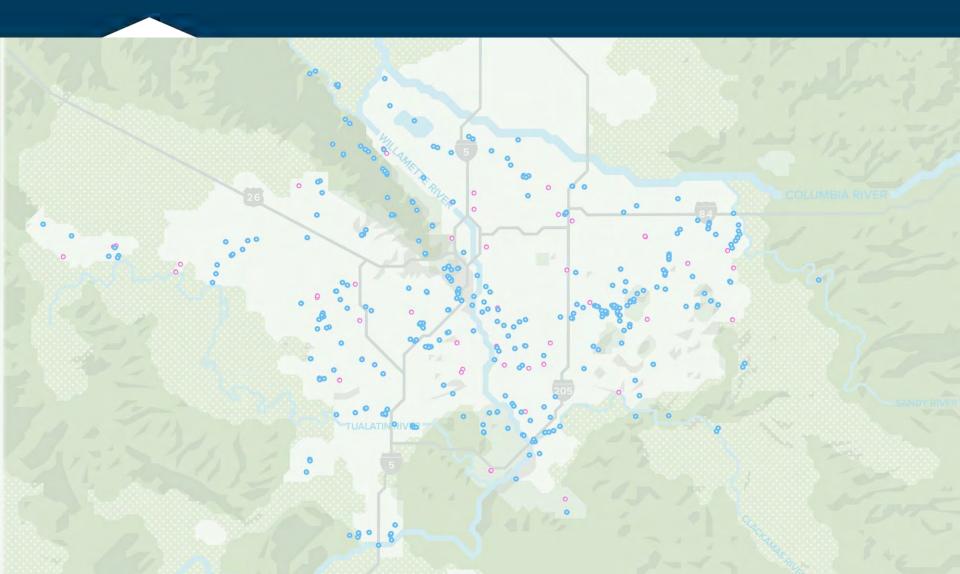


Connecting people to nature

Graham Oaks Natural Area



Investing in communities



Local park investments

Portland – Khunamokwst Park



Nature in Neighborhoods grants Cornelius –

Virginia Garcia Memorial Health Center Green Alley



Nature in Neighborhoods grants

Gresham – Nadaka Nature Park



Complex community projects



Refinement

What is refinement?

when regional partners and community come together to take the big policy goals in the bond measure and turn them into specific actions, programs and criteria

Each program area will have its own refinement process.



Refinement schedule

- November 2019-April 2020: Preparation
- May-October 2020: Alignment
- November 2020-March 2021: Launch
- April 2021 and onward: Innovate



Questions?

Community investments manager

Juan Carlos Ocaña-Chíu

<u>Juan.Carlos.Ocana-</u> <u>Chiu@oregonmetro.gov</u>

Bond refinement team manager

Beth Cohen Beth.Cohen@oregonmetro.gov Subscribe!

oregonmetro.gov/ parksandnaturebond Regional affordable housing bond Implementation update

April 2020



Bond measure framework

\$652.8 million GO bond

3,900 homes and 12,000 people

- At least half sized for families
- 1,600 deeply affordable

5% administrative costs cap

Community oversight





Lead with racial equity

Prioritize people not served by the market

Distribute opportunities throughout region

Long term benefit, good use of public dollars



Work completed in 2019

Metro Work Plan adopted

Community Oversight Committee appointed and launched

Early project commitments

Local engagement and implementation strategies

Intergovernmental agreements



Metro Affordable Housing Bond Phase 1 Projects





"The Mary Ann" Apartments | Downtown Beaverton City of Beaverton Total Units: 54 30% AMI Units: 11 Family Size Units: 29



18000 Webster Road Property Acquisition | City of Gladstone Housing Authority of Clackamas County

Total Units: 45 30% AMI Units: 45 Family Size Units: 0

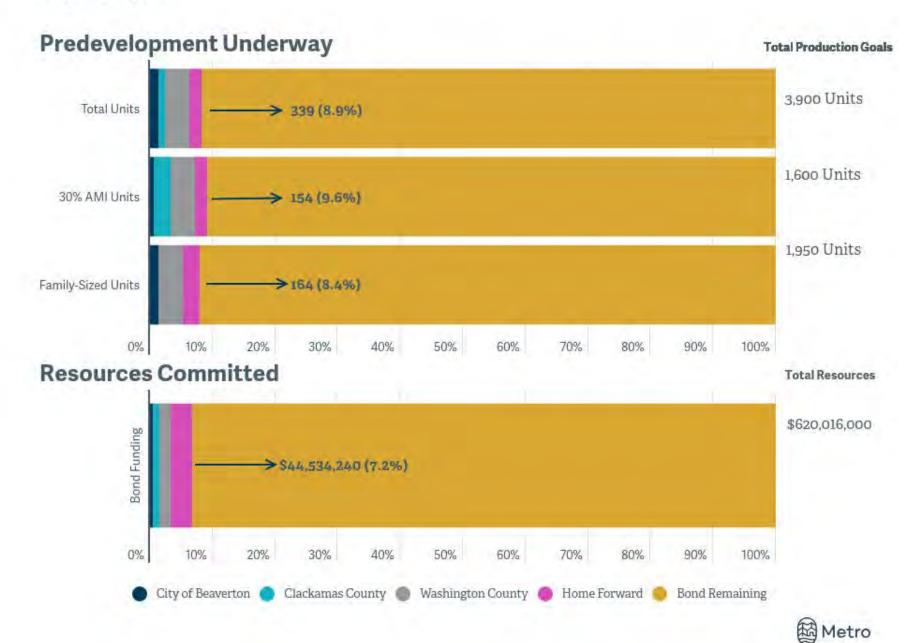


"Dekum Court" Apartments | City of Portland Home Forward Total Units: 160 30% AMI Units: 65 Family Size Units: 80



"72nd and Baylor" Apartments | City of Tigard Housing Authority of Washington County Total Units: 80 30% AMI Units: 33 Family Size Units: 55

July 2019 Update



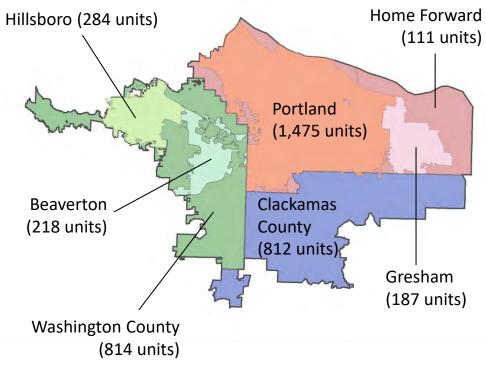
Local Implementation Strategies

Development plan

- Location priorities
- Anticipated number of projects
- Selection criteria/process

Advancing racial equity

- COBID participation goals (20%+)
- Workforce expectations (vary)
- Low-barrier screening
- Affirmative marketing
- Community engagement strategies and expectations



Funding Process

- 1. Local project selection and Metro concept endorsement
- 2. Final approval following project refinement
- 3. Developer agreement and funding disbursement
- 4. Restrictive covenant or regulatory agreement



Operationalizing racial equity

Best practices for operationalizing racial equity in affordable housing

Local implementation strategies and selection criteria

New project outcomes reporting expectations



Solicitations

Recently closed solicitation in Beaverton (\$9M)

Open solicitations in Clackamas Co. (\$40M), Washington Co (\$80M), and Hillsboro (\$18M)

Gresham solicitation expected this week (\$13-18M)

Portland solicitation expected in fall/winter 2020



Oversight Committee



Understanding voter support for affordable housing:

In my neighborhood

DHM Research May 2017



Research purpose

- Understand which messages about creating new affordable housing are most effective
- Ensure that messages about affordable housing resonate in every district and part of the region
- Provide messages that can help elected officials, community partners, and advocates combat NIMBYism in their own communities

Survey methodology

- DHM Research Panel survey: an online tool to understand opinions about regional and statewide policy
- N=430 residents in Clackamas, Multnomah, and Washington Counties; margin of error +/-4.7%
- Open quotas, results weighted to match the demographic makeup of voters in the tri-county region

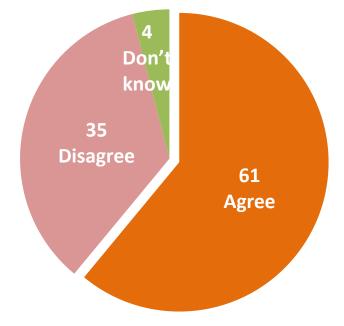
As you recall



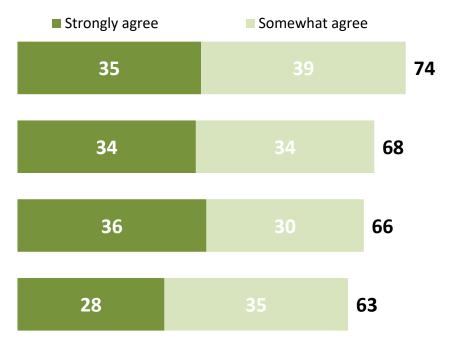
59% of voters supported the housing bond, including a majority of voters in each county.

Yes, in my neighborhood!

"I support building more affordable housing in my neighborhood."



Messages about new housing are strong



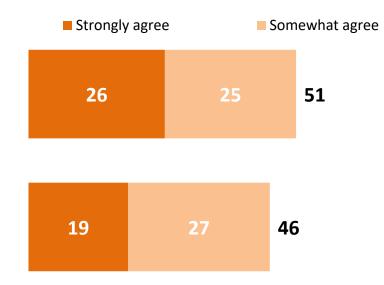
More housing options provide shelter for those in need and keep our neighborhoods safe and enjoyable for everyone.

It makes me feel good to know my neighborhood includes residents of all income levels.

All neighborhoods in our region share responsibility for providing affordable housing, and all neighborhoods should have some affordable options.

Our region is changing as more people move here, which means **the character of some of our neighborhoods will have to change** as we make room.

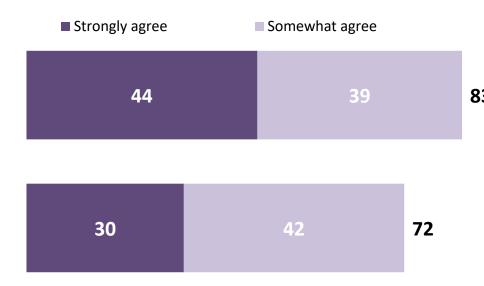
A few messages are less effective



Building affordable housing in my neighborhood will **ensure my children and parents** will be able to live here in the future.

More affordable housing to my neighborhood would support local businesses.

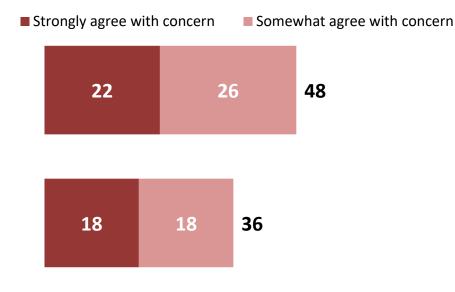
Messages for special circumstances



Affordable housing takes time to plan and build, but it creates permanent housing stability for those in need. I think it is more important to invest in long-term solutions like affordable housing than short-term solutions like shelters.

Some neighborhoods offer more services and amenities, such as access to public transportation, libraries, and health care clinics. It makes sense to build more affordable housing in neighborhoods with services, **even if the land is more expensive**.

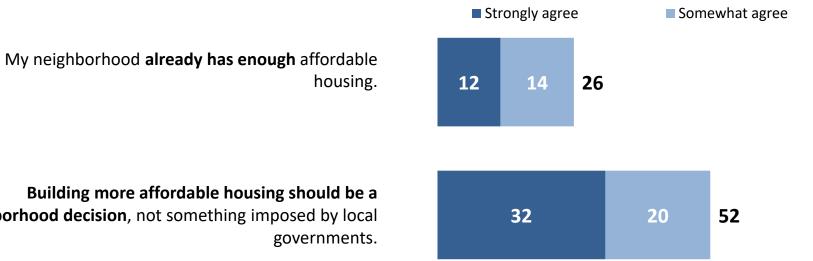
Be mindful of resident concerns



Building more affordable housing in my neighborhood will lower property values for existing residents.

I would **worry about my personal safety** and the safety of my family members if additional affordable housing were built in my neighborhood.

Opportunities to engage



Building more affordable housing should be a neighborhood decision, not something imposed by local

How partners can engage residents

Introduce neighbors to project partners.

Be clear about partner roles and responsibilities.

Use small breakout groups and feedback cards (skip the mic).

Provide direct contact for information, concerns and referrals.



How electeds can engage residents

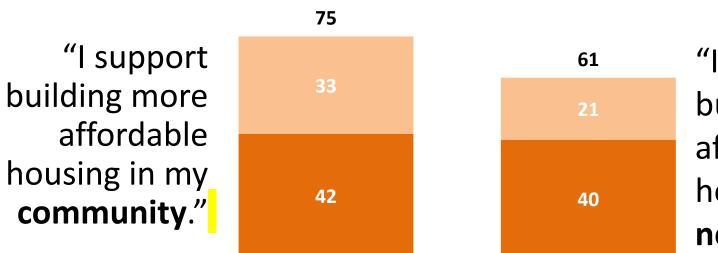
Show how new development will improve the neighborhood experience for everyone.

Value neighborhood opinions and support; they are important to the success of the project and community.

Invite community to important project milestones and provide project updates.



Support for new affordable housing



Strongly agree Somewhat agree

"I support building more affordable housing in my **neighborhood**."

In Conclusion

Ideas?

Questions?

oregonmetro.gov



Materials following this page were distributed at the meeting.

Regional mobility policy update

TPAC/MTAC Workshop April 15, 2020

Kim Ellis, Metro Lidwien Rahman, ODOT

Dr. Jennifer Dill, TREC Max Nonnamaker, PSU



Today's purpose

Stay connected

Provide update on project and PSU/TREC research



Project purpose

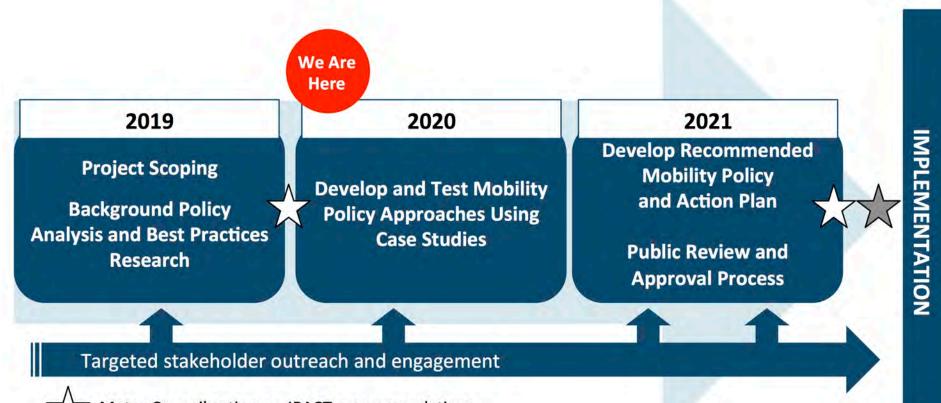
Update the policy on how the region defines mobility and measures success for the Portland area transportation system

Recommend amendments to the RTP and Oregon Highway Plan Policy 1F for the Portland area



Visit oregonmetro.gov/mobility

Two-year timeline for updating our policy





Metro Council action on JPACT recommendations



Oregon Transportation Commission action on Metro Council and JPACT recommendations The Commission will be engaged throughout the project.

Consultant team and lead staff

- Susie Wright, KAI, project manager Matt Hughart, KAI
- Judith Gray, Fehr & Peers (and CA team)
- Darci Rudzinski, Angelo Planning Group
- Allison Brown, JLA Public Involvement
- Charles Brown, Equitable Cities LLC
- Bill Kabeiseman, Bateman Seidel (legal review)







Spring 2020

- Finalize IGA and consultant contract
- Finalize background report
- Refine project schedule and engagement approach

Summer – Fall 2020

 Engage partners on current approaches, 2018 RTP mobility performance, best practices, evaluation criteria and potential mobility measures to test

Regional Mobility Policy Background Report:

Policy Analysis and Best Practices

Max Nonnamaker Jennifer Dill, Ph.D.

04/15/20





Review Process







Fall 2019 - present

70 documents reviewed

40 *mobility* measures

Analysis



Selected 2018 RTP Goals





EQUITABLE TRANSPORTATION

Time-Based Measures

Travel Time

Planning Time Index

Waiting Time

Travel Time

- **Definition:** Time spent traveling between key origin-destination pairs.
- Current Examples of Usage:
 - Oregon Department of Transportation (ODOT):
 - System Performance Measure for Region 1
 - Analysis Procedures Manual (APM)
 - Supplemental measure for Regional Transportation and Transportation System plans

Urban Form Measures

MMLOS

System Completeness

Bicycle/Pedestrian Level of Traffic Stress

Accessibility to Destinations

Accessibility to Transit

Accessibility to Employment/Population

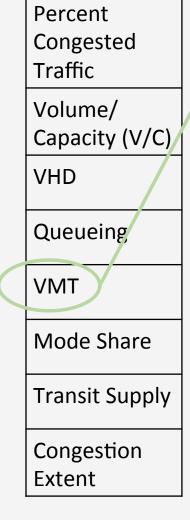
Bike/Pedestrian Network Directness

Pedestrian Crossing Index

System Completeness

- Definition: Percent of planned facilities or services that are built and in place.
 - Metro:
 - Congestion Management Process (CMP) monitoring and reporting.
 - 2018 RTP as a key performance measure for addressing Goal 3 (Transportation Choices) and Goal 9 (Equitable Transportation)¹⁹.

Capacity-Based Measures



VMT

- **Definition:** VMT is a measure of the number of vehicle miles traveled within a certain area and time period.
- Current Examples of Usage:
 - Nationally Used: San Francisco County Transportation Authority and in the Los Angeles Mobility Plan 2035 (CA)
 - California Office of Planning & Research (OPR)
 - California Metropolitan Planning Organizations (MPOs) - Senate Bill 743

Analysis Example - VMT

	Applicability	Notes/Explanation
RTP Goal		
Shared Prosperity	•	
Transportation Choice	(
Reliability and Efficiency	0	
Climate Leadership	•	
Equitable Transportation	ſ	
Mode		
Private motor vehicles	•	
Freight	•	
Transit	ſ	
Bicycles	0	
Pedestrians	0	
Planning Applicability		
TSP/Corridor	•	
Plan Amendment	•	
Development Review	0	
Performance Monitoring	•	

Data Analysis & Availability		
Existing conditions	 VMT data for and private motor vehicles, large freight trucks, and transit are available through Modeled trip tables⁵ Network-based distance skims⁵ Traffic volumes³ 	
Forecasts	VMT can also be forecasted by using VMT mapping and Travel Demand Model ³ .	

Questions and discussion

Kim Ellis, Metro

kim.ellis@oregonmetro.gov



Lidwien Rahman, ODOT

lidwien.rahman@odot.state.or.us





Visit oregonmetro.gov/ mobility

oregonmetro.gov



Regional Mobility Policy Background Report Potential Mobility Measures – as of 4/7/2020

Below are 27 measures of mobility found in our review of the literature. These measures focus on the movement or access of people and/or goods, rather than other aspects of the performance of transportation systems, such as safety or land use.

- 1. Travel Time (multiple modes)
- 2. Planning Travel Time
- 3. Transit Reliability/On-time Performance/Waiting Time
- 4. Vehicle Hours Traveled (VHT)
- 5. Vehicle Miles Traveled (VMT)
- 6. Person Hours of Travel (PHT)
- 7. Person Throughput
- 8. Recurring Delay/ Non-recurring Delay
- 9. Hours of Congestion/Duration of Congestion
- 10. Volume-to-Capacity (v/c) ratio and Level of Service (LOS)
- 11. Congestion Extent
- 12. Queuing
- 13. Percent of Congested Traffic
- 14. Vehicle Hours of Delay (VHD)
- 15. Multimodal Level of Service (MMLOS)
- 16. Level of Traffic Stress (Bicycle and Pedestrian)
- 17. System Completeness
- 18. Accessibility to Transit
- 19. Accessibility to Employment and Population
- 20. Accessibility to Essential Destinations
- 21. Accessibility to Freight Terminals/Intermodal facilities
- 22. Trip Length Distribution
- 23. Bicycle/Pedestrian Network Directness
- 24. Pedestrian Crossing Index
- 25. Mode Share
- 26. Transit Supply
- 27. Transit Ridership

By Friday, April 24,2020, send comments or suggestions for other measures to consider to <u>kim.ellis@oregonmetro.gov</u> and <u>Lidwien.rahman@odot.state.or.us</u>.

Thank you!

Regional Mobility Policy Background Report

Bibliography of documents reviewed as of 4/7/2020

- Oregon Department of Transportation. (2013). *Alternative Mobility Targets: Performance Measures and Analysis Tools Synthesis*. (2013). https://digital.osl.state.or.us/islandora/object/osl%3A10692
- Clifton, K., Harris, A., Currans, K., & Wagner, Z. (2013). A Multimodal Framework for the Transportation Planning Rule Process. Portland State University.
- Delahanty, R. (2015, October 30). *Clackamas Regional Connections Study Task 4.1.2 Implementation Recommendations Memo*. Prepared for the Project Management Team at the Clackamas Regional Center Connections Project by DKS Associates.
- Florida Department of Transportation. (2018). FDOT Mobility Measures Program.
- Gliebe, J., & Strathman, J. (2012). *Development and Sensitivity Testing of Alternative Mobility Metrics.* Prepared for the Oregon Department of Transportation. (Final Report).
- Kittelson & Associates. (2012). Accessibility Performance Measures Final Report. Prepared by Matt Hughart for Lidwien Rahman, Oregon Department of Transportation.
- Kittelson & Associates. (2014). *Mutli-Modal Performance Measures and Standards*. Prepared for Steve L. Kelley, Washington County Department of Land Use and Transportation.
- Metro & Oregon Department of Transportation. (2019, July 23). *Regional mobility policy update factsheet*.
- Mitchell, C., & Milam, R. T. (2016). Smart Transportation Metrics for Smart Growth. *American Planning Association*, 13.
- State Smart Transportation Initiative. (2016). *Trip-making and accessibility: New tools, better decisions*. SSTI.
- U.S. Department of Transportation (2017). *Level of Service Case Studies*. Evolving Use of Level of Service Metrics in Transportation Analysis.
- Oregon Department of Transportation. (2019). Annual Performance Progress Report: Reporting Year 2019.
- Oregon Department of Transportation. (2019). ODOT Report Card.
- Oregon Department of Transportation. (2019). *Legislatively Approved 2019 2021 Key Performance Measures.*
- Oregon Department of Transportation. (2018). *Portland Region 2018 Traffic Performance Report.*
- Metro. (2017). 2018 Regional Transportation Update Performance Measures Scoping Report.
- Metro. (2018). Appendix L 2018 Regional Transportation Plan. Federal performance-based planning and congestion management process documentation.

Metro. (2018). 2018 Regional Transportation Plan

- Oregon Department of Transportation. (2013). *Project Atlas Corridor Bottleneck Operations* Study – ODOT Region 1.
- Oregon Department of Transportation. (2013). *Planning Business Line Team PB-02 Operational Notice Alternative Mobility Targets.*
- Oregon Department of Transportation. (2017). Analysis Procedures Manual Appendix 9A
- Oregon Department of Transportation. (2018). Analysis Procedures Manual Version 2 Chapter 9: Transportation Analysis Performance Measures.
- Rahman, L. (2018). Alternative Mobility Targets OR 213 @ Beavercreek Road, Oregon City ODOT Staff Report. Oregon Department of Transportation.
- Oregon Department of Transportation. (2019). Consent 7 Resolution to amend the Oregon Highway Plan and adopt the Interstate 5/Chemawa Road Interchange Area Management Plan and Alternate Mobility Targets.
- Oregon Department of Transportation. (2019). Agenda E Approve amending the Oregon Highway Plan to adopt alternative mobility targets for the Interstate 5 – Exit 48 Rogue River Interchange.
- Federal Highway Administration. (2018). *Measuring Multimodal Network Connectivity.* U.S. Department of Transportation.
- National Academies of Sciences, Engineering, and Medicine 2019. Estimating the Value of Truck Travel Time Reliability. Washington, DC: The National Academies Press. <u>https://doi.org/10.17226/25655</u>.
- Brozen, M., Huff, H., Liggett, R., Wang, R., & Smart, M. (2014). Exploration and Implications of Multimodal Street Performance Metrics: What's a Passing Grade? University of California Transportation Center.
- Fehr & Peers. (2014). *Multimodal Policy Options of Long Range Planning and Transportation Concurrency*. Prepared for the City of Bellevue Washington.
- Mooney, R., Yakowenko, J. (2016). *Level of Service on the National Highway System.* Memorandum to Federal Highway Administration. U.S. Department of Transportation
- U.S. Department of Transportation. (2017). Evolving Use of Level of Service Metrics in Transportation Analysis – California Case Study.
- U.S. Department of Transportation. (2017). Evolving Use of Level of Service Metrics in Transportation Analysis – Florida Case Study.
- U.S. Department of Transportation. (2017). Evolving Use of Level of Service Metrics in Transportation Analysis – Metropolitan Council Case Study.
- United States Environmental Protection Agency. (2011). *Guide to Sustainable Transportation Performance Measures*.
- Metro. (2000). *Request for Alternate Mobility Standards for the Portland Metropolitan Region*. Prepared for Oregon Transportation Commission.

- Oregon Department of Transportation. (2011). Oregon Highway Plan Mobility Standards Discussion Paper.
- Garrett, M. (2011). Oregon Highway Plan (OHP) Policy 1F Revisions (Mobility Standards). Prepared by Oregon Department of Transportation for the Oregon Transportation Commission.
- Cambridge Systematics, Inc. (2014) *Transportation Performance Measures for Outcome Based System Management and Monitoring, Final Report, SPR 753.* Prepared for Oregon Department of Transportation and the Federal Highway Administration.
- Oregon Department of Transportation. (2017). Development Review Guidelines.
- Zietsman, R., Ramani, T., Potter, J., Reeder, V., & DeFlorio, J. (2011). *National Cooperative Highway Research Program Report 708: A Guidebook for Sustainability Performance Measurement for Transportation Agencies*. Prepared by Texas Transportation Institute & Cambridge Systematics for the Transportation Research Board.
- Cambridge Systematics, Texas Transportation Institute, Dowling Associates, & Levinson, D. (2012). National Cooperative Highway Research Program 08-36, Task 102: Assessing Alternative Methods for Measuring Regional Mobility in Metropolitan Regions. Prepared for American Association of State Highway and Transportation Officials Standing Committee on Planning.
- Clifton, K. (2013). Chapter 3.2: Transportation Planning Rule (TPR) Reviews. *Development Review Guidelines 2013.*
- State of California Governor's Office of Planning and Research. (2013) *Preliminary Evaluation of Alternative Methods of Transportation Analysis.*
- California Office of Planning and Research. (2014). *Quantifying the effect of local government actions on VMT: VMT Impact Tool Summary for Policy Makers.*
- Salon, D. (2014). *Quantifying the effect of local government actions on VMT* (Final Report). Institute of Transportation Studies, University of California, Davis. Prepared for the California Air Resources Board and the California Environmental Protection Agency.
- Caltrans. (2015). 047 Caltrans Smart Mobility Framework: An Approach for Performance-based Multimodal Planning. Western ITE Las Vegas 2015.
- Pasadena Department of Transportation Complete Streets. (2015). *Transportation Impact Analysis Current Practice and Guidelines*.
- Milam, R. T., Birnbaum, M., Ganson, C., Handy, S., & Walters, J. (2017). Closing the Induced Vehicle Travel Gap Between Research and Practice. *Transportation Research Record*, 2653(1), 10–16. https://doi.org/10.3141/2653-02
- State of California Governor's Office of Planning and Research. (2018). *Technical Advisory on Evaluating Transportation Impacts in CEQA.*