GRADING CALIFORNIA'S RAIL TRANSIT STATION AREAS: A Ranking of How Well They Accommodate Population Growth, Boost Economic Activity and Improve the Environment

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Ethan N. Elkind[1]
Michelle Chan[2]
Tuong-Vi Faber[3]

I. Introduction: Thriving Rail Transit Station Neighborhoods Help Meet California's Economic and Environmental Objectives

What are California's rail transit station areas?

Each of California's major metropolitan areas, including Los Angeles, the San Francisco Bay Area, San Diego and Sacramento, has a rail transit system. Rail is designed to move large numbers of people to their destinations with frequent service, through either "heavy rail" trains that receive power from electrified third rails below, or less-expensive "light rail" trains that receive power from overhead lines.

This report studies and grades the neighborhoods within 1/2-mile radius of 489 existing stations in 6 distinct California rail transit systems, serving over 60 percent of the state's

[1] Ethan Elkind is the Associate Director of the Climate Change and Business Program at the Center for Law, Energy and the Environment (CLEE) at UC Berkeley School of Law. He researches and writes on land use, renewable energy, and transportation policies, among other topics related to business solutions to combat climate change. His book *Railtown* on the history of the modern Los Angeles Metro Rail system was published by University of California Press in January 2014.

[2] Michelle Chan is a practicing Canadian lawyer and researcher with CLEE. Her previous research contributions include publications with the Harvard Corporate Social Responsibility Initiative and the British Institute of International and Comparative Law. Her general professional interests center on innovative approaches to addressing social needs.

[3] Tuong-Vi Faber is a practicing attorney at a US law firm and a former Visiting Scholar at UC Berkeley School of Law. Her research interests include corporate law, corporate governance and sustainable development. In recent years she has contributed to various publications of CLEE, including in relation to environmental policy, clean technology, renewable energy and transportation policies.

population.[4] The overall grades are based on how well these stations areas encourage residents and employees to ride transit, connect to amenities, and create vibrant, equitable, and thriving locales. The 1/2-mile radius generally represents the outer limit of convenient walking distance to the station.[5]

The six rail transit systems include:

- Los Angeles County Metro Rail – heavy & light rail
- Sacramento Regional Transit (RT) – light rail
- San Diego Metropolitan Transit System (MTS) – light rail
- San Francisco Bay Area Rapid Transit (BART) – heavy rail
- San Francisco Municipal Railway (MUNI) – light rail
- Santa Clara Valley Transportation Authority (VTA) – light rail

The grades do not cover other kinds of rail, such as long-distance Amtrak, cable cars, or less frequent commuter rail lines, although it does include the bus rapid transit Orange Line in Los Angeles, given its rail-like qualities. And because the San Joaquin Valley (the state's fastest-growing region by population) lacks rail transit, this report briefly examines the busiest bus stops in the two largest Valley cities of Fresno and Bakersfield.

Why do rail transit station areas matter?

Rail transit systems require significant public money to build and operate, and they often take years to build. For example, heavy rail can cost between $230 and $430 million per mile, as with the new BART extension to San Jose;[6] light rail can cost as much as $242 million per mile, depending on the urban density and whether tunnelling is involved, as with a new extension to Los Angeles International Airport (LAX).[7] These public expenditures warrant corresponding attention to the station areas, which largely determine how effective the transit lines will be.

As the academic literature on transportation consistently indicates, the most effective rail systems serve significant concentrations of jobs, retail, services, and housing around the stations and along the corridors they travel, particularly those within one-half mile of the station (defined as the "rail transit station area" in this study). More of this station-area

[4] 2010 population data for each metropolitan region are available from the U.S. Census Bureau, at: https://www.census.gov/population/www/cen2010/cph-t/cph-t-5.html (accessed September 18, 2015).
[5] *See* Erick Guerra and Robert Cervero, "Is a Half-Mile Circle the Right Standard for TODs?" ACCESS magazine, University of California Transportation Center, Number 42, Spring 2013. Available at: http://www.accessmagazine.org/articles/spring-2013/half-mile-circle-right-standard-tods/ (accessed August 31, 2015).
[6] The total 16-mile extension to Silicon Valley will cost $7 billion, but the first 10-mile phase will cost $2.3 billion. *See* Silicon Valley BART Extension FAQ, Valley Transportation Authority website. Available at: http://www.vta.org/bart/faq (accessed August 12, 2015).
[7] The 8.5 mile route will cost $2.058 billion but includes some tunnelling and construction through a densely populated built environment. *See* Crenshaw/LAX Transit Project – Overview, Los Angeles Metro website. Available at: http://www.metro.net/projects/crenshaw_corridor/ (accessed August 12, 2015).

