

What the Oregon Household Activity Survey tells us about the path ahead for active transportation

Metro brown bag presentation

Purpose of analysis:

- Identify trends in transportation 1994-2011
- Identify strategic pathways to achieving policy goals related to transportation
- Identify costs associated with not achieving policy goals

Findings and Conclusions:

- Walking and bicycling in Portland grew from 19 percent of all trips in 1994 to 28 percent of all trips in 2011
- 162 million more trips by Portlanders in 2011 than in 1994
- 64 percent of new trips were by walking (29 percent), bicycling (22 percent) or transit (12 percent)
- Driving alone declined 8.5 percent per capita

Findings and Conclusions:

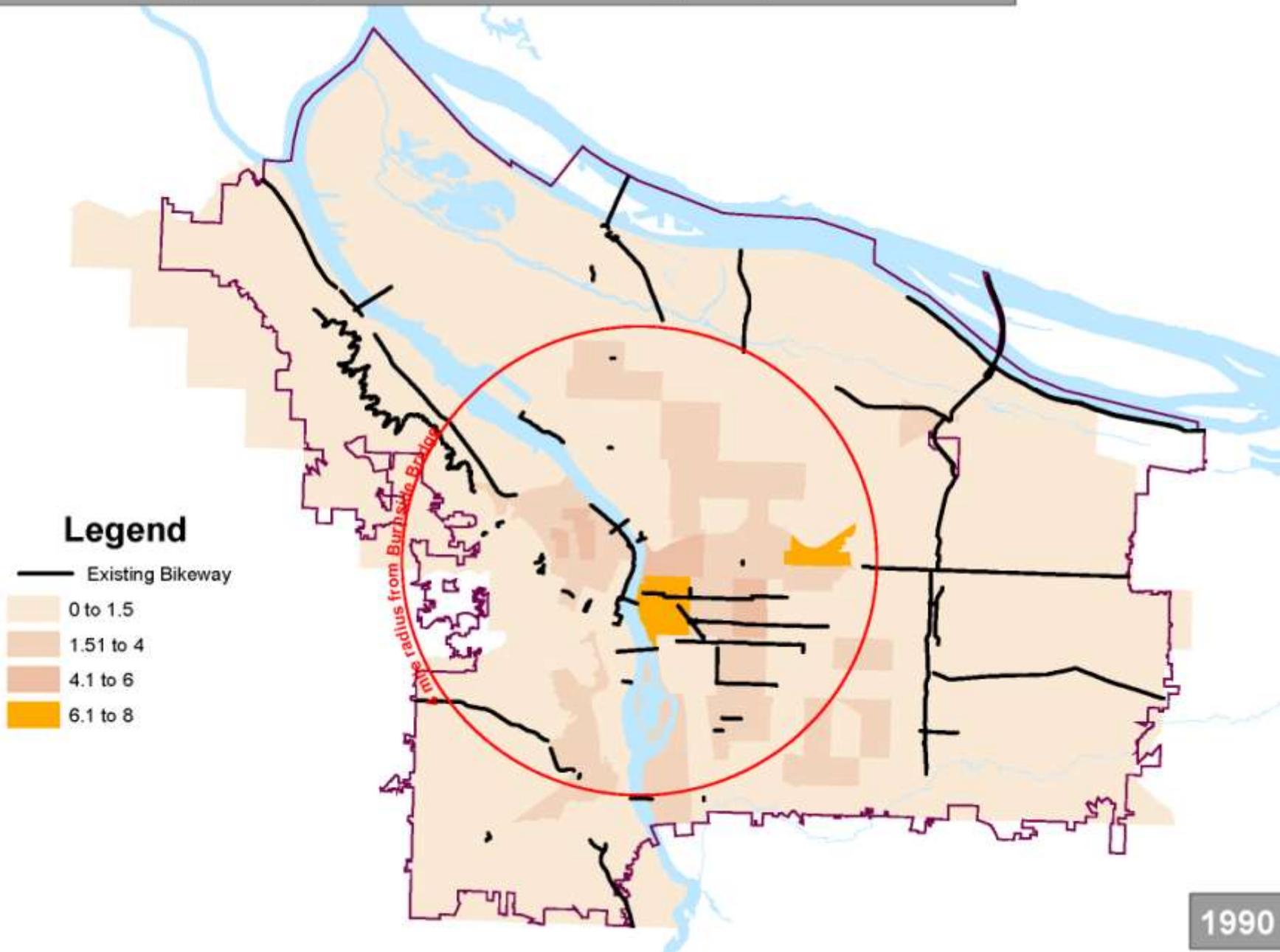
- Without these advances, Portlanders would have made 211,000 more weekday auto trips than they did in 2011
- Achieving 25 percent bicycle mode split is achievable with a whole-hearted embrace of bicycling
- It is the close-in neighborhoods (Willamette River to I-205) that will have to carry a disproportionate share of non-automotive trips if Portland is to achieve its goals

Findings and Conclusions:

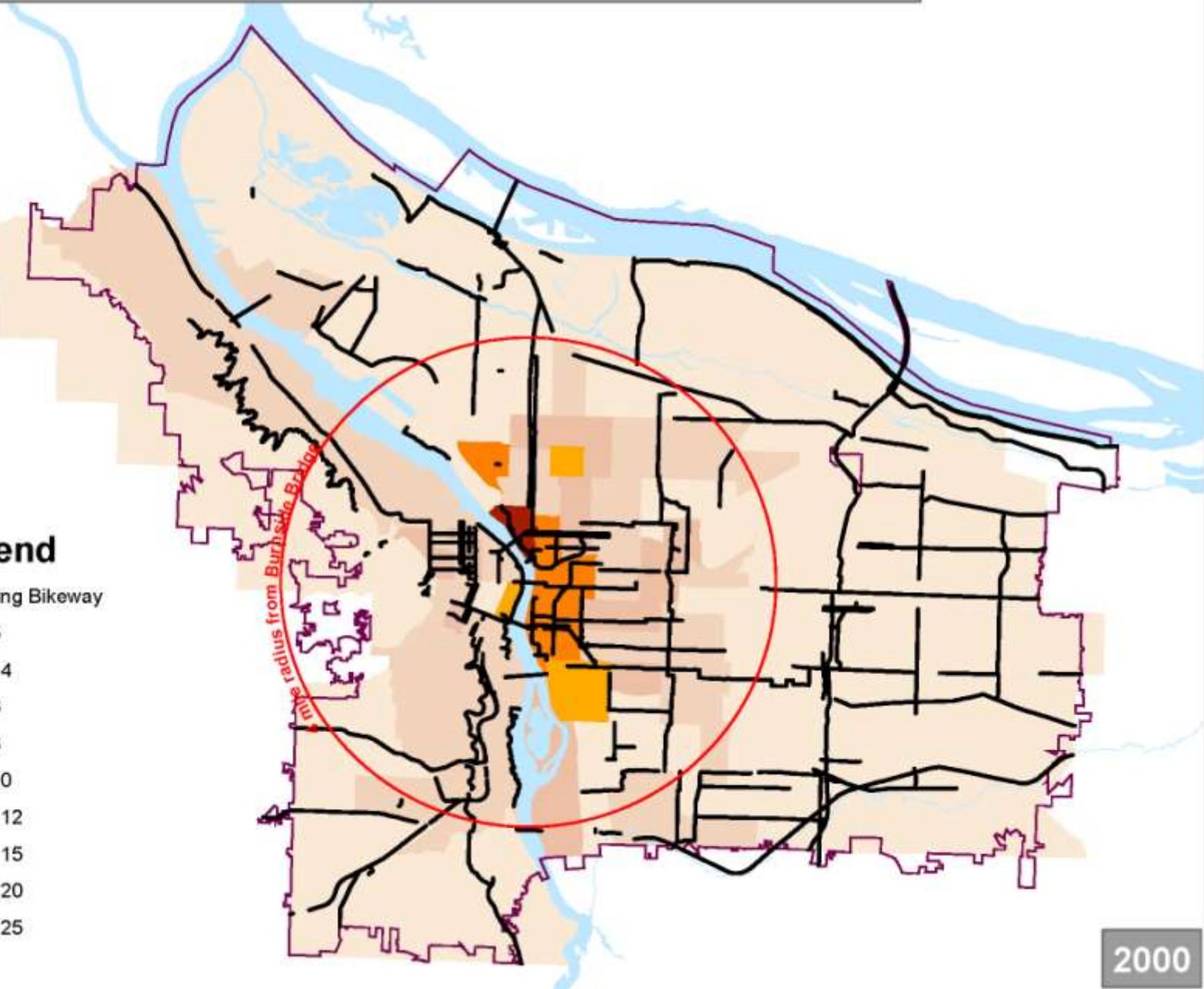
- If we do not achieve these goals, then by 2035 there will be more than one million additional daily automotive trips generated by Portlanders; that's enough to fill up 23 Powell Boulevards

**We've seen steady growth in
bicycle use**

Portland Oregon Bicycle Commute Mode Split by Census Tract

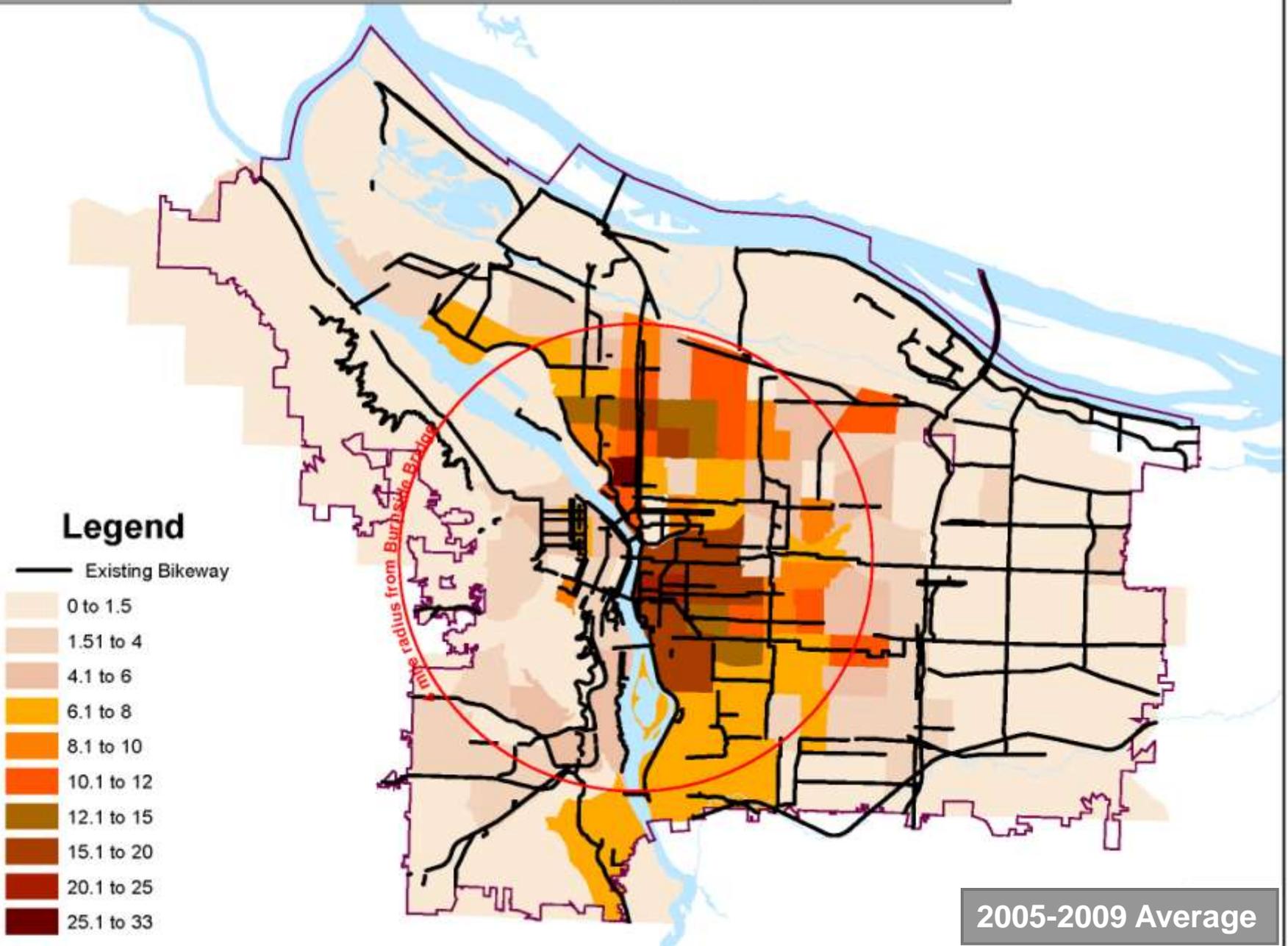


Portland Oregon Bicycle Commute Mode Split by Census Tract

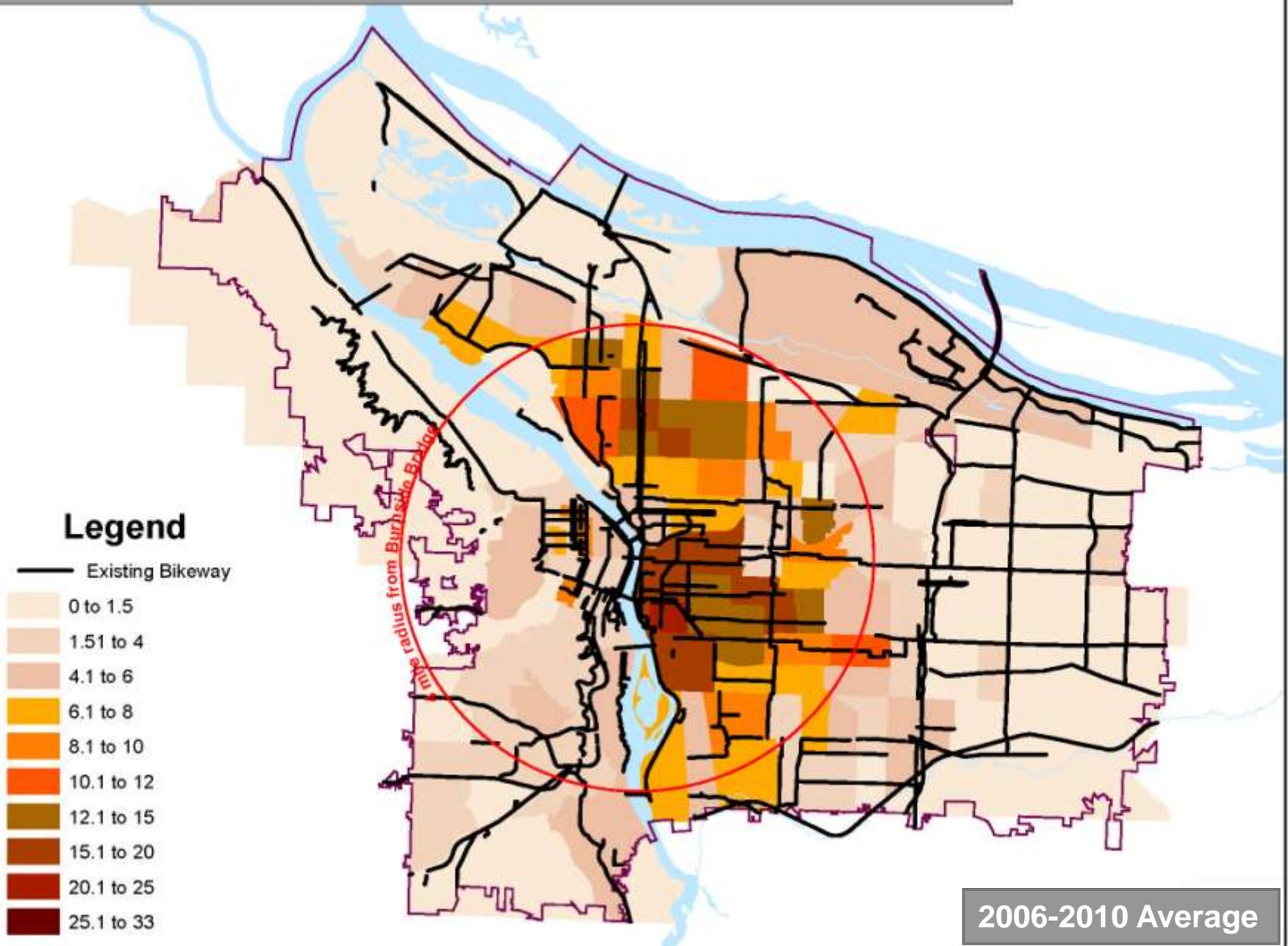


2000

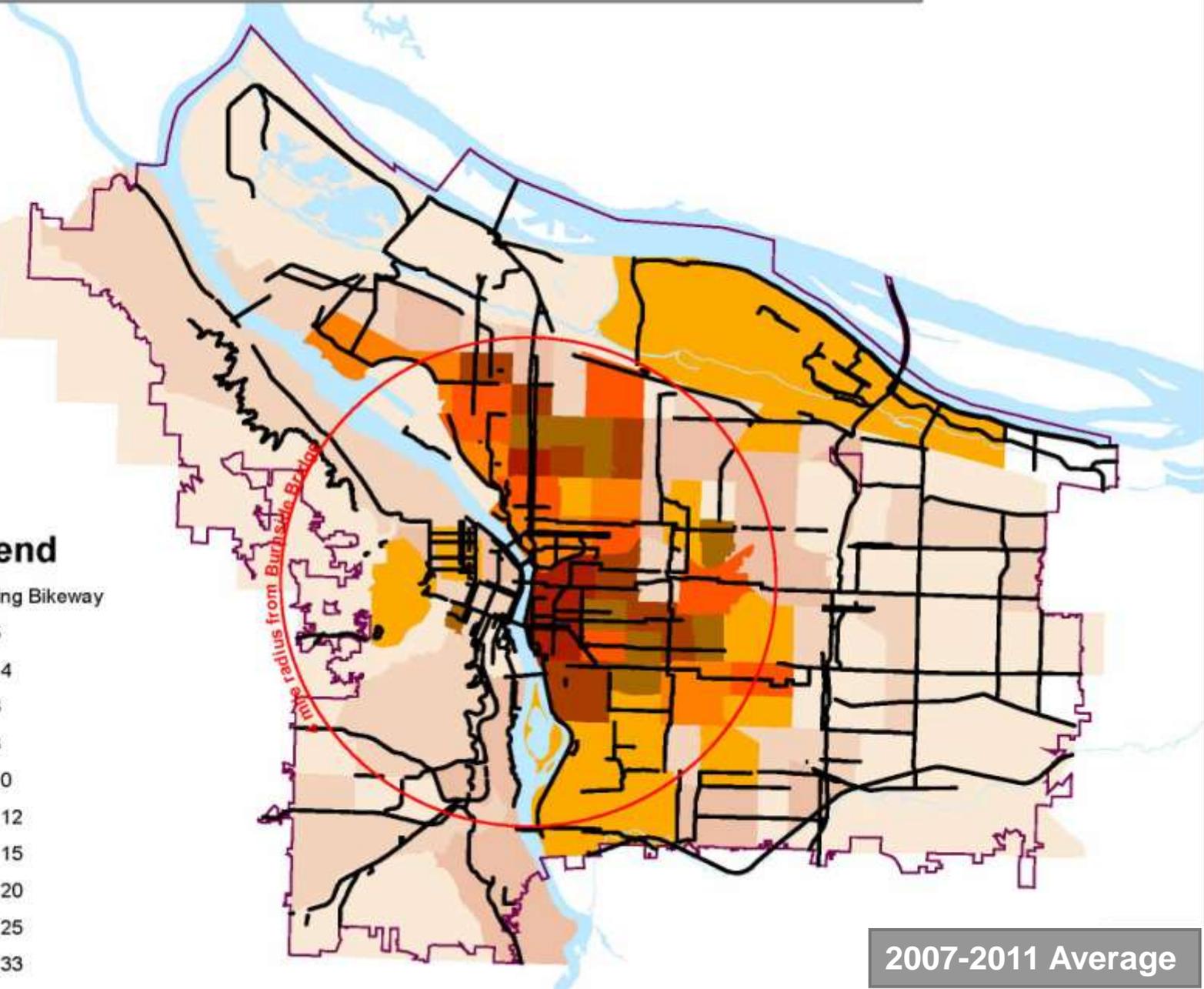
Portland Oregon Bicycle Commute Mode Split by Census Tract



Portland Oregon Bicycle Commute Mode Split by Census Tract



Portland Oregon Bicycle Commute Mode Split by Census Tract



2007-2011 Average

Portland Oregon Bicycle Commute Mode Split by Census Tract

Almost half of Portland's commuters live in areas where the average bicycle commute mode split is 10%

Legend

— Existing Bikeway

Up to 4.49%

4.5% to 26%

Mode splits in colored area:

