Empowering Practitioners:

Recent Analysis & Research Findings in TOD

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Empowering Practitioners: TOD Top 10

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TOD Top 10

1. Regional accessibility
2. Jobs
3. Connectivity
4. Density
5. Parking
6. Bundled Strategies
7. Rational “Actors”
8. Patience
9. Transit Supply
10. Socioeconomic factors

TOD Top 10

1. Regional accessibility is more important than local design
2. Job location and density are key
3. Connectivity has many benefits
4. Density matters, but it isn’t enough
5. Pricing is powerful

TOD Top 10

6. Strategies work in bundles
7. Walk and transit trips must win the competition with other modes
8. Land use effects take time

- "Built environment" is one of three important sets of factors in ridership:
  9. Transit Supply
  10. Socioeconomic

Did you know?

- Density
- Diversity
- Design
- Destinations
- Distance to Transit
- Demographics

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Did you know?

Design

- ~~Street Network Connectivity~~
- ~~Sidewalk Completeness~~
- ~~Route Directness~~
- Network Density
- % of 4-leg vs. 3-leg intersections

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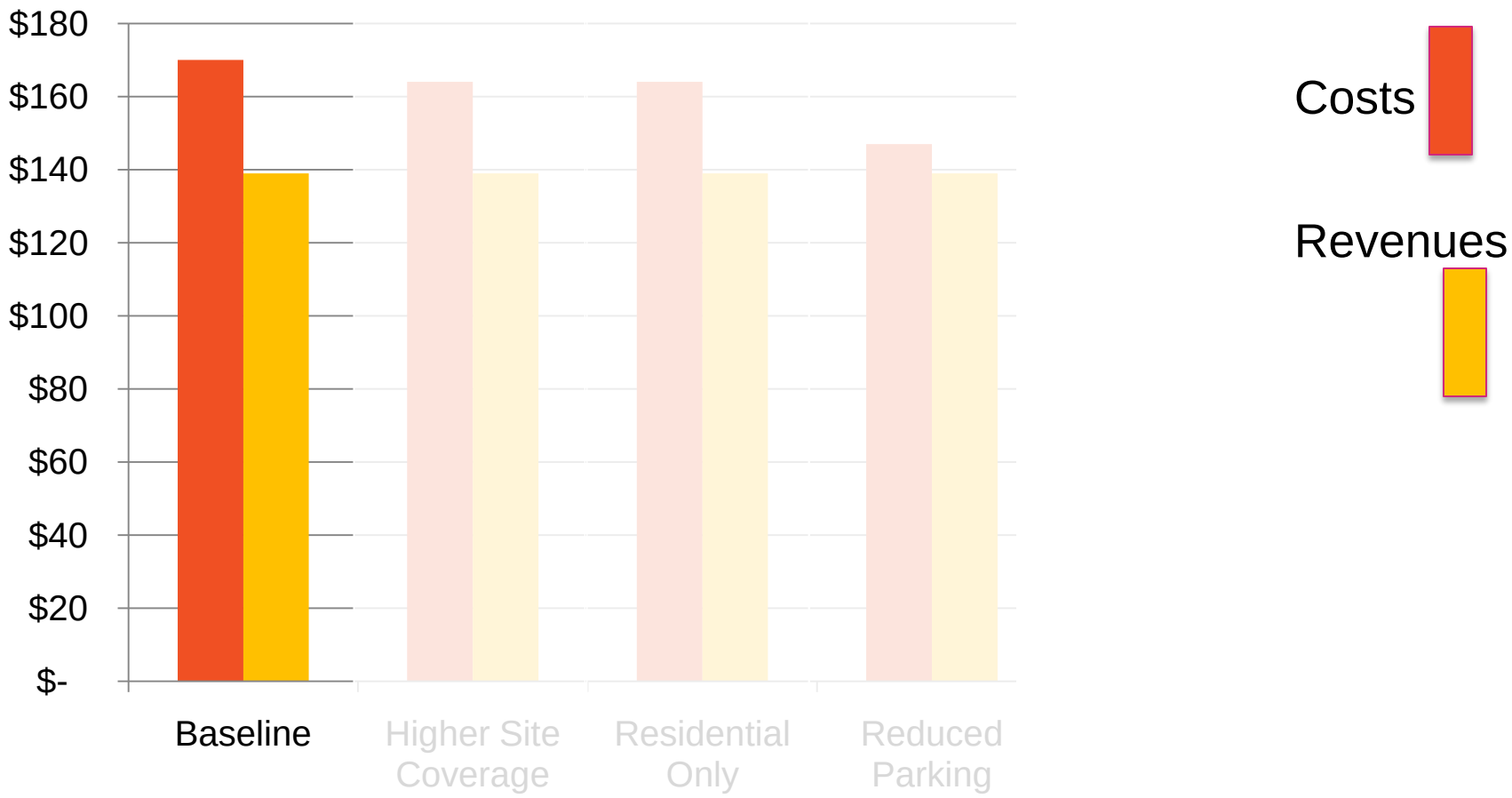
Did you know?

- **Destinations** = Travel Time to Regional Employment
- **Density** = [Population + Employment] / square mile
- **Diversity Factors** = Population + Employment

Bundled Strategies

TOD Policy Levers analysis by Strategic Economics



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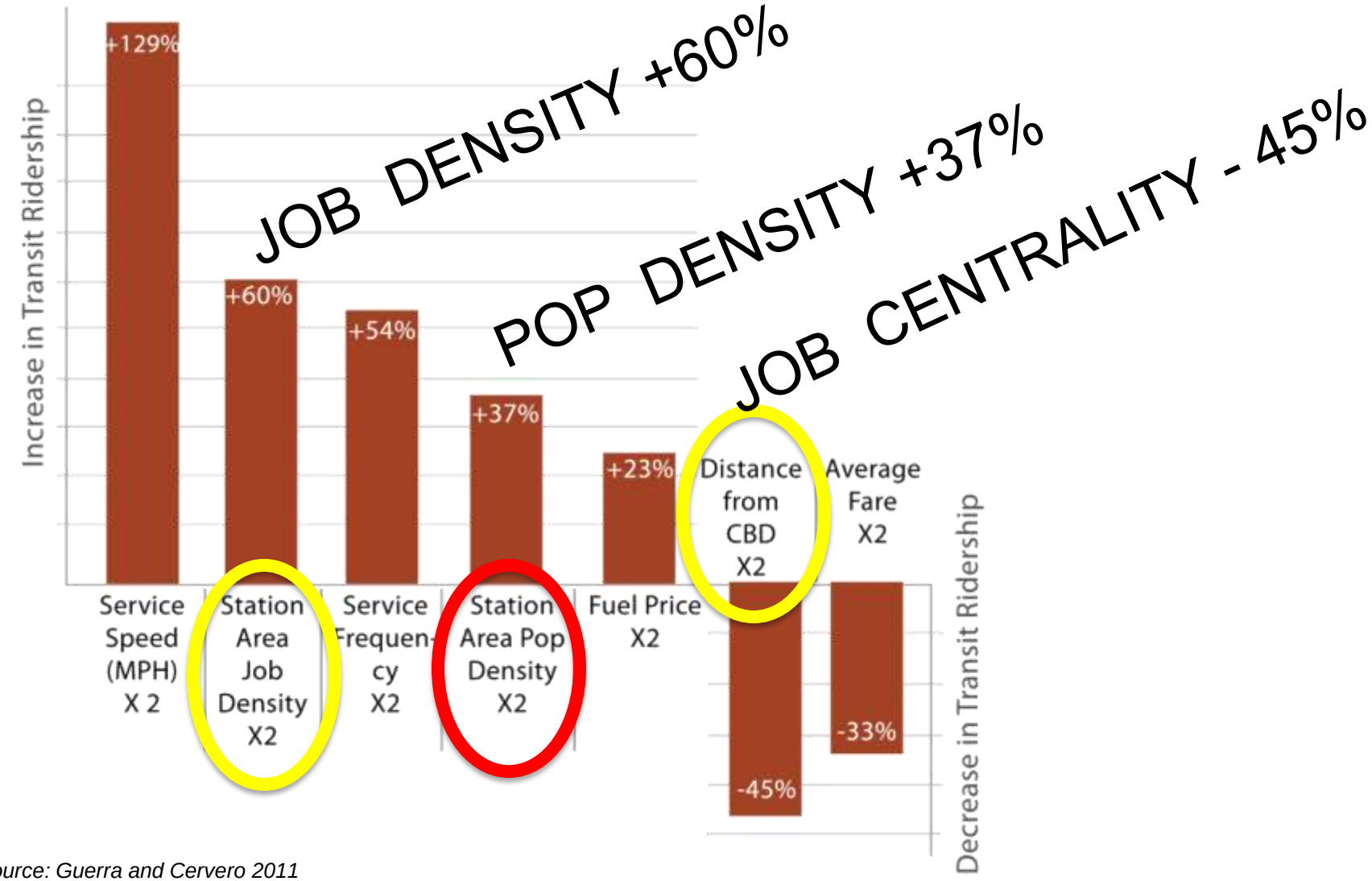
Change in Transit Ridership as a result of Doubling Key Factors



Source: Guerra and Cervero 2011

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Modeling Literature Synthesis: Rodier

Source: Rodier, Carolyn, "A Review of the International Modeling Literature: Transit, Land Use, and Auto Pricing Strategies to Reduce Vehicle Miles Traveled and Greenhouse Gas Emissions." August 1, 2008 submission to the Transportation Research Board Annual Meeting.

Based On: 24 studies, 16 in US.

Rodier Take-Away

Take-away “Even improved calibrated travel models are likely to underestimate VKT (vehicle kilometers of travel) reductions from land use, transit, and pricing policies.”

Rodier: **Key Findings**

- ***Benefits of Land Use Strategies Over Time:*** The results of land use and transit strategies are realized over several decades.
- ***Comprehensive Approaches:*** "Combined scenarios" with land use, transit and pricing strategies result in greater VKT reduction
- ***Range of Benefits Expected:*** Land use and transit scenarios may reduce VKT by 2% to 6% during 10 years; thismay increase by ~2 to 5 % in each future 10-year increment."

“Travel and the Built Environment—A Meta-Analysis,” Reid Ewing

- **Source:** Ewing, Reid. “Travel and the Built Environment—A Meta-Analysis,” US EPA Smart Growth Office, 2008.
- **Based on:** 52 prior studies, all from 1996 or later.

Ewing: **Take-Away**

"Almost any development in a central location is likely to generate less automobile travel than the best-designed, dense, mixed-use development in a remote location."

Ewing: **Key Findings**

- *Importance of Density*
- *Walk trips*
- *Transit Trips*
- *Neighborhood Type*

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Cevero / CTOD / ULI

- **Source:** PB Placemaking, Robert Cervero, Center for Transit Oriented Development and Urban Land Institute, “Effects of TOD on Housing, Parking and Travel,” TCRP Report 128, Final Draft, August 1, 2008.
- **Based on:** Data on 17 TOD projects in 4 regions, and literature review.
- **Take-Away Quote:** “This study reports that commuters living in transit oriented developments typically use transit 2 to 5 times more than other commuters in their regions, with TOD transit mode share varying from 5% to near 50%.”

Cevero / CTOD / ULI: Take-Away

"This study reports that commuters living in transit oriented developments typically use transit 2 to 5 times more than other commuters in their regions, with TOD transit mode share varying from 5% to near 50%."

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Cevero / CTOD / ULI: Key Findings

- ***Service Quality:*** Ridership heavily influenced by travel times
- ***Regional Accessibility:*** Links to job centers, school, cultural facilities mean more transit use
- ***Density:*** Higher densities near transit increase ridership.
- ***TOD and Parking:*** Published trip & parking generation figures overestimate TOD rates
- ***TOD and Car Ownership***

Objectives

- VMT
- Transit Ridership
- Active Transportation (Walking + Bicycling)
- Community Health

Strategies

- Density
- Access to High Quality Transit (frequency, speed, cost)
-
- Distance to a Regional Downtown/Center
- Neighborhood Design (e.g. block size)
- Spatial Arrangement and Mix of Land Uses
- Access to Local Amenities (e.g. parks & shops)
- Parking Availability

Short on Time, Long on Sources, What to Do?

- Use synthesis studies
- Know your audience
- Align anecdotes with research findings
- Know what's being measured
- Recognize exceptions
- Don't overwhelm your audience -- or yourself

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Thank You

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