

Streetcars and Economic Development: A Comparative Study of Four Streetcar Systems

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A brief history of streetcars

- 1820s-1880s horse-drawn “omnibus”
- 1860s-1890s steam and cable
- 1890s-present electric
- “Streetcar” suburbs
- 1950s onward cars = decline



- Pre 2001 “Heritage”



Rapid Transit in 1877 - First Horse Car run in Manchester, N.H.



Rise of the Modern Streetcar

- Portland North-South streetcar line opened 2001 @ \$57 million, entirely locally funded.
- Grew from 2.4 miles to 4 miles (8 track miles) downtown/west side, now a loop crossing the Willamette River
- Purposes:

Link neighborhoods, expand create transportation options.

Fit the scale and traffic patterns of existing neighborhoods.

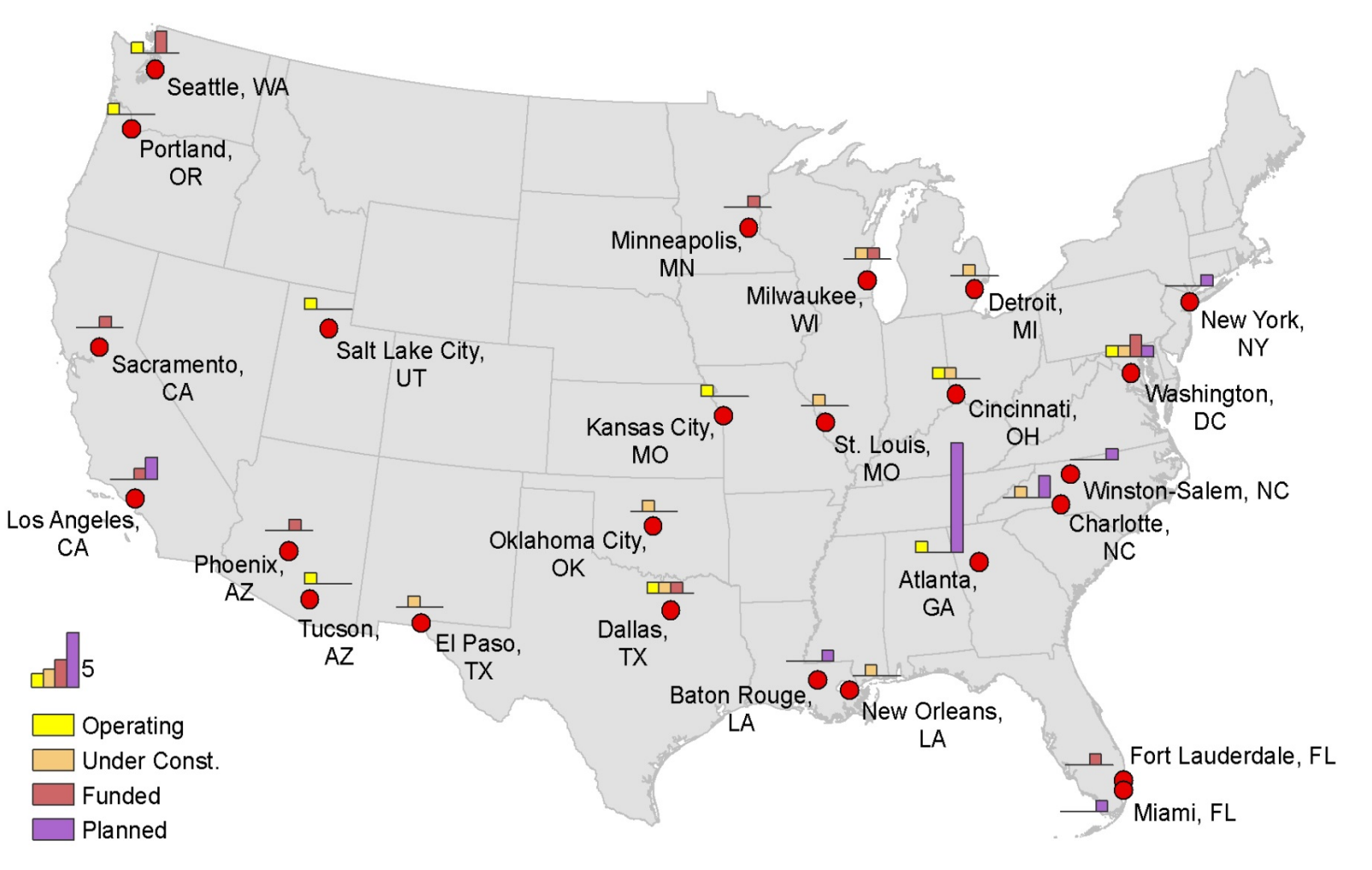
Provide quality service to attract new transit ridership.