development produces more riders, due in large part to their proximity to the transit system.[8] And more paying riders means reduced public subsidies required to operate the system, with more people benefitting from transit investments.[9]

Better station-area development also addresses important environmental and quality-of-life needs. The state's population is projected to grow significantly by mid-century, with household population likely to increase 28 percent, from 38.897 million in 2015 to 49.779 million in 2050, according to the California Department of Finance.[10] Better land use patterns are necessary for housing and employing this growing number of residents without increasing traffic, worsening air pollution (including the greenhouse gases that cause climate change), paving over open space and agricultural land, and depleting limited water supplies. That means more compact development in walkable and bikeable communities that are connected by rail transit.

The environmental benefits from more transit-oriented development are significant: as the American Public Transportation Association estimated, reductions in driving facilitated by public transit save 37 million metric tons of carbon dioxide annually across the nation, equivalent to the emissions from generating electricity for 4.9 million households.[11] And according to a 2008 report by the Brookings Institute, the average urban U.S. resident in 2005 had a smaller carbon footprint (2.24 metric tons per year) than the average resident generally (2.60 metric tons), primarily due to less car travel and energy use.[12]

Transit-oriented development also has significant economic benefits, with increasing market demand for compact and convenient neighborhoods. Multiple-family housing units surpassed single-family homes in new construction throughout California for the first time in 2012.[13] Nationally, a U.S. Environmental Protection Agency survey of residential building permit data in the fifty largest metropolitan areas from 1990 to 2009 showed a substantial increase in the share of new construction built in central cities and

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[8] For example, residents living near transit stations are roughly five times more likely to commute by transit than the average resident in the same city, according to a 2004 study by California university researchers. *See* Hollie M. Lund, Robert Cervero, Richard W. Wilson, *Travel Characteristics of Transit-Oriented Development in California*, funded by CalTrans Transportation Grant, January 2004, p. iii.

[9] Erick Guerra and Robert Cervero, "Transit and the "D" Word," ACCESS magazine, University of California Transportation Center, Number 40, Spring 2012, pp. 4-5. Available at: http://www.uctc.net/access/40/access40.pdf

[10] "Report P-1 (County): State and County Total Population Projections, 2015-2060," California Department of Finance, December 15, 2014. Available at: http://www.dof.ca.gov/research/demographic/reports/projections/P-1/ (accessed August 10, 2015).

[11] "The Benefits of Public Transportation," American Public Transportation Association. Available at: http://www.apta.com/resources/reportsandpublications/Documents/greenhouse_brochure.pdf (accessed August 30, 2013).

[12] Marilyn A. Brown, Frank Southworth, and Andrea Sarzynski*, Shrinking the Carbon Footprint of Metropolitan America*, Brookings Institute, May 2008, p. 3.

[13] California Department of Finance, "California Grew by 0.8 Percent in 2012," Press Release, May 1, 2013. Available at: http://www.dof.ca.gov/research/demographic/reports/estimates/e-1/documents/E1_2013_Press_Release.pdf (accessed May 9, 2013).

older suburbs. This time period included a particularly dramatic rise during the 2005-2009 years, including the beginning of the most recent real estate downturn.[14] Home values also tend to be higher near transit, in walkable neighborhoods, and near bike paths and other protected bikeways, indicating greater demand for housing near these amenities. For example, during the last recession, residential property values performed 41 percent better on average if they were located near public transportation with high-frequency service.[15] Ultimately, more station-area development can accommodate this projected population growth and housing demand in a more sustainable manner than sprawl and low-density housing.

Why grade rail transit station areas?