46% of commuters

Bicycle: 9.9%

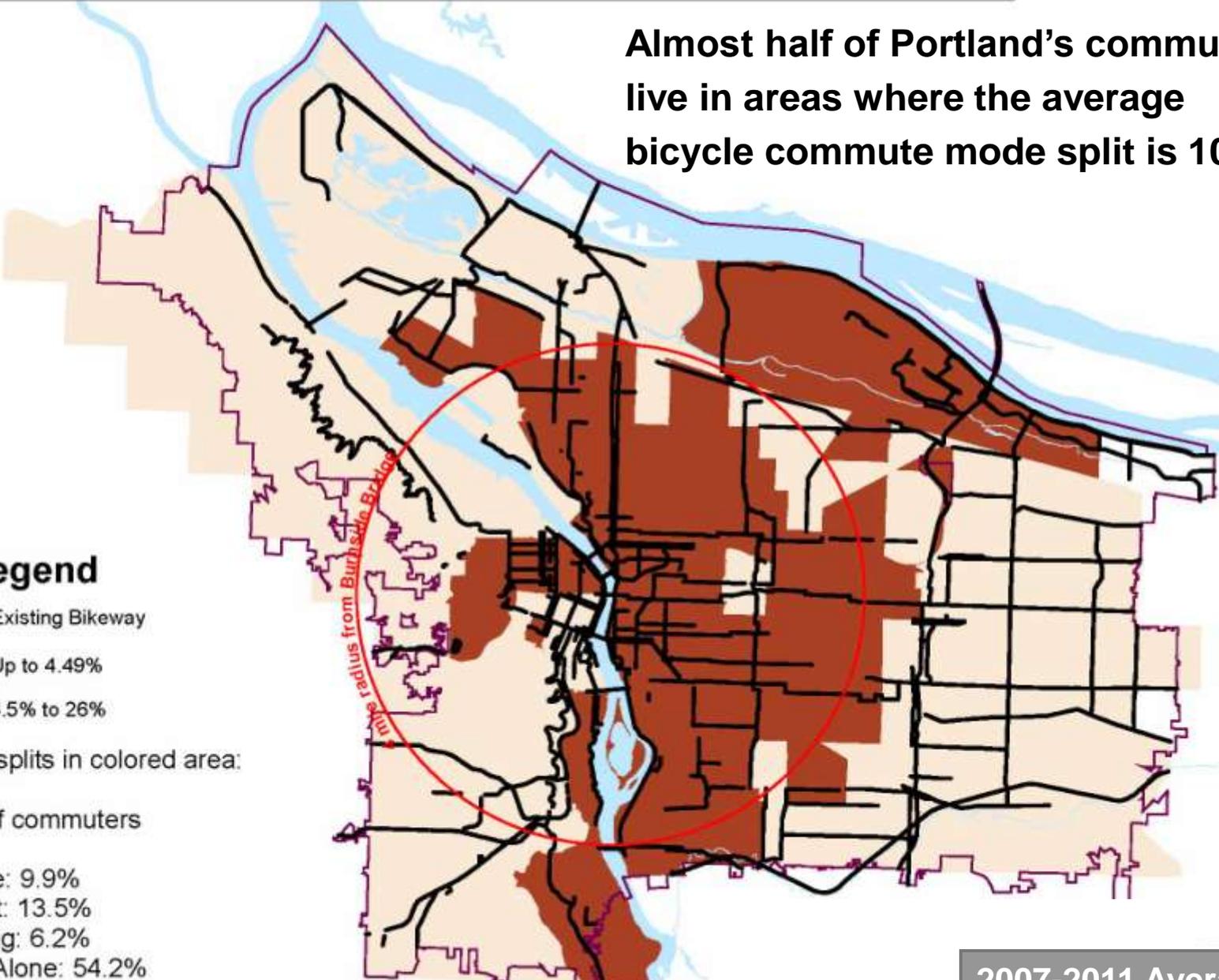
Transit: 13.5%

Walking: 6.2%

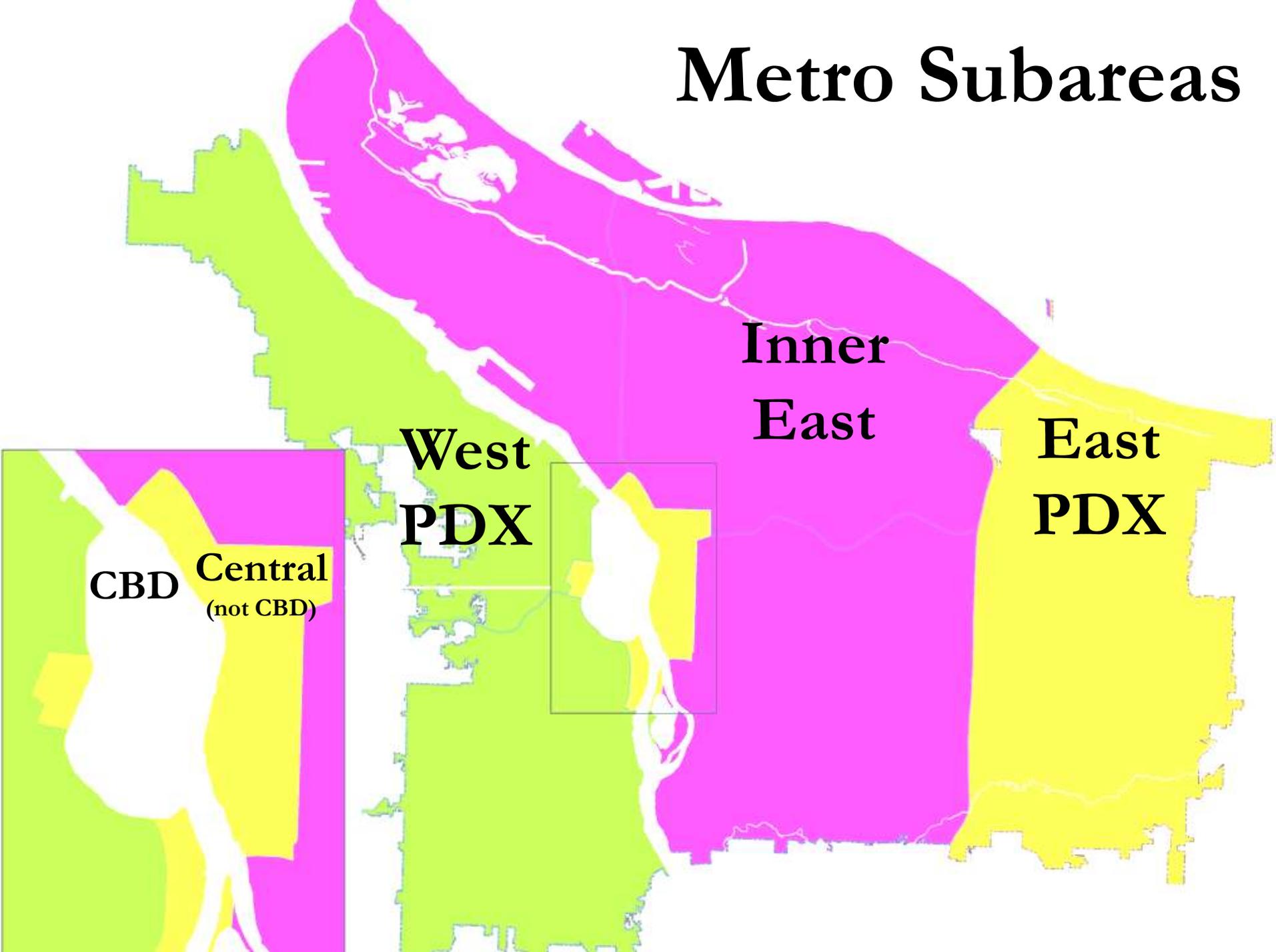
Drive Alone: 54.2%

1 mile radius from Burleson Bikeway

2007-2011 Average



Metro Subareas



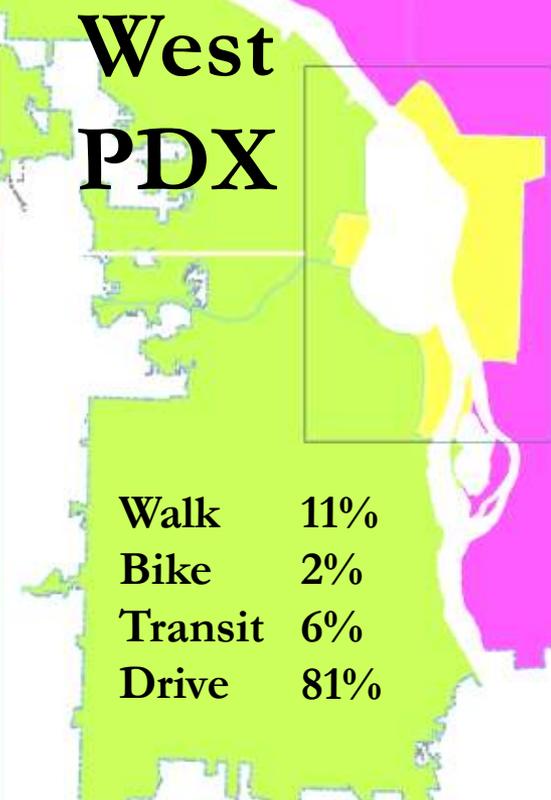
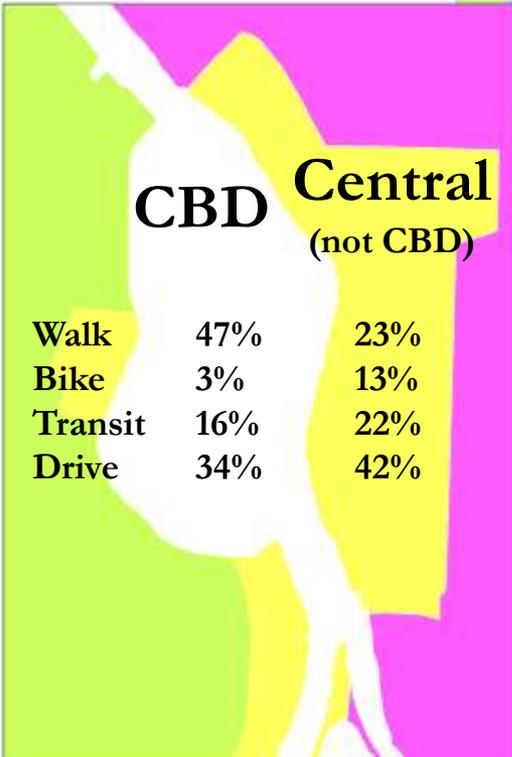
2011

Metro Subareas

Mode Splits

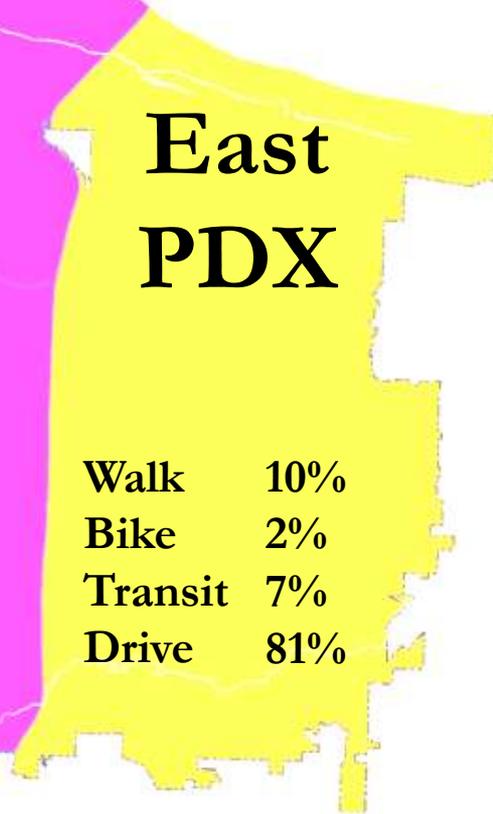
citywide

Walk	15.2%
Bike	5.5%
Transit	6.9%
Drive	72.4%



Inner East

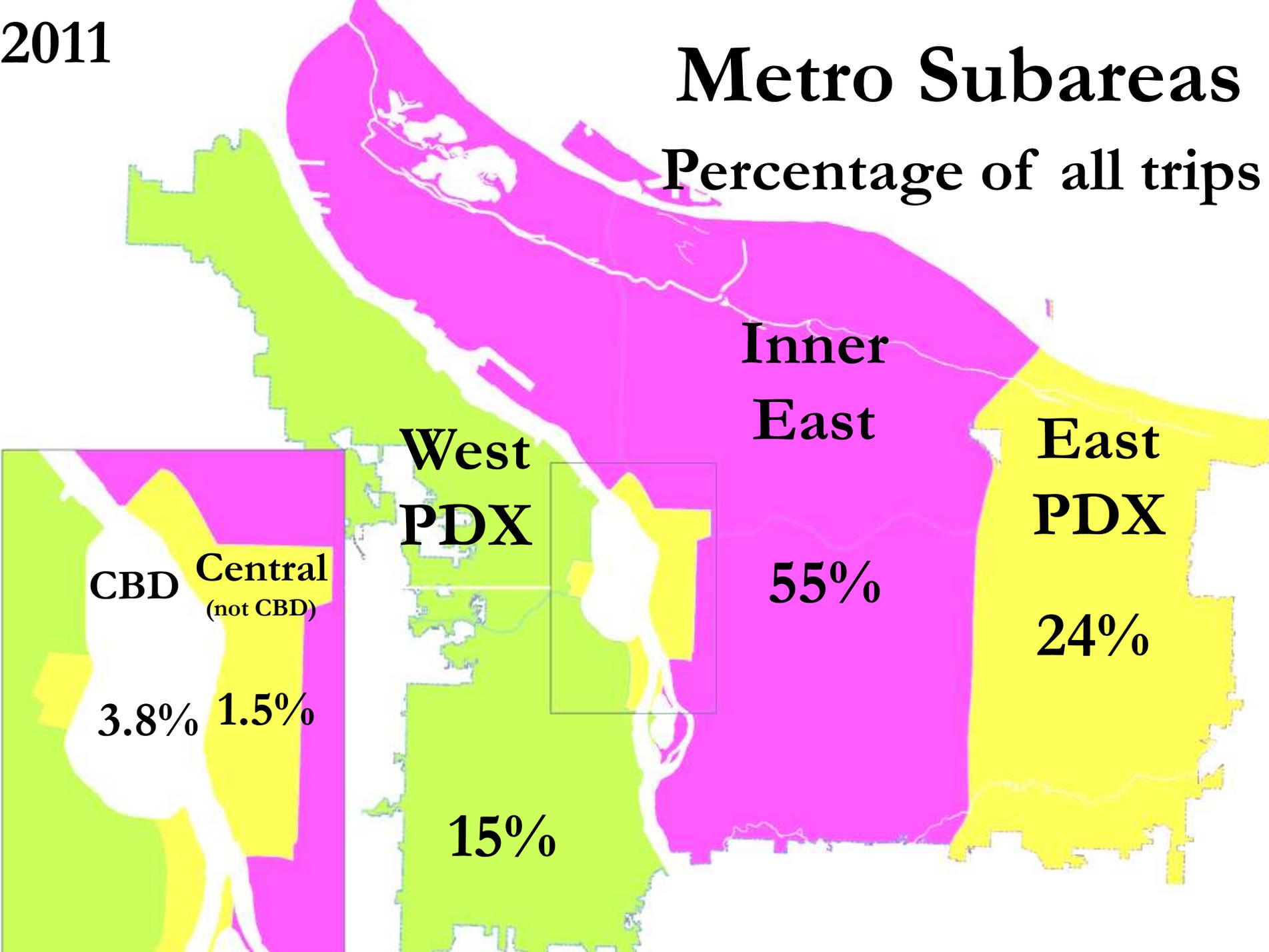
Walk	16%
Bike	8%
Transit	6%
Drive	70%



2011

Metro Subareas

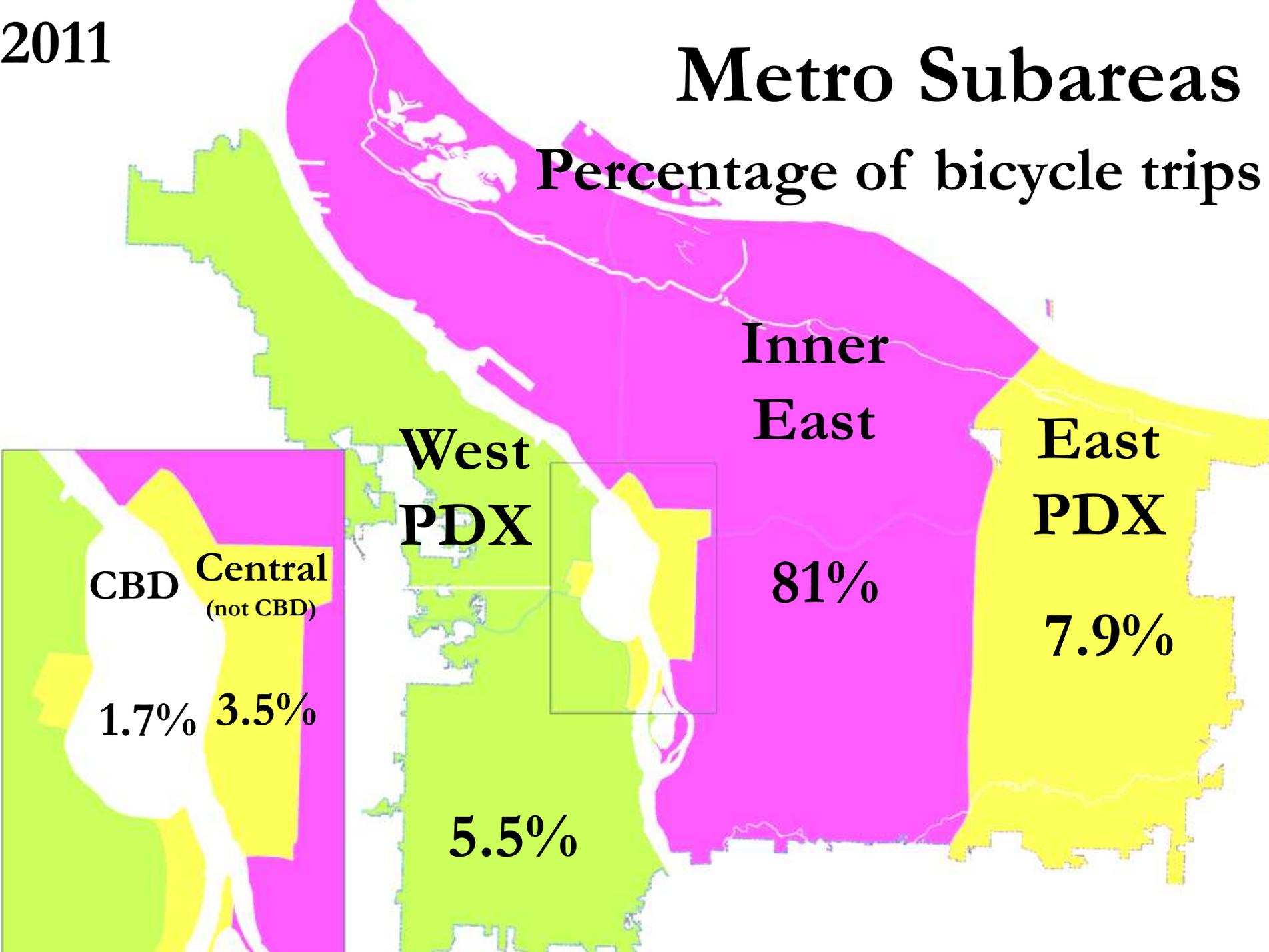
Percentage of all trips



2011

Metro Subareas

Percentage of bicycle trips



All Trip Mode Split Data 1994-2011

Entire City of Portland (based on assumptions about #hholds and daily trips)					Contribution to growth in non- auto trips
	1994	2011	Change	% Change	
Walk	13.0%	15.0%	2.0%	15%	38.8%
Bike	1.6%	6.0%	4.4%	268%	46.6%
Transit	5.5%	6.6%	1.1%	19%	14.6%
Drive	79.8%	72.4%	-7.4%	-9.3%	
AT & Transit	20.1%	27.6%			

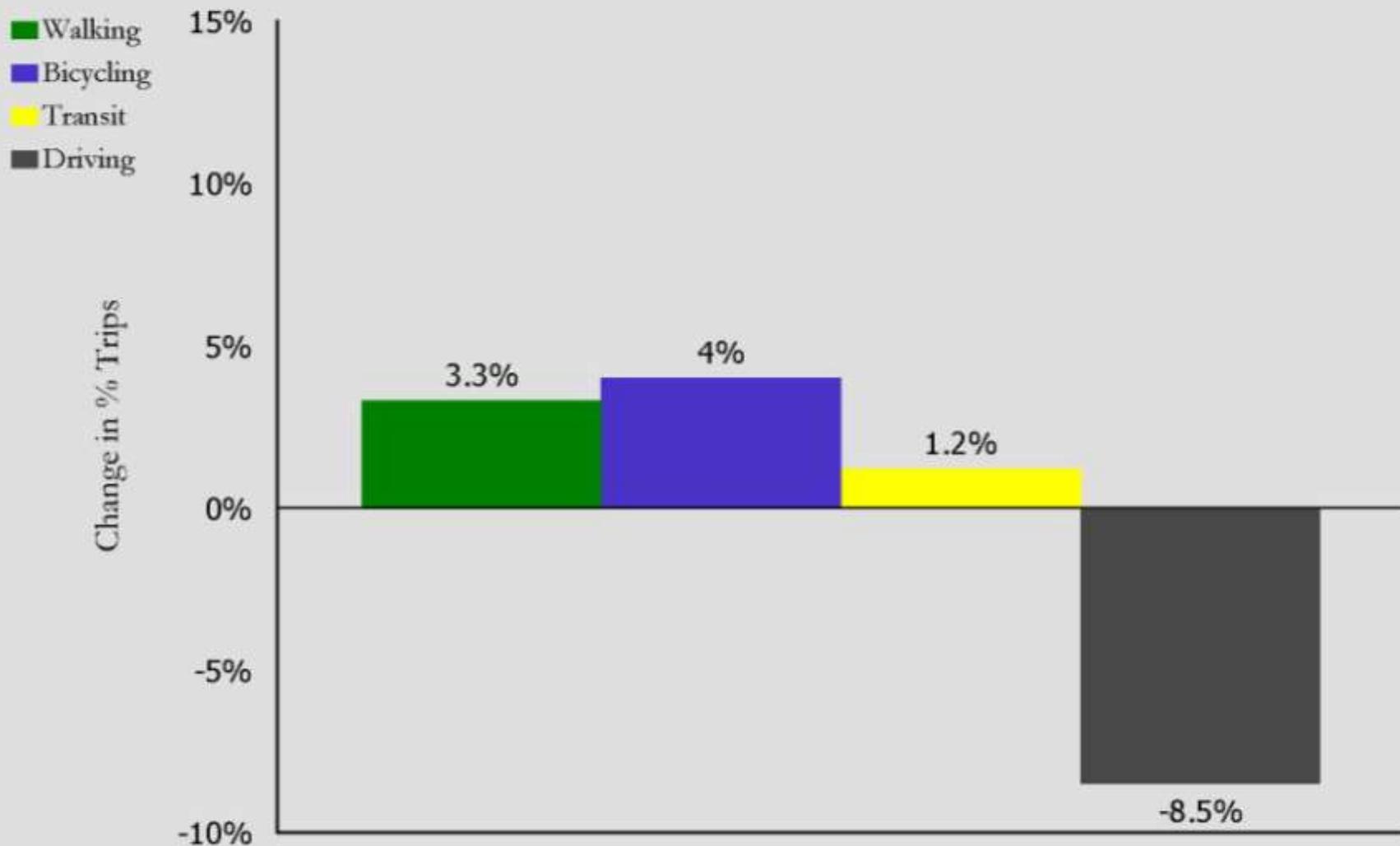
All Trip Mode Split Data 1994-2011

Entire City of Portland (based on assumptions about #hholds and daily trips)					Contribution to growth in non- auto trips
	1994	2011	Change	% Change	
Walk	11.9%	15.2%	3.3%	28%	38.8%
Bike	1.6%	5.5%	4.0%	254%	46.6%
Transit	5.6%	6.9%	1.2%	22%	14.6%
Drive	80.9%	72.4%	-8.5%	-11%	
AT & Transit	19.1%	27.6%			

**Bicycle transportation
contributed the most to the
decline in per capita drive
alone trips since 1994**

Change in Mode Split 1994-2011

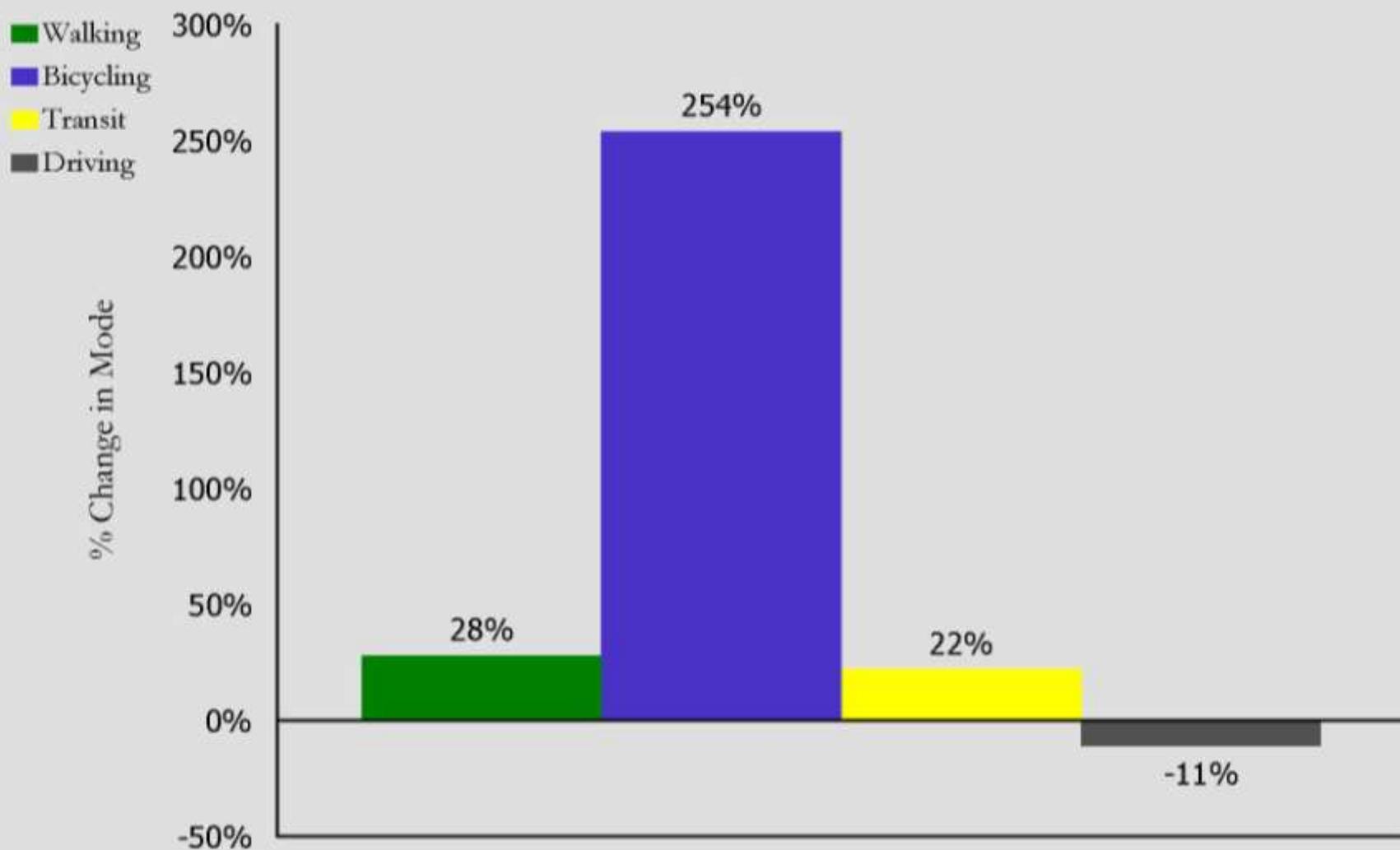
City of Portland, All Trips



“Change in % trips represents the change in per capita trips by mode when comparing 1994 and 2011. This change in trips reflects per capita growth by mode over this time period.”

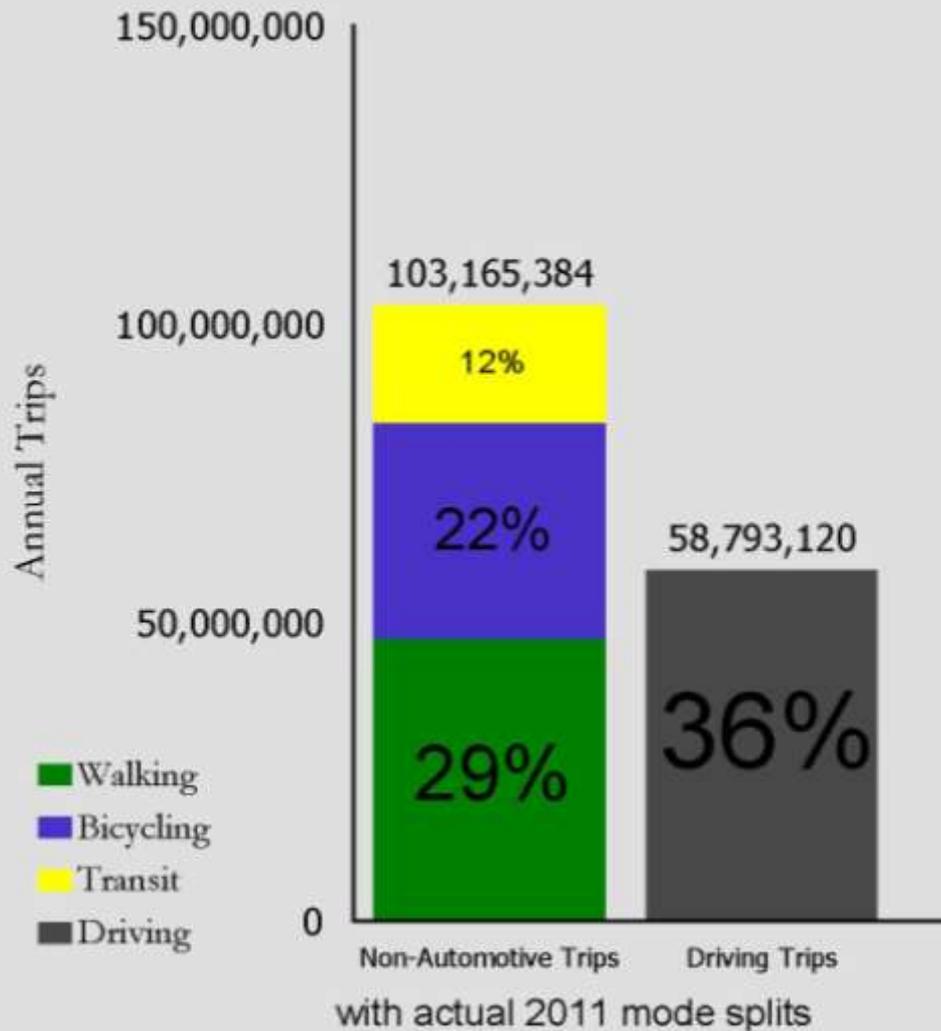
% Change in Mode Split by Mode 1994-2011

City of Portland All Trips



"% Change in Mode" reflects growth (or decline) in mode between 1994 and 2011.

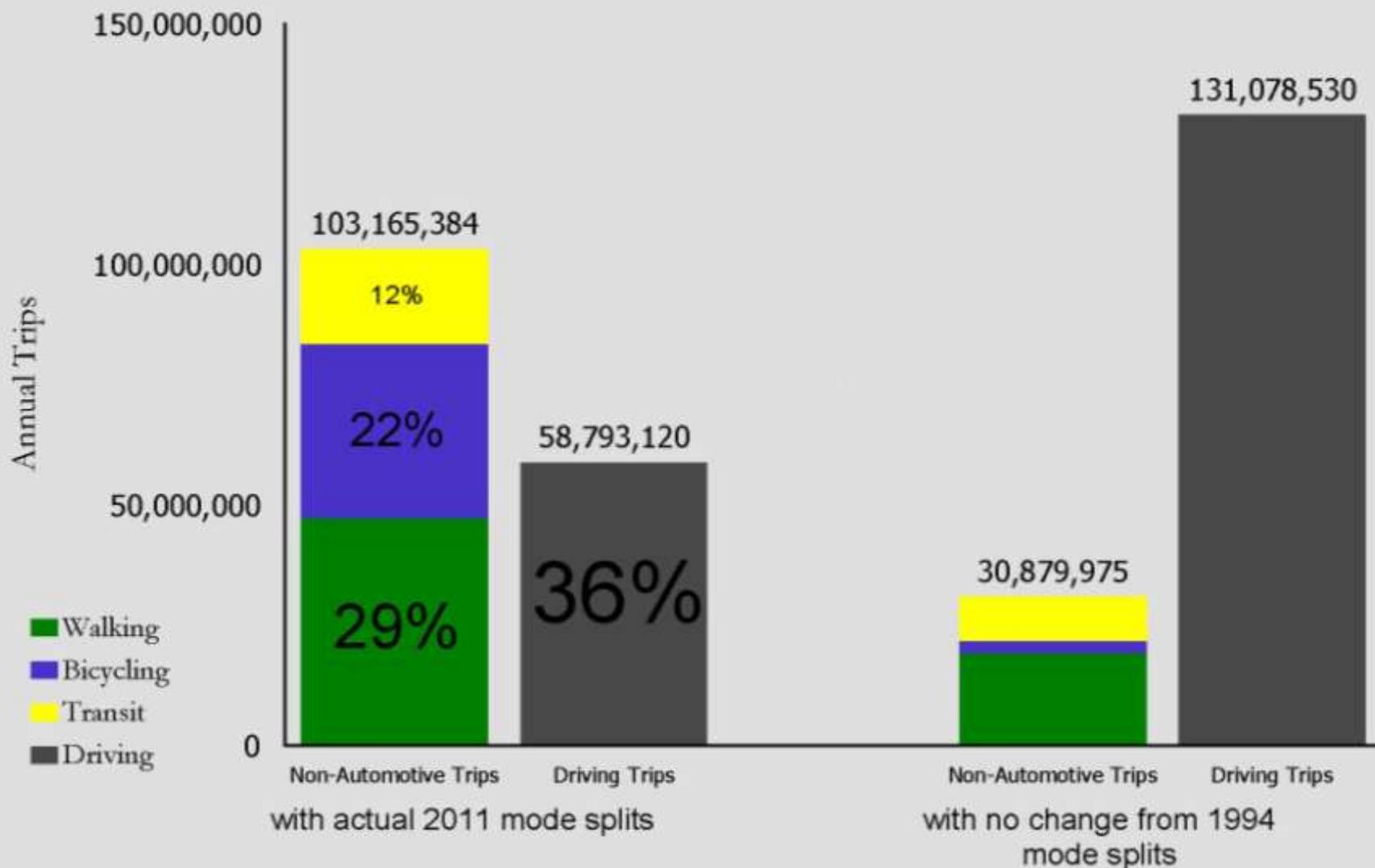
Distribution of Trips Added 1994 to 2011



Annual trips taken by Portland residents increased by approximately 162 million from 1994 to 2011 (mainly due to population increase); 64% of those additional trips were by walking, bicycling and transit.

Distribution of Trips Added 1994 to 2011

With actual 2011 mode splits and with 1994 mode splits (no change)



Annual trips taken by Portland residents increased by approximately 162 million from 1994 to 2011 (mainly due to population increase); 64% of those additional trips were by walking, bicycling and transit.

Achieving 25%

How much and where does
bicycling have to grow to
achieve our policy goals?

Mode splits City of Portland: 1994, 2011 and Projected Growth

Mode Splits City of Portland: 1994, 2011 and Projected Showing Growth

	Entire City of Portland				1994-2011		2011 to 2020		2011-2035	
	1994	2011	2020	2035	Change	Growth	Change	Growth	Change	Growth
Walk	11.9%	15.2%	17%	20%	3.3%	27.7%	2%	11%	5%	32%
Bike	1.6%	5.5%	10%	25%	4.0%	254.2%	4%	79%	19%	346%
Transit	5.6%	6.9%	9%	12%	1.2%	22.1%	3%	37%	5%	74%
Drive	80.9%	72.4%	64%	43%	-8.5%	-10.5%	-9%	-12%	-29%	-40%
MVMT billion miles	2.35	2.26	2.39	2.06						

	Growth Scenarios: Bike Growth		
	1994-2011	2011-2020	2011-2035
CBD	38.9%	100.0%	300.0%
Central (not CBD)	364.3%	75.0%	100.0%
East to I-205	305.0%	75.0%	320.0%
West	53.8%	100.0%	400.0%
East PDX	260.0%	100.0%	800.0%
City Wide	254%	79%	346%

Mode splits City of Portland: 1994, 2011 and Projected Growth

Mode Splits City of Portland: 1994, 2011 and Projected Showing Growth

	Entire City of Portland				1994-2011		2011 to 2020		2011-2035	
	1994	2011	2020	2035	Change	Growth	Change	Growth	Change	Growth
Walk	11.9%	15.2%	17%	20%	3.3%	27.7%	2%	11%	5%	32%
Bike	1.6%	5.5%	10%	25%	4.0%	254.2%	4%	79%	19%	346%
Transit	5.6%	6.9%	9%	12%	1.2%	22.1%	3%	37%	5%	74%
Drive	80.9%	72.4%	64%	43%	-8.5%	-10.5%	-9%	-12%	-29%	-40%
MVMT billion miles	2.35	2.26	2.39	2.06						

	Growth Scenarios: Pedestrian Growth		
	1994-2011	2011-2020	2011-2035
CBD	19.0%	10.0%	19.0%
Central (not CBD)	-36.2%	10.0%	20.0%
East to I-205	38.5%	10.0%	38.0%
West	-28.1%	10.0%	10.0%
East PDX	51.5%	10.0%	20.0%
City Wide	28%	11%	32%

Mode splits City of Portland: 1994, 2011 and Projected Growth

Mode Splits City of Portland: 1994, 2011 and Projected Showing Growth

	Entire City of Portland				1994-2011		2011 to 2020		2011-2035	
	1994	2011	2020	2035	Change	Growth	Change	Growth	Change	Growth
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Bike	1.6%	5.5%	10%	25%	4.0%	254.2%	4%	79%	19%	346%
Transit	5.6%	6.9%	9%	12%	1.2%	22.1%	3%	37%	5%	74%
Drive	80.9%	72.4%	64%	43%	-8.5%	-10.5%	-9%	-12%	-29%	-40%
MVMT billion miles	2.35	2.26	2.39	2.06						

	Growth Scenarios: Transit Growth		
	1994-2011	2011-2020	2011-2035
CBD	1.9%	3.0%	3.0%
Central (not CBD)	120.0%	50.0%	50.0%
East to I-205	0.0%	20.0%	40.0%
West	96.8%	50.0%	100.0%
East PDX	35.3%	50.0%	110.0%
City Wide	22%	37%	74%

**The east side between the
Willamette and I-205 is where
we will achieve the largest
gains in bicycle use**

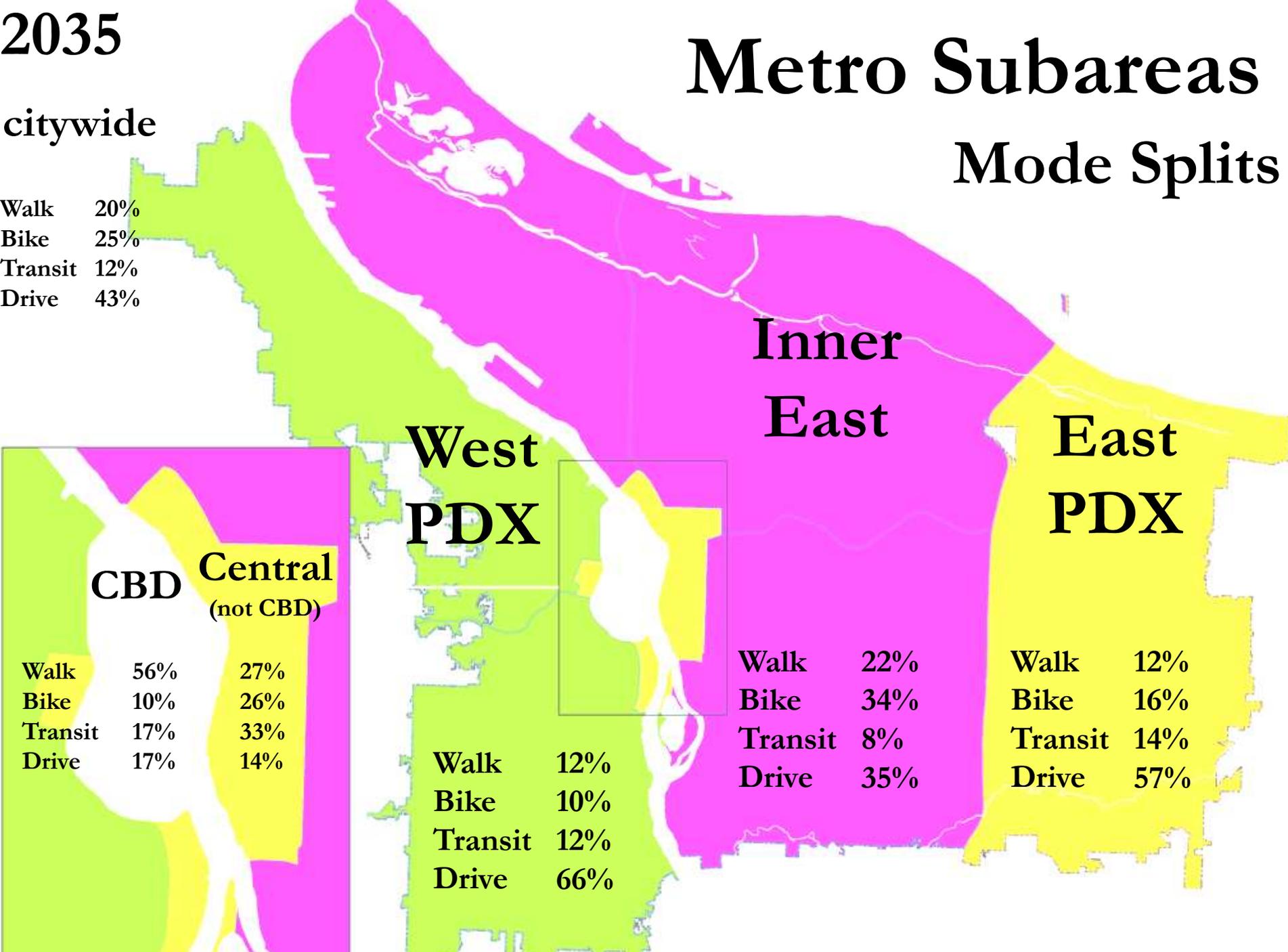
2035

Metro Subareas

Mode Splits

citywide

Walk	20%
Bike	25%
Transit	12%
Drive	43%



CBD Central
(not CBD)

Walk	56%	27%
Bike	10%	26%
Transit	17%	33%
Drive	17%	14%

West PDX

Walk	12%
Bike	10%
Transit	12%
Drive	66%

Inner East

Walk	22%
Bike	34%
Transit	8%
Drive	35%

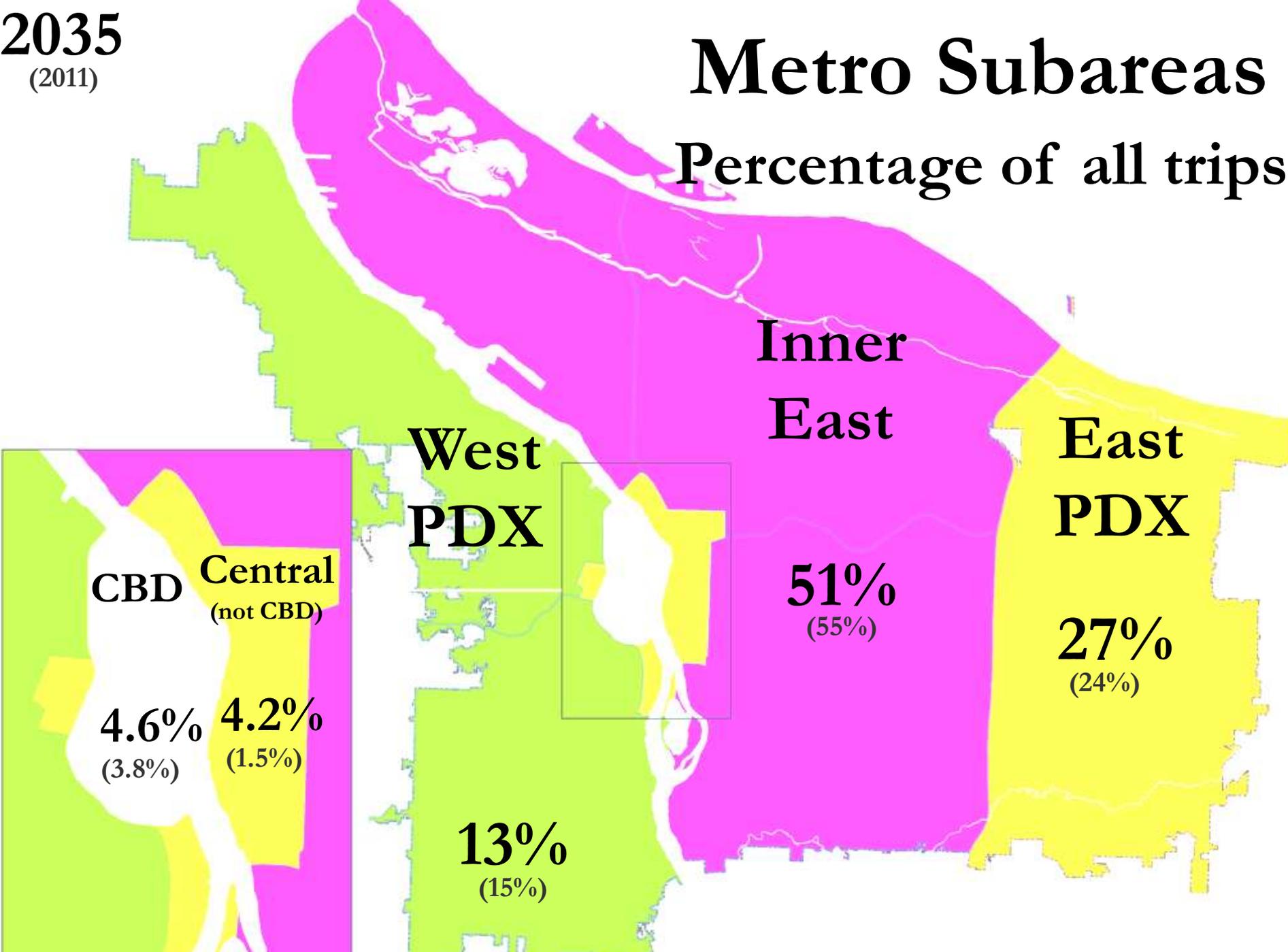
East PDX

Walk	12%
Bike	16%
Transit	14%
Drive	57%

2035
(2011)

Metro Subareas

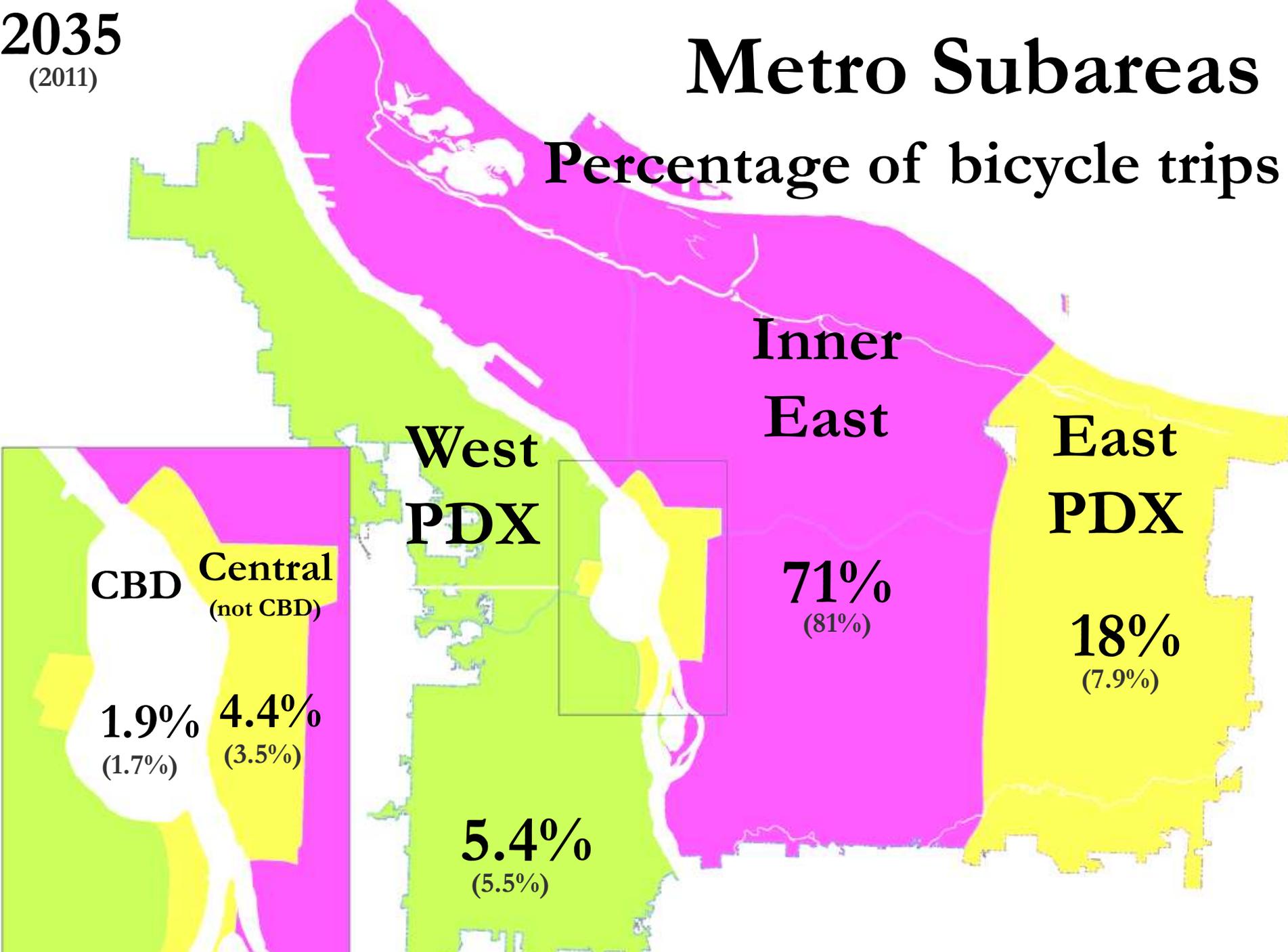
Percentage of all trips



2035
(2011)

Metro Subareas

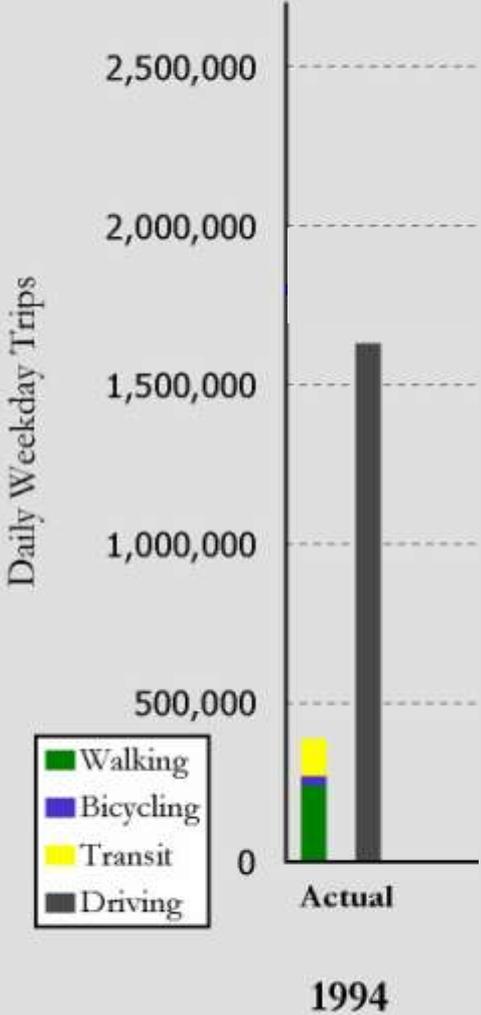
Percentage of bicycle trips



What's the benefit?

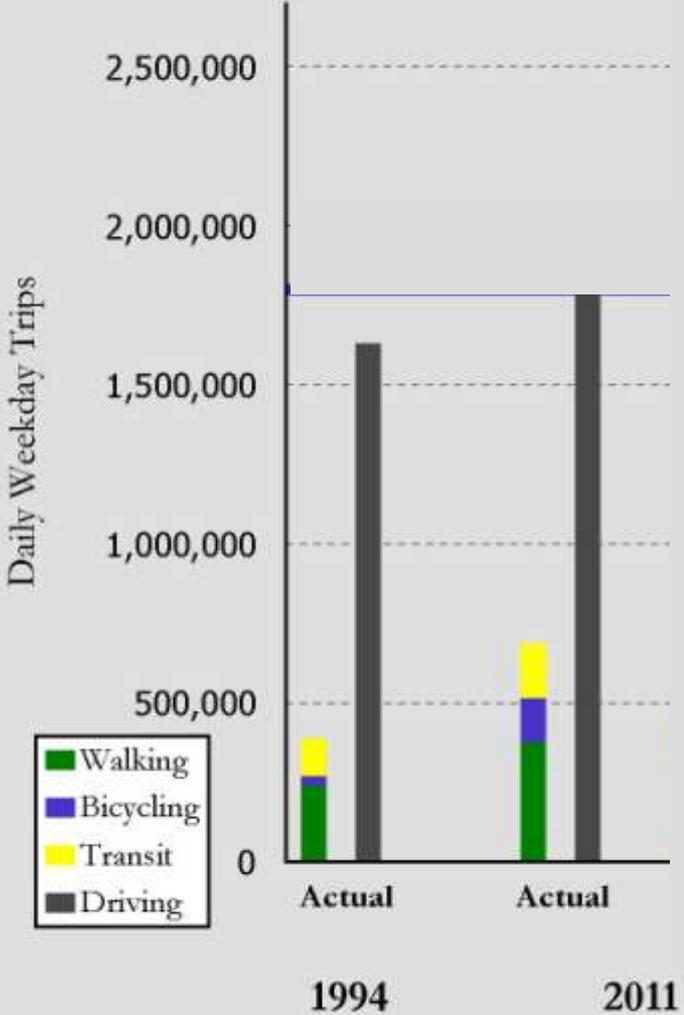
**What if we don't
achieve our goals?**

Daily trips: with & without increased AT mode splits



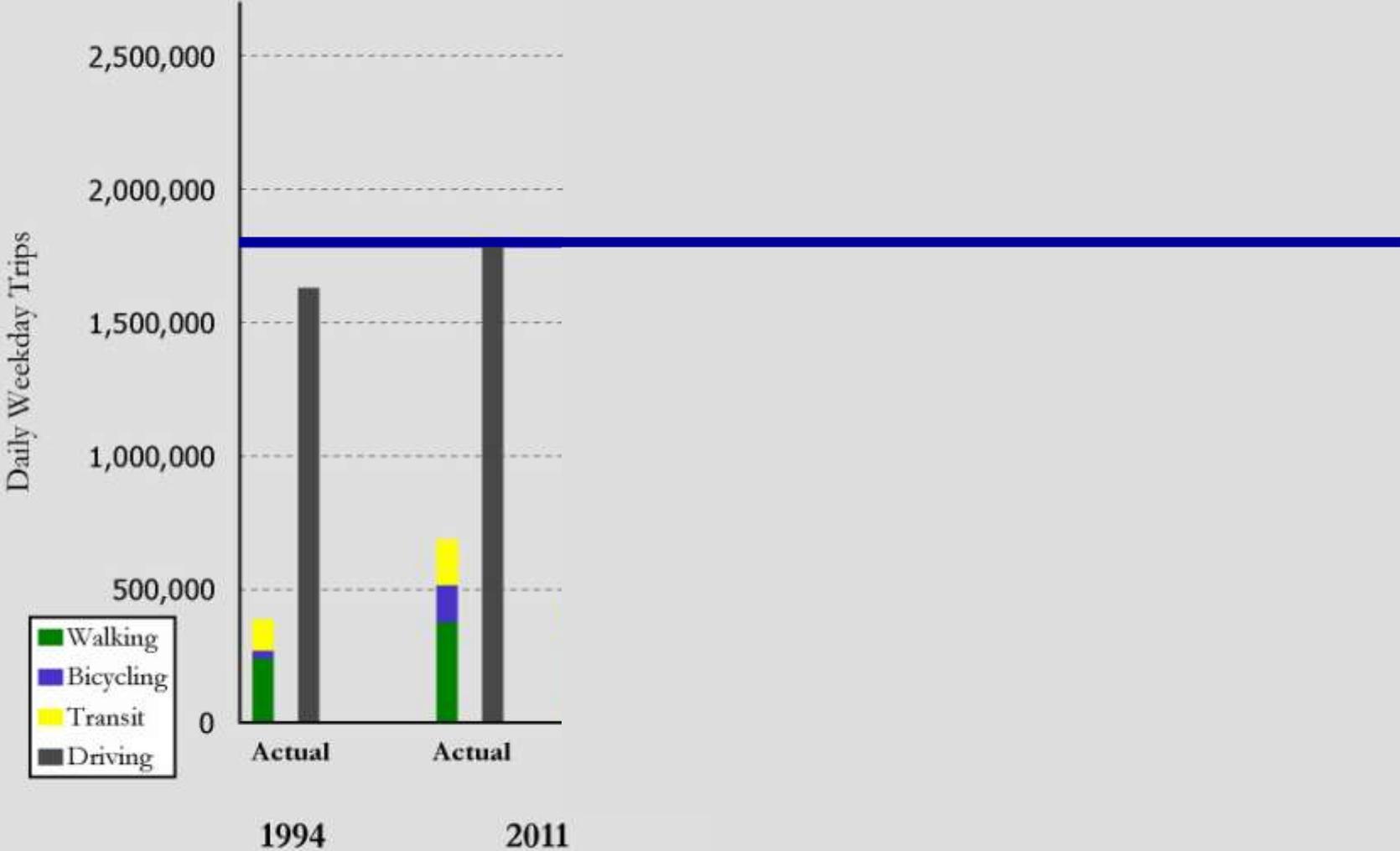
Based on Metro's 2011 Personal Transportation Survey

Daily trips: with & without increased AT mode splits



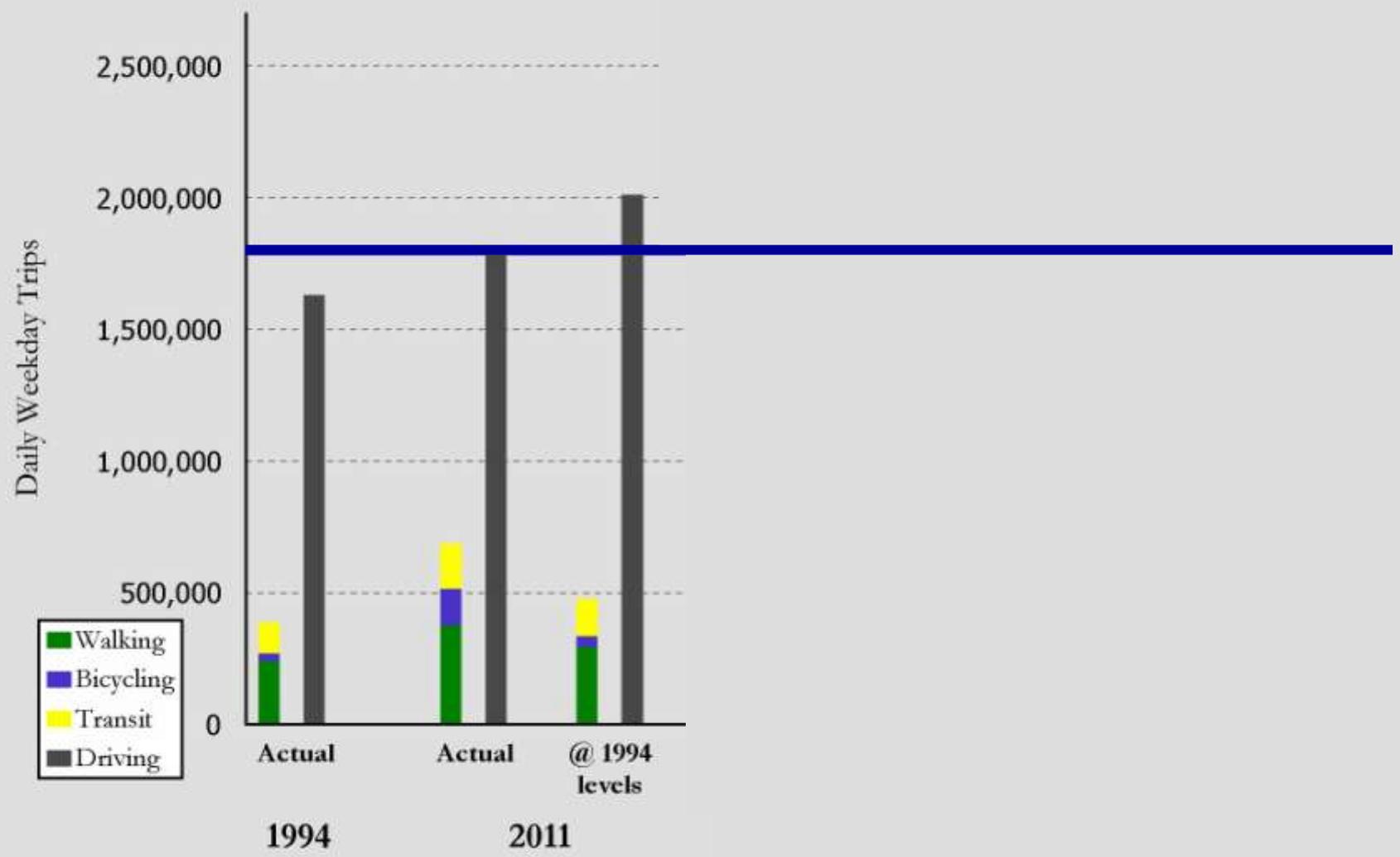
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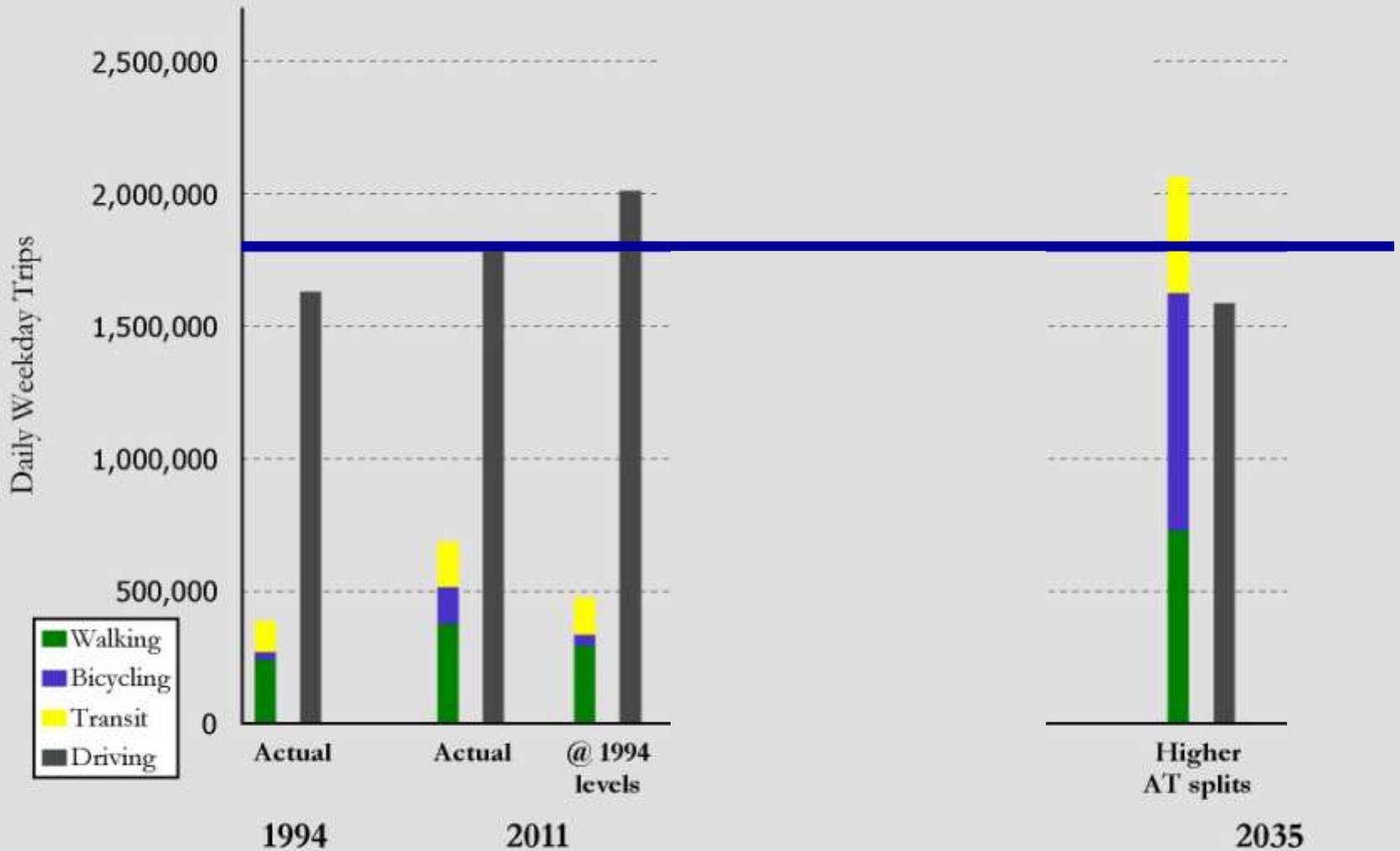
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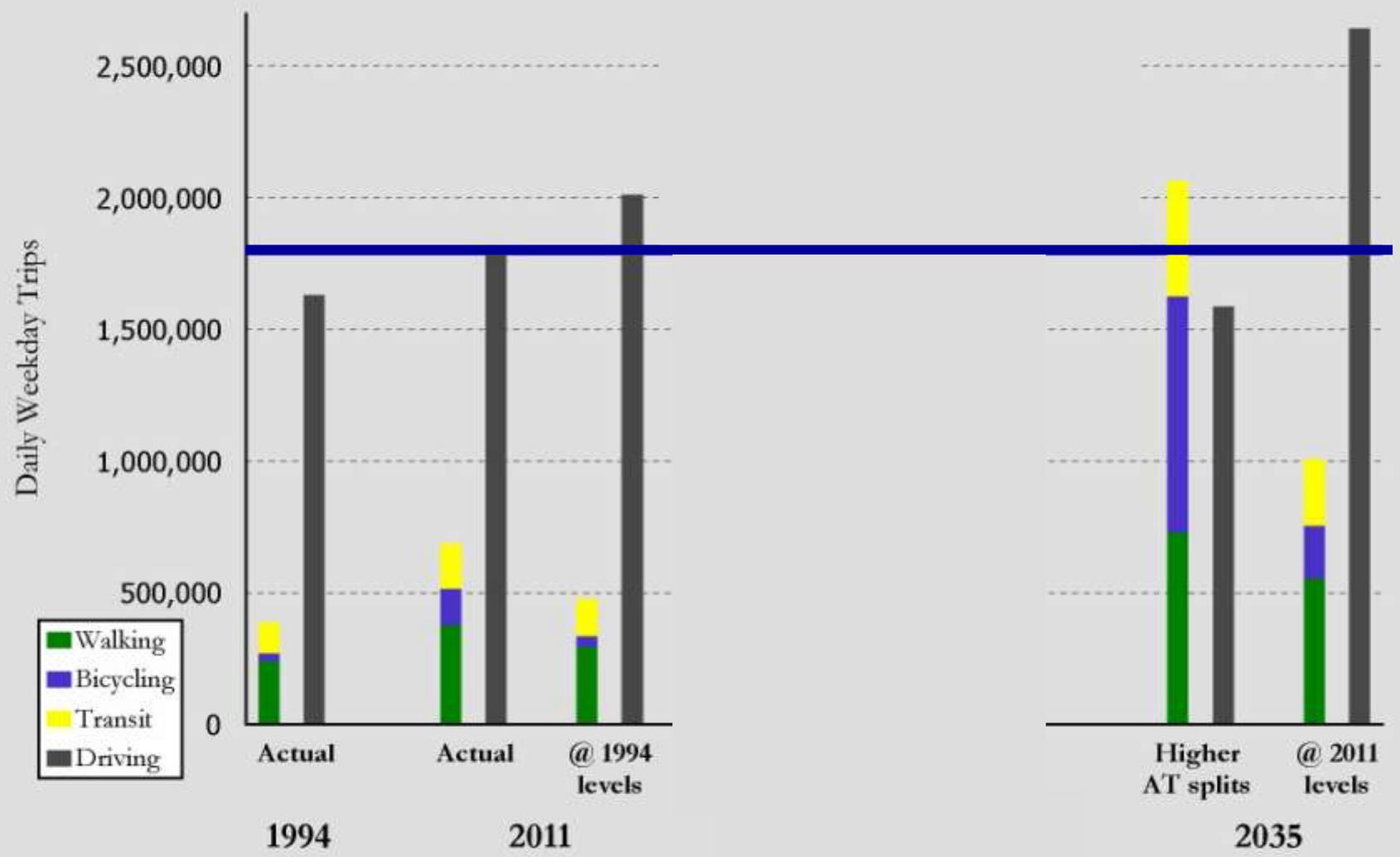


Based on Metro's 2011 Personal Transportation Survey

Daily trips: with & without increased AT mode splits

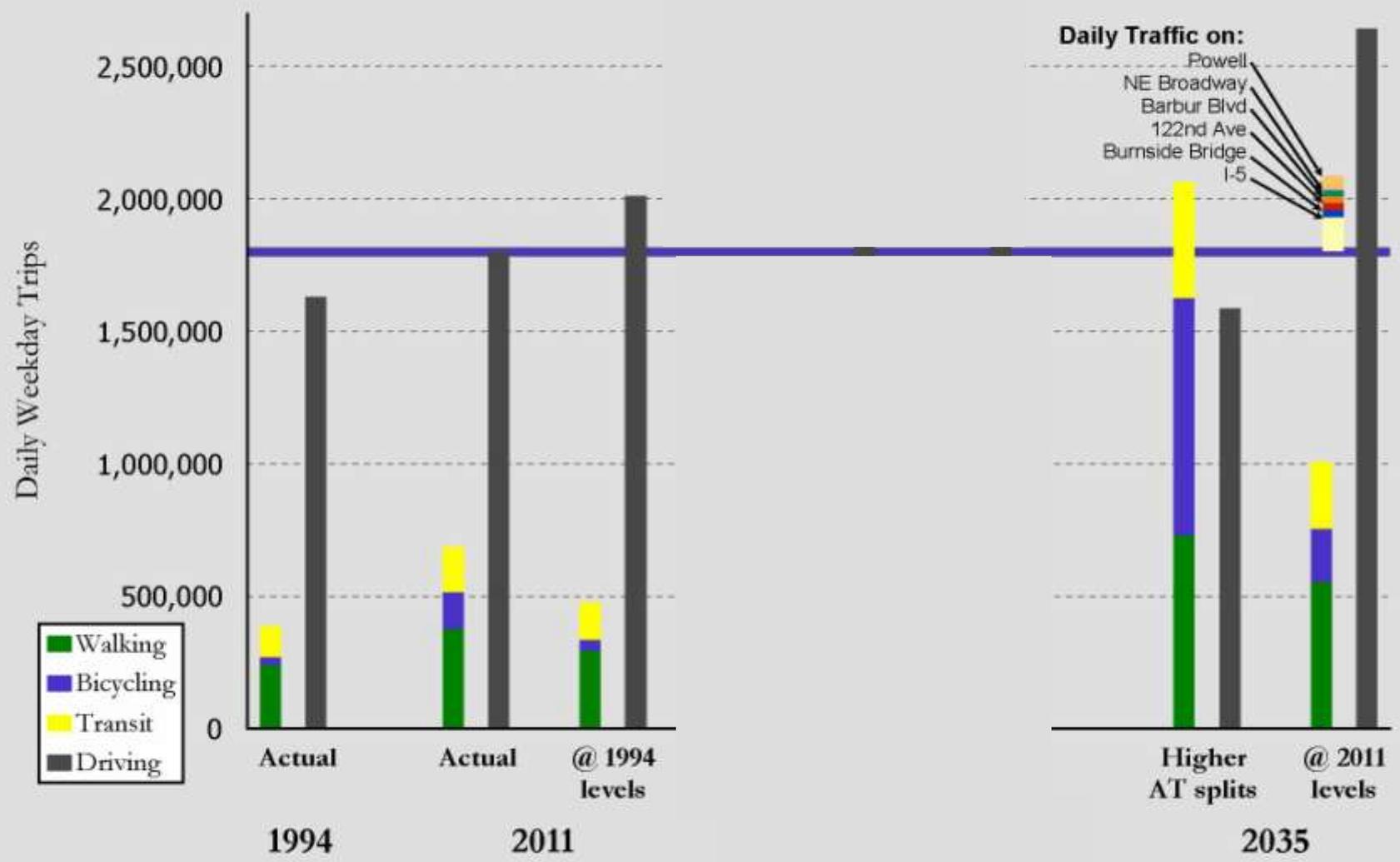


Daily trips: with & without increased AT mode splits



Based on Metro's 2011 Personal Transportation Survey

Daily trips: with & without increased AT mode splits

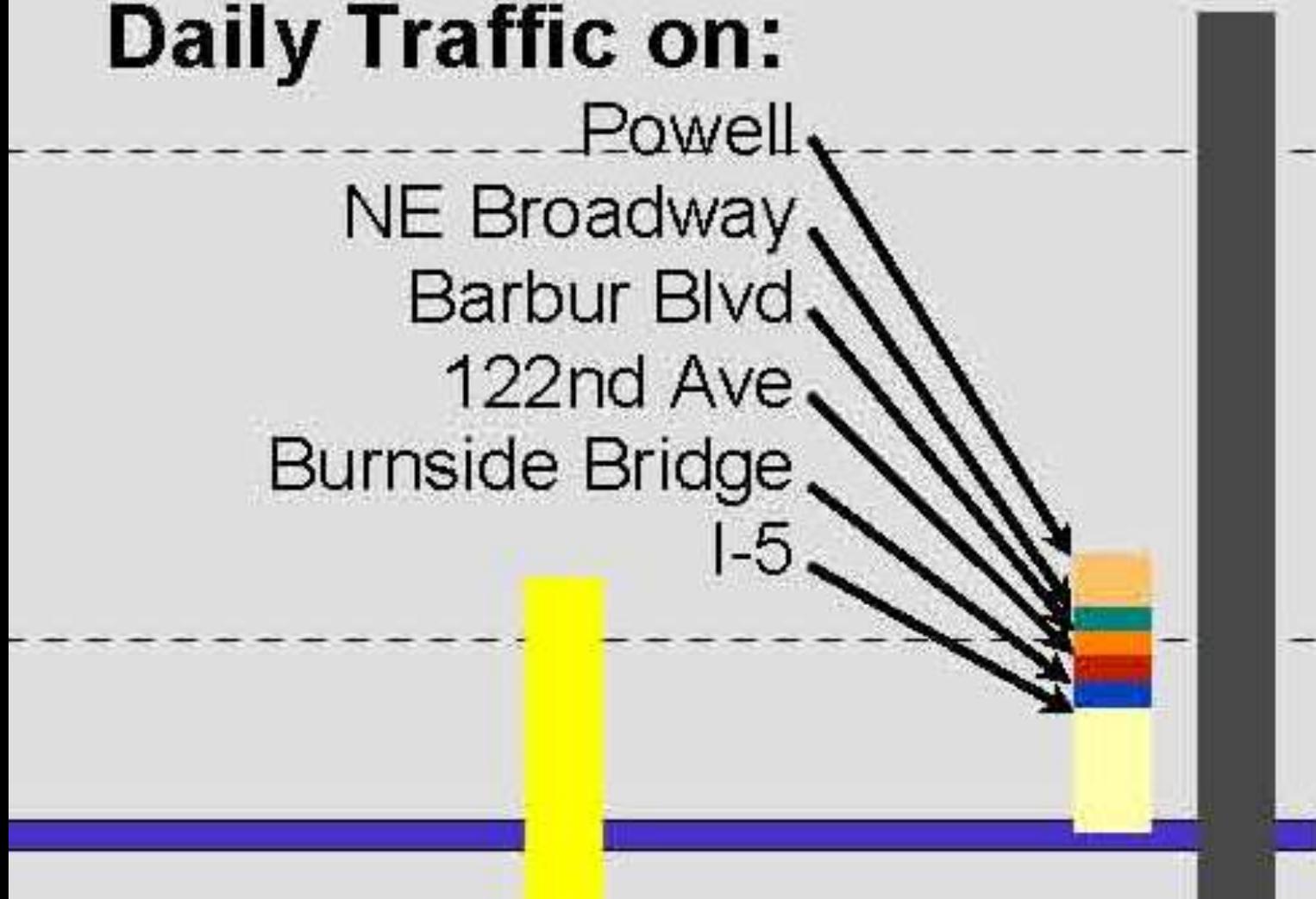


Based on Metro's 2011 Personal Transportation Survey

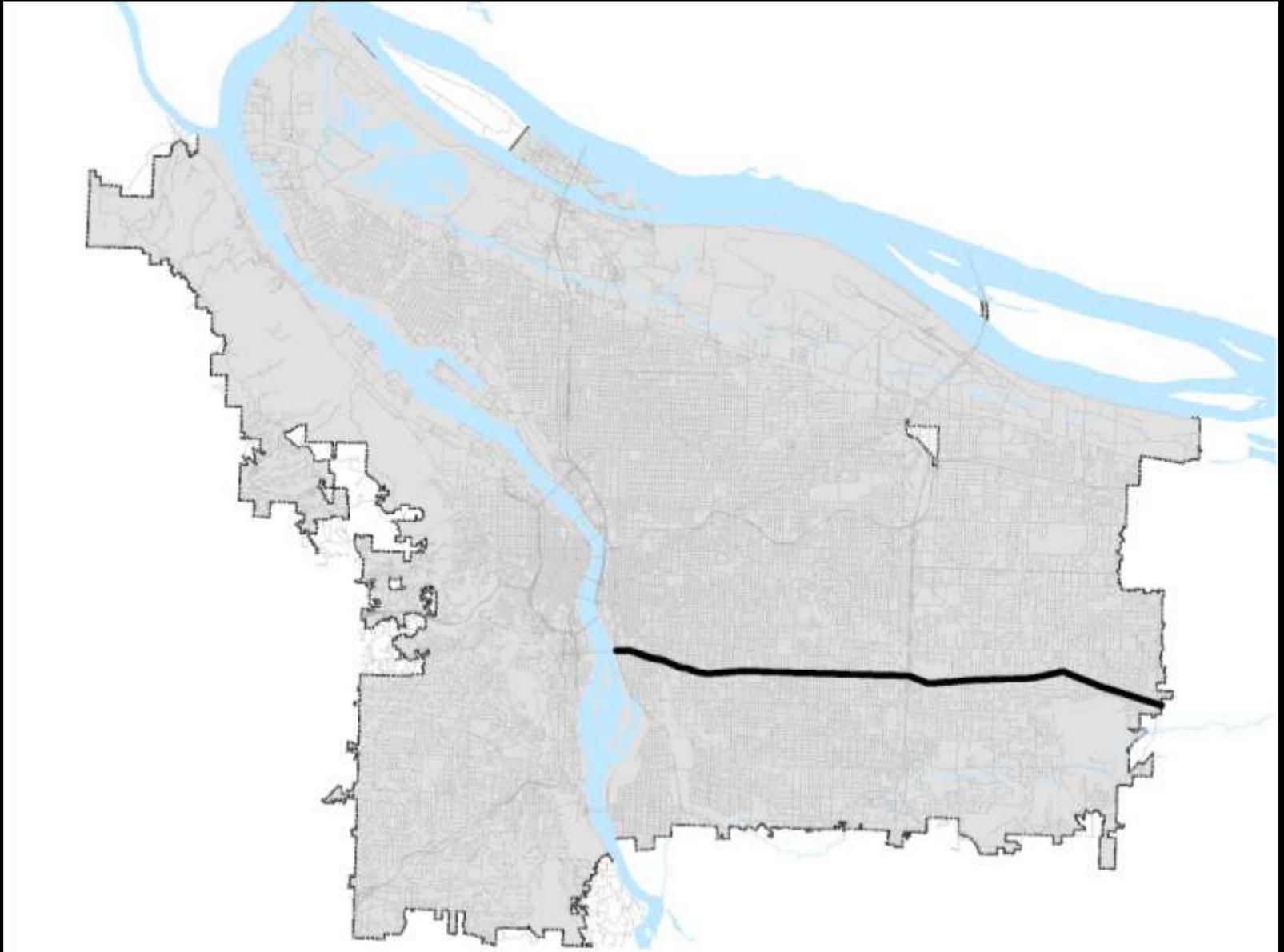
What if we don't achieve our policy goals?

Daily Traffic on:

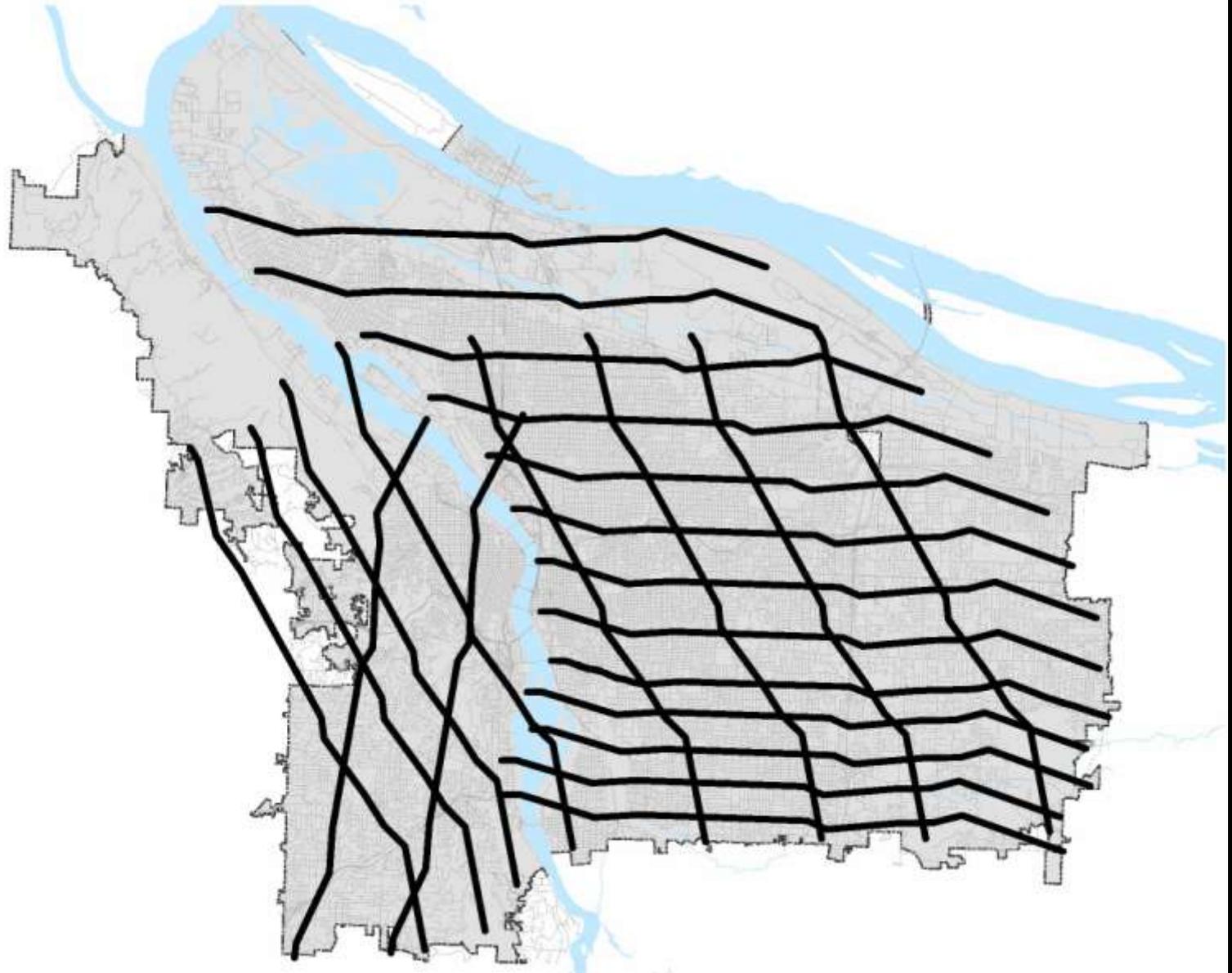
- Powell
- NE Broadway
- Barbur Blvd
- 122nd Ave
- Burnside Bridge
- I-5



What if we don't achieve our policy goals?



What if we don't achieve our policy goals?



How to measure the effects of fewer bicycle and more car trips in Portland in 2035

Working paper
Economic evaluation
methodology and
Summary

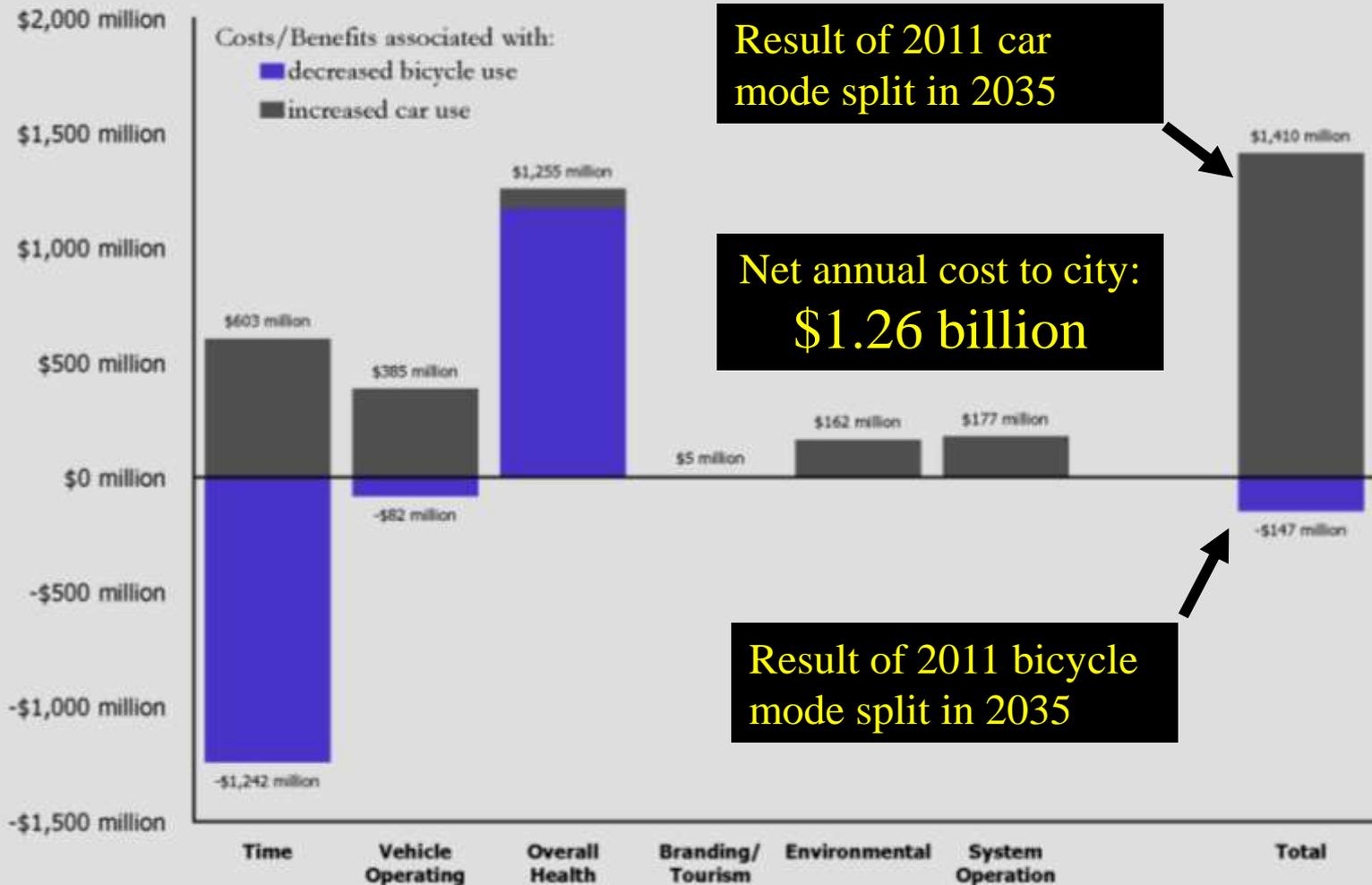


Table 2.2 Average costs per kilometre for cycling, DKK, 2008 prices

	Cycling (16 km/h)			For reference: Car (50 km/h) in city			
	Internalized	External	Total	Internalized	External	Duties	Total
Time costs (travel time, non-work)	5.00	0	5.00	1.60	0	0	1.60
Vehicle operating costs	0.33	0	0.33	2.20	0	-1.18	1.02
Prolonged life	-2.66	0.06	-2.59	0	0	0	0
Health	-1.11	-1.80	-2.91	0	0	0	0
Accidents	0.25	0.54	0.78	0	0.22	0	0.22
Perceived safety	+ (?)	0	+ (?)	?	?	0	?
Discomfort	?	0	?	?	?	0	?
Branding/tourism	0	-0.02	-0.02	?	?	0	?
Air pollution	0	0	0	0	0.03	0	0.03
Climate changes	0	0	0	0	0.04	0	0.04
Noise	0	0	0	0	0.36	0	0.36
Road deterioration	0	0	0	0	0.01	0	0.01
Congestion	0	0	0	0	0.46	0	0.46
Total	1.81	-1.22	0.60	3.80	1.13	-1.18	3.74

The effects of fewer bicycle and more car trips in Portland in 2035

Costs of Increased Bicycle Use and Decreased Bicycle Use
Annual in Portland for 2035

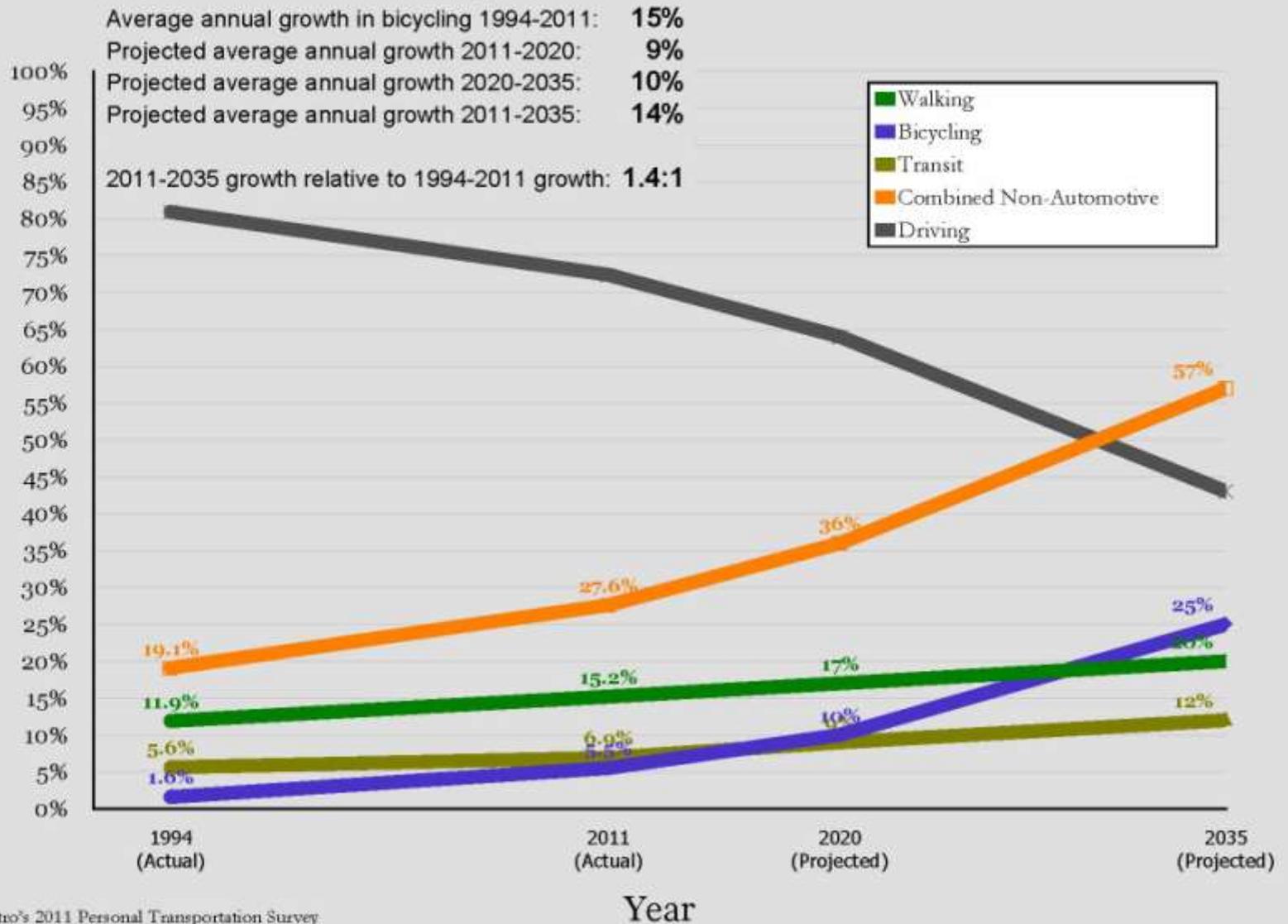


Is 25% achievable?

**What is the experience of
other cities?**

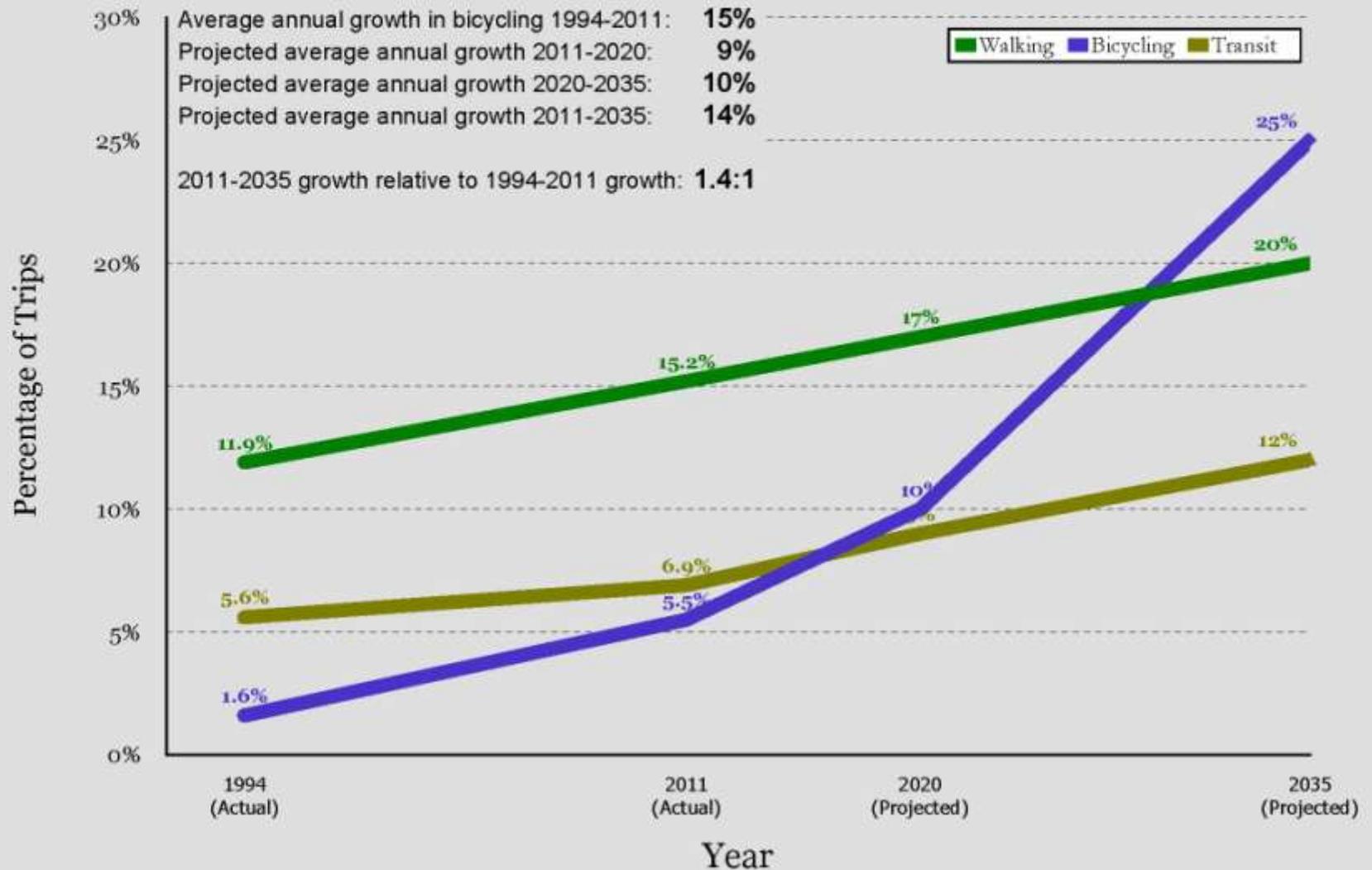
Projections

Portland All Trip Mode Split by Year Actuals and Projections based on OHAS data



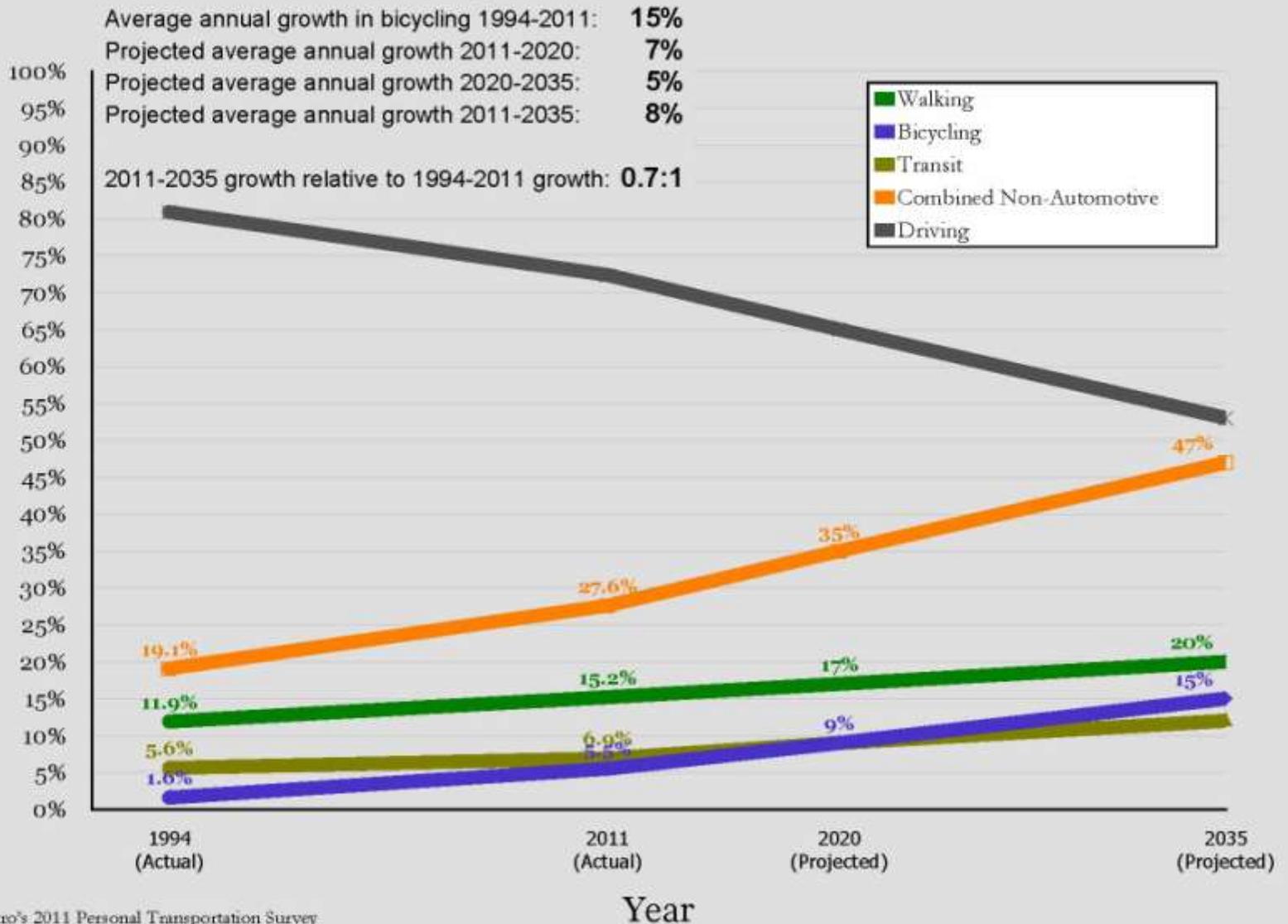
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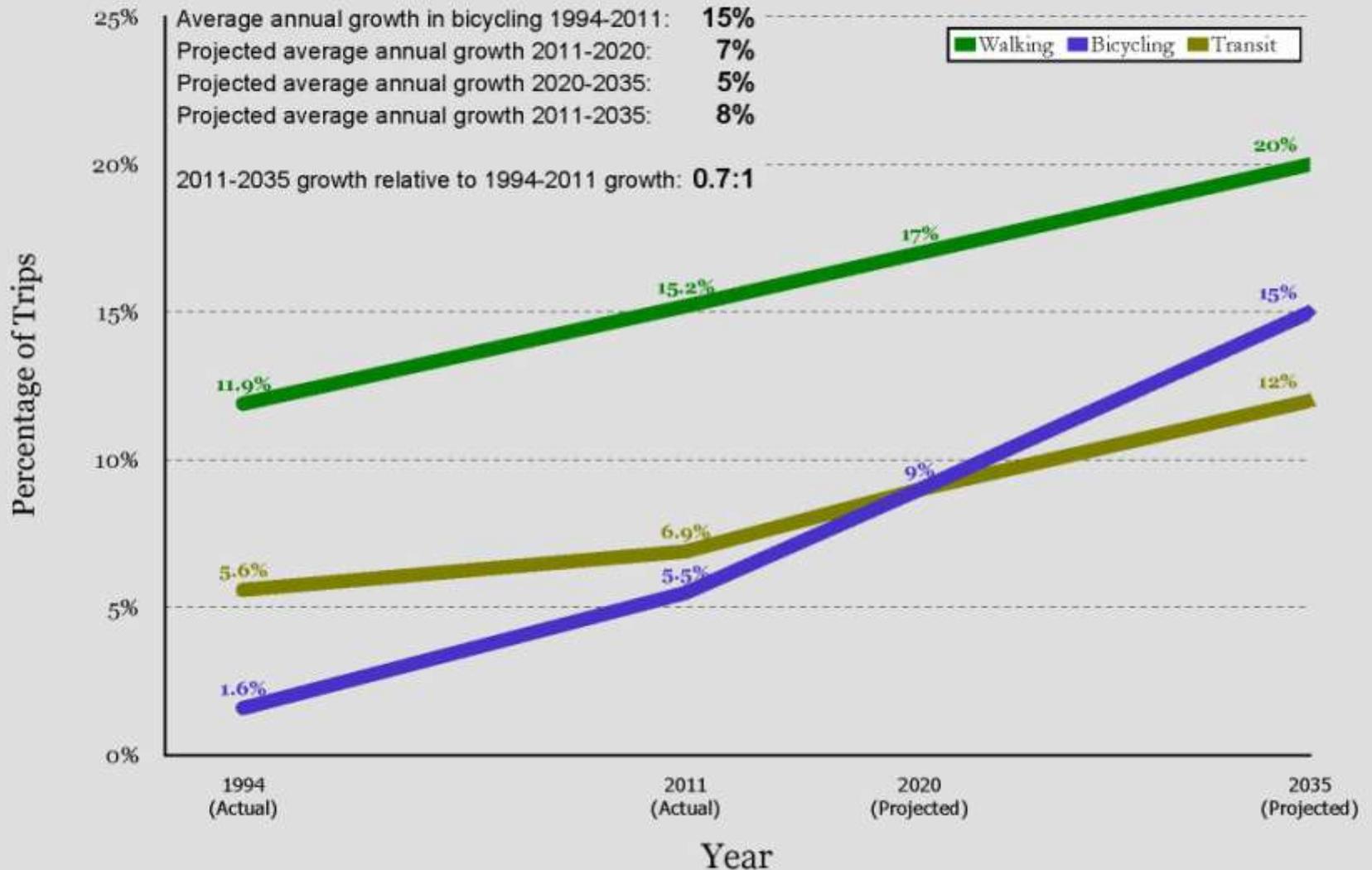
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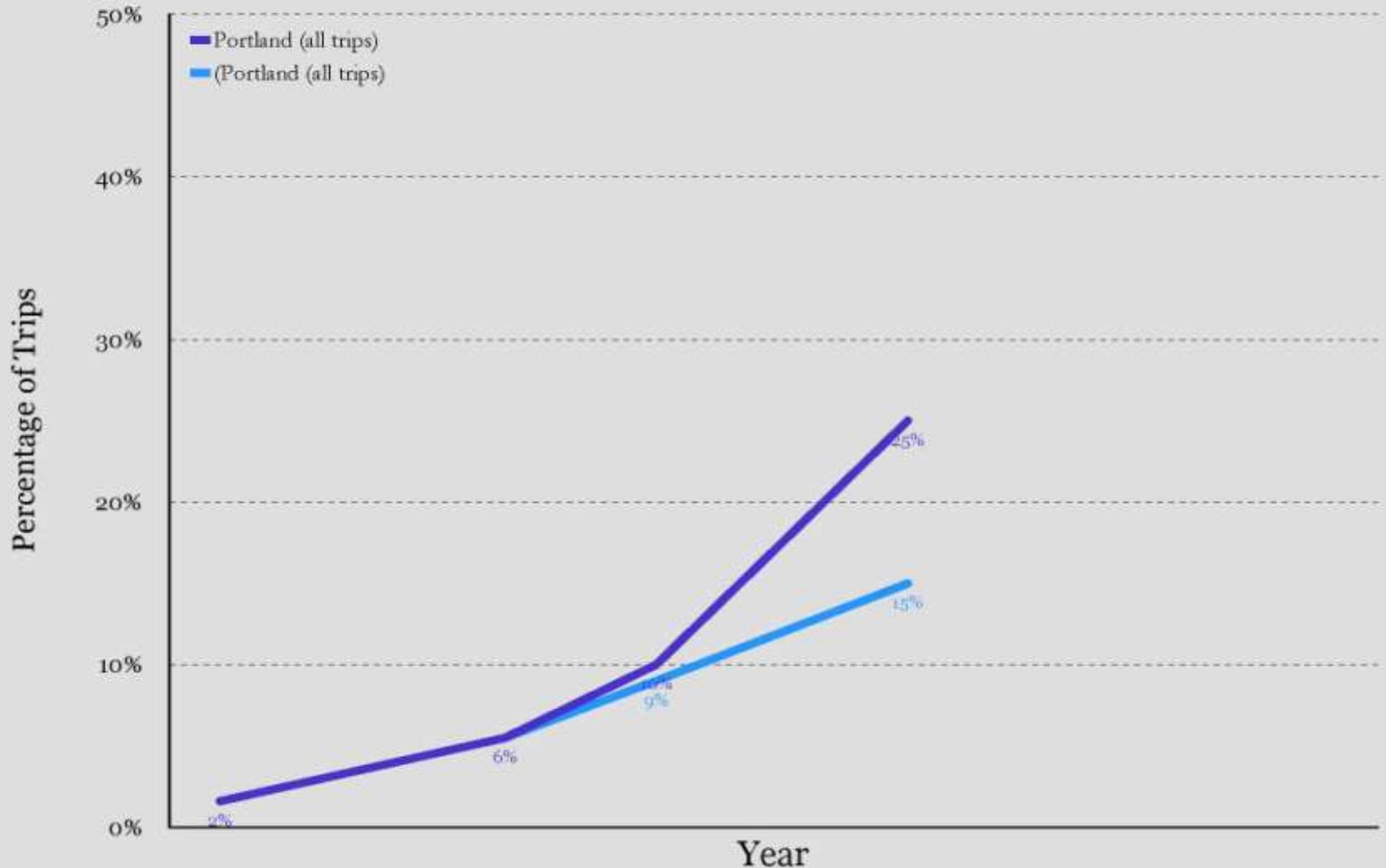
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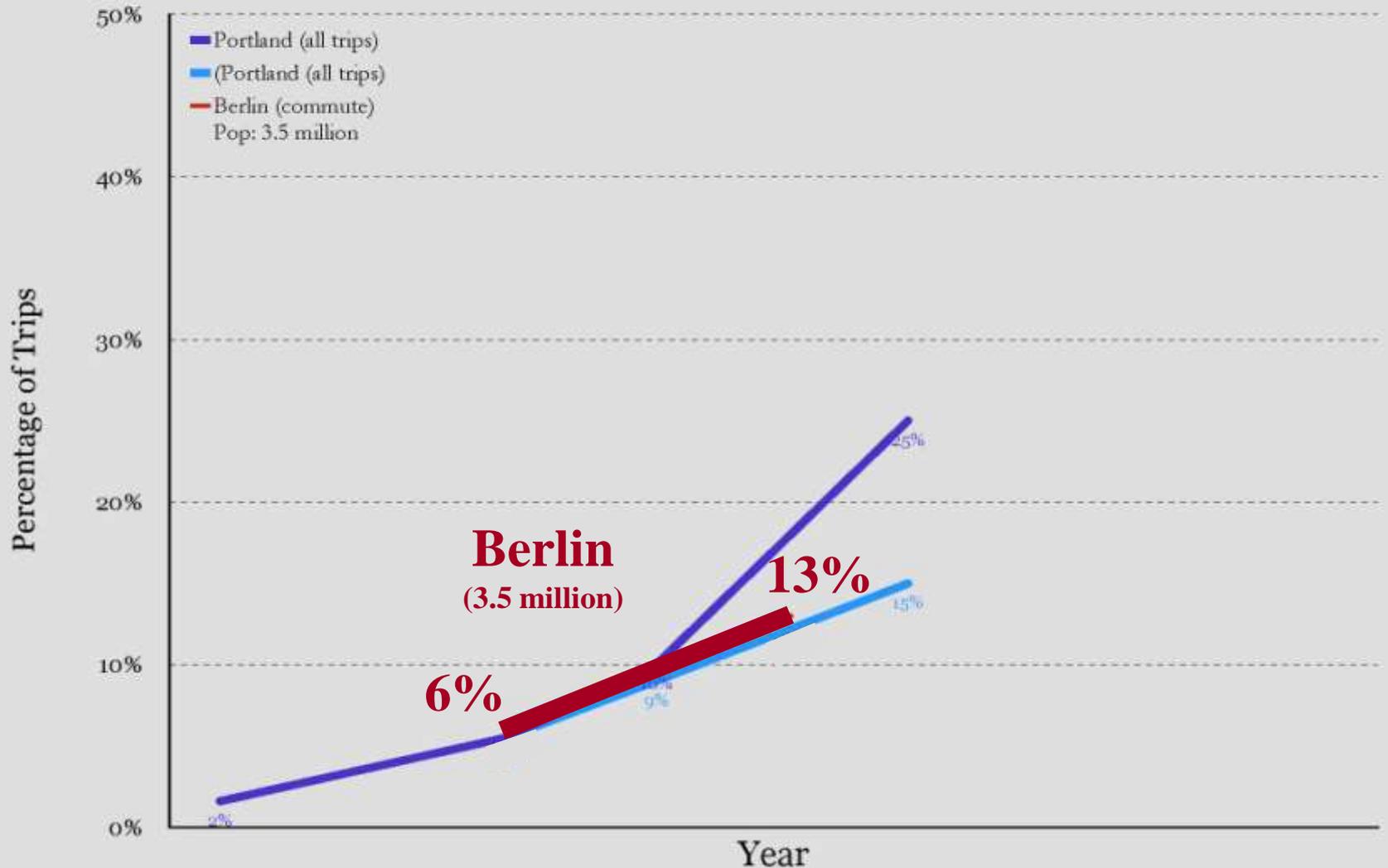
Are our goals achievable?

Portland All Trip Mode Split by Year: 15/25% Compared to cities around the world



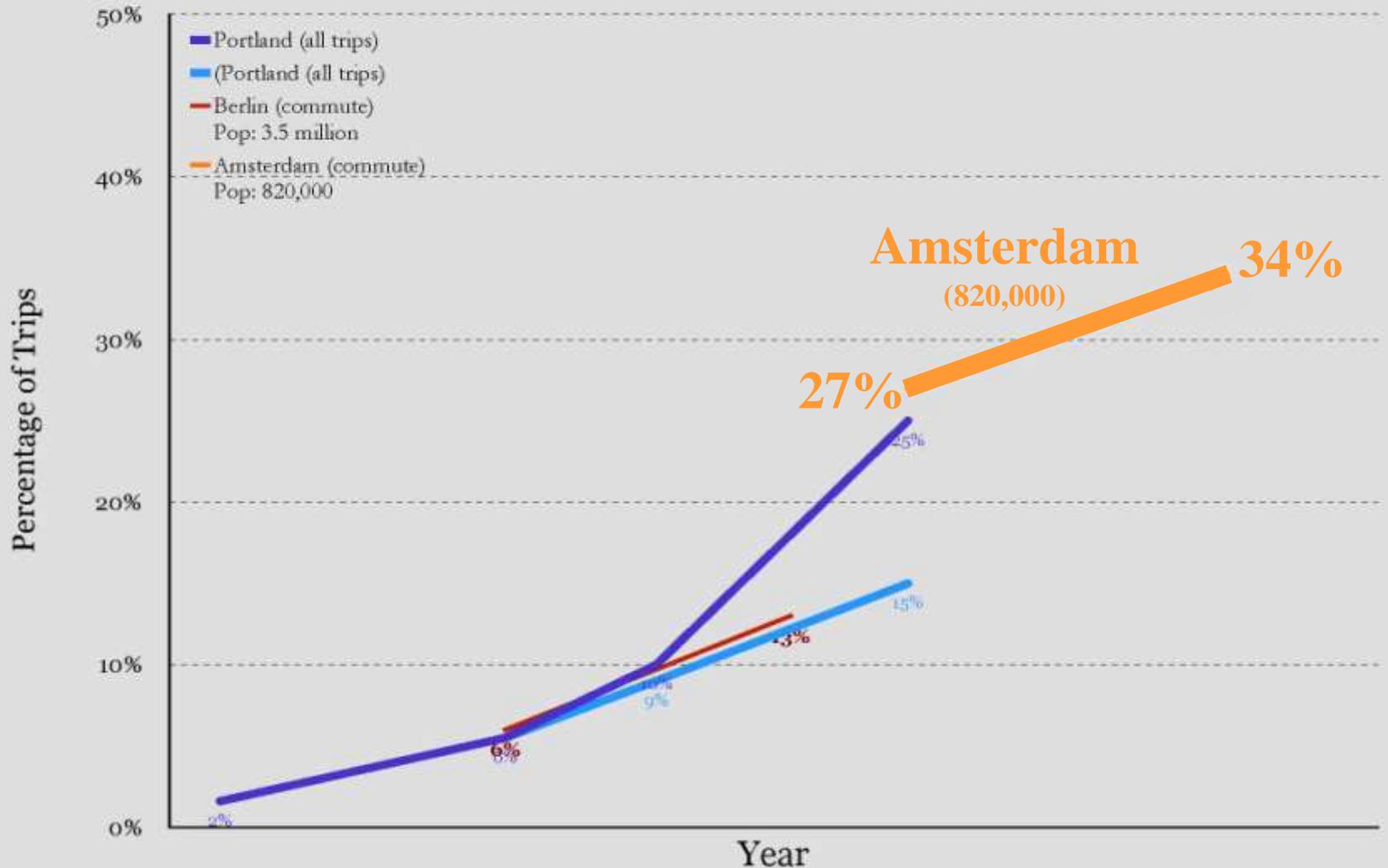
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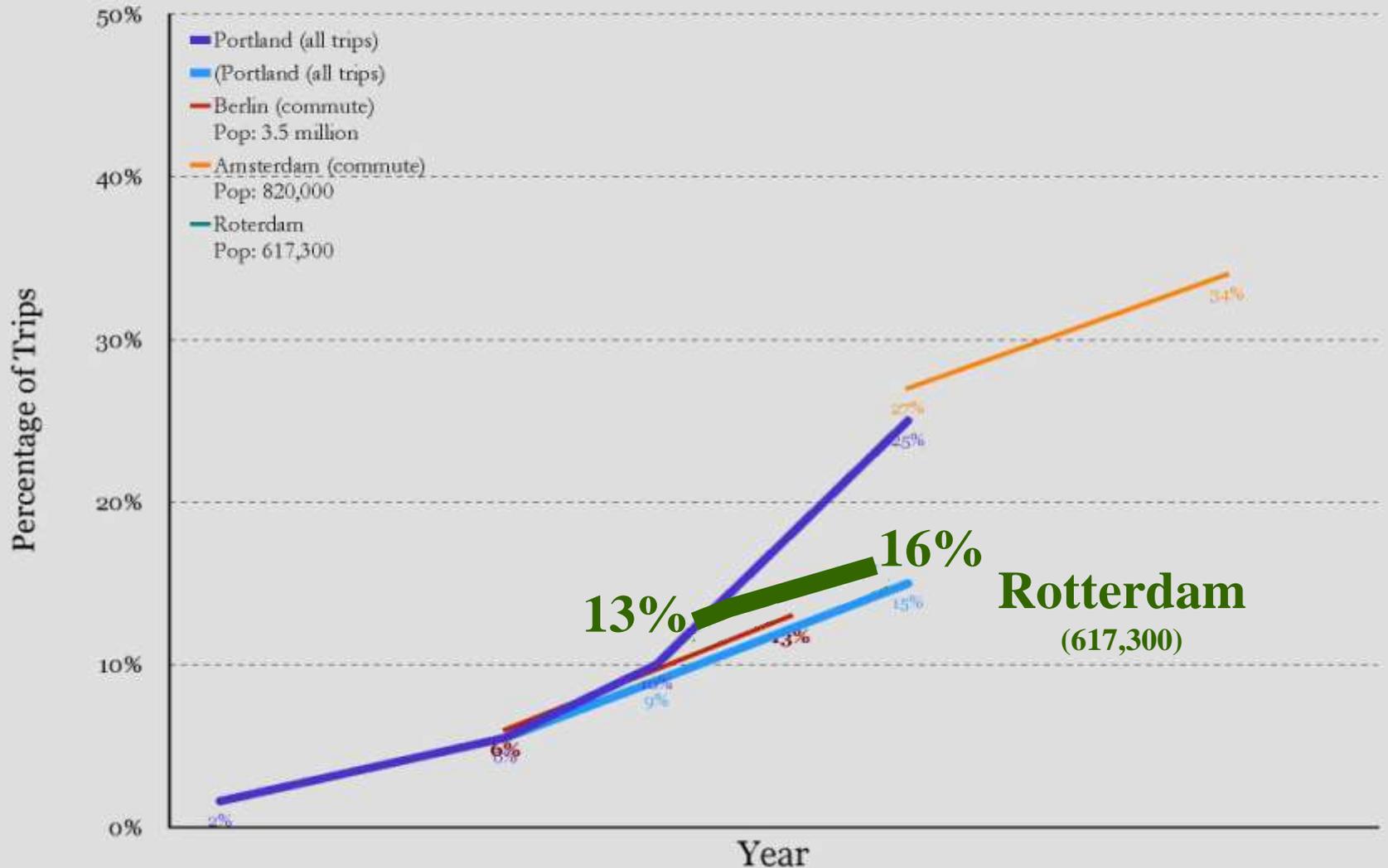
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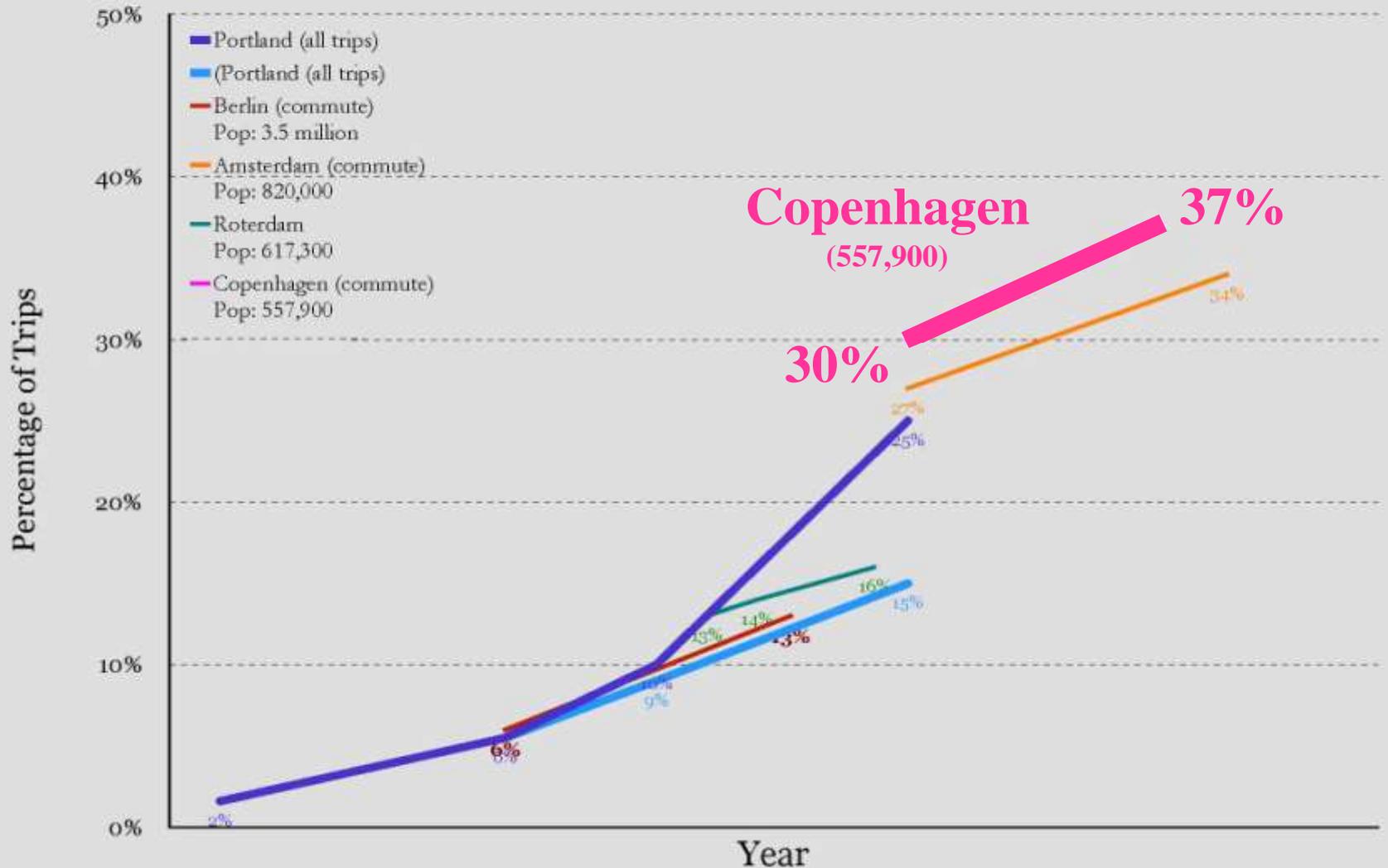
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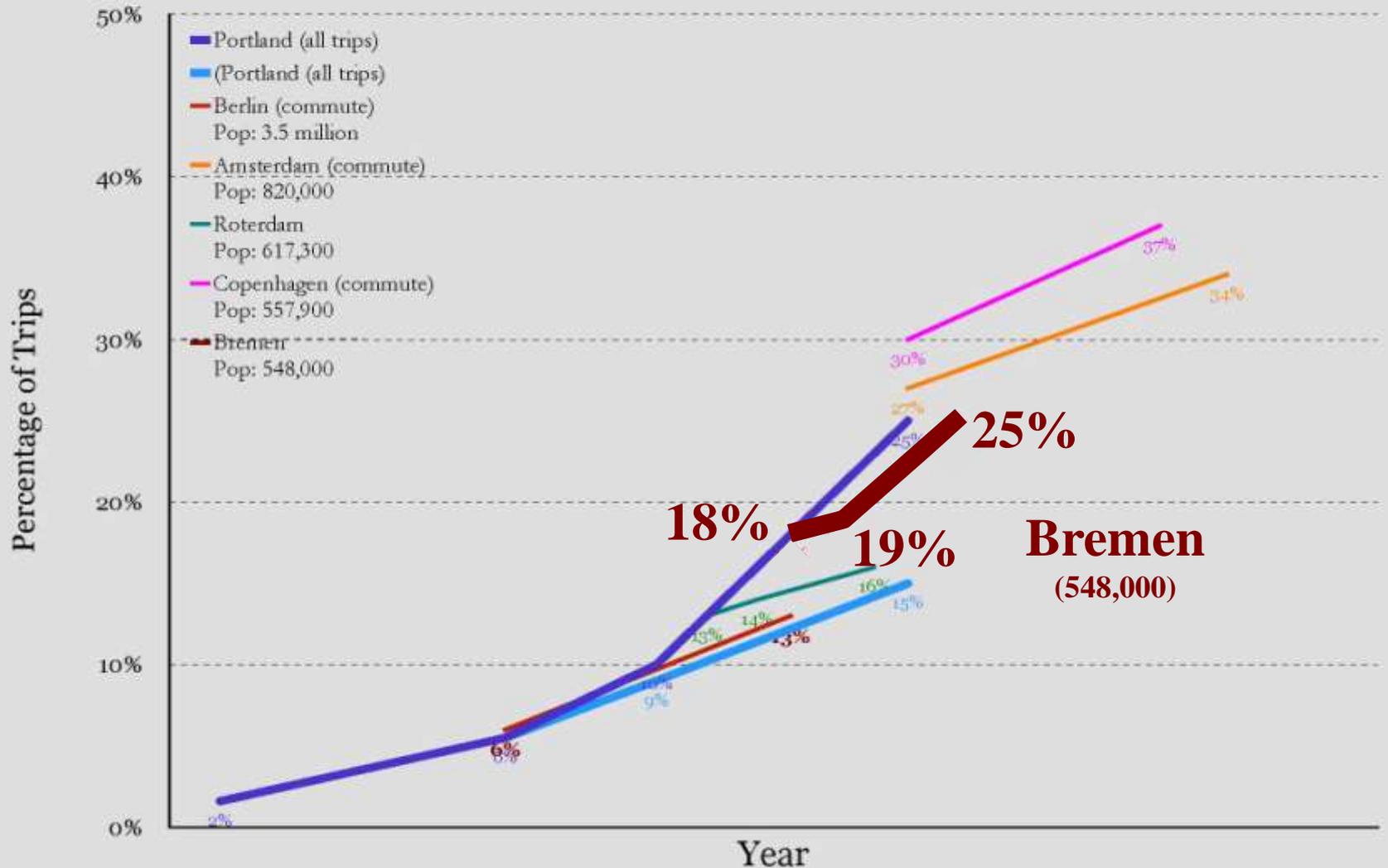
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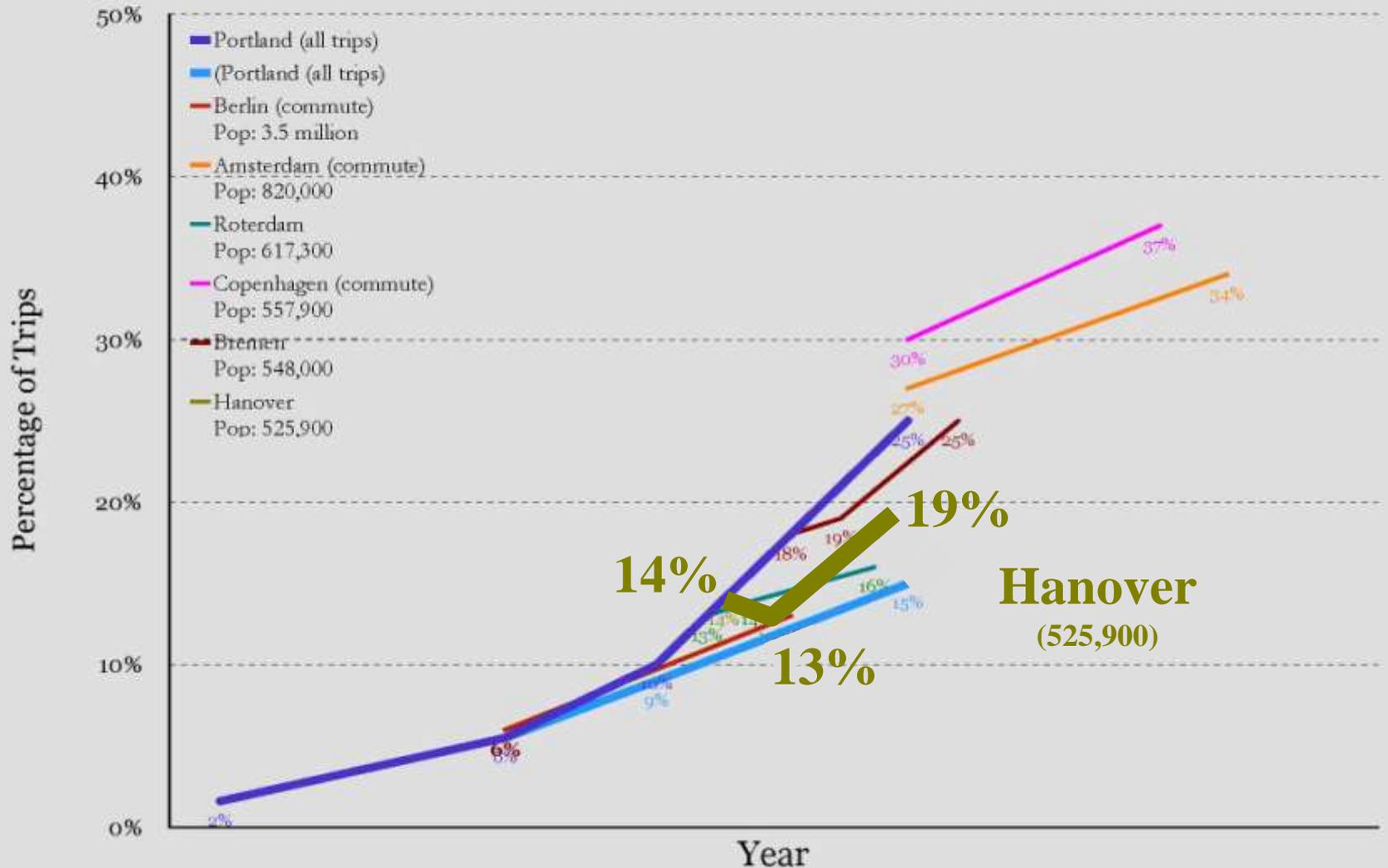
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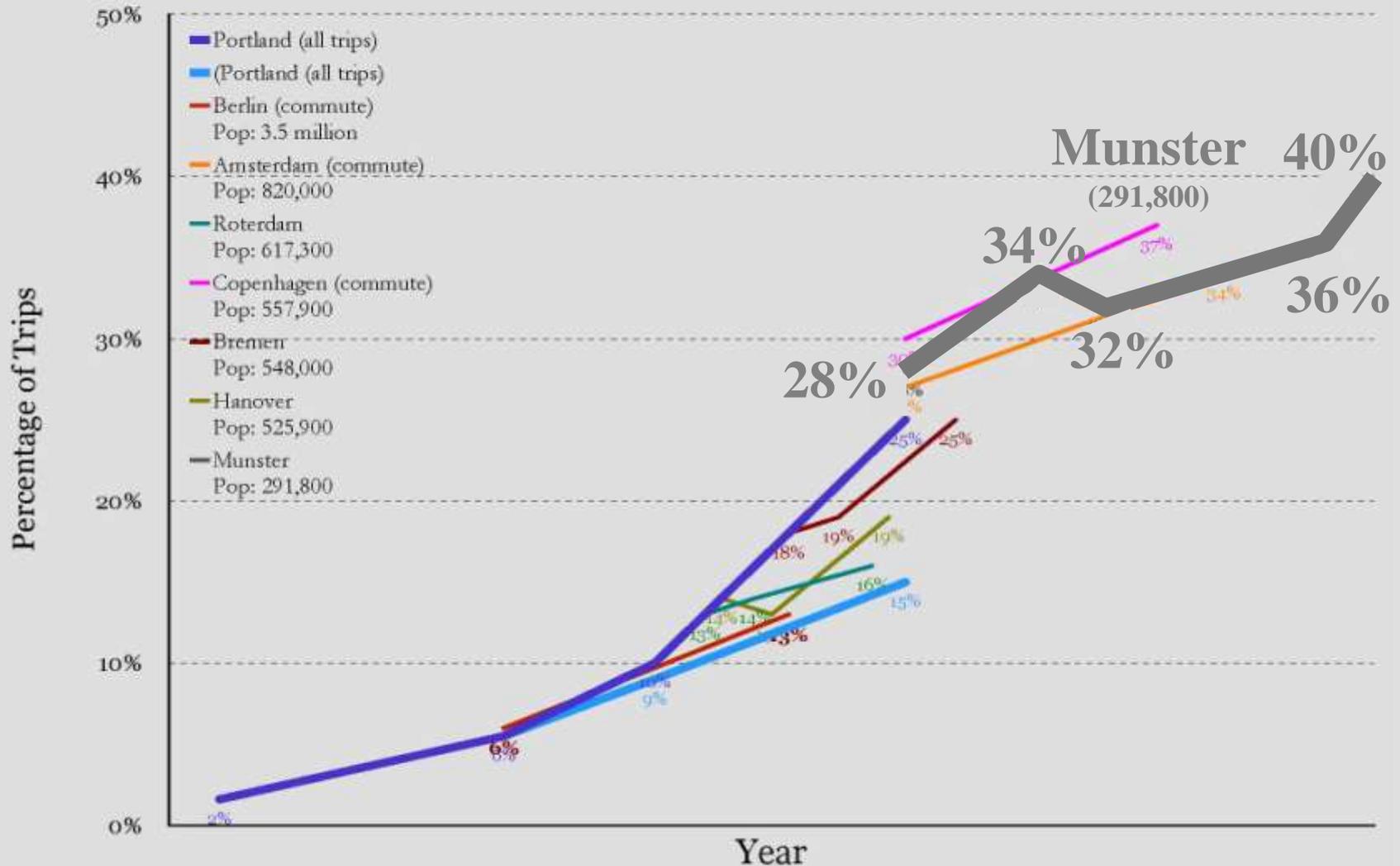
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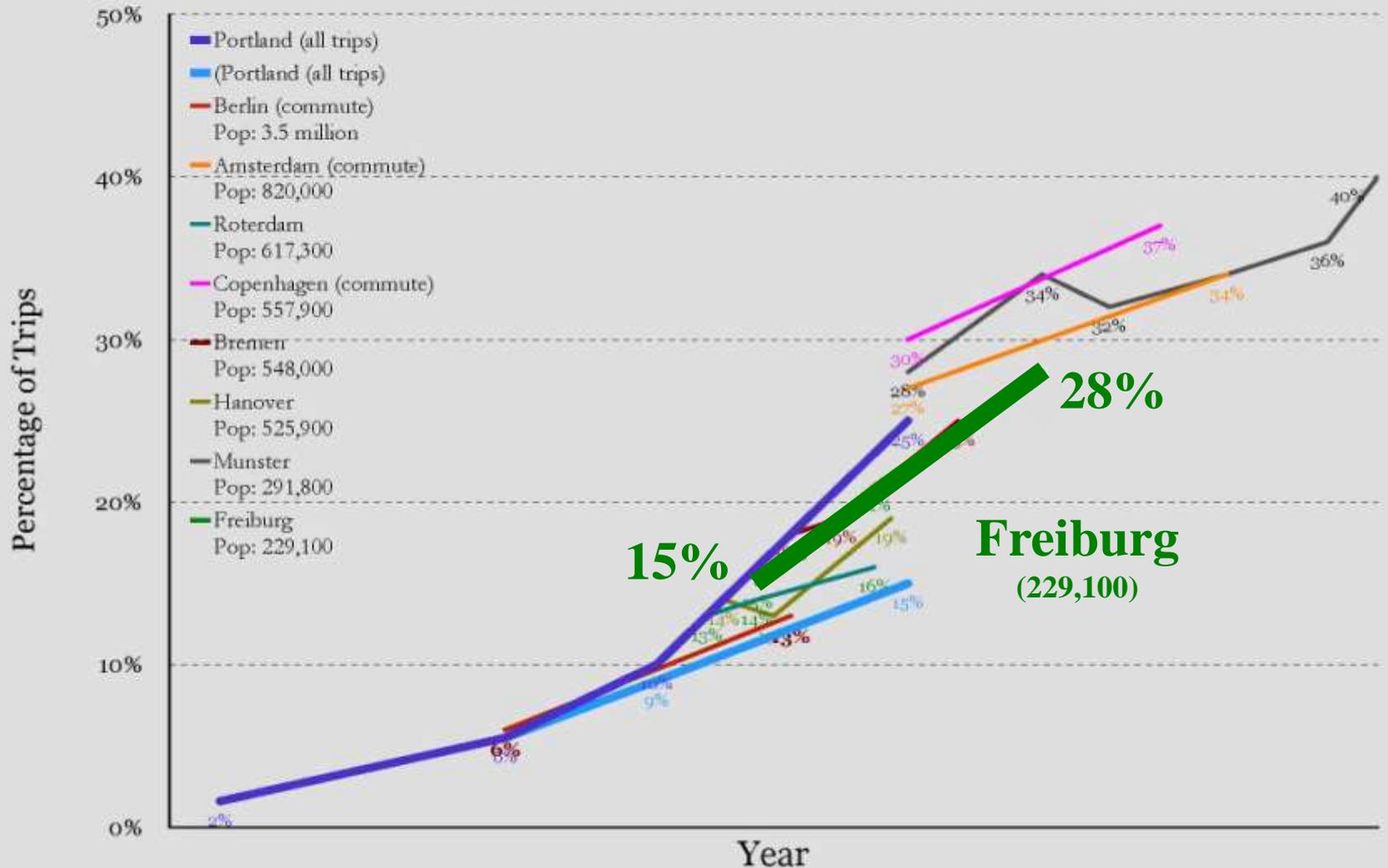
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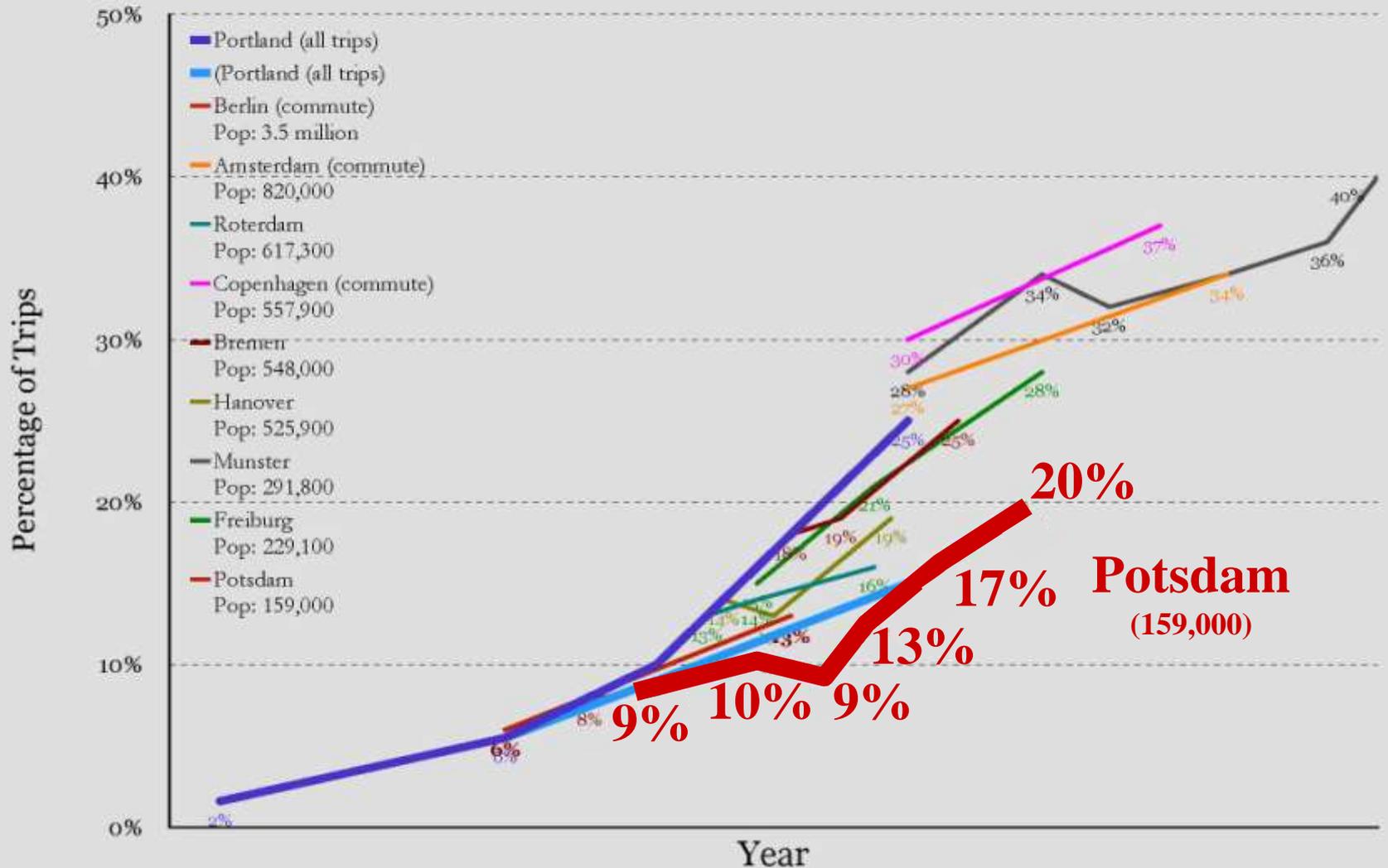
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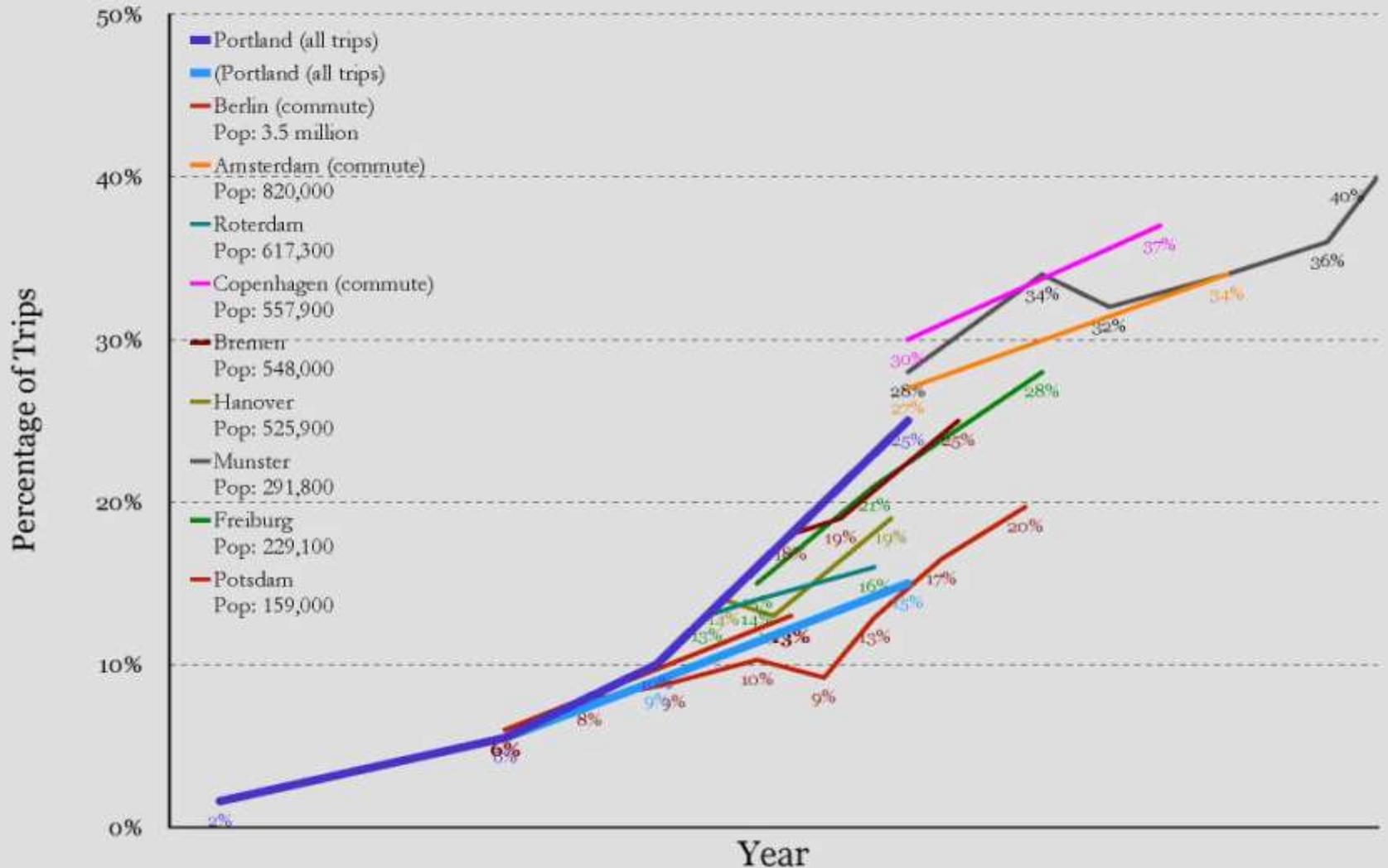
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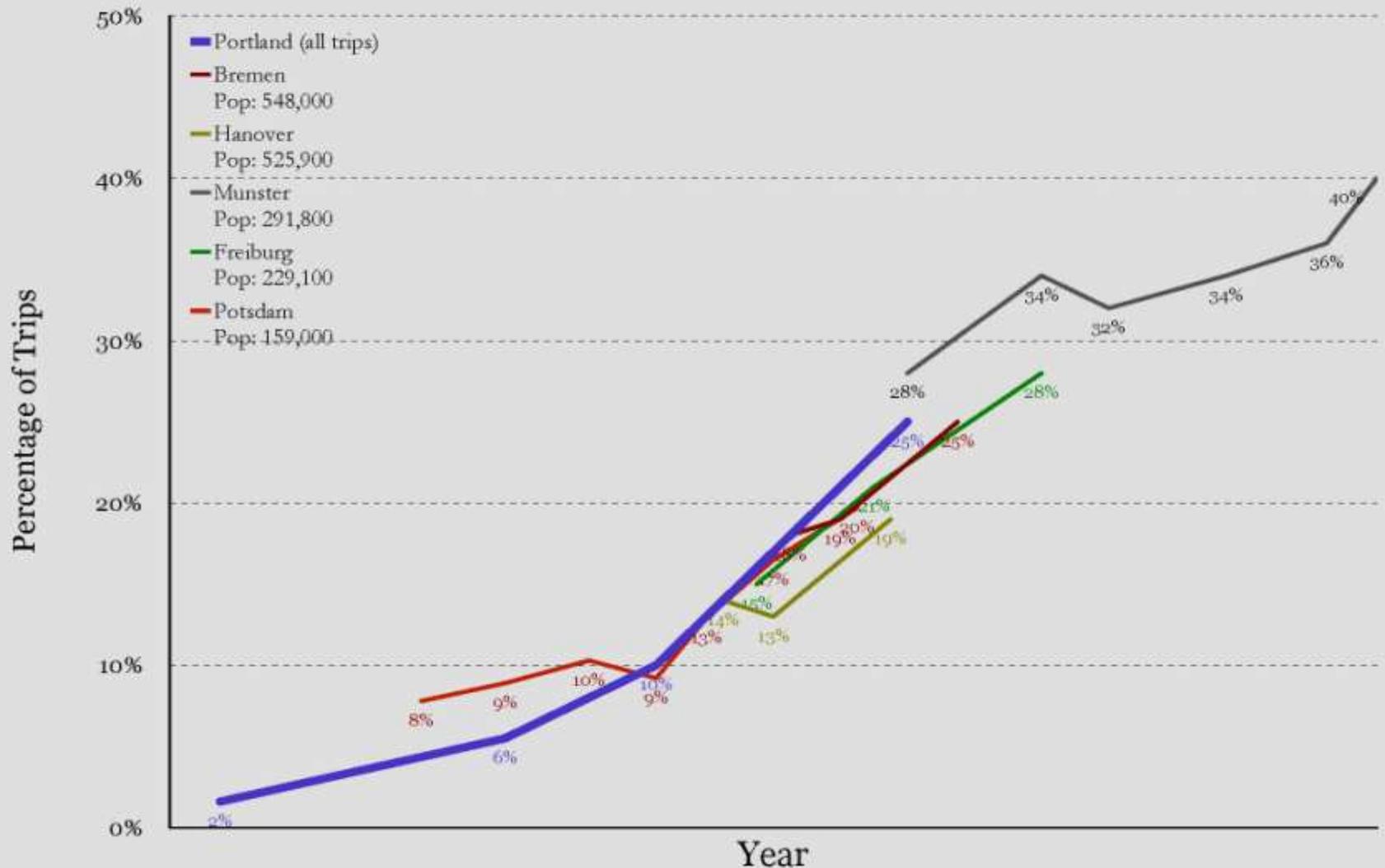
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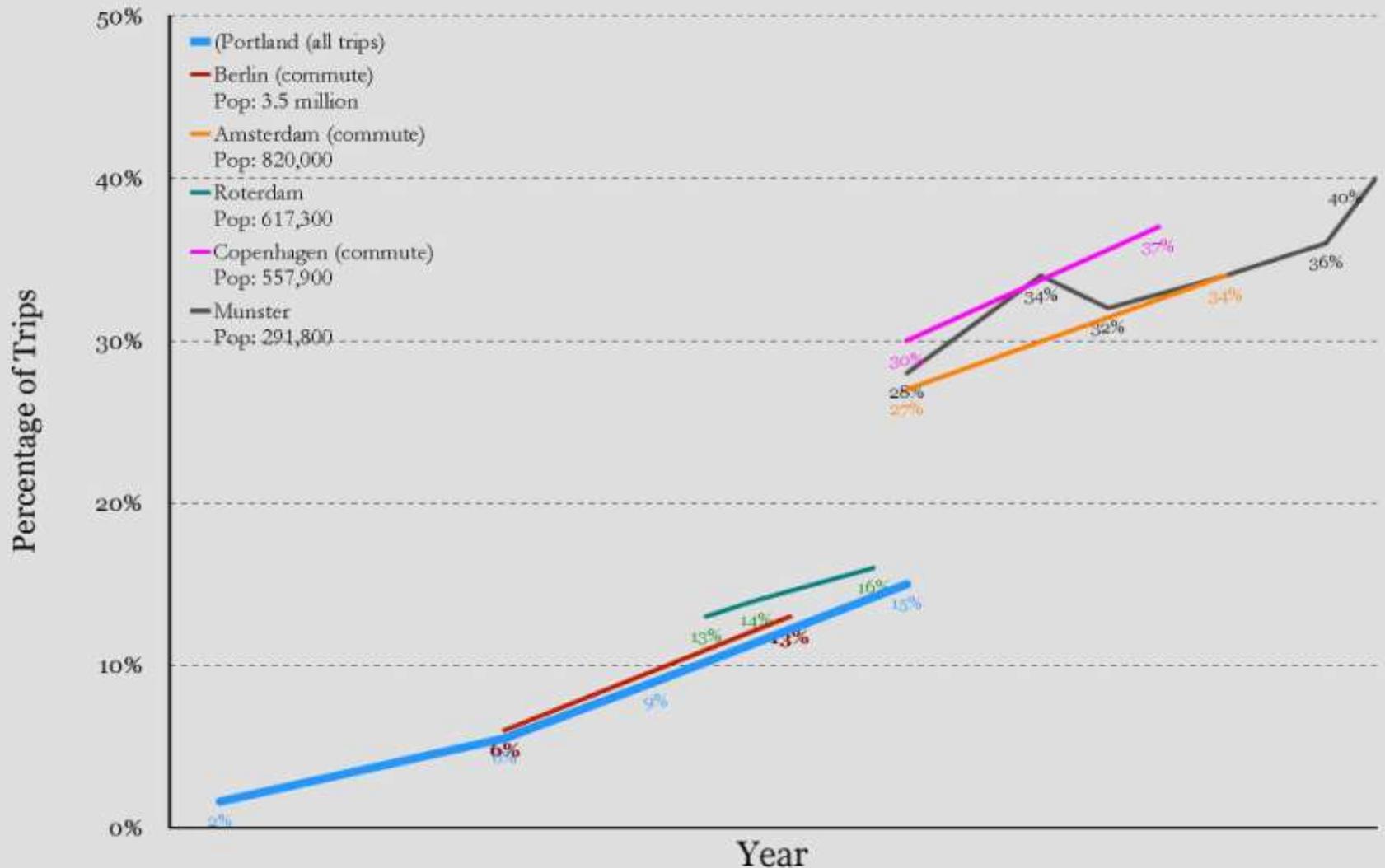
Are our goals achievable?

Portland All Trip Mode Split by Year: 25% Compared to cities around the world



Are our goals achievable?

Portland All Trip Mode Split by Year: 15% Compared to cities around the world



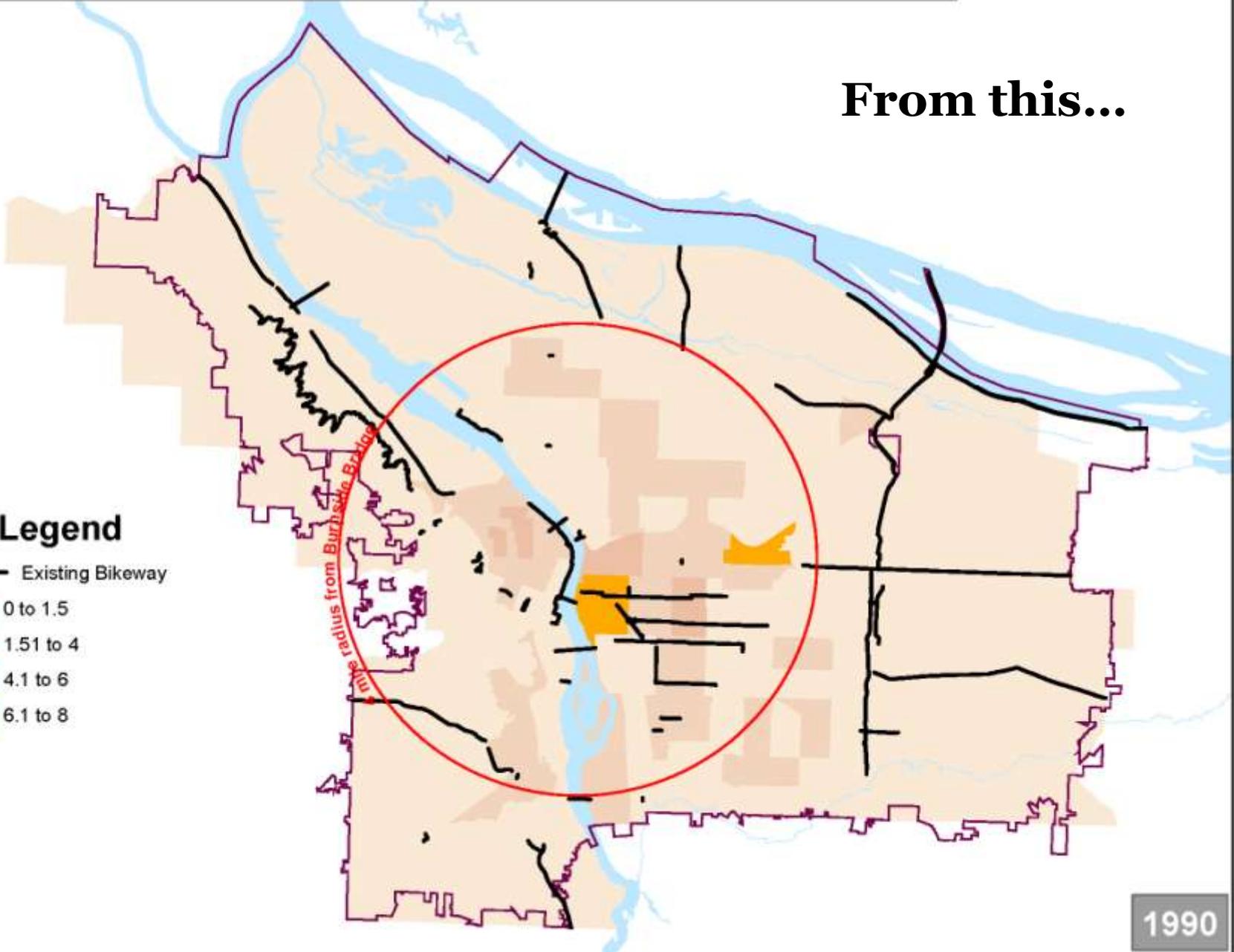
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- Driving alone declined 8.5 percent per capita
- Without these advances, Portlanders would have made 211,000 more weekday auto trips than they did in 2011
- Achieving 25 percent bicycle mode split is achievable with a whole-hearted embrace of bicycling
- It is the inner east side (Willamette River to I-205) that will have to carry a disproportionate share of non-automotive trips if Portland is to achieve its goals
- If we do not achieve these goals, then by 2035 there will be more than one million additional daily automotive trips generated by Portlanders; that's enough to fill up 23 Powell Boulevards

We can achieve our goals

Portland Oregon Bicycle Commute Mode Split by Census Tract

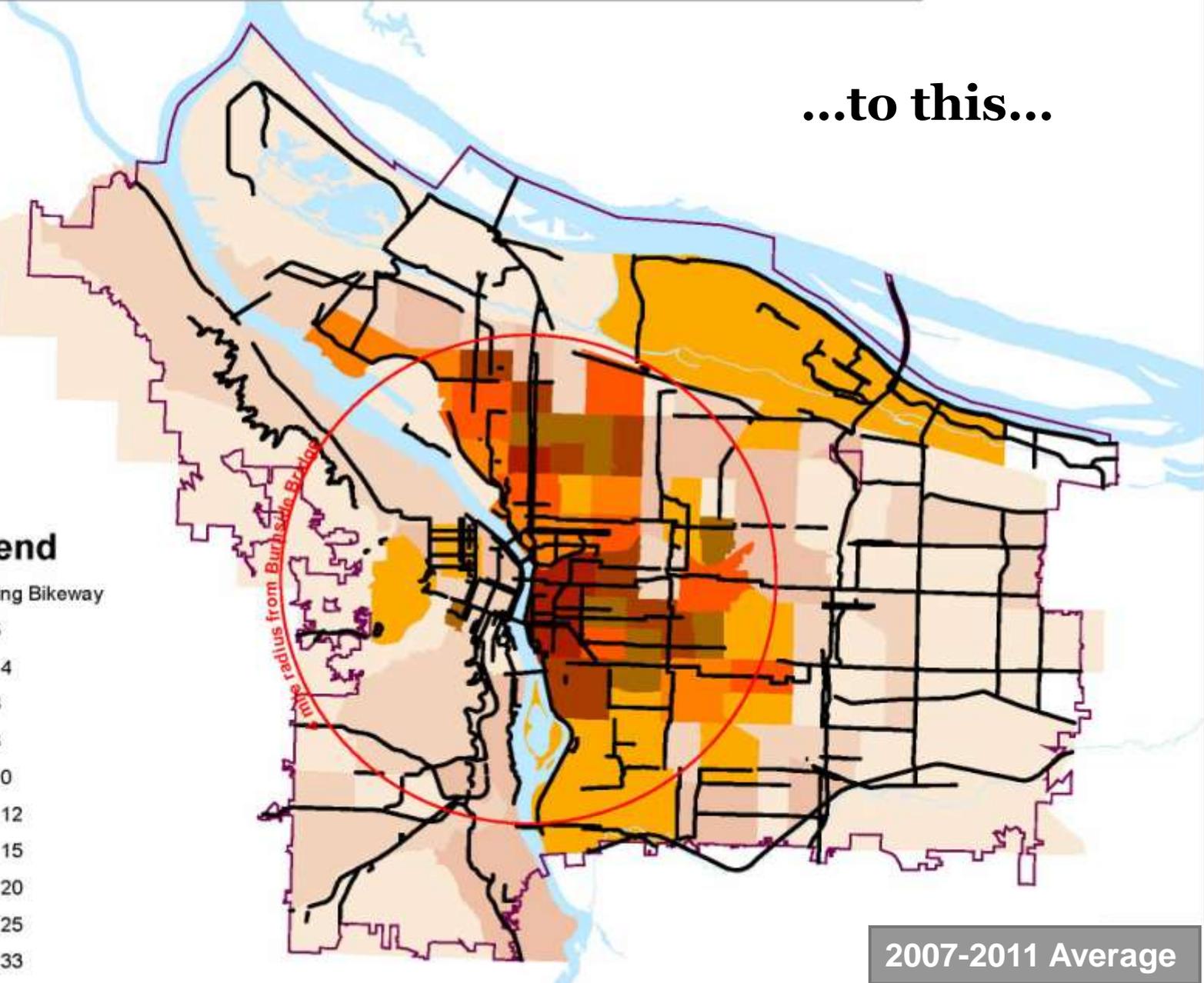
From this...



1990

Portland Oregon Bicycle Commute Mode Split by Census Tract

...to this...

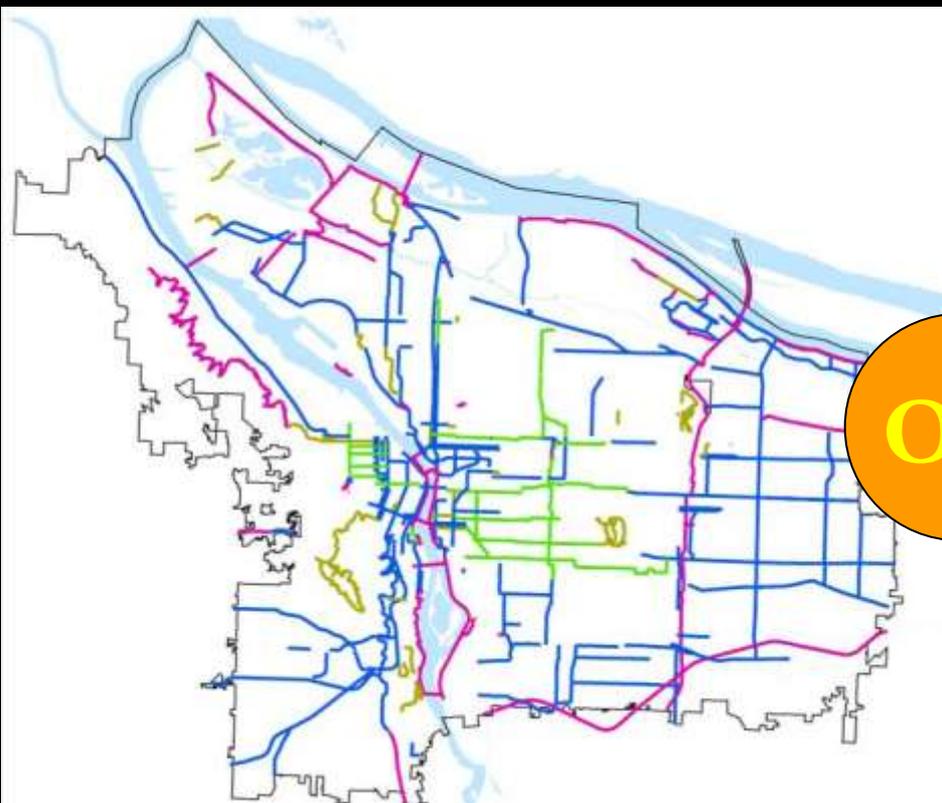


2007-2011 Average

...for this...

\$60 Million

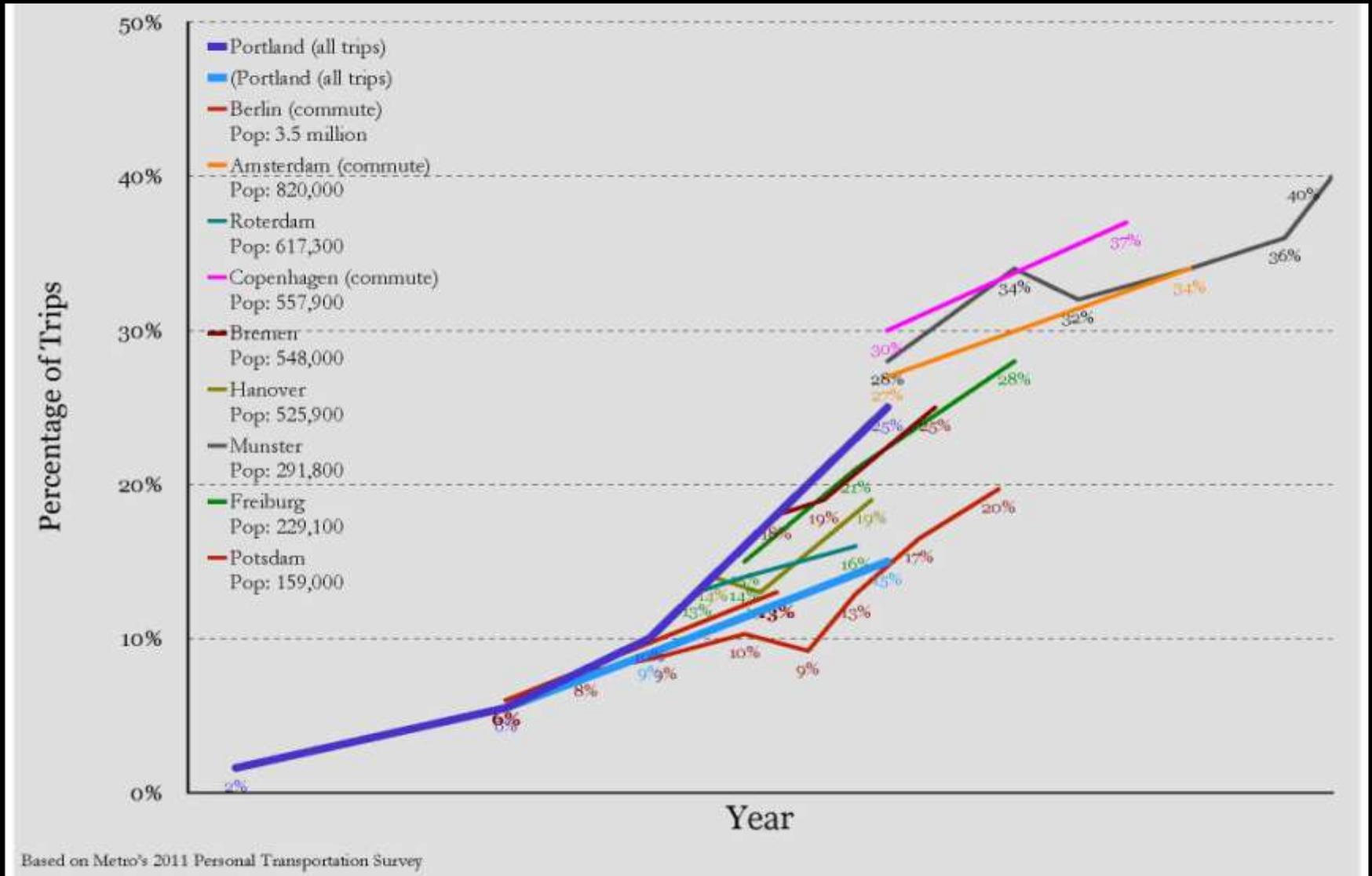
300 MILE bikeway network 1 MILE of urban freeway



OR

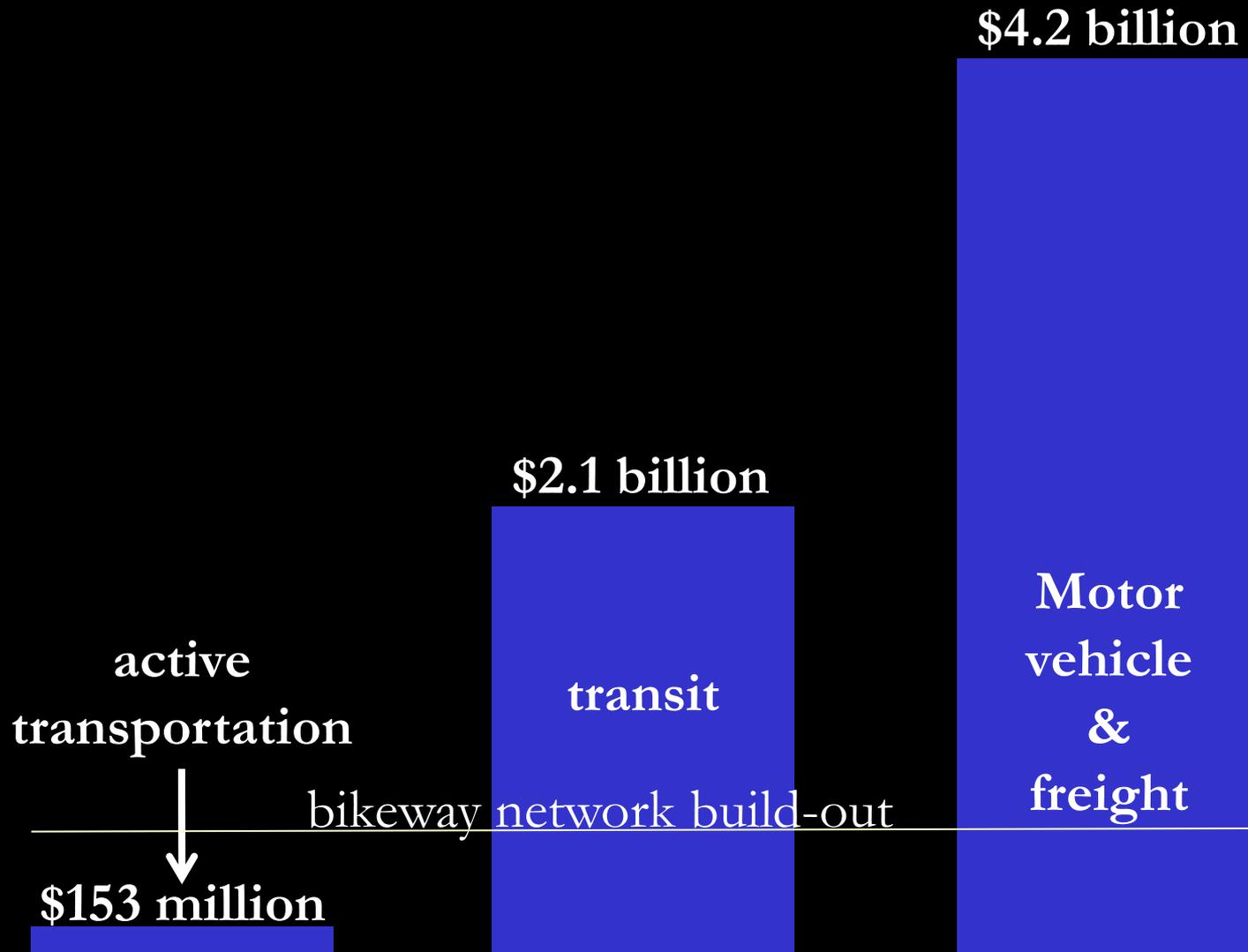


We see what other cities have accomplished.



We can afford this

Portland Region Transportation Expenditures Cumulative 1995-2010

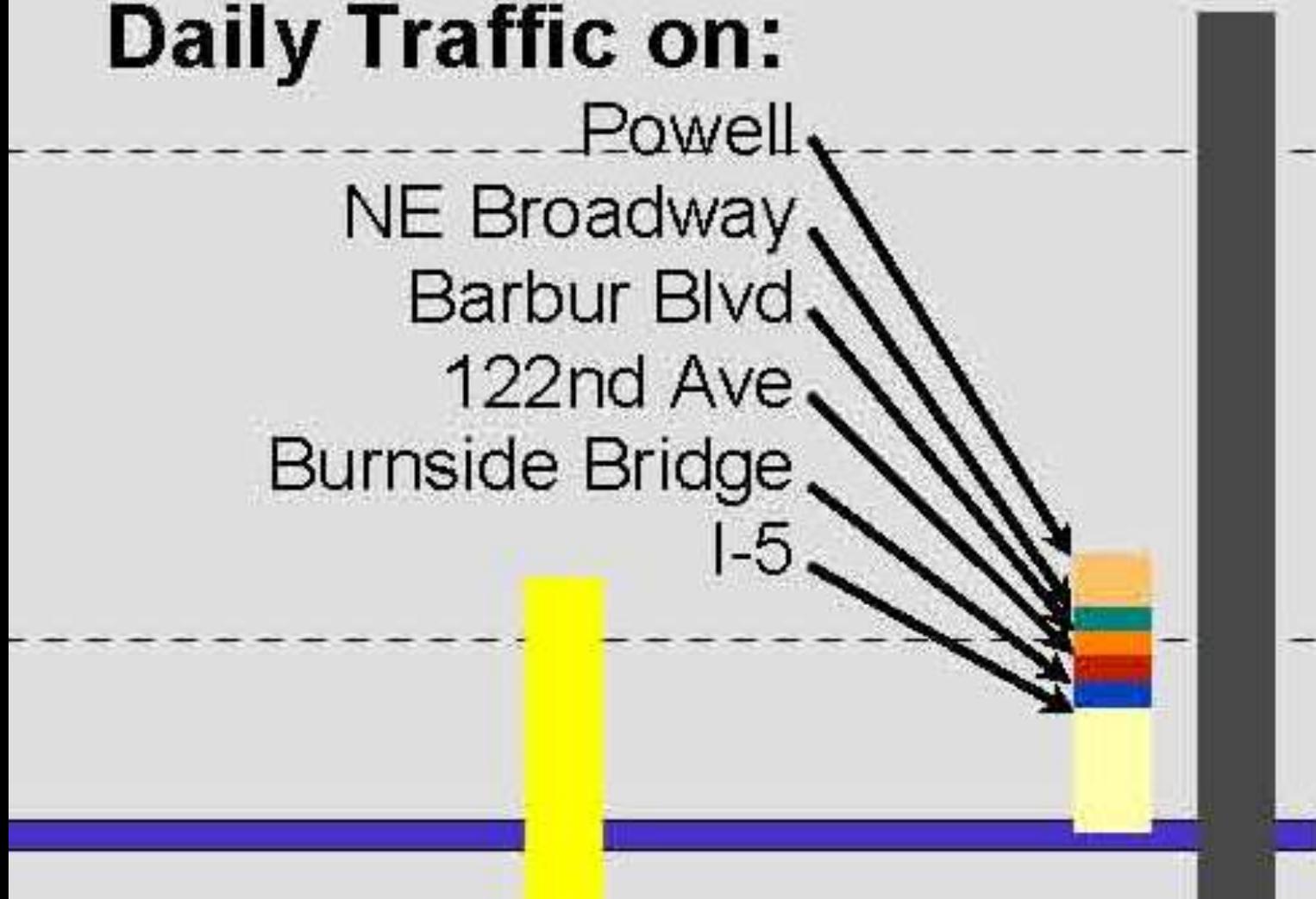


We cannot afford not to

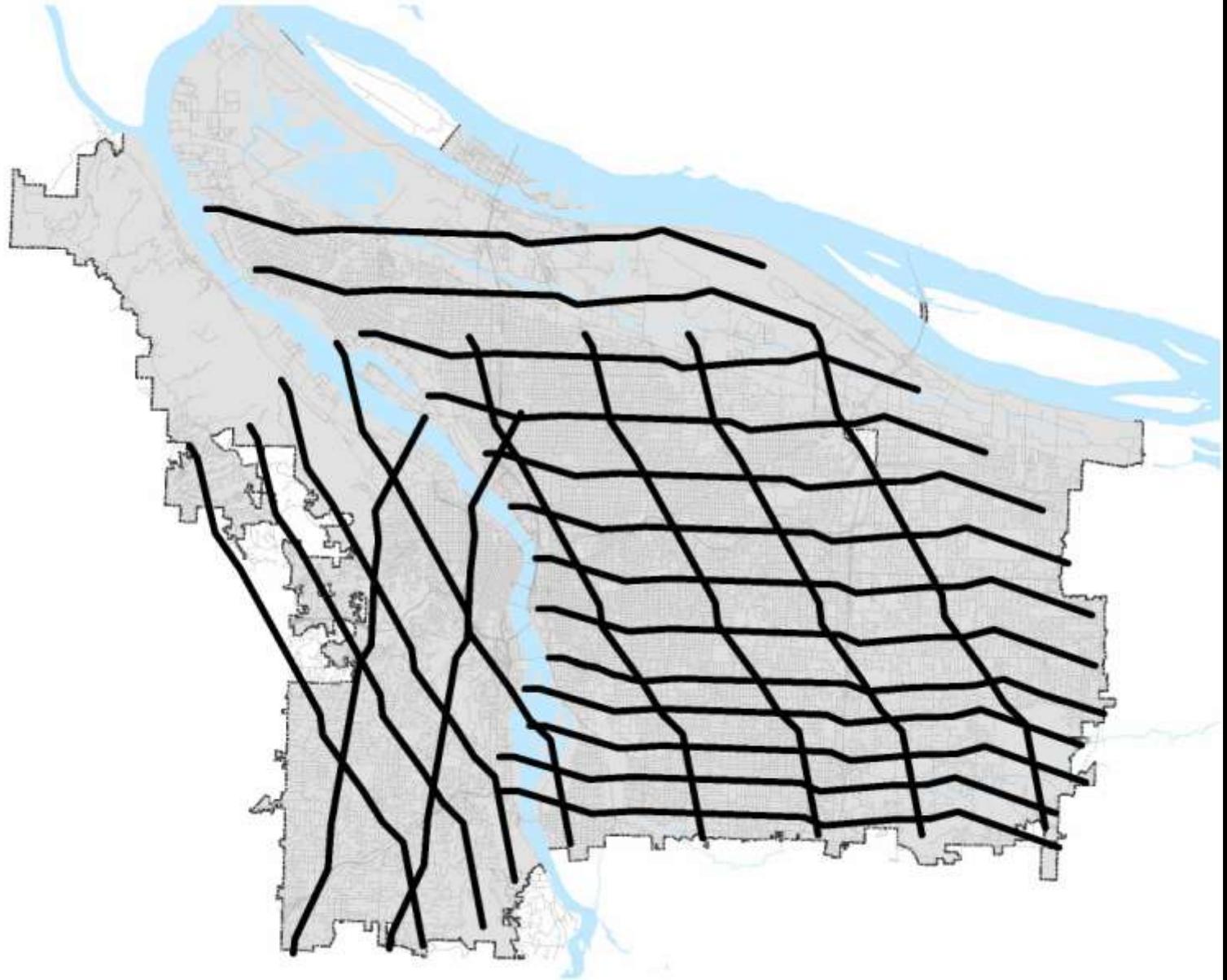
What if we don't achieve our policy goals?

Daily Traffic on:

- Powell
- NE Broadway
- Barbur Blvd
- 122nd Ave
- Burnside Bridge
- I-5



What if we don't achieve our policy goals?



Mode split is a matter of policy