Reduce auto trips, parking demand, congestion & pollution.

Encourage housing & business development in Central City.



Streetcar Envy?



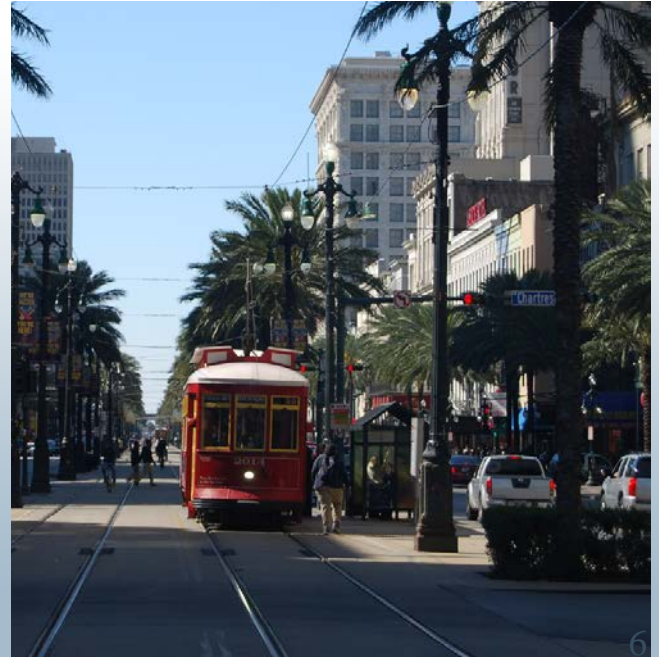
Streetcars & Economic Development

Adds transportation **capacity** to densely settled urban areas

Allows substitution of on-street and garage parking thereby creating more **real estate investment** opportunities.

Creates opportunities to facilitate **agglomeration economies** that stimulate more investment and create more jobs.

In theory, streetcars in densely settled urban areas
= job growth



Research Design

Quasi-experimental

Treatment and control

Pre-post

STREETCAR LINE	BEFORE YEAR	AFTER YEAR
Portland, Central Loop	2006	2013
Seattle, South Lake Union	2003	2013
Salt Lake City, S Line	2009	2013
New Orleans, Rampart-St. Claude*	2008	2013

Method

Shift-Share Analysis attributes employment change between regional effects, industry effects and local effects such as transit stations.

$$SS = CC + IM + SCA$$

Where

- **SS** = Shift-Share for local site = the total change in employment between the Before date (_B) and the After date (_A)
- **CC** = Central County share = $(SCA_{iB} (CC_A - CC_B / CC_B))$ where **CC** is total Central County jobs and *i* is a given industry sector.
- **IM** = Industry Mix Effect = $(SCA_{iB} ((CC_{iA} / CC_{iB}) - (CC_A / CC_B)))$ summed across all sectors where CC_i is Central County jobs for sector *i*.
- **SCA** = **Streetcar station area** share for each industry sector = $(SCA_{iB} ((SCA_{iA} / SCA_{iB}) - (CC_{iA} / CC_{iB})))$ summed across all sectors.

Economic Sectors → Economic Groups

NAICS Code	NAICS Sector Title and Economic Group Name
	<i>Manufacturing</i>
33-33	Manufacturing
	<i>Light Industrial</i>
22	Utilities
42	Wholesale Trade
48-49	Transportation and Warehousing
	<i>Retail-Lodging-Food</i>
44-45	Retail Trade
72	Accommodation and Food Services
	<i>Knowledge</i>
51	Information
54	Professional, Scientific, and Technical Services
	<i>Office</i>
52	Finance and Insurance
53	Real Estate and Rental and Leasing
55	Management of Companies and Enterprises
	Administrative and Support and Waste Management and
56	Remediation Services
81	Other Services (except Public Administration)
92	Public Administration
	<i>Education</i>
61	Educational Services
	<i>Health</i>
62	Health Care and Social Assistance
	<i>Arts-Entertainment-Recreation</i>
71	Arts, Entertainment, and Recreation

Treatment and Controls

- **Treatment** are three streetcar stations roughly equidistant along the same line.
- **Central county** control is the central county of the treatment locations.
- **Streetcar controls** are the means of 10 alternative locations representing each streetcar station at the beginning of the study period.