Despite the need for more station-oriented neighborhoods and job centers, many of California's rail transit station areas represent missed opportunities for development. Overall, due to high costs, restrictive local land use policies, and a complex regulatory environment, the state has generally under-produced housing units as compared to the national average since the 1970s, particularly in transit-rich areas. The result has been growing income inequality and higher home prices and rents that take up more of residents' incomes.[16] California's communities with transit have too often failed to meet market demand, which would help accommodate a growing population and improve the economic performance of rail transit systems and the local jurisdictions with station areas.

Grading the state's rail transit station areas for how well they encourage ridership and create thriving, rail-oriented neighborhoods helps highlight strong performers for other regions to emulate, while alerting underperformers about the need to improve. State and local leaders should look to these underperforming areas as priorities for attention and action.

Ultimately, these grades reveal which rail transit station areas perform best at serving significant concentrations of housing, jobs, and other amenities in a walkable, equitable environment. High-performing stations are often in the middle of transit systems in downtown-like environments, while the poorest-performing stations are often located at the outer edges of the rail systems and the urban areas. Low density, auto-oriented areas, even when graded against similar place types, scored poorly. Rail transit in the San Francisco Bay Area overall performed well, Los Angeles and Sacramento systems were

[14] U.S. EPA, "Residential Construction Trends in America's Metropolitan Regions," January 2010, 1 and 10 & December 2012, pp. iii-iv. Available at: epa.gov/smartgrowth/construction_trends.htm (accessed June 17, 2013).
[15] Sofia Becker, Scott Bernstein and Linda Young, "The New Real Estate Mantra: Location Near Public Transportation," American Public Transportation Association (APTA) and National Association of Realtors, March 20, 2013. Available at: http://www.realtor.org/sites/default/files/smart-growth-Home-Values-Performed-Better-Near-Public-Transportation-2013-03.pdf (accessed January 14, 2015).
[16] Mac Taylor, "California's High Housing Costs: Causes and Consequences," California Legislative Analyst's Office, March 17, 2015. Available at: http://lao.ca.gov/reports/2015/finance/housing-costs/housing-costs.pdf (accessed August 10, 2015).

average, and the Santa Clara Valley and San Diego systems showed need for improvement compared to their state-wide counterparts.

II. Methodology: How the Rail Transit Station Areas Are Graded

This report grades the performance of the major rail transit station areas in California. The Center for Law, Energy and the Environment (CLEE) at UC Berkeley Law designed a grading system based on 11 key indicators of a thriving station neighborhood, as well as available data. To identify and select the indicators, CLEE convened leading experts on transit-oriented development (TOD), both within California and nationally, for input on the priority measures of station-area success (See Appendix C for list of experts). We then located and utilized existing data sources that measure performance on the priority indicators, such as from the Center for Transit-Oriented Development and Walk Score. The final step was developing a scorecard that grades each station neighborhood on a statewide curve from A+ to F.

To determine the grade, we divided rail transit stations based on three place types: residential (one-third or fewer workers relative to workers plus residents), mixed (a mix of residents and workers), and employment (one-third or fewer residents relative to workers plus residents). We calculated their scores on each of the 11 indicators within those 3 place types. We then determined the proper weighting of the 11 indicators, in consultation with the expert group, to reflect the priorities of the group and based on feedback on preliminary draft grades from local experts. Finally, we compared each station's total score across the indicators against all stations state-wide within their place type to determine the final grade, based on percentile rank. We present the grades in this report by transit system for ease of review and with all three place-type grades listed together with color codes.

STEP 1 – Defining the Grading Area

The grades cover neighborhoods within the half-mile radius around 489 fixed guideway rail transit stations along key transit lines in California (see table 1).

Table 1: TRANSIT LINES	
Los Angeles Metro Rail (Metro Blue Line)	88
Sacramento Light Rail (Meadowview Watt/I-80(Blue))	30
San Diego Metropolitan Transit System (MTS)	57
San Francisco BART	44
San Francisco Municipal Railway (MUNI)	205
Santa Clara Valley Transportation Authority (VTA)	65
Total Graded Stations Areas	**489**

We excluded from the grading system Amtrak, Metrolink, and commuter-based Caltrain service, since we sought to examine communities with regular rail transit service, although we included the bus rapid transit Orange Line in Los Angeles, given its rail-like qualities. We also omitted tourism-related transit, such as San Francisco MUNI's cable car line.

