

Multi-Modal Planning for High Growth Business Clusters

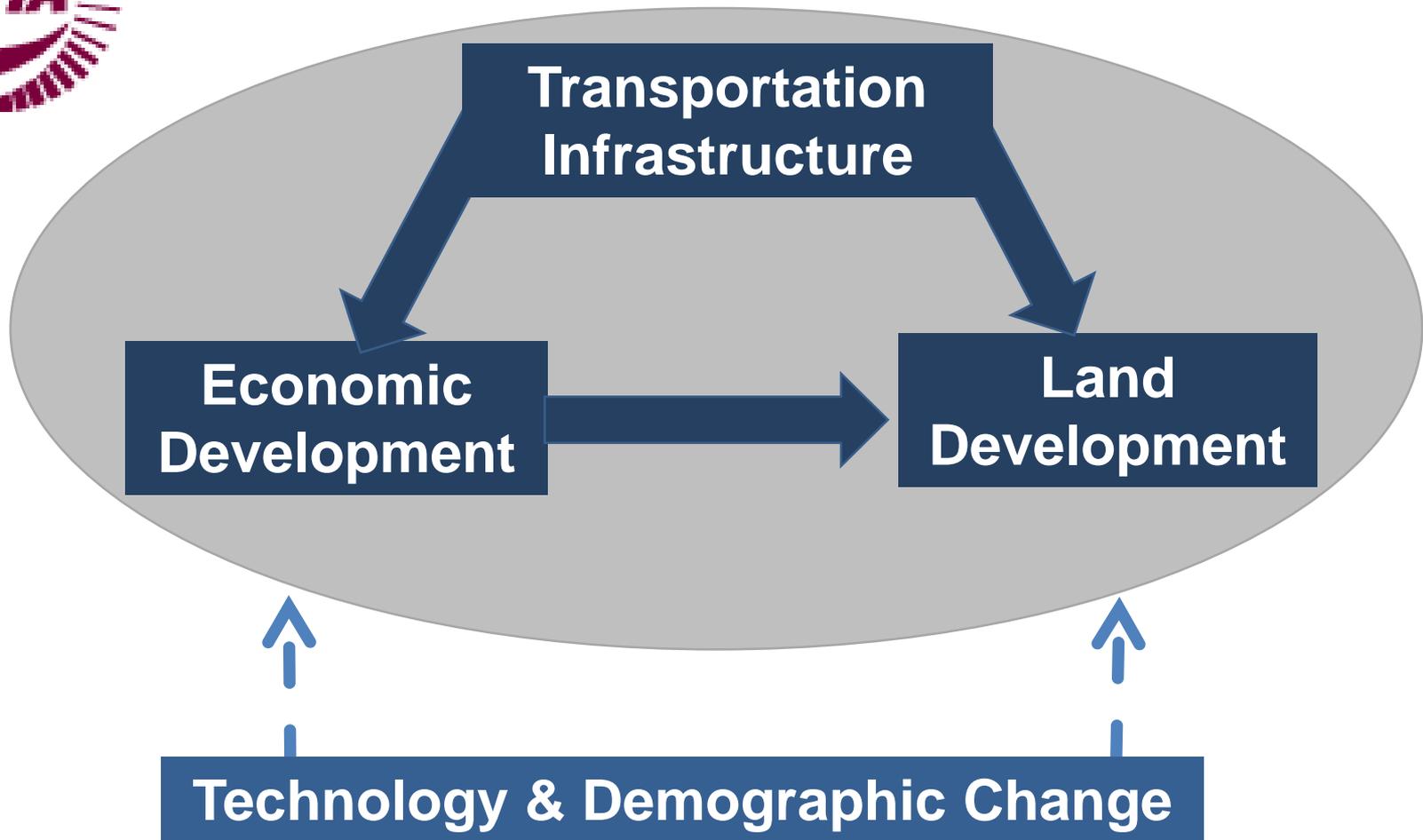
Chandler Duncan, Economic Development Research Group, Inc.

Susan Moses, SJ Moses & Associates

Glen Weisbrod, Economic Development Research Group, Inc.

ITED Annual Conference, April 2014

Public Transportation Roles



Case Studies: Logic

- ❖ The American economy is changing.
- ❖ High growth industries have specific location requirements and clustering patterns.
- ❖ High growth clusters concentrate travel demand and strain resources.
- ❖ Increasing need for supporting infrastructure must be addressed.
- ❖ Failure to provide sufficient capacity for high growth industry clusters has an economic cost.



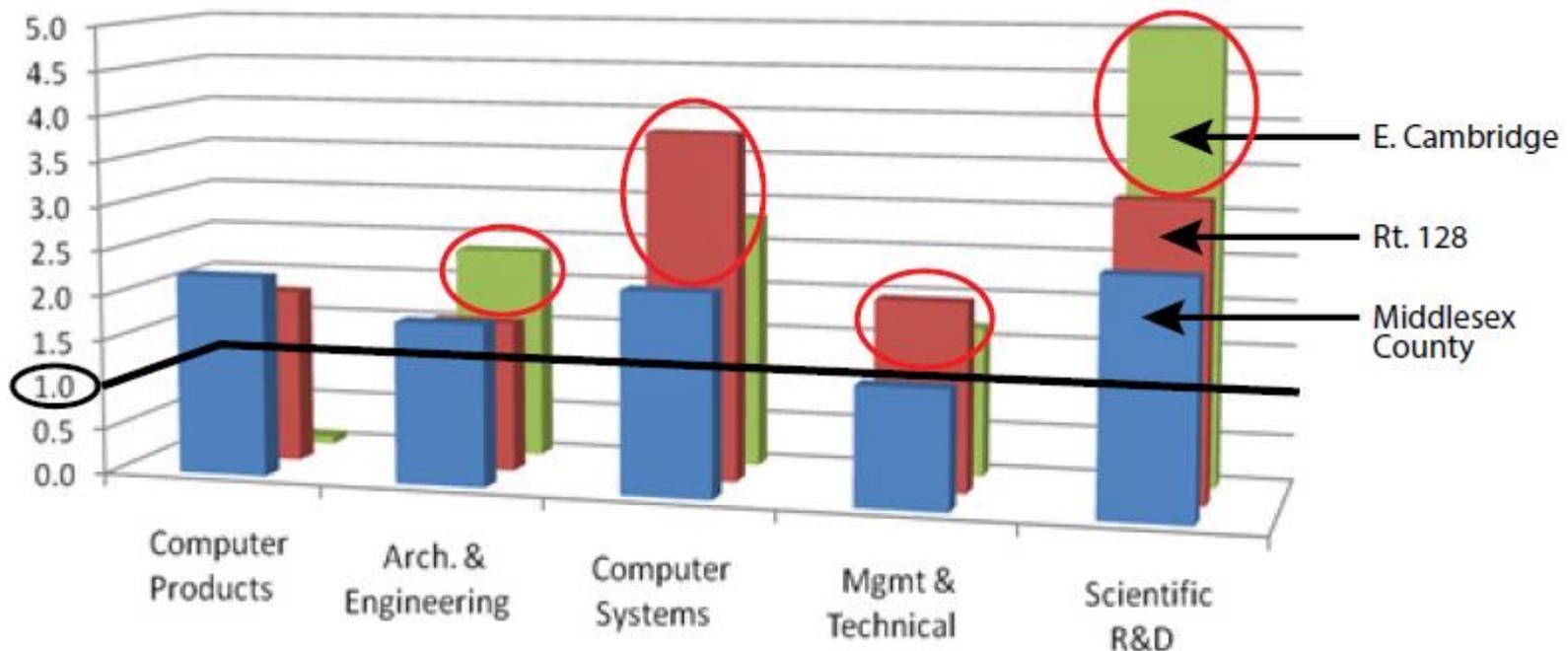
Fastest Growing U.S. Industries

BLS Projections: 2010 – 2020

Sector	\$ Output Growth (Top Six)	Employment Growth (Top Six)
Professional, technical services	X	X
Financial Services	X	X
Software – Information Service	X	X
Construction	X	X
Retail	X	
Wholesale & warehousing	X	
Health care services		X
Education		X



Specialization of Technology Clusters (Boston area)



Source: Massachusetts Office of Labor and Workforce Development, 2011 data

(Values represent Location Quotients; a value of 1.0 means that the study area has the statewide average concentration of the given industry, 2.0 means the area has double the state average concentration and 0.5 means it has half of the state average concentration of the given industry.)

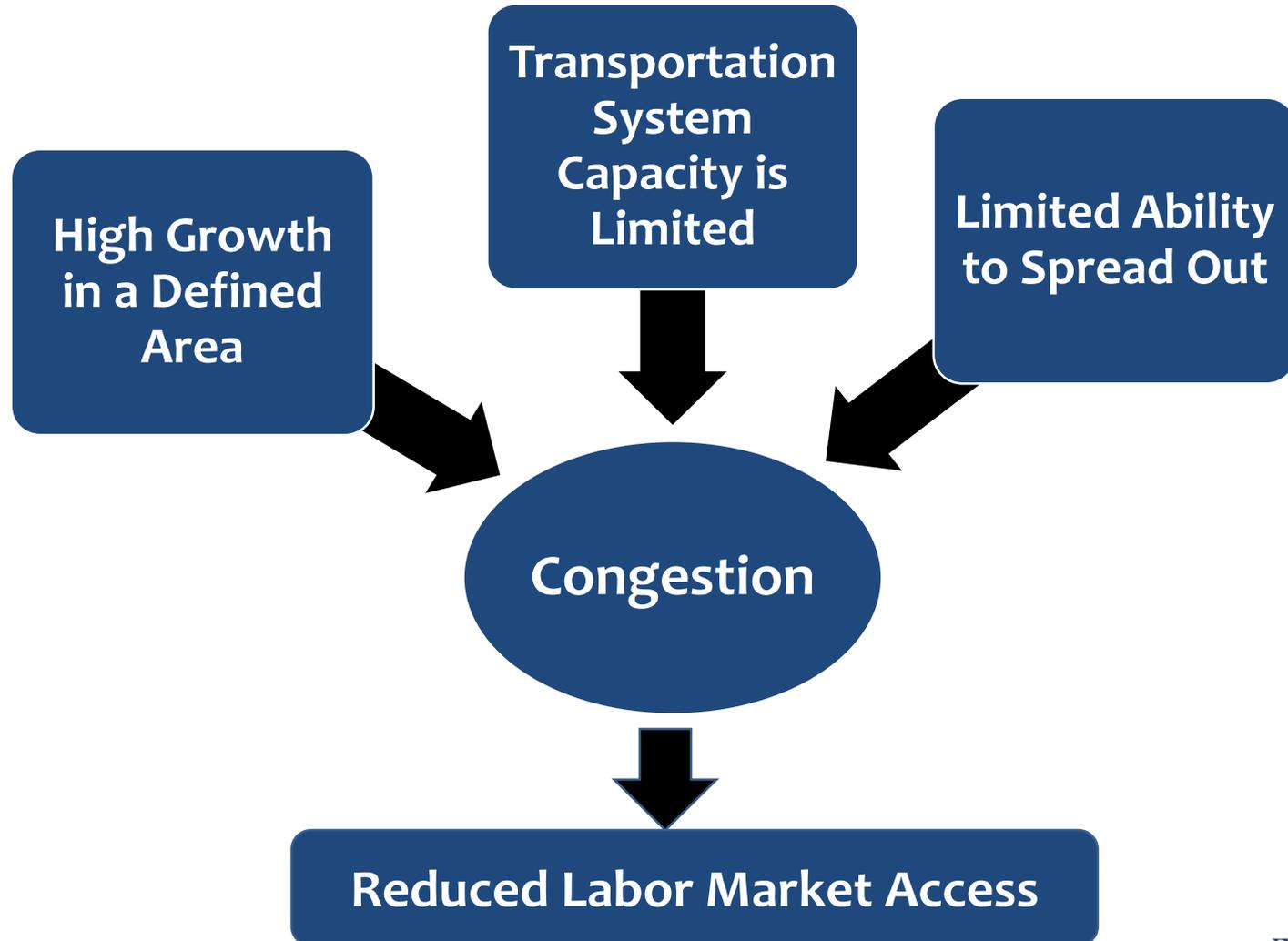


Biotech & Software Clusters

- Evolution: from pharma & computer clusters featured in 1982 Congressional study to today's biotech & software clusters
- Reasons for clustering (agglomeration):
 - Access to broad, skilled workforce (“urbanization” economies)
 - Access to research universities (*“localization” economies*)
- Land and wage premiums paid
- Support high productivity & high growth, but...



High Growth Cluster Consequences



Demographic Change

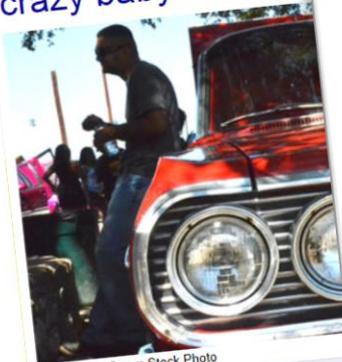
- Baby Boomers aging
- Millennial generation: values
- Densification & condo booms
- Urban “buzz”

Fewer young Canadians are getting their driver's licence

The Washington Post PostTV Politics Opinions
Fewer teens get driver's licenses

By Ashley Hal
Reaching dr
than half of
report issued
Only 44 per
the time the

Study: Americans driving less as car-crazy baby boomers retire



Credit: Kens5.com Stock Photo



by Kens5.com Staff

kvue.com
Posted on May 14, 2013 at 4:20 PM

The driving boom is over, according to
average number of miles driven by Am



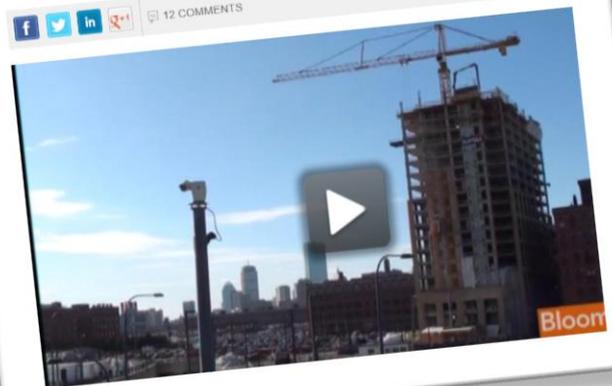
Transportation and
the New Generation
Why Young People Are Driving Less
and What It Means for Transportation Policy

Boston Booms as Workers Say No to
Suburbs: Real Estate

By Nadja Brandt - Mar 12, 2013 12:00 AM ET



12 COMMENTS



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Public & Private Responses

- Private Fleets – bring workers from central city and elsewhere in the metro area (stopgap action)
- Public Investment



← Biogen Cambridge
Denver Tech Center →



Google San Francisco



Deerfield, IL (Chicago Area)



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Overview of Eight Clusters Studied

Cluster	Key Industries	Setting
Boston area: Kendall Square	biotech; IT; internet; social media	Urban
Boston area: 128 Corridor	software; hardware, pharmaceuticals	Suburban
San Francisco area: Silicon Valley	software; internet; IT, social media	Suburban
San Francisco: Midtown/SOM	social media/gaming; internet; biotech	Urban
Atlanta area: Medline	health; biotech	Suburban
Chicago area: Deerfield	pharmaceuticals; headquarters	Suburban
Denver Technology Center	IT; telecom.; software	Suburban
Seattle area: South Lake Union	health; biotech; internet	Urban



Roadway Accessibility Challenges

Industry Cluster	Commuting Trips at Peak		Peak V/C on Routes Accessing Cluster		% Increase in Auto Delay 2010-2040
	2010	2040	2010	2040	
Cambridge Kendall	50,000	69,000	At capacity	1.4	27%
128 Corridor	24,000	26,000	At capacity	1.3	39%
Silicon Valley	39,000	56,000	At capacity	1.4	45%
SF Midtown/SOM	102,000	116,000	At capacity	1.5	20%
Atlanta Medline	64,000	97,000	At capacity	1.2	22%
Deerfield, IL	27,000	41,000	At capacity	1.5	39%
Denver Tech Ctr	9,000	10,000	At capacity	1.5	**
Seattle S Lake Union	14,000	18,000	At capacity	1.5	53%



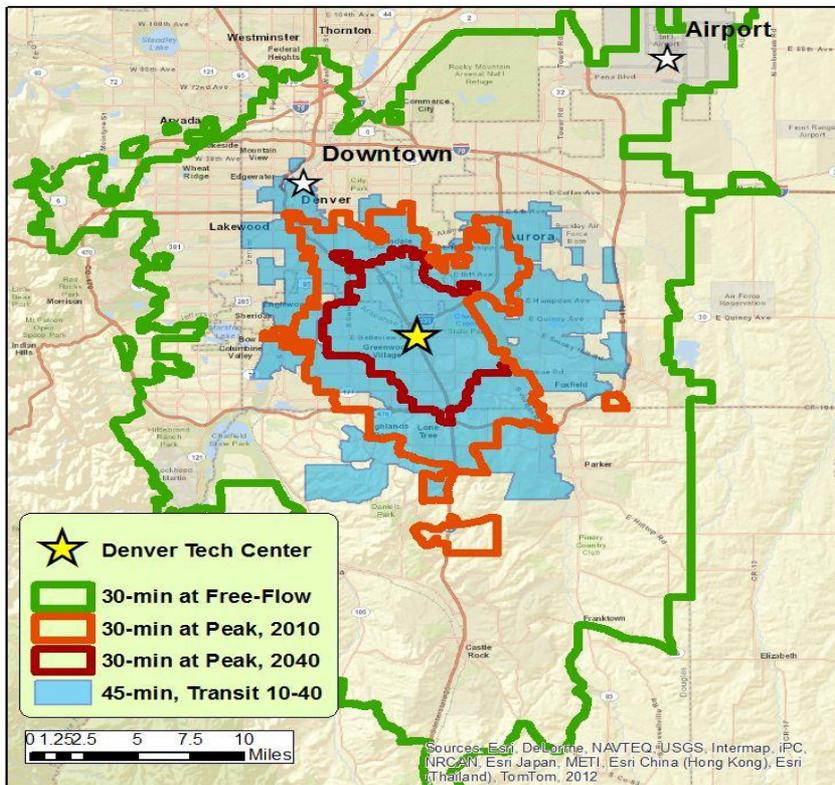
Transit & Housing Investments

Industry Cluster	Transit Expansion Planned or Proposed		Private Shuttles in Existence	Housing for Millennial Planned
	Bus Service	Fixed Guideway		
Cambridge Kendall	Yes	Yes	Yes	Yes
128 Corridor			Yes	Yes
Atlanta Medline		Yes	Yes	Yes
Deerfield , IL	Yes		Yes	Yes
Denver Tech Ctr		Yes	Yes	
Seattle S Lake Union		Yes	Yes	Yes
Silicon Valley		Yes	Yes	Yes
SF Midtown/SOM		Yes	Yes	Yes

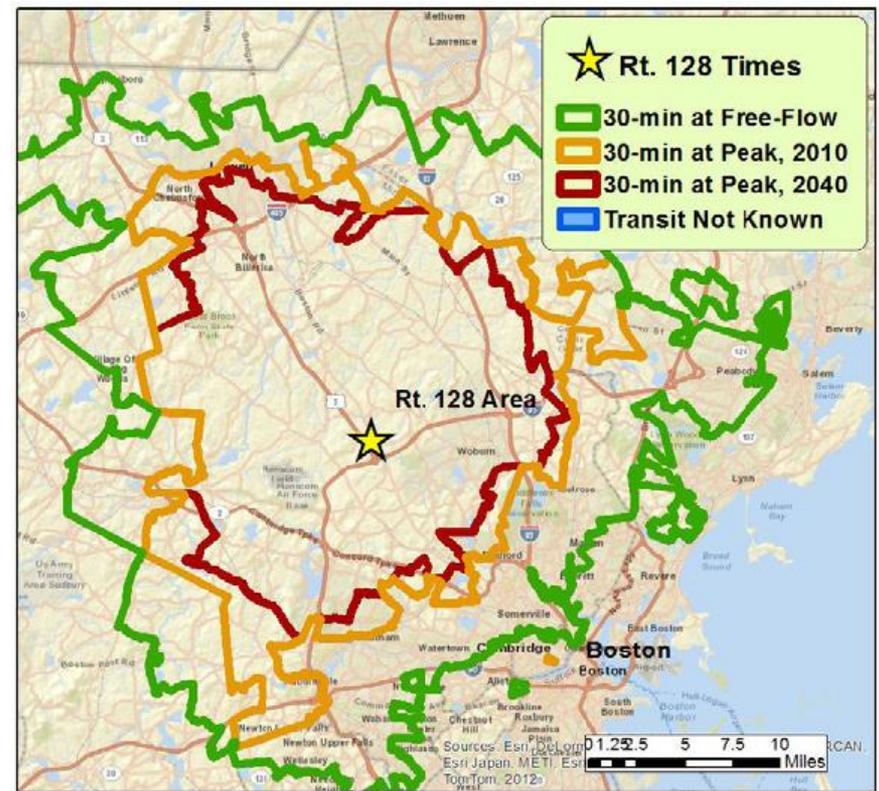


MPO Hwy Network Models

*Reduction in Labor Market
if Traffic Continues to Grow*



Denver Tech Ctr



Rt.128 Massachusetts

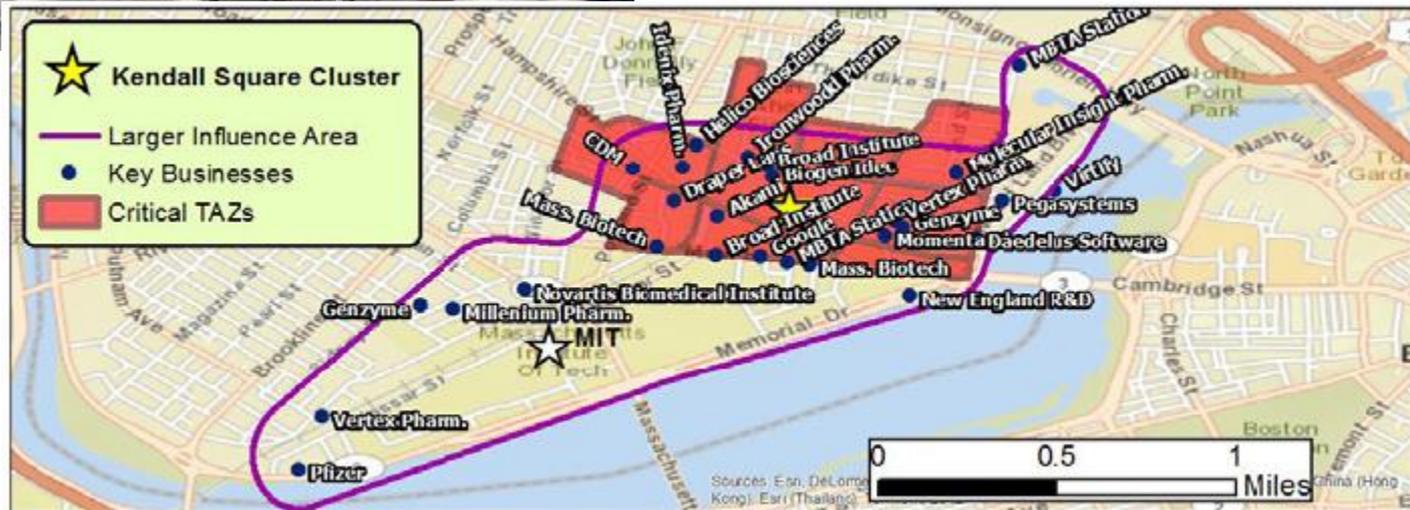
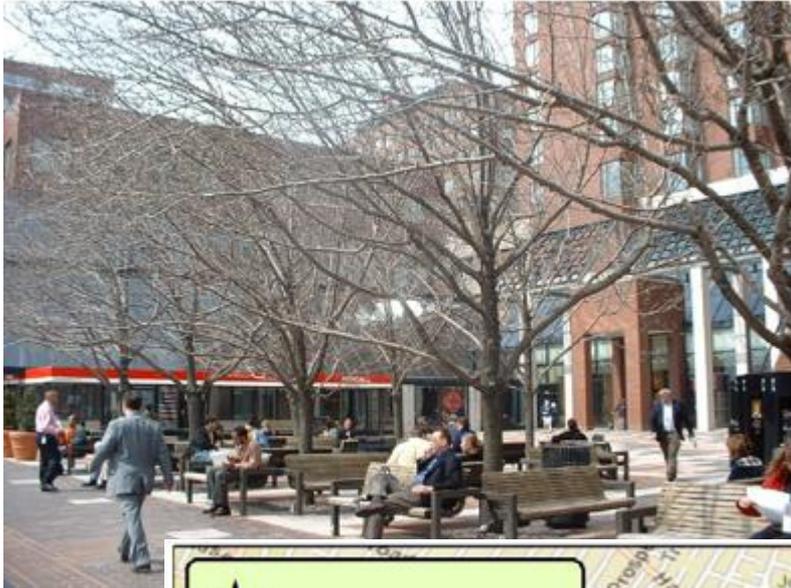


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Kendall Square Cluster (Cambridge, MA)



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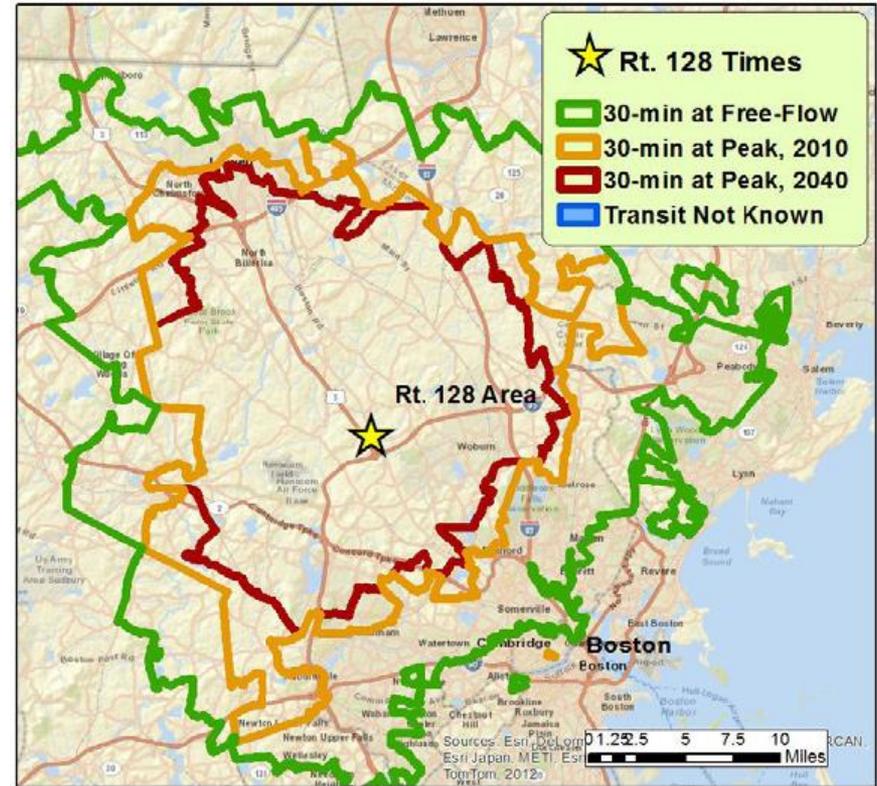
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Kendall Square

- ❖ MIT, Volpe Center, Whitehead Institute (Bio-Tech), Draper Labs and other core businesses.
- ❖ Served by MBTA Red Line (every 4.5 Minutes), 4 bus lines, MIT shuttles (increasing by 4% Annually), Longfellow bridge travel lanes actually being replaced by sidewalks.
- ❖ Longfellow bridge travel lanes actually plan to be replaced by sidewalks.
- ❖ Long range planning entails increased housing availability and transit frequency.
- ❖ Example of a “mature” urban cluster (post-highway)



Route 128 Technology Cluster



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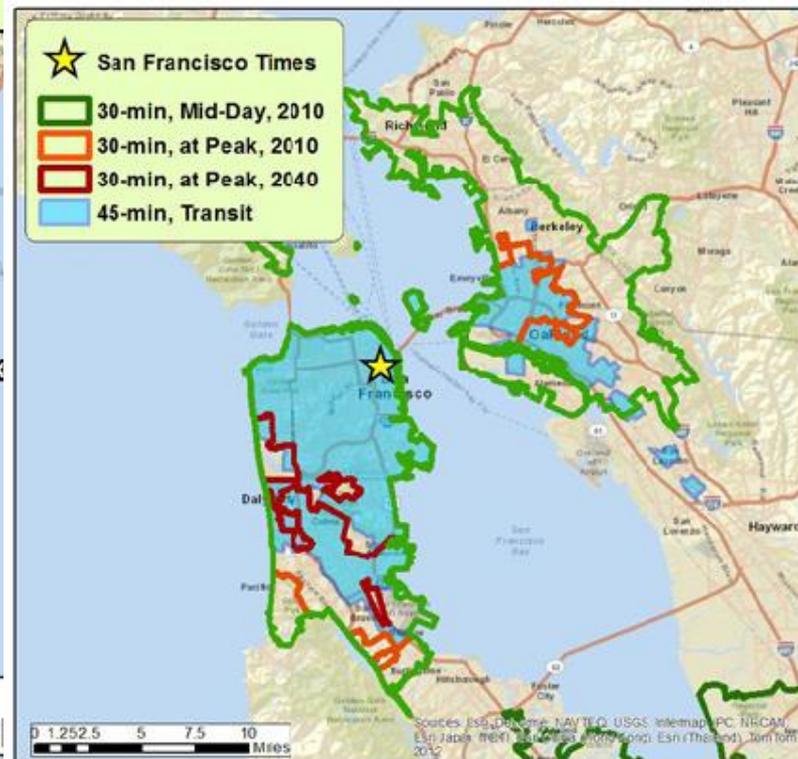
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128 Technology Corridor

- ❖ Mitre Corporation, Ratheon, Sun Microsystems and Lahey Clinic are among core businesses.
- ❖ Cluster has been highly dependent on highway routes (128 and 3), with auto-oriented design and limited transit access (3 bus routes, but no rail or BRT).
- ❖ 43% of households that can reach cluster by auto during free flow conditions are made inaccessible during peak congestion.
- ❖ Route 128 Corridor plan calls for new transit center and new express bus services, but land development pattern poses long-term challenges.
- ❖ Example of a “mature” sub-urban cluster, where accessibility options have become limited.



San Francisco: Mid-Town & South of Market Cluster



Mid-Town & South of Market

- ❖ Twitter, Google (satellite office), Yelp, MetaCafe, PlayHaven, Idle Games, Pivotal Labs, Strobe, Sallesforce and Kiva are among core businesses.
- Cluster benefits from downtown location with existing transit, including BART, MUNI buses, cable cars and streetcars, regional bus services and Caltrain commuter rail.
- ❖ Many silicon valley firms (including Google) cite millennial' desire for urban location as reason for campuses in this cluster.
- ❖ New \$4.5 Billion “Transbay” terminal will provide multi-modal transportation and housing hub as a central element of this clusters' future development,

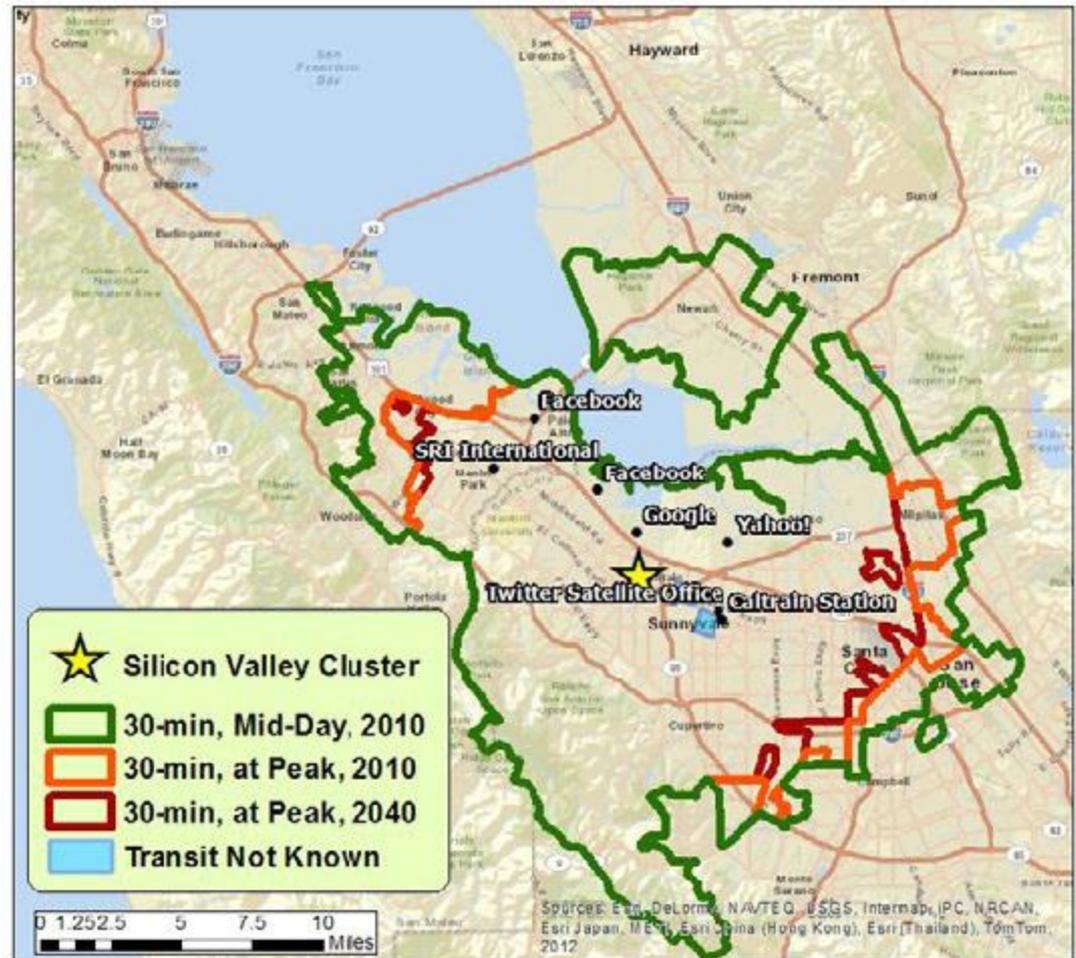
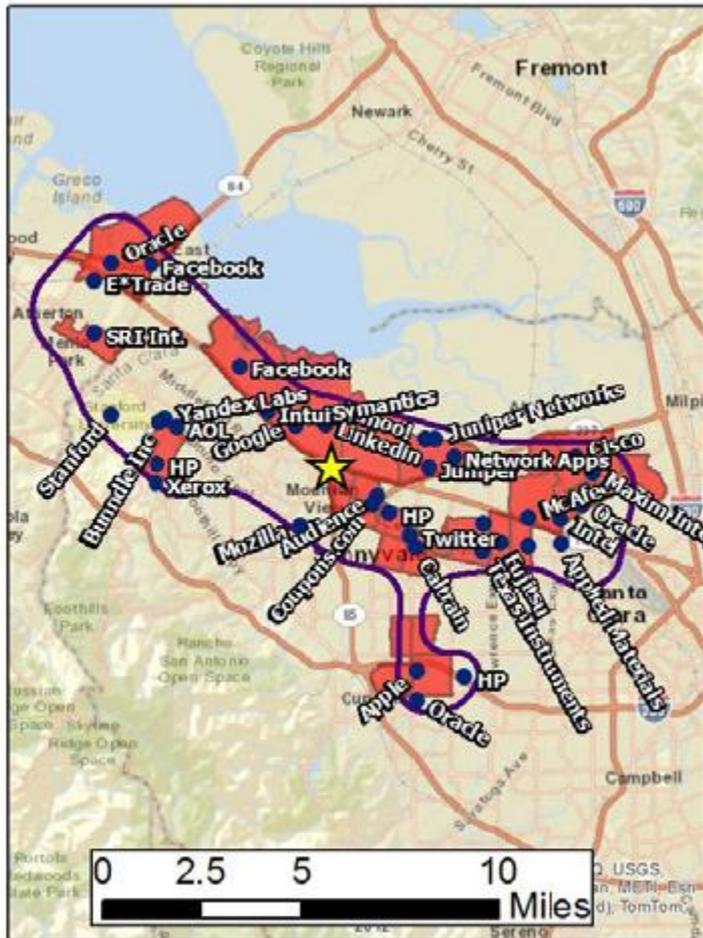


Transportation in SoMa and Mid Market

- BART
- Caltrain
- MUNI
- AC Transit
- Golden Gate Transit
- SamTrans
- Car Sharing
- Corporate Shuttles
- Cycling
- Walking
- Private Auto



California: Silicon Valley Cluster



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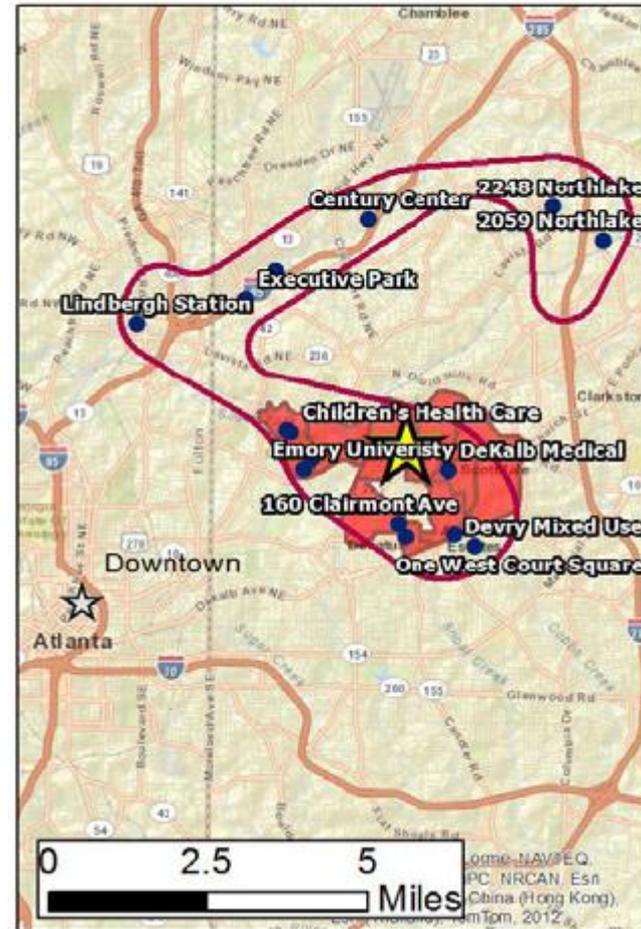
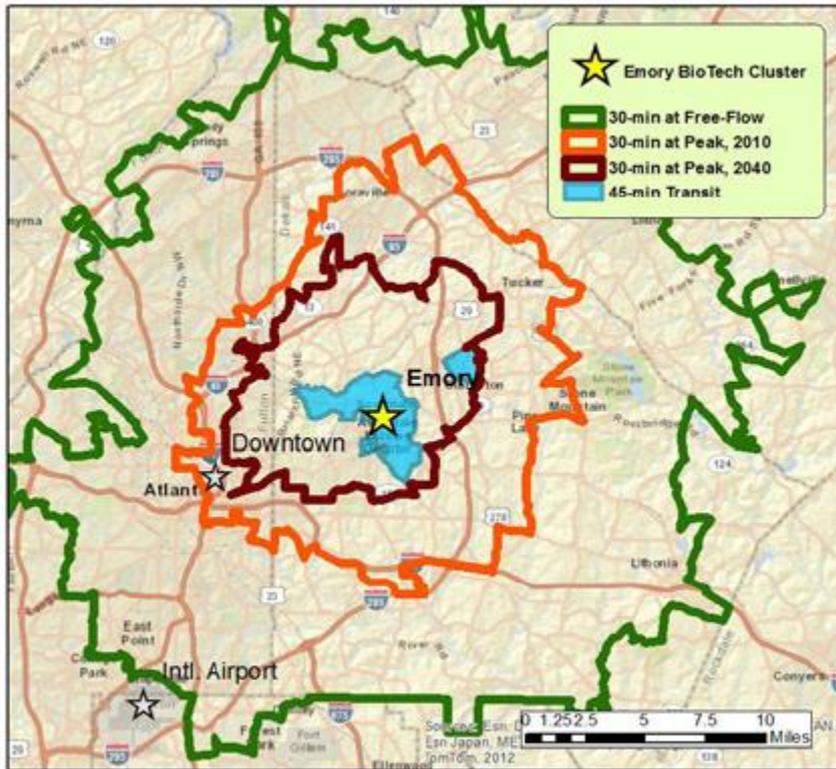
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Silicon Valley Cluster

- ❖ Facebook, LinkedIn, Google, Oracle, are among core businesses.
- Interstate 280 and Highway 101 are primary transportation facilities. Cluster served by Caltrain and bay area's commuter rail system, but much development pattern not conducive to transit.
- ❖ BART and Caltrain are expanding service to area. HSR to southern California also planned with a node in Silicon valley. Google private shuttle is among the largest transit services in this area.



Atlanta: “Medline” Cluster



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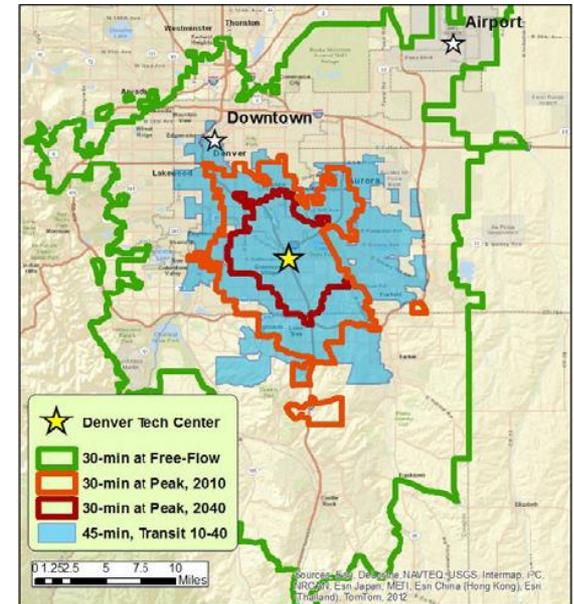
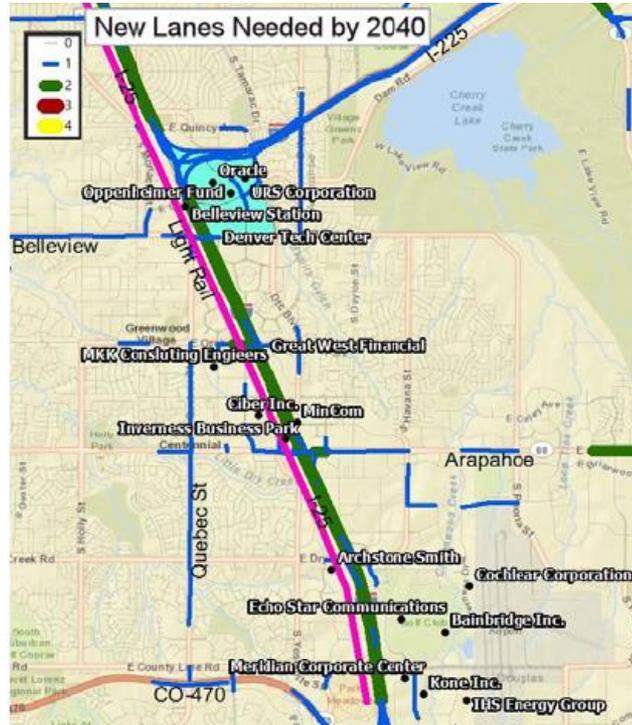
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Atlanta “Medline”

- ❖ Emory University, Centers for Disease Control and DeKalb medical center are among core businesses.
- I-85 and I-285 are the principal connections to the site, and both exceed capacity with limited room for long-term expansion.
- Avondale MARTA station currently the only rail transit connection to the area, not in walking distance of most businesses.
- ❖ Clifton Corridor study seeks to expand MARTA access to the study, with 10 new light rail stops, serving over 39,000 jobs by 2030.



Denver Technology Center Cluster



Denver Technology Center

- ❖ United Cable Vision, AT&T Broadband, Sprint, Nextel and Dow Jones are among core businesses.
- I-25 and I-225 have served as highway access, and recently expanded capacity, yet expected to be fully utilized by 2040.
- “T-Rex” Light Rail project implemented to complement I-25 and I-225 capacity and sustain cluster in long-term.
- ❖ Additional work needed to enable walkability from T-Rex light rail line to technology center.



Bellevue Station with DTC

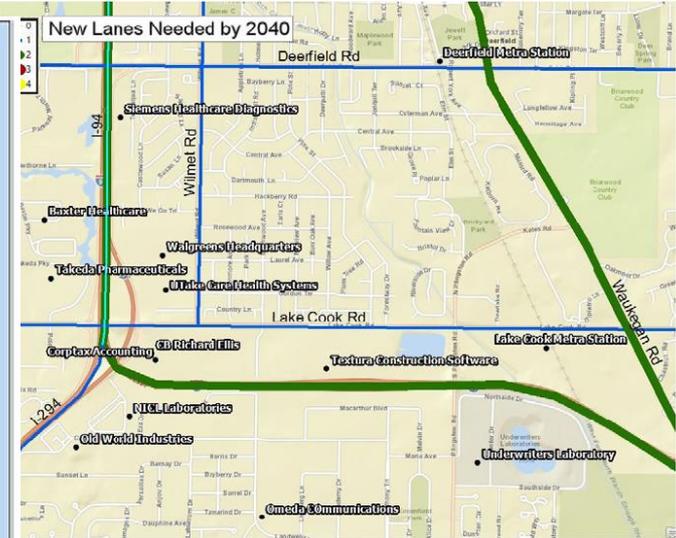


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Deerfield, IL: Business Cluster



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Deerfield Cluster

- ❖ Baxter healthcare, Business Technology Partners, APAC Customer Services and Future Brands are among core businesses.
- I-95 and I-295 have long provided access to Chicago, and land for expansion is abundant
 - Would seem like the “perfect highway-oriented cluster”
 - Yet employer still independently collaborate to provide “Shuttle Bug”
- Mileage to attractive Chicago Neighborhoods and Millennial desire to live in urban areas fuels the demand for transit.



South Lake Union Cluster

- ❖ Fred Hutchinson Cancer Research Center, Zymogenetics, Battelle, Seattle Biomedical Research Institute are among core businesses.
- Served by streetcars, but largely dependent on I-5 and SR 99 for access to the rest of Seattle economy.
- Land use planning has increased density, making additional transit options possible in long-range planning. (Contrast with “Med-Line” and 128 Corridor).
- ❖ Private firms have sponsored pilot projects to expand streetcar service, with third streetcar line planned.
- ❖ Mobility plan included a mix of streetcars, transit nodes, bicycle-pedestrian and other amenities.



Westlake Ave Trolley



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Takeaways

- ❖ Knowledge intensive industries often will prefer (or depend on) cluster sites, even when they pose land and traffic challenges.
- Identify a cluster dynamic based on industry type, growth and occupational mix.
- When cluster is forming, or beginning to grow is ideal time to anticipate very high densities, and allow for multi-modal solutions (even if need is futuristic).
- ❖ Engage businesses to consider private sector roles in shuttles, transit and other services.
- ❖ Include access to desired housing locations for knowledge-workers in addition to cluster site-access.



Thank You!

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