PORTLAND, OREGON STREETCAR SYSTEM

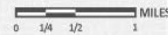


- NORTH SOUTH LINE
- A LOOP
- B LOOP
- MAX LIGHT RAIL
- STREETCAR/LRT STATION
- TRANSFER STATION
- MULTIMODAL STATION

SALT LAKE CITY, UTAH STREETCAR SYSTEM



- S-LINE
- TRAX LIGHT RAIL
- FRONT RUNNER COMM. RAIL
- FUTURE STREETCAR EXPANSION
- STREETCAR/LRT STATION
- MULTIMODAL STATION

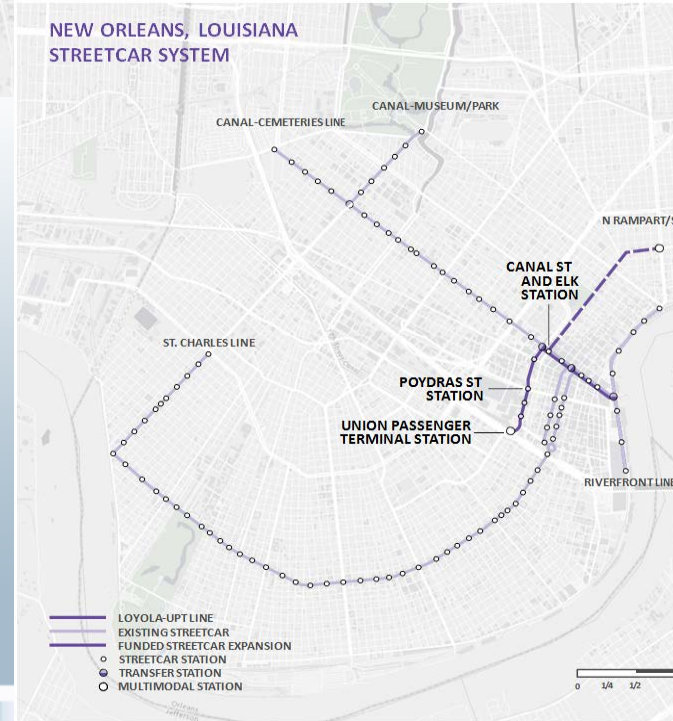


SEATTLE, WASHINGTON STREETCAR SYSTEM



- SOUTH LAKE UNION LINE
- FIRST HILL LINE
- FUNDED STREETCAR
- FUTURE STREETCAR
- MONORAIL
- LINK LIGHT RAIL
- SOUNDER COMMUTER RAIL
- STREETCAR/LRT STATION
- TRANSFER STATION
- MULTIMODAL STATION

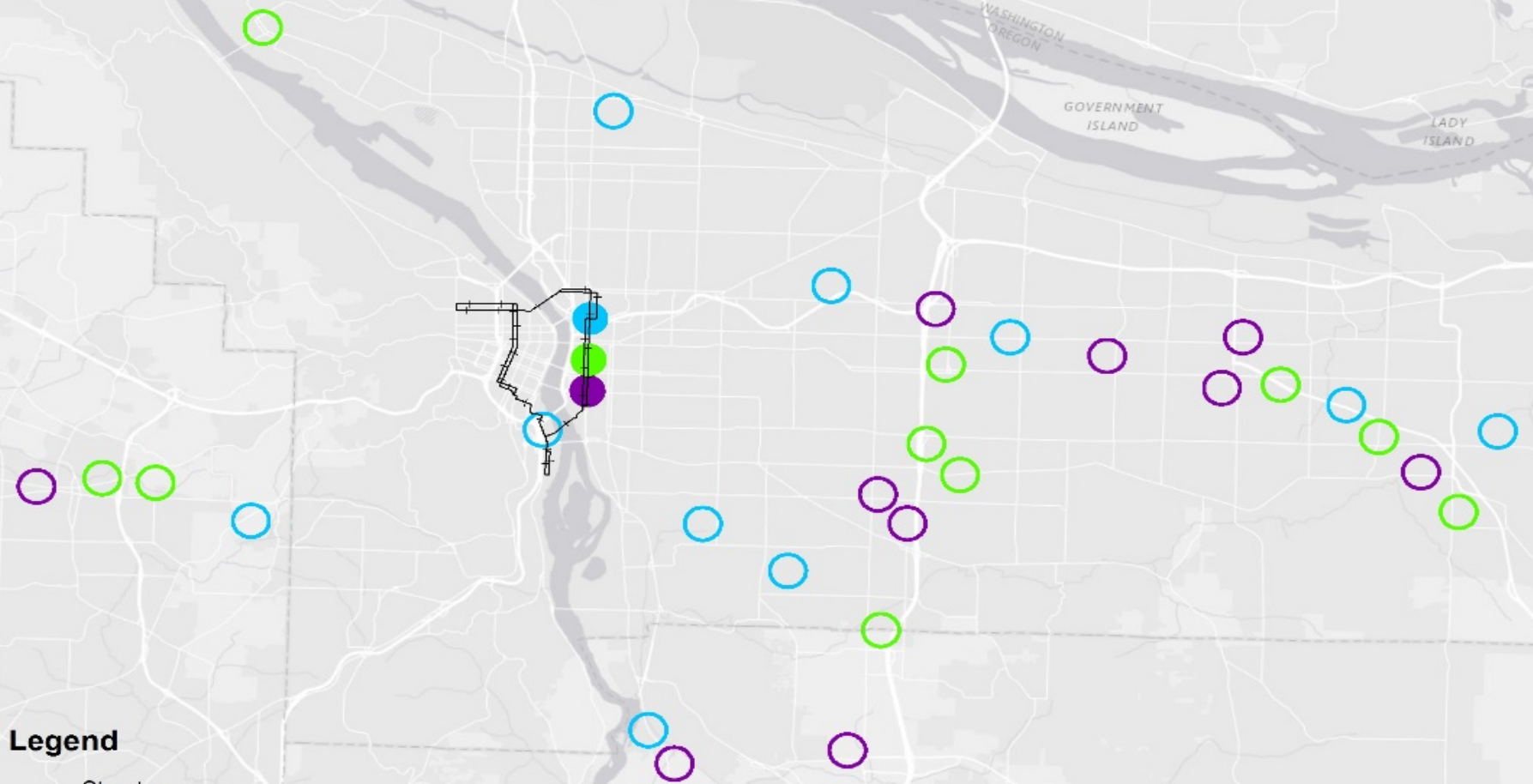
NEW ORLEANS, LOUISIANA STREETCAR SYSTEM



- LOYOLA-UPT LINE
- EXISTING STREETCAR
- FUNDED STREETCAR EXPANSION
- STREETCAR STATION
- TRANSFER STATION
- MULTIMODAL STATION

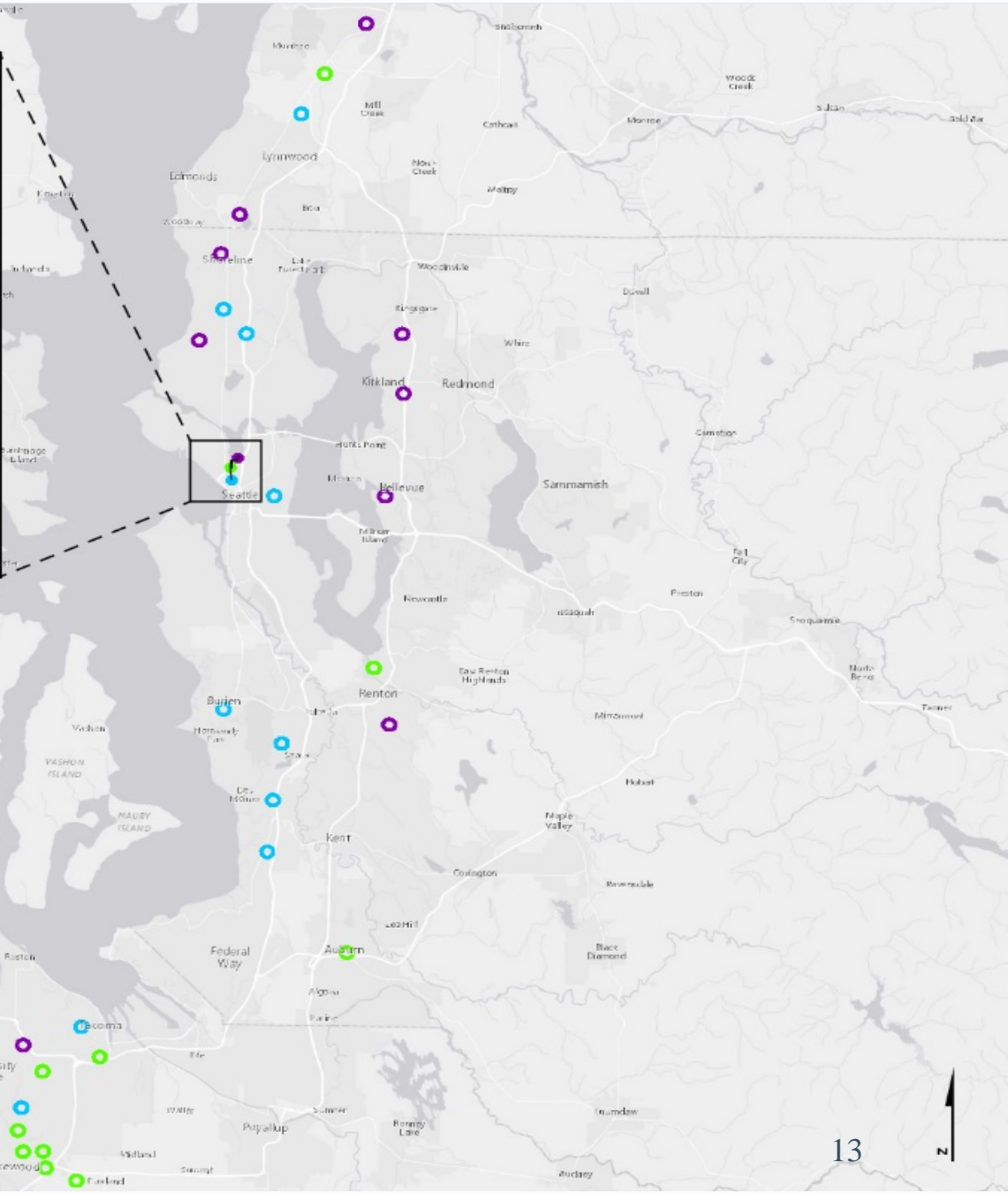
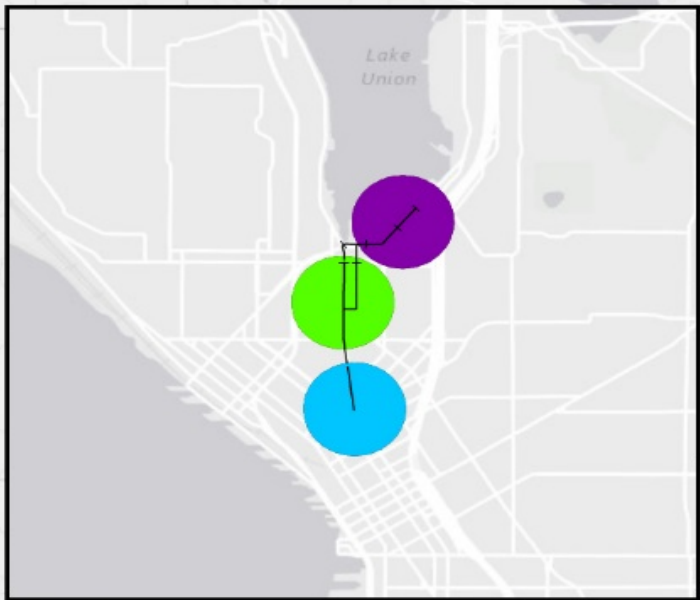


PORTLAND




- Legend**
- +— Streetcar
 - Treatment Sites
 - Control Sites





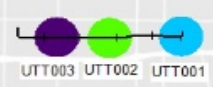
SEATTLE

Legend

-  Streetcar
-  Treatment Sites
-  Control Sites



SALT LAKE CITY



Legend

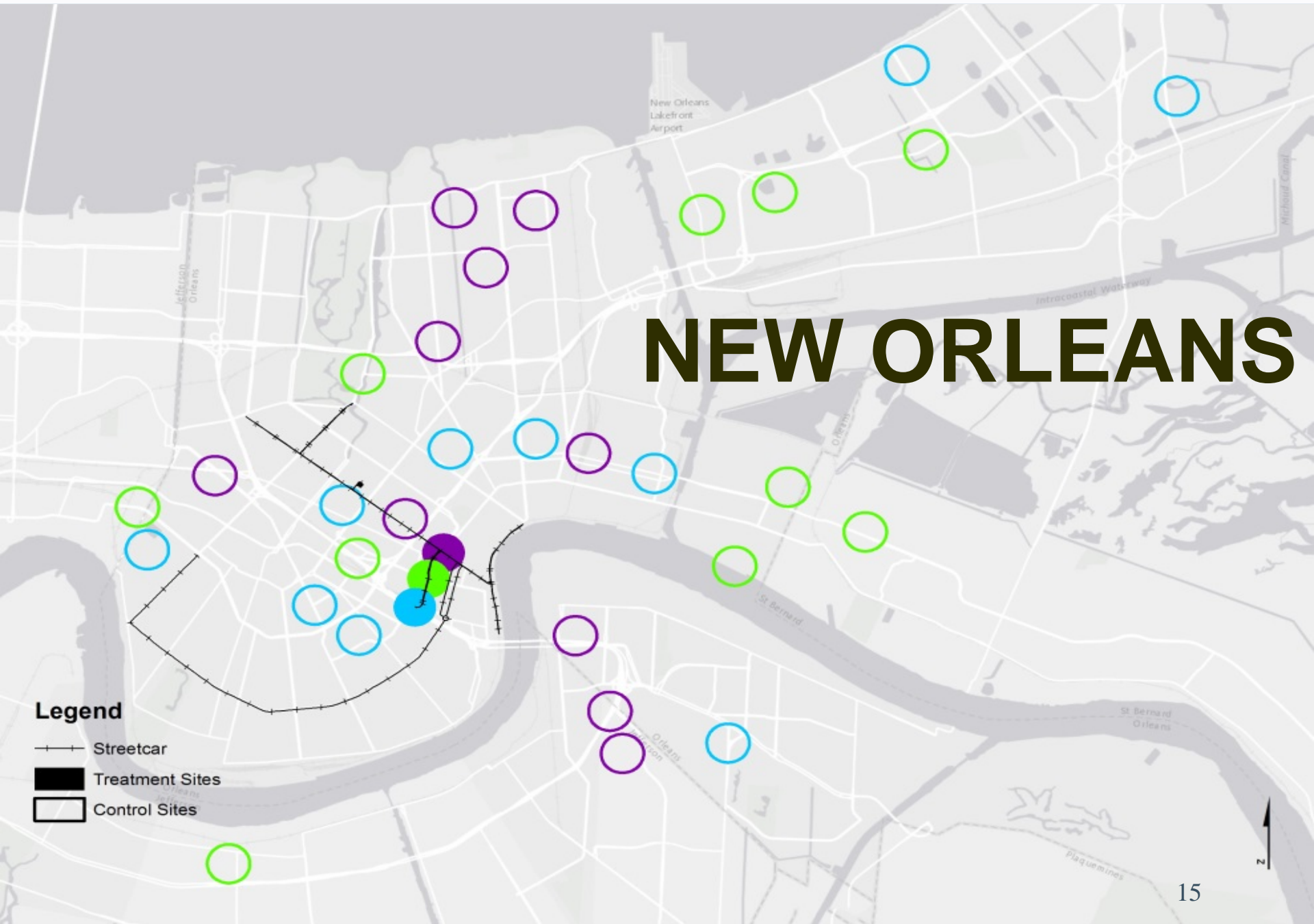
- +— Streetcar
- Treatment Sites
- Control Sites



NEW ORLEANS

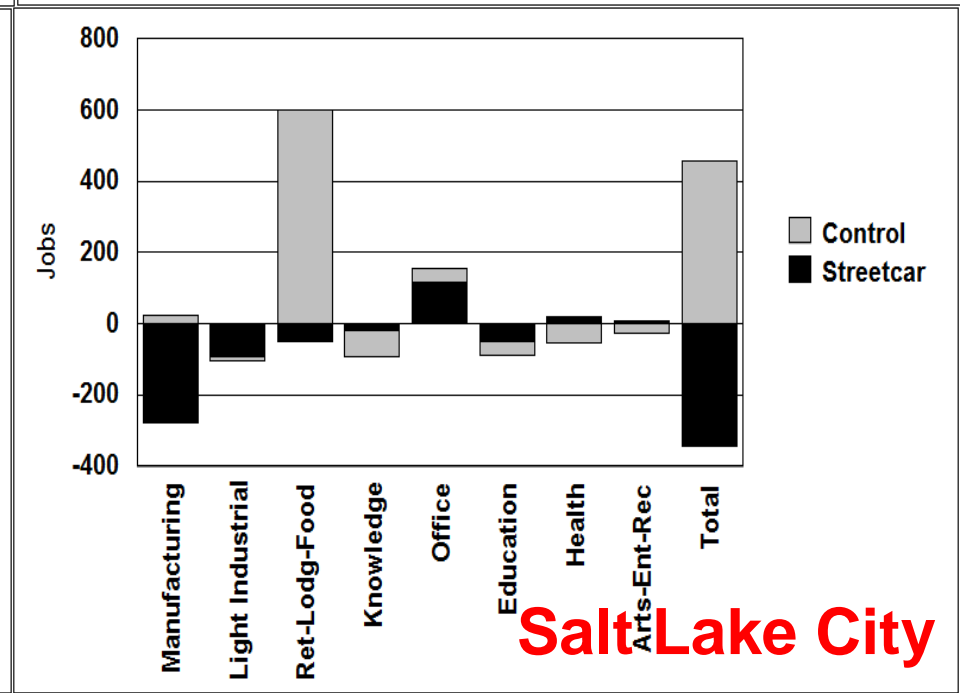
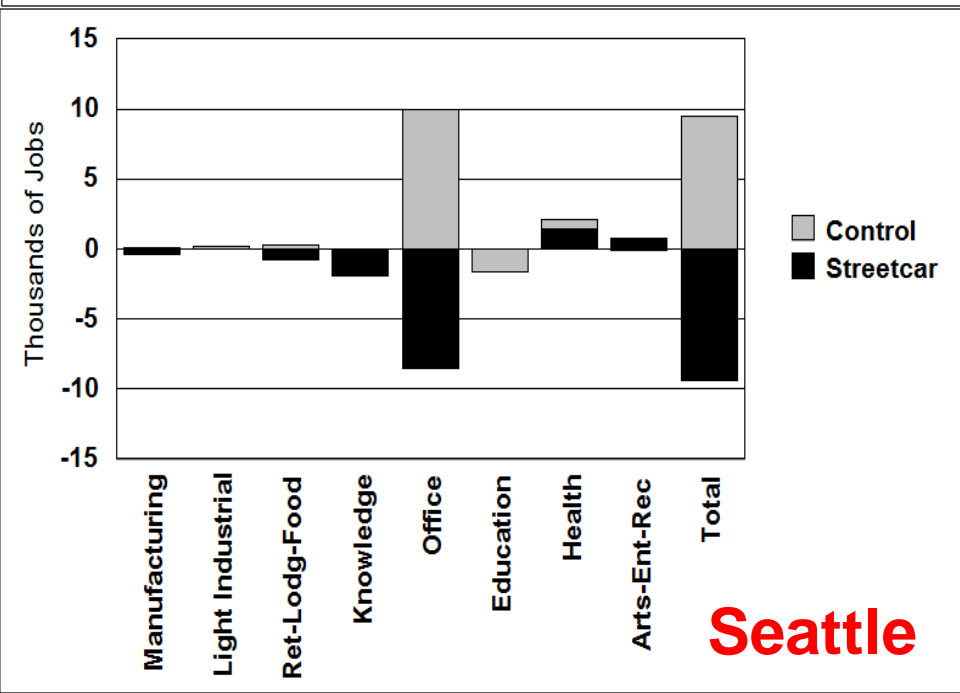
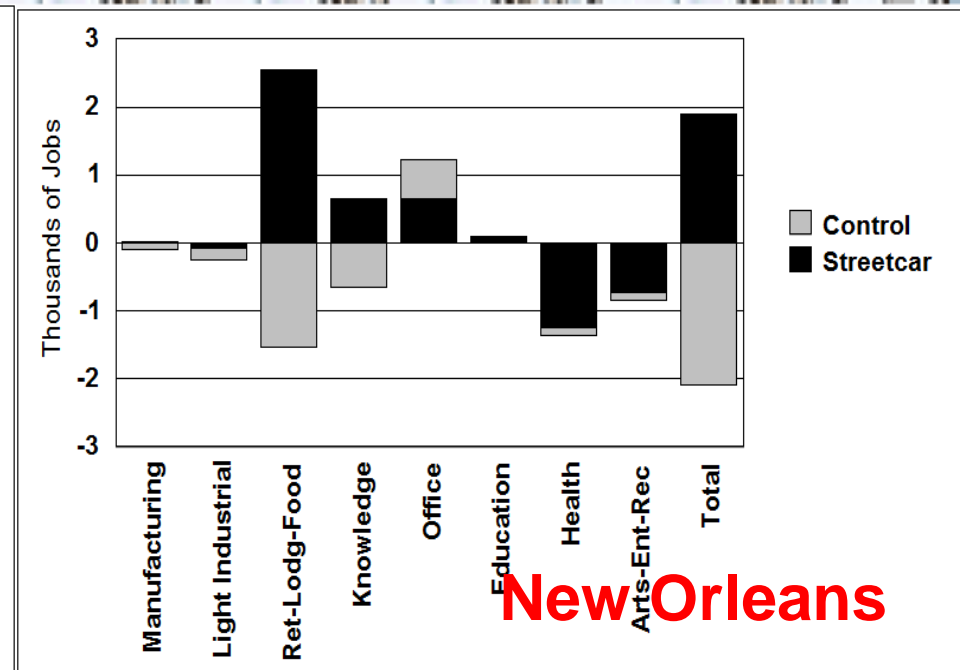
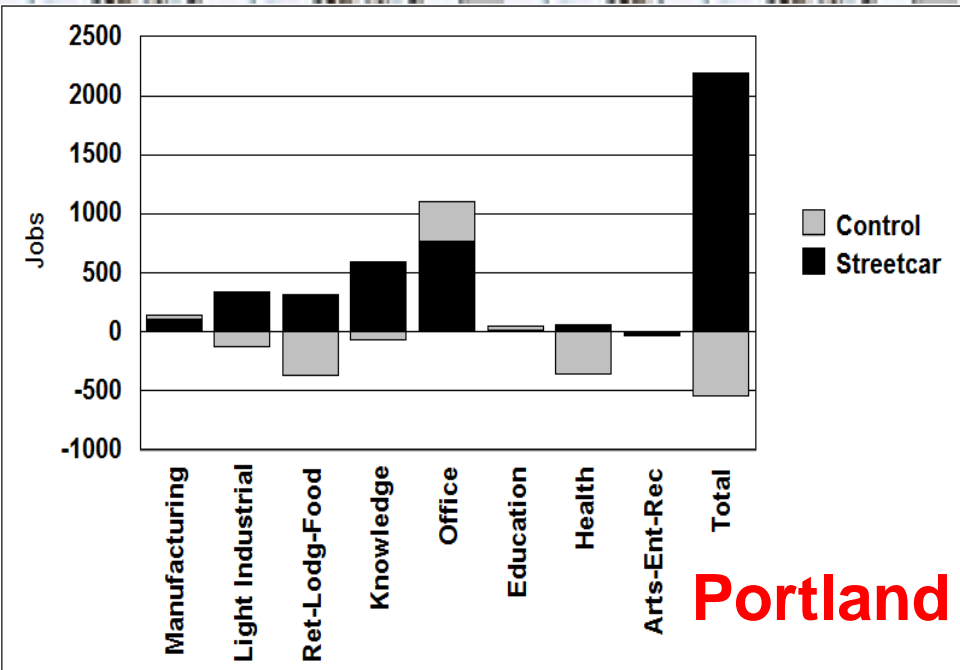
Legend

- +—+— Streetcar
- Treatment Sites
- Control Sites



Summary Results for Station Areas

	Portland	Seattle	Salt Lake City	New Orleans
Economic Group				
		<i>Streetcar Station Area Share</i>		
Manufacturing	109	-355	-280	14
Light Industrial	342	-16	-91	-86
Retail-Lodging-Food	319	-779	-48	2,555
Knowledge	593	-1,941	-20	644
Office	767	-8,555	115	657
Education	11	26	-48	89
Health	66	1,453	20	-1,247
Arts-Ent-Rec	-19	770	7	-725
Total	2,189	-9,397	-345	1,900
Economic Group				
		<i>Control Station Area Share</i>		
Manufacturing	27	116	25	-98
Light Industrial	-128	230	-13	-160
Retail-Lodging-Food	-371	288	599	-1,524
Knowledge	-70	1	-71	-652
Office	332	10,011	39	565
Education	43	-1,677	-41	16
Health	-352	670	-55	-122
Arts-Ent-Rec	-19	-128	-26	-123
Total	-537	9,511	457	-2,098



No Consistent Patterns?

- The oldest systems (Portland 2006 & Seattle 2003) predate the Great Recession → opposite trends
 - Seattle's system is in a **built-out downtown** area with little room to grow where **residential demand** may be displacing jobs.
 - Portland's east loop is in an **under-invested redevelopment** area where both residential and new jobs have plenty of capacity for growth.
- The newest systems (Salt Lake City 2009 & New Orleans 2008) launched during the Great Recession → opposite trends
 - Salt Lake City's system is in a **built-out secondary center** and the line **passes through mostly residential areas**; one commercial node built out
 - New Orleans' system is in an **under-invested redevelopment** area where both residential and new jobs have plenty of capacity for growth.

Policies to Leverage Streetcars and Economic Development

- High density mixed use and residential zoning
- Streetcar neighborhood form based code
- Community development area (CDA) incentives
- Target employment zones around stations
- Incentive overlay zone
- Streetcar corridor special area plans and zoning

Future Research

- Residential development including demographic and economic influences
- Specific station area studies
- Updates especially for newer systems



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