We sought to include the San Joaquin Valley in the grades, due to its significance as the state's fastest-growing region in terms of population. However, due to lack of data and rail transit in the region, we did not include the two most populated cities of Bakersfield and Fresno in our main grading system. Instead, we provide a separate narrative and proposed letter grades later for the busiest bus stops in those two cities.

STEP 2 – Identifying Key Data Sources

We identified and used existing data on rail transit station areas. Future updates to the grades could utilize other or new sources of data, such as from mobile devices. We used available data related to the rail transit station areas from six key sources, including:

The TOD Database	Uses figures from the US Census 2000 and 2010, employment dynamics, and census transportation.
The H+T Affordability Index	Specifically measures transit quality, transit use, and level of activity.
Walk Score	Measures walkability based on a location's distance to amenities, block size and intersection density.
Zillow Index	Measures trends in home value based on city, state, neighborhood, and zip code.
California Governor's Office of Planning and Research 2012 Survey Results	Consists of information on city planning/policies.
Crime Reports Database	Lists the number of reported criminal incidents based on data provided by police departments.

Where data sources were searchable based on longitude and latitude, the data collected covered the half-mile radius around the station location. Otherwise, the data reflected the station zip code or local government jurisdiction.

STEP 3 – Selection of Grading Metrics

We determined the grades from 11 indicators, which represented 5 categories of metrics for station-area neighborhoods:

Metric 1 – **Transit**

1. transit use by residents
2. transit use by workers
3. quality of transit reach
4. transit safety

Metric 2 – **Land use and design**

5. sum of jobs and households per acre
6. walkability

Metric 3 – **Policy and market context**

7. policy support for TOD
8. market performance in real estate - change of value over five years (2009-2013), including during the recent downturn

Metric 4 – **Equity**

9. transit affordability
10. dependency

Metric 5 – **Health and environmental impact**

11. greenhouse gas (GHG) emissions

We measured performance on the indicators directly from the data sources discussed above. However, we undertook additional data research to grade station areas under two of the indicators. First, we analysed **Policies/Plan Preparedness** based on responses to the California Governor's Office of Planning and Research (OPR) 2012 Annual Survey Results (the latest comprehensive version available). If local jurisdictions with rail transit stations answered the following three questions 'yes', we assigned one point:

> Question 5. Has your jurisdiction "modified the circulation element to plan for a balanced, multimodal transportation network that meets the needs of all users of the streets, roads, and highways…"?
>
> Question 10. Has your jurisdiction implemented "parking reductions in transit, mix uses, special designated areas or shared parking"?
>
> Question 14. Does your jurisdiction have policies and/or programs to facilitate mixed use development and/or the clustering of residential, employment, and commercial areas, contained in a Specific Plan or Zoning Ordinance?

Second, we determined **Market Performance** by taking rental and home values from 2009 to 2013 using the Zillow Index. We then calculated the rate of change, assigned points to each rate based on performance levels, and averaged the points for rental and home values to produce a single measure of market performance.

STEP 4 – Weighting of Indicators

Rather than weight each of the 11 indicators equally in determining grades, we found that some indicators were more determinative of successful station neighborhoods than others. As a result, we weighted the relative importance of each indicator score on the final grade based on research and consultation with experts. Future versions of these grades could change the weighting based on further input.

As the top priority for grading, we concluded that the percentage of employees and residents within the station area who use transit, the sum of jobs and households in the station area, and the quality of the transit system's access to destinations were the most important indicators, weighted at 15 percent each. Walkability and affordability followed at 10 percent each. Transit dependency, market performance, and local plan preparedness were next at five percent each. Transit safety at three percent and greenhouse gas emissions at two percent completed the weighting system (See table 2).

Table 2: Summary of metrics, indicators, data sources, and weighting

INDICATORS	MEASURES	SOURCE	WEIGHTING
	METRIC 1: TRANSIT		
Transit Use: Residents	Percentage of workers who reside in the station area using transit, bike, or walk to work	CTTP (TOD Database)	15%
Transit Use: Workers	Percentage of workers who work in the station area using transit, bike, or walk to work	CTTP (TOD Database)	15%
Transit Quality	Area that can be reached within 30mn by transit scaled by the frequency of service (expressed in km^2)	H+T	15%
Transit Safety	Safety—Number of reported criminal incidents in the area (for the last 30 days – as sampled in December 2014)	CrimeReports	3%
	METRIC 2: LAND USE AND DESIGN		
Activity	Sum of jobs and households per acre	Census (TOD Database)	15%
Walkability	Walk Score (measures distance to amenities, block size and intersection density)	Walk Score	10%
	METRIC 3: CONTEXT		
Policies / Plan Preparedness	Planning and policy-making supportive of transit-oriented development	OPR 2012 Survey, Q4, Q10, Q14	5%
Market Performance	Percentage of change in monthly median home value over 5 years	Zillow Index	5%
	METRIC 4: EQUITY		
Affordability	Percentage of income spent on transportation + housing	H+T (TOD Database)	10%
Transit Dependency	Percentage of zero-vehicle households	ACS/Census (TOD Database)	5%
	METRIC 5: HEALTH AND ENVIRONMENTAL IMPACT		
GHG Emissions	GHG emissions per household	CNT Data	2%

STEP 5: Evaluating Performance

In order to compare rail transit station areas in similar areas, we divided the stations into three similar place types, which appear color-coded on the grading sheet:

	Group 1 - Primarily **residential,** 33.3% or less workers relative to workers and residents
	Group 2 - **Mixed** between 33.4% to 66.6% of workers relative to workers and residents
	Group 3 - Primarily **employment**: 66.7% or more workers relative to workers and residents.

Each transit station area competed within its place type to receive scores up to **five points** on each of the 11 indicators. Each point represents a one-fifth increment of best performance.

1 point = bottom 20%
2 points = in the 21-40%
3 points = in the 41-60%
4 points = in the 61-80%
5 points = top 20%

STEP 6: Assigning the Final Grade

We calculated each station's total score on the 11 indicators, weighted as described above, and based on the transit station's general percentile rank within its state-wide place type/group. We then compared the final number against all transit stations within that place type in the state. We assigned letter grades to each transit station area based on the number of points obtained across all indicators, determined by the percentile rank within the place type. We divided the grades into quarters to represent A, B, C, and D grades, with the top 25 percent A, next 25 percent B, etc. To determine pluses and minuses within each letter grade, we applied increments of 5 percent at the top and bottom of the quartile. Finally, we deemed the bottom 2 percent to be a fail, or "F". The F grades are drawn from the bottom quartile, meaning there are fewer D- grades.

A+ > 95%	B+ > 70%	C+ > 45%	D+ > 20%	F > 0%
A > 80%	B > 55%	C > 30%	D > 5%	
A- > 75%	B- > 50%	C- > 25%	D- > 2%	

Limitations of the Methodology

Like any grading process, this methodology has limits. First, we were restricted by the available data. Some of the data are outdated, such as those relying on census information collected in 2010, which will not be collected comprehensively again until 2020. Some of the data are snapshots, such as for crime reports from a specific month, and some data are somewhat incomplete, such as the survey responses by local governments as to whether or not they have a plan and supportive local policies in place for their rail transit station areas. In addition, not all the data could be provided at the half-mile radius, such as those tabulated by zip code or local jurisdiction.

In addition, new rail transit lines that became operational after 2010 are not included in this report, due to the lack of available data. This particularly affected Los Angeles, which has embarked on a major expansion of its rail system following voter approval of a 2008 sales tax measure in part for this purpose. The data will also not capture post-2010 development projects adjacent to stations or new local plans for station area development.

How to use the Grading Sheet

We present the grades in six separate scorecards for the following transit systems: Metro Rail, Sacramento RT, San Diego MTS, BART, MUNI, and VTA. Grades are listed from best to worst within their transit system, and readers can click on the station hyperlink to view more detail on the score, including performance under each indicator.

We included a total data set in Appendix A, which lists the 489 station areas along the first column according to place type, while the 11 indicