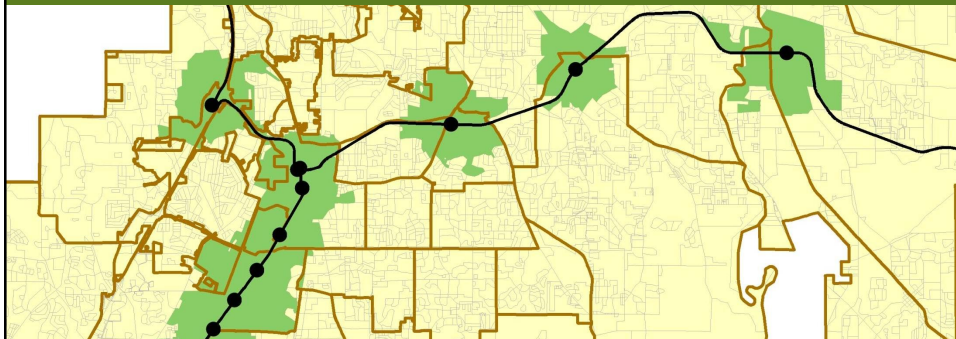


# SmartTrips Site Analysis

For Washington County



Peter Collins & David Moskovitz

Spring 2010

Professor Geoffrey Duh



## What is SmartTrips?

An Individual Marketing & Incentive Program



Senior Strolls



Women on Bikes



Commuter Connections

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# What is SmartTrips?

An Individual Marketing & Incentive Program

Goal: 10% reduction in drive-alone trips  
**Portland SmartTrips → 9 – 13 % reduction**



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# What is SmartTrips?

An Individual Marketing & Incentive Program

Goal: 10% reduction in drive-alone trips

**Targets:**

1. Residential areas with population 20,000-30,000
2. Businesses with 100+ employees

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## SmartTrips for WashCo?

- Travel Options = Opportunity
- Supportive business community
- Challenging built environment





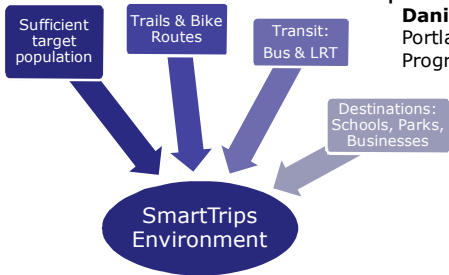



Hwy 217      Tualatin Valley Highway


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## Constraints & Factors

- Served by public transit
- Urbanized and incorporated
- More than 20,000 residents



Expert consultation  
**Daniel Bower**  
Portland SmartTrips  
Program Manager



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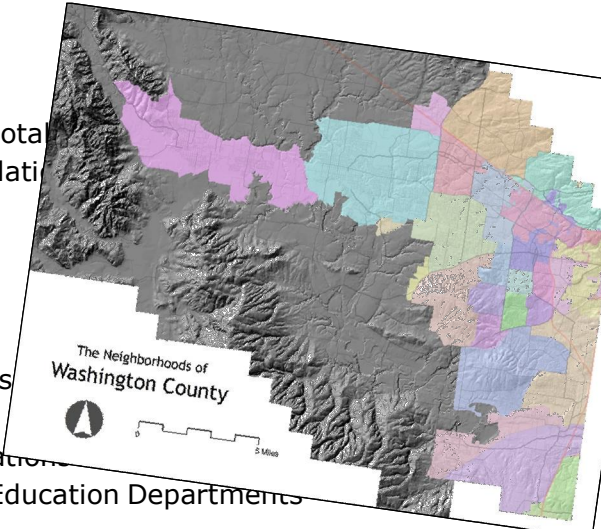
## Potential Sites

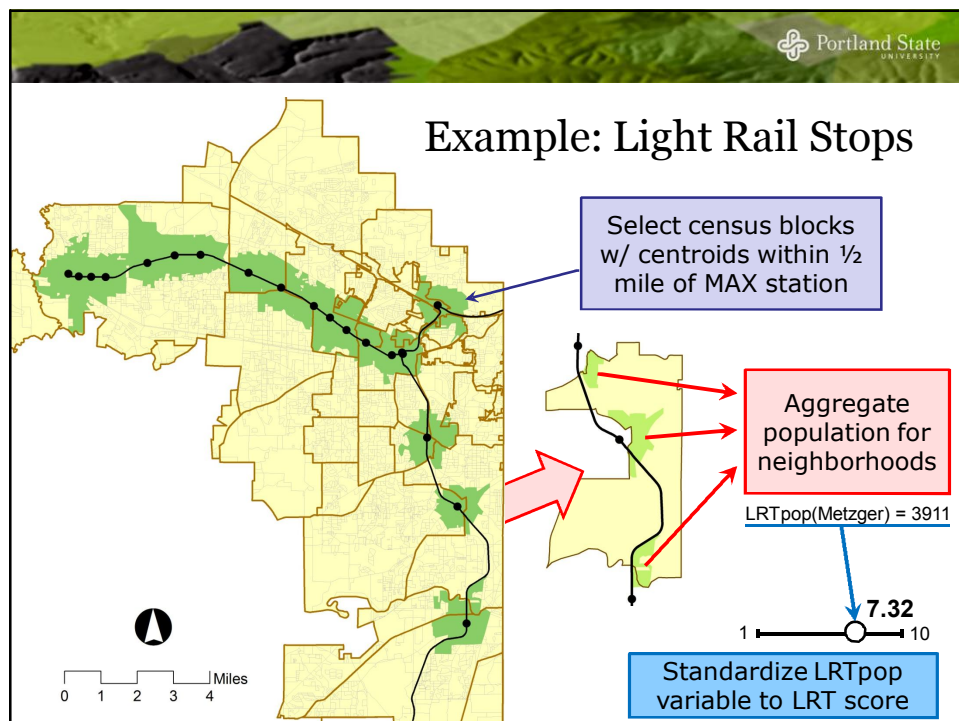
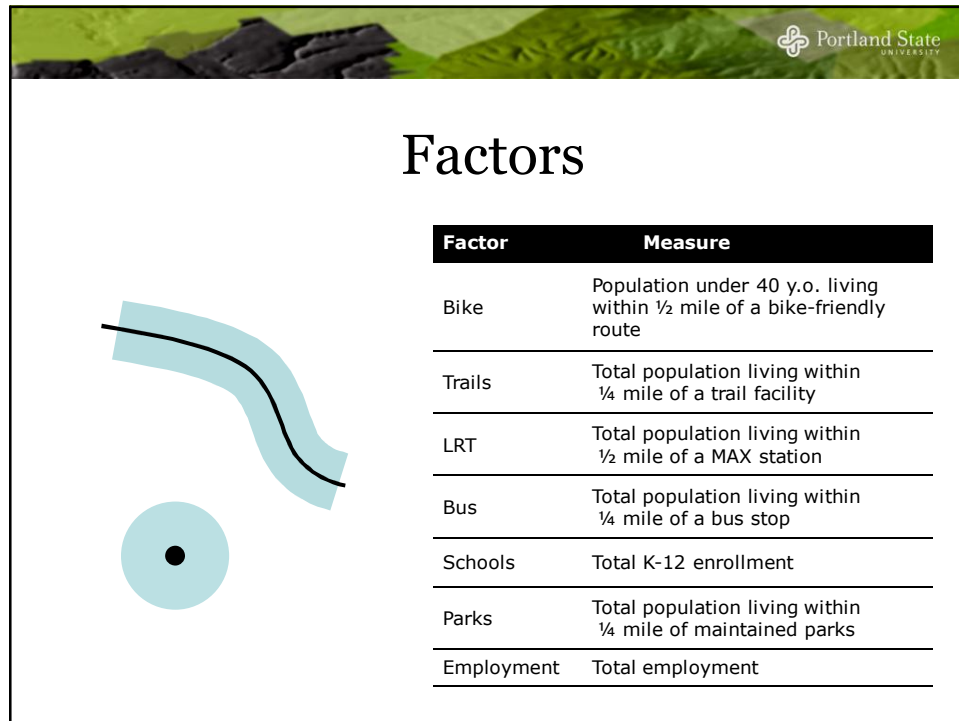
**Study Area:**

- 56 Neighborhoods
- 140 square miles, total
- 417,287 total population

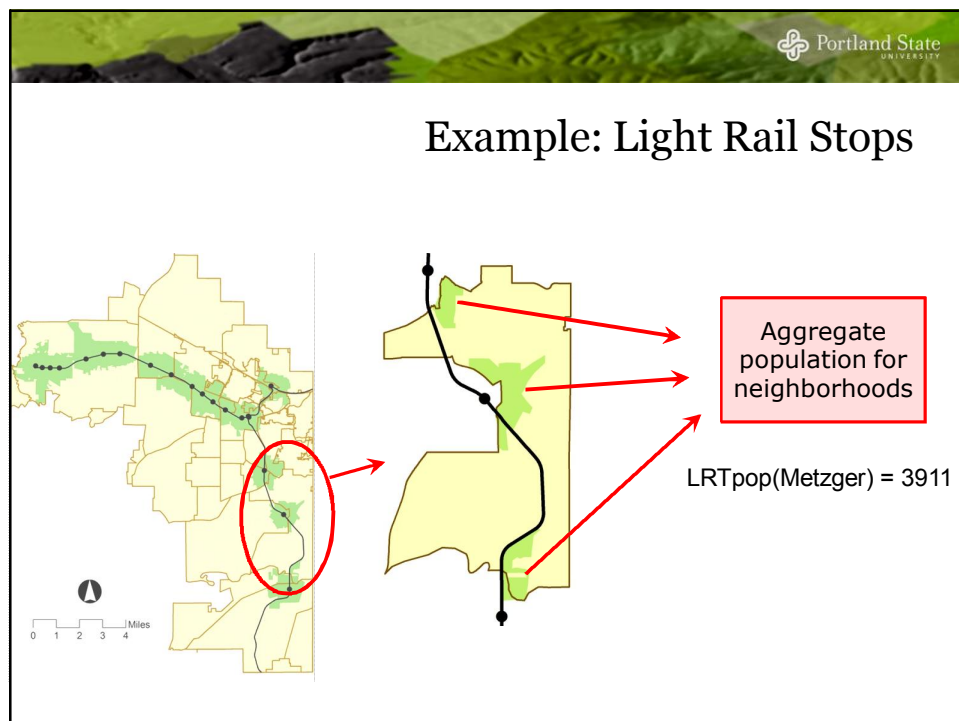
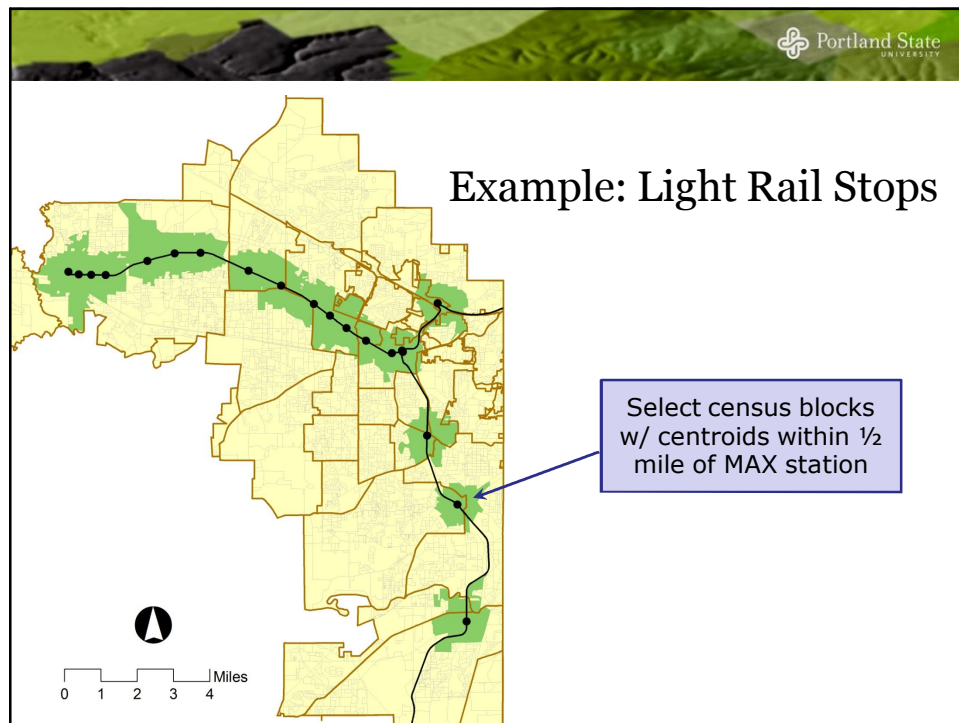
**Data Sources:**

- RLIS
- 2000 Census Blocks
- PBOT – TAZs
- ECO Employer Locations
- County and State Education Departments



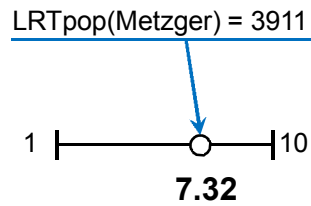






## Example: Light Rail Stops

Standardize LRTpop variable to LRT score



## Weighted Scores

Name	sum	1	bike	1	sch	1	bus	1	LRT	1	trail	1	park	1	MP	1	pop	1	pop
CPO 4M METZGER	9.0	9.02	8.8	9.25	7.32	9.15	9.42	9.75	9.17	9.24	8.98	8.98	8.91	8.92	9.22	9.29	9.22	9.03	9.08
CPO 5 SHERWOOD-TUALATIN S2	8.90	10.03	10	10	0	9.86	10.25	10	10	0	0	0	0	0	0	0	0	0	0
CPO 6 COOPER MTN-ALOHAN	8.59	9.54	9.18	9.62	8.2	9.55	9.77	8.21	9.52	3.63	8.55	9.26	8.86	9.16	8.08	9.09	9.67	7.98	9.42
CPO 4B BULL MTN	8.39	8.63	9.02	8.79	8.12	8.45	8.86	8.73	8.08	8.65	8.27	9.15	8.82	8.01	8.47	7.73	9.06	9.29	8.66
FIVE OAKS/TRIPLE CREEK	8.12	8.45	8.86	8.73	8.08	8.65	8.27	9.15	8.82	8.01	8.47	7.73	9.06	9.29	8.66	8.27	8.87	8.22	7.75
CENTRAL BEAVERTON	8.08	8.65	8.27	9.15	8.82	8.01	8.47	7.73	9.06	9.29	8.66	8.27	8.87	8.22	7.75	7.95	8.35	8.33	8.12
CPO 1 CEDAR HILLS-CEDAR MILLS	8.01	8.47	7.73	9.06	9.29	8.66	8.27	8.87	8.22	7.75	7.95	8.35	8.33	8.12	8.12	7.68	7.68	7.68	7.68
CPO 12 CORNELIUS-FOREST GROVE	7.91	9.24	9.15	9.06	9.29	8.66	8.27	8.87	8.22	7.75	7.95	8.35	8.33	8.12	8.12	7.68	7.68	7.68	7.68
CPO 7 SOMMERSET W-EL	7.91	9.24	9.15	9.06	9.29	8.66	8.27	8.87	8.22	7.75	7.95	8.35	8.33	8.12	8.12	7.68	7.68	7.68	7.68
CPO 7 SOMMERSET W-EL	7.91	9.24	9.15	9.06	9.29	8.66	8.27	8.87	8.22	7.75	7.95	8.35	8.33	8.12	8.12	7.68	7.68	7.68	7.68
CPO 5 SHERWOOD-TUALATIN	7.91	9.24	9.15	9.06	9.29	8.66	8.27	8.87	8.22	7.75	7.95	8.35	8.33	8.12	8.12	7.68	7.68	7.68	7.68
CPO3 GARDEN HOME-RAVOSE	7.91	9.24	9.15	9.06	9.29	8.66	8.27	8.87	8.22	7.75	7.95	8.35	8.33	8.12	8.12	7.68	7.68	7.68	7.68
DENNY WHITFORD/RALEIGH	7.91	9.24	9.15	9.06	9.29	8.66	8.27	8.87	8.22	7.75	7.95	8.35	8.33	8.12	8.12	7.68	7.68	7.68	7.68
GREENWAY	7.91	9.24	9.15	9.06	9.29	8.66	8.27	8.87	8.22	7.75	7.95	8.35	8.33	8.12	8.12	7.68	7.68	7.68	7.68
CPO 6 COOPER MTN-ALOHAN	7.91	9.24	9.15	9.06	9.29	8.66	8.27	8.87	8.22	7.75	7.95	8.35	8.33	8.12	8.12	7.68	7.68	7.68	7.68
WEST BEAVERTON	7.91	9.24	9.15	9.06	9.29	8.66	8.27	8.87	8.22	7.75	7.95	8.35	8.33	8.12	8.12	7.68	7.68	7.68	7.68
NEIGHBORS SOUTHWEST	7.91	9.24	9.15	9.06	9.29	8.66	8.27	8.87	8.22	7.75	7.95	8.35	8.33	8.12	8.12	7.68	7.68	7.68	7.68
EXTON MTN	6.09	7.93	7.44	7.9	0	0	8.01	6.04	7.76	0.74	5.06	7.56	7.5	7.9	0	0	6.7	5.47	6.45
SOUTH BEAVERTON	5.31	7.89	8.1	8.2	0	0	0	0	0	0	4.28	6.13	7.13	6.65	0	0	6.12	6.06	3.96
HIGHLAND	5.06	7.56	7.5	7.9	0	0	0	0	0	0	3.84	5.9	0	6.12	0	6.68	6.06	3.96	5.81
WEST SLOPE	4.28	6.13	7.13	6.65	0	0	0	0	0	0	2.93	3.49	7.25	3.48	0	0	3.97	4.47	3.72
ASHCREEK	3.84	5.9	0	6.12	0	0	0	0	0	0	2.88	4.57	0	4.16	0	0	5.51	6.4	5.26
WASHINGTON CO UNCLAIMED #2	2.93	3.49	7.25	3.48	0	0	0	0	0	0	2.87	1.51	7.56	1.09	0	2.83	2.45	8.05	2.2
CPO 5 SHERWOOD-TUALATIN S2	2.88	4.57	0	4.16	0	0	0	0	0	0	2.12	3.92	0	0	0	4.94	4.12	2.22	3.87
WASHINGTON CO UNCLAIMED #1	2.87	1.51	7.56	1.09	0	0	0	0	0	0	1.80	4.21	0	0	0	0	4.86	2.48	4.61
HAYHURST	2.12	3.92	0	0	0	0	0	0	0	0	1.69	2.18	0	2.52	0	3.55	2.73	1.78	2.48
NORTHWEST HEIGHTS	1.80	4.21	0	0	0	0	0	0	0	0	1.49	2.63	0	0	0	2.26	3.17	2.45	2.92
MAPLEWOOD	1.69	2.18	0	2.52	0	0	0	0	0	0	1.44	0	4.94	-0.01	0	0	0.62	7.02	0.37
WASHINGTON CO UNCLAIMED #3	1.49	2.63	0	0	0	0	0	0	0	0	1.44	0	4.94	-0.01	0	0	0.62	7.02	0.37
WILSONVILLE	1.44	0	4.94	-0.01	0	0	0	0	0	0	1.44	0	4.94	-0.01	0	0	0.62	7.02	0.37

$n$  = Neighborhoods

$i$  = Factor

$w_i$  = Relative factor weight

$s_{n,i}$  = Score for neighborhood  $n$ , factor  $i$

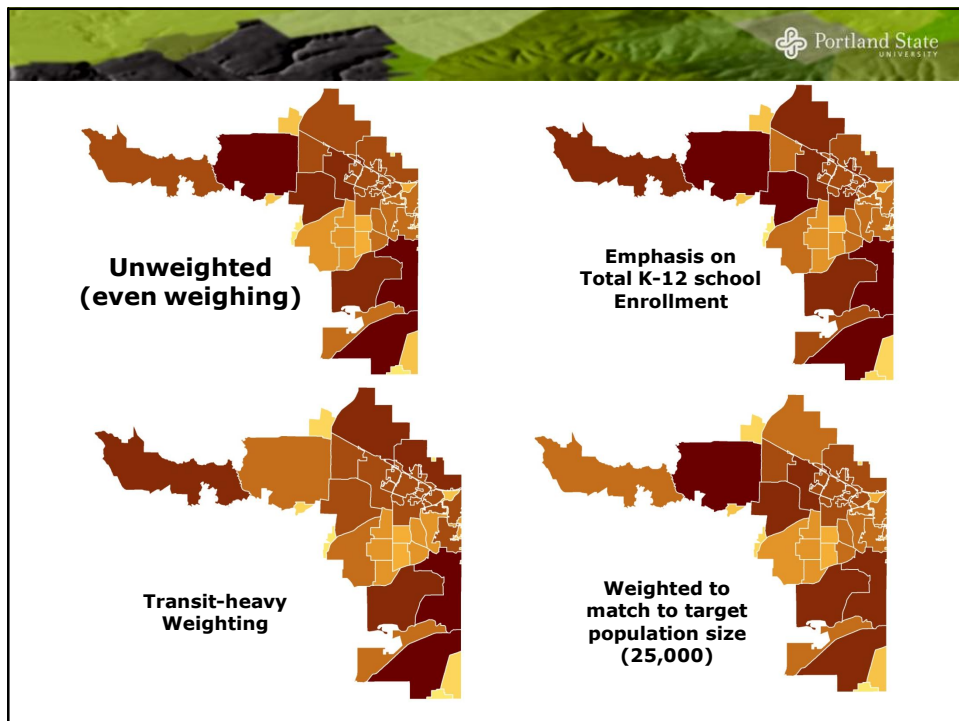
$S_n$  = Overall neighborhood score

$$S_n = \sum_{\forall i} w_i \cdot s_{n,i}$$

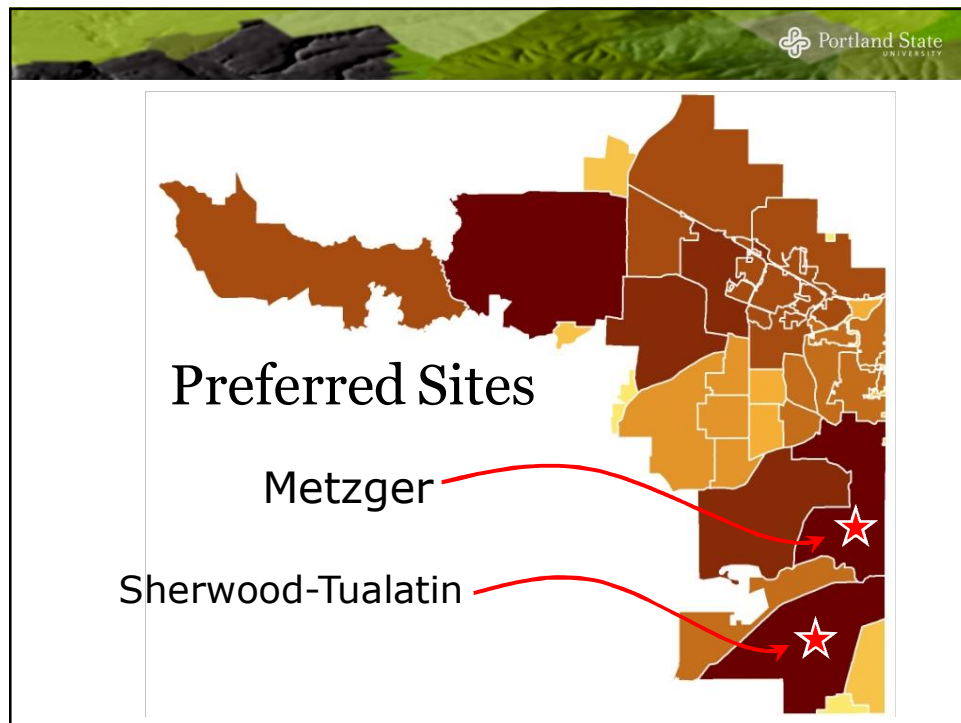
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## Weighting Scenarios

Bike	Sch	Bus	LRT	Trail	Parks	EMP	Pop	Size	1	2	3	4
1	1	1	1	1	1	1	1	1	Hillsboro	Cooper Mtn.	Sherwood-Tualatin	Metzger
9	1	7	5	3	1	1	1	1	Hillsboro	Cooper Mtn.	Sherwood-Tualatin	Metzger
1	1	1	1	1	1	1	1	5	Metzger	Sherwood-Tualatin	Cornelius/Forest Grove	Cedar Hills/Cedar Mill, South
1	5	1	1	1	1	1	1	1	Hillsboro	Metzger	Sherwood-Tualatin	Cooper Mtn.
1	1	1	1	1	1	5	1	1	Metzger	Hillsboro	Sherwood-Tualatin	Five Oaks/Triple Creek







## Validation

- Adam Argo
  - WTA Board Member
  - Transportation Planner, *David, Evans & Assoc.*
- Karen Frost
  - Executive Director, *WTA*
- Steve Hoyt-McBeth
  - *Portland Bureau of Transportation*



## Next Steps

- Present findings to WTA Board
- Write RTO grant
- Contact Washington County planning/advocacy groups

**Individualized marketing grants for 2009-11**

**City of Portland - \$300,000**  
Greenline SmartTrips

**City of Portland - \$200,000**  
North/Northwest Smart Trips

**City of Portland - \$171,520**  
Street Car Loop and South Waterfront SmartTrips

**City of Gresham - \$100,000**  
Targets residents who live within one-half mile of the Civic Drive MAX Station

**City of Wilsonville SMART - \$228,480**  
Targets the residential areas of Wilsonville

**Travel options grants for 2009-11**


**Lloyd TMA - \$41,445**  
Lloyd Links program provides Lloyd employee links form their residence to Lloyd area work s through personal and direct assistance.

**TriMet Trip Planner - \$68,930**  
Test the usability of an open source multi-mode planner system to increase mode share for bik and transit trips during peak commute hours an reduce drive alone trips.

**Bicycle Transportation Alliance - \$25,000**  
Support the bike commute challenge, workplace workplace, to see which business, non-profit or agency can get the most people biking in Septem

**City of Portland Transportation - \$50,000**  
Support the new Sunday Parkways on North and Northeast Portland to provide a car free environn

**City of Tigard - \$20,000**



## Evaluation

### Challenges

Things that could be overcome

- Census Data – 10yrs old
- Lack of Transportation Options data
- Predefined neighborhood boundaries
- No established methodology
- Difficult to select appropriate GIS tools

### Opportunities

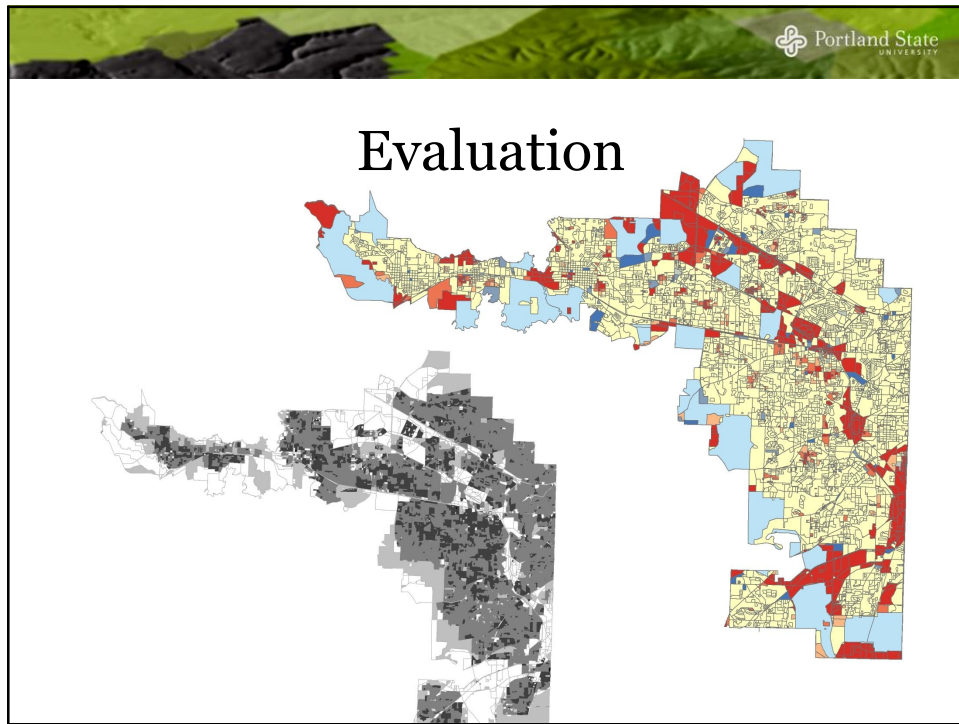
Potential for further investigation

- Incorporate Public Process
- Apply Travel Demand Modeling techniques
- Topography?

### Limitations

Things inherently not so great about this project/method

- Lack of SmartTrips research
- Is this type of analysis needed?



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## Special thanks to:

Adam Argo  DAVID EVANS AND ASSOCIATES INC.

Daniel Bowers  GREEN LINE SMART TRIPS

Karen Frost  WTA Promoting Balanced Transportation Choices

Steve Hoyt-McBeth  CITY OF PORTLAND OFFICE OF TRANSPORTATION 1120 S.W. 5th Avenue, Suite 800 Portland, Oregon 97204

Caleb Winters  Metro