How Can Urban Planning Engage in the AV Revolution?:

Make AVs Work for Us

Art Pearce
Policy, Planning and Projects Group Manager
City of Portland Bureau of Transportation

PBOT
PORTLAND BUREAU OF TRANSPORTATION

What is the Role of Urban Planning?

How can Urban Planning guide the AV Revolution?

“Urban planning can be described as a technical and political process concerned with the welfare of people, control of the use of land, design of the urban environment including transportation and communications networks, and protection and enhancement of the natural environment.”

(Wikipedia)

1. Articulate what is at stake with the Introduction of Automated Vehicles

AV: Greatest Disruption in 100 Years?

1900: All horses.

1913: All cars.

Impact to cities could be as significant as the invention of the car.

Policy decisions will determine their impact.

Utopian vision: Automated vehicles complement active transportation and mass transit, radically reduce the total number of cars, increase safety and mobility options, and free up public space currently used for parking

Nightmare vision: Automated vehicles induce longer commutes and sprawling development, compete with walking and cycling, and reduce investment in high capacity mass transit.

CITY OF VANCOUVER

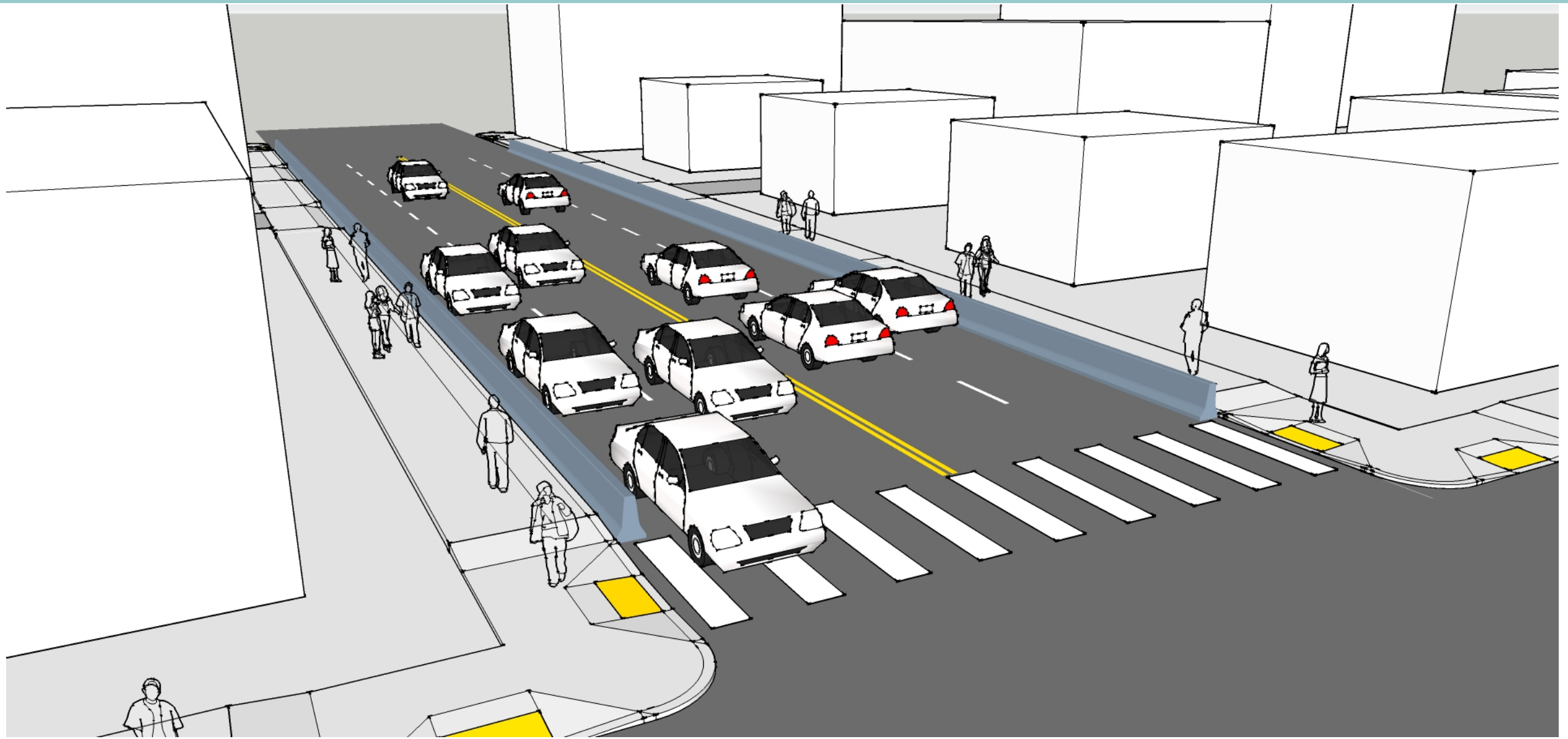
Is This What 10,000 Steps Looks Like?

How will society in the future interact?

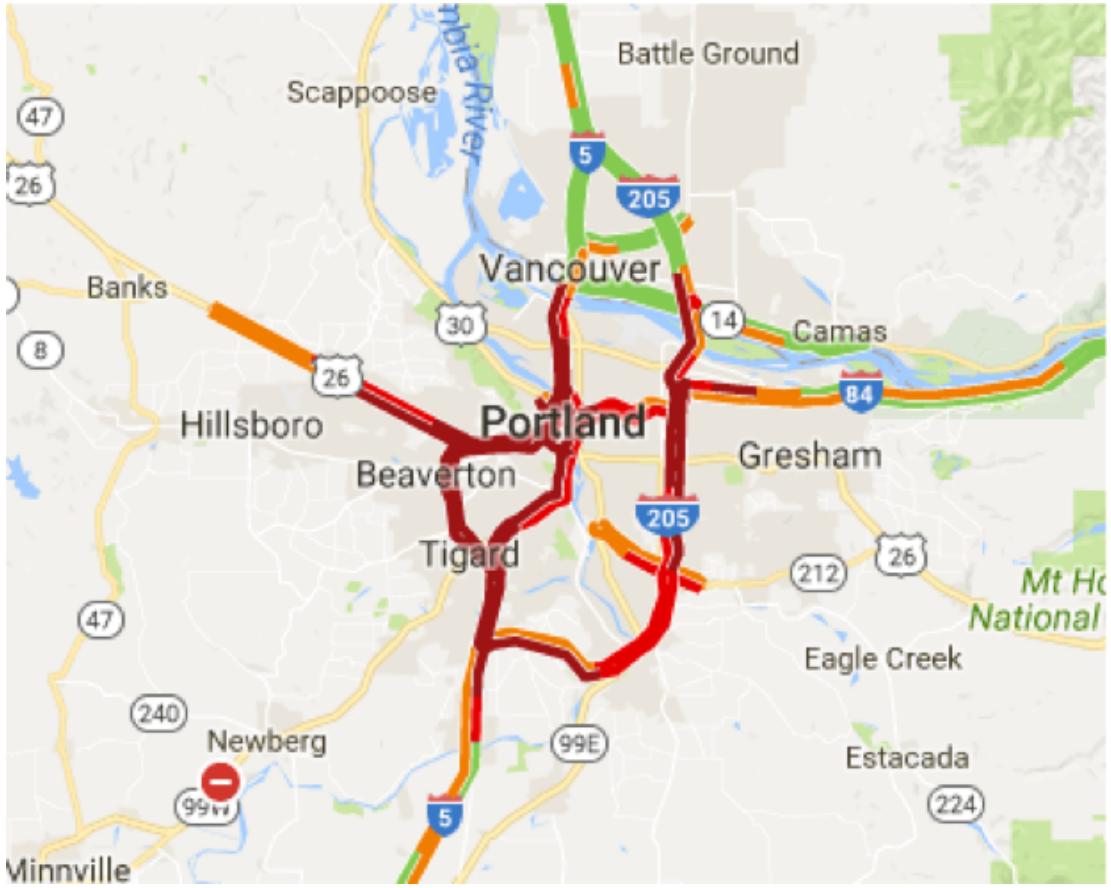
How should the streets in cities function in the future?

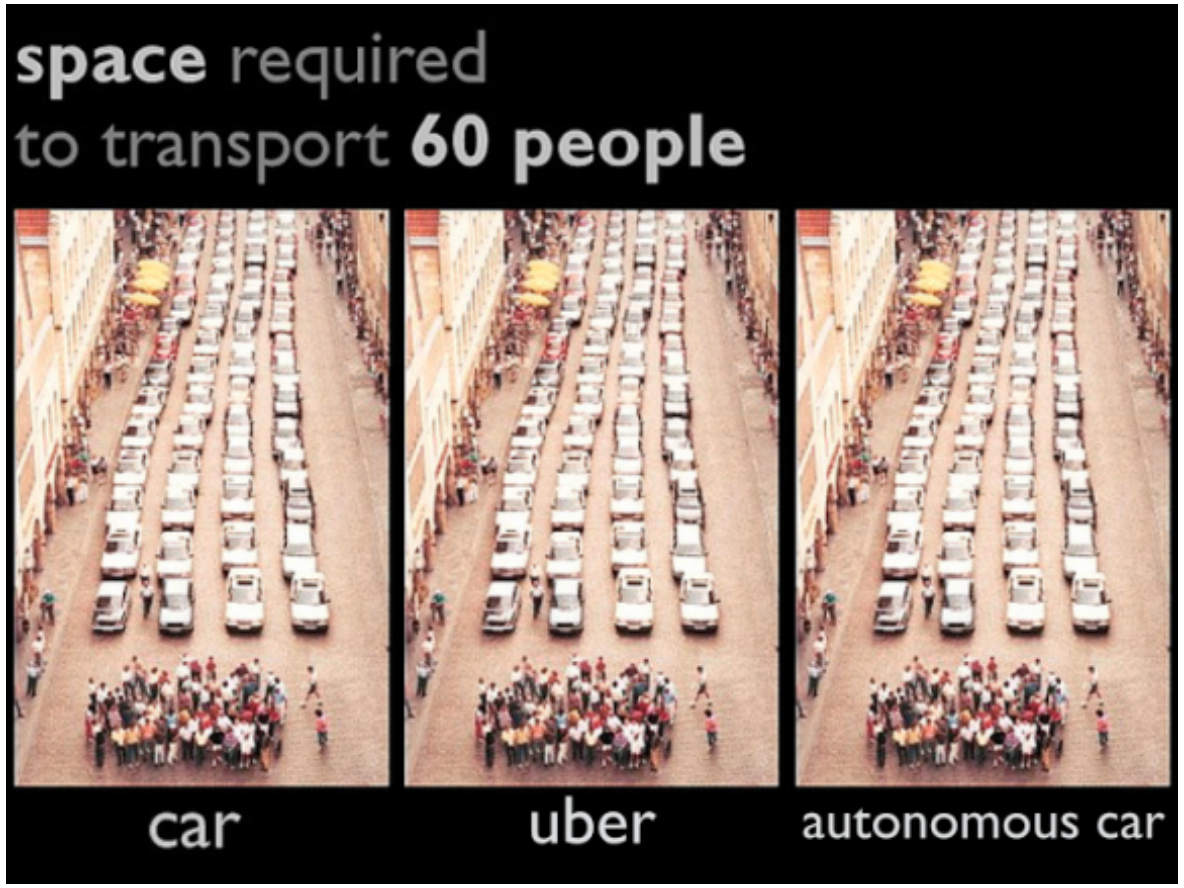
Do “driverless” cars mean a people-less city?

How will streets in cities function in the future?



Automated Vehicles & Congestion



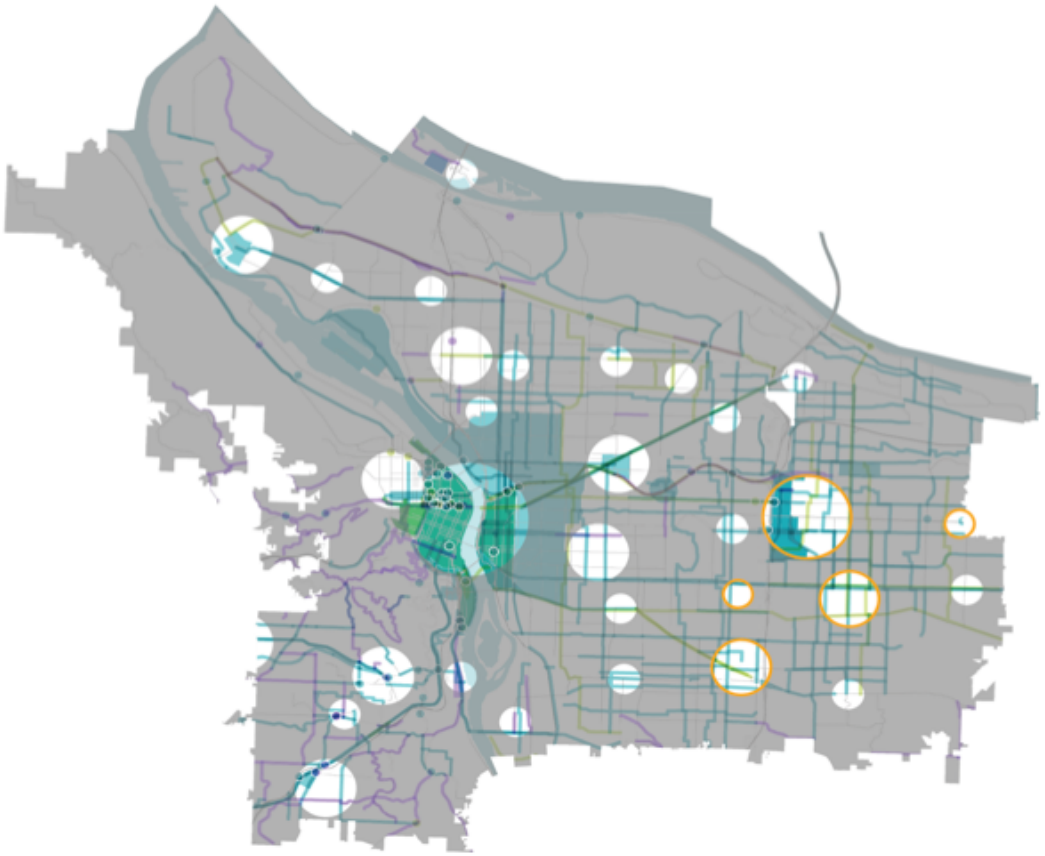


Our current transportation systems are imbalanced and inefficient

We use our cars 5% of the time and at 25% seat utilization

2. Establish Clear Policy Outcomes and Long Range Plans to place AVs in context and connect the dots between transportation and land use

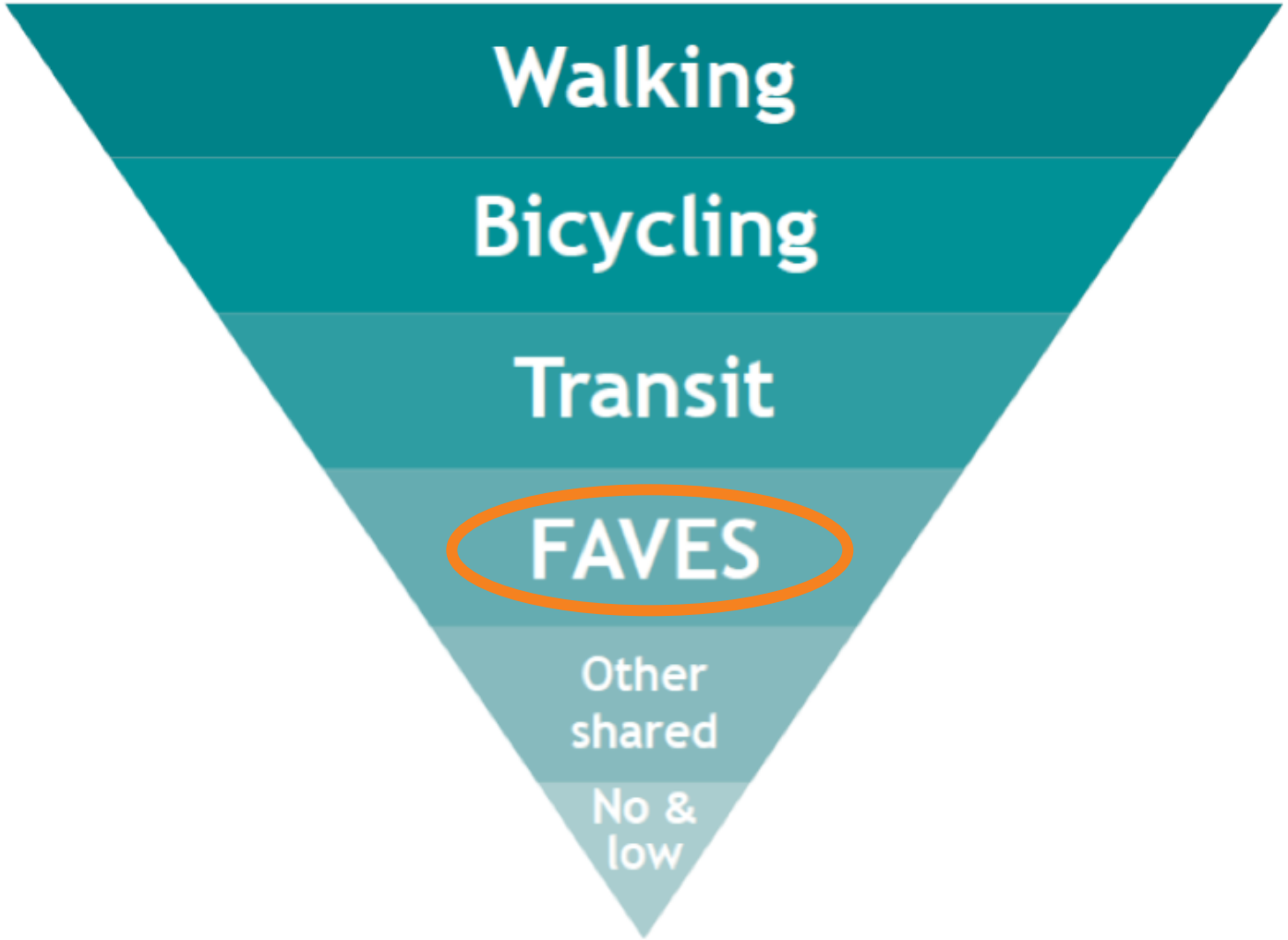
SAVI: Goals-Based Policy



AV's should advance the outcomes/goals in Comprehensive Plan

- **Vision Zero**: Prioritize Safety on our streets particularly for most vulnerable travelers
- **Health:** support active transportation and healthy communities
- **Economic Opportunity:** Support local economic growth and great places
- **Equity:** ensure benefits accrue to disadvantaged people without increased burden
- **Congestion & Climate:** reduce burden on the transportation system and environment

Policy: Prioritize!



Fleet
Autonomated Vehicles
Electric & Shared

3. Create A Clear Operating Landscape And Role For Local Agencies

Clear Federal, State, and Local Roles

Federal Role

- Vehicle safety testing and certification
- Funding for state and local V2I and pilot projects

State Role

- Vehicle Registration
- AV operations on state roads
- Funding for V2I and pilot projects

Local Role

- AV operations on local roads (City Engineer authority)
- Pilot projects
- Managing Mobility Services

Getting Ahead:
Portland's Smart Autonomated Vehicle Initiative

Mayor & Transportation Commissioner announced Portland's Smart Autonomated Vehicle Initiative in April 2017

Invites AV Testing and Piloting in Portland

Directed staff to prepare four elements:

1. Policy foundation
2. Request For Information (RFI)
3. Administrative Rule: framework for permitting, data collection
4. Public Engagement Strategy

"We want to do AV right."

What will determine the outcome?
Policy & Actions

Portland Administrative Rule and Permit Process

Establishes clear path for AV test approval/permit

- Requires a Permit for use of city streets
- Establishes clear approval criteria
- Requests basic info: what, when, where
- Builds on TNC permitting framework
- Lays out public engagement process (if needed)
- Clarifies data reporting
- Indemnifies City
- Creates interim fee structure

Local Role: Managing AV Operations

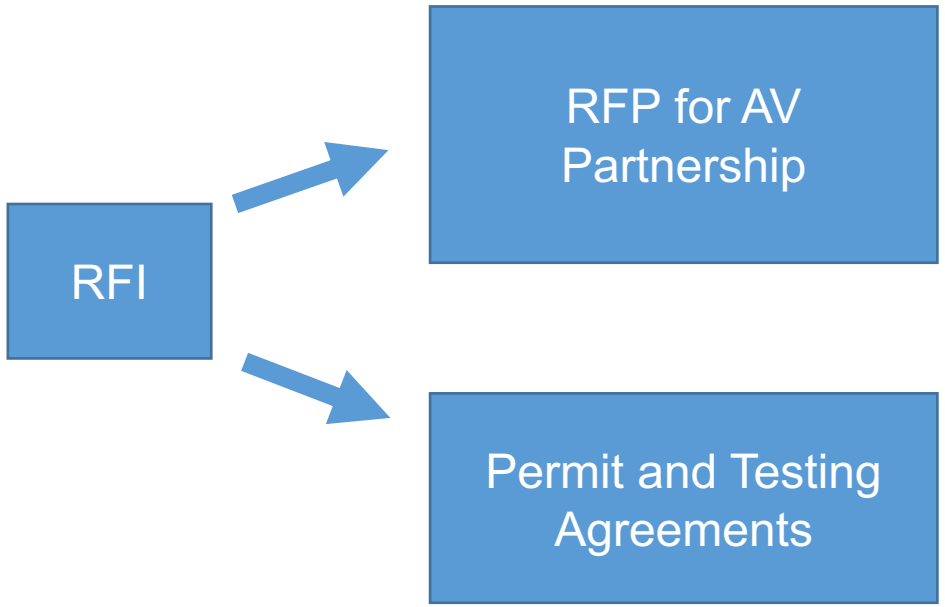
Tools

- Street design
- Parking
- Pick-up and drop-off zones
- Speeds
- Freight loading and unloading
- Efficiency incentives
- EV charging
- Smart V2I infrastructure
- Technology on poles or in pavement
- New maintenance requirements
- Pricing

4. Continually Invite Private Sector Partnerships

Portland's AV Request for Information

- Invites organizations to identify potential AV tests/Pilots that advance Portland's goals
- Builds off AV proving grounds application
- Asks them what they need from us (e.g. pick-up & drop-off zones, testing facility(PIR), permit to operate, Transit last mile funding partnership)
- Identifies what outcomes we want and what data we need to evaluate success
- Informs public engagement approach
- First step toward partnerships, to be followed by permit assistance and/or specific RFP for operating partnerships



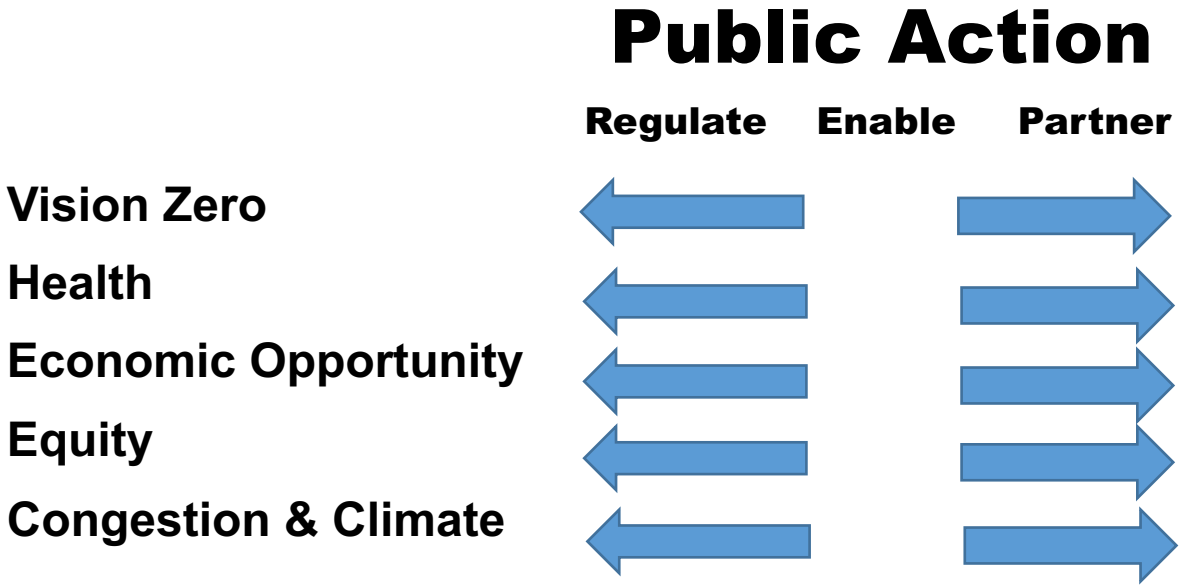
RFI Received 19 responses from 5 states

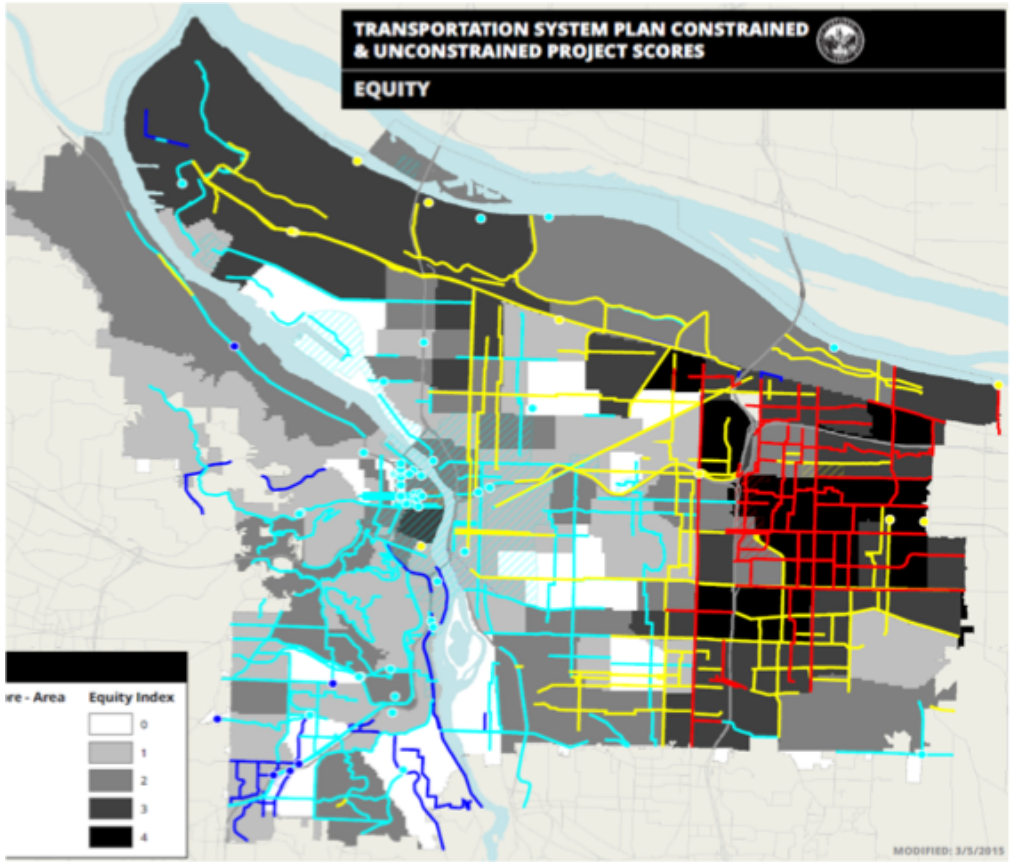
5. Measure Against Goals

Invest In the Good- Regulate the Bad

SAVI: Goals-Based Policy

How do we assess the impact of specific AV proposals?





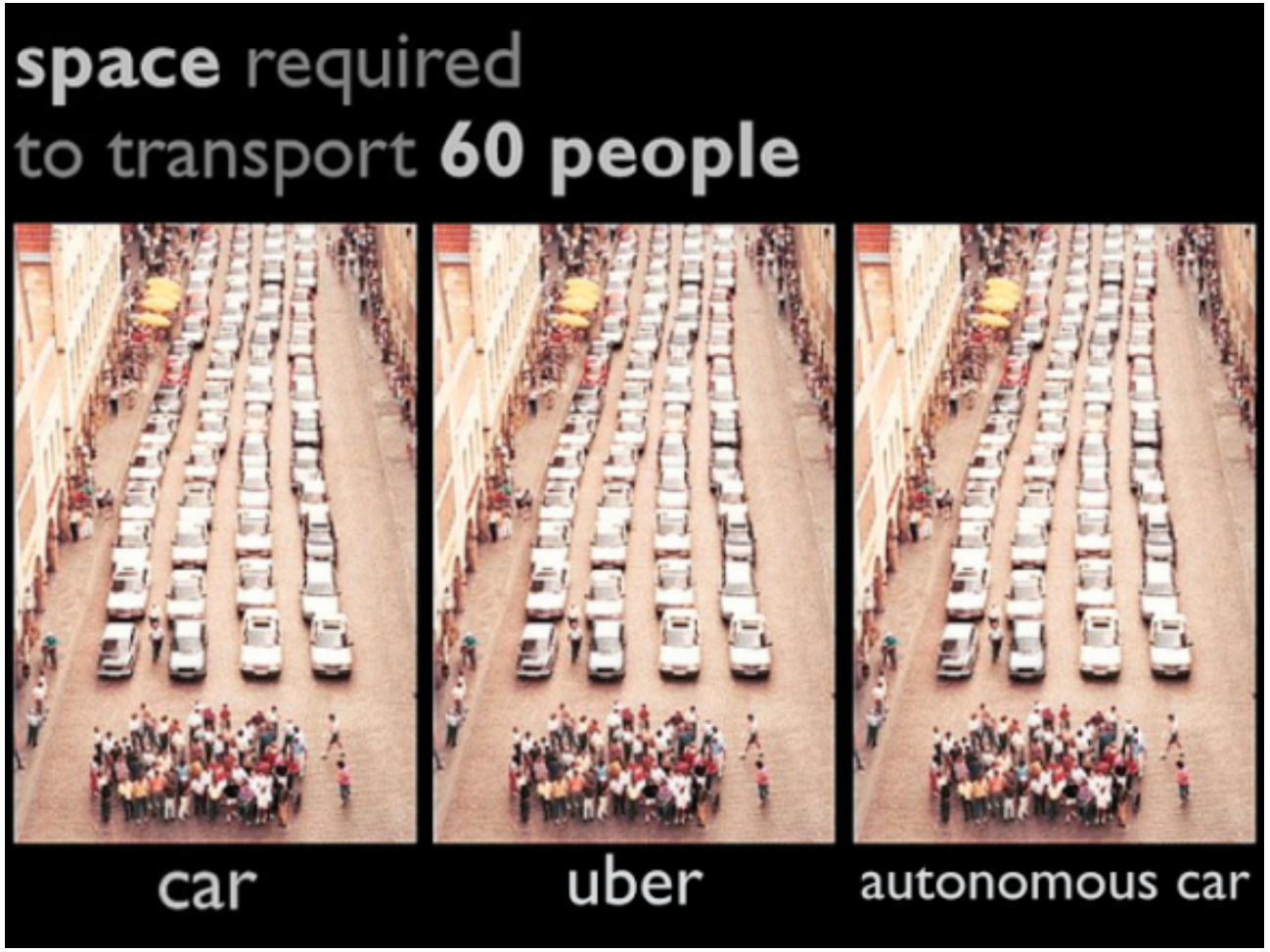
6. Introduce New Pricing Practices to Steer Market and Individual Response

Pricing: Price Inefficiency & Reward Efficiency

Create Pricing Structures based on Number People Served

Pricing = Rewarding Efficiency

- **Location/congestion level**
- **Time of day**
- **Number of passengers**
- **Fuel efficiency**
- **Parking > Pick-up and drop-off zones**



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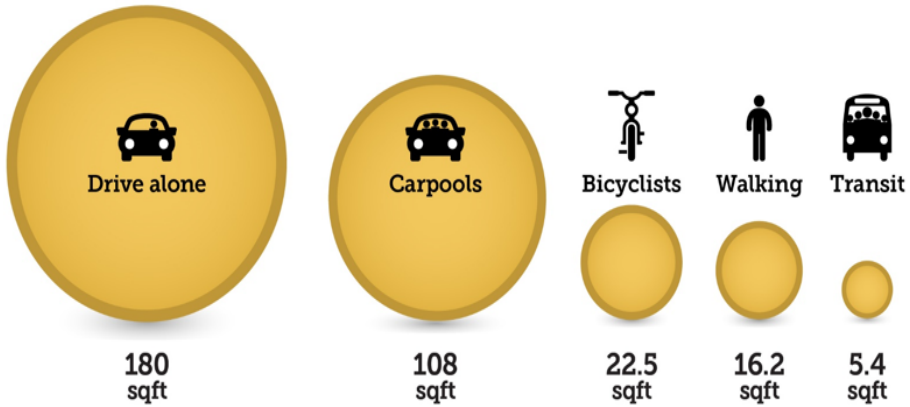
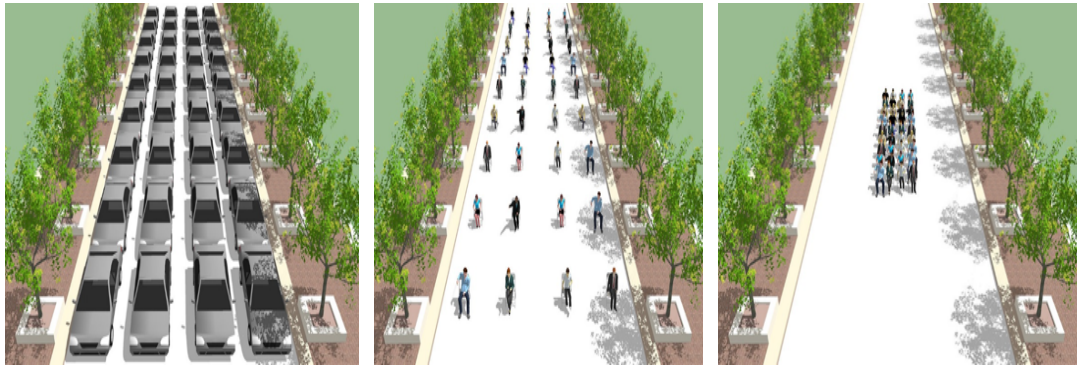
Personal gain or system efficiency?
Technology can calculate for system efficiency better than humans.
But only if we tell it what to prioritize…

Relative footprint of a person trip by mode



Most effective way to move 60 people?



Embed Pricing Principles into existing processes

Draft Portland AV Permit Fee structure

Connected and Autonomous Vehicle Fee Schedule
The following fees must be paid before a permit will be issued.

Pilot Application fees

AV Permit Application Fee -	**$250.00** (non-refundable)
Public Road Right-of-Way Operator Fee -	**$100.00**/Operator
Operator Background Check -	**$75.00**/Operator
Company Permit Fee -	**$500.00**
Public Right-of-Way Vehicle Fee -	**$250.00**/Vehicle

Pilot Road User Charges

Infrastructure Connection Fee -	**$XX**/usage or **$XX**/monthly bulk usage charge
Congestion Fee -	**$XX** per trip in congestion zones during peak hours (TBD)
Efficiency fee -	Rate TBD by vehicle fuel efficiency
OreGo Registration Required* -	**$0.015**/mile

*Information about OreGo registration can be found at http://www.myorego.org/about/.

Full Deployment Fees

This fee structure will be developed over time in consultation with stakeholders.

Will Gas Tax and Parking Revenues will go away?

How Can we increase the use of OreGo now?

Could TNCs "ridefees" be modified to focus on infrastructure use and system efficiency?

Is a Curb Zone Access Fee the new Parking?

7. Iterate To Help Your Community Adapt

Convene, Adapt, Convene Again

Thanks!

For more information go to:
Portlandoregon.gov/SAVI

Art Pearce
Portland Bureau of Transportation
Artpearce@Portlandoregon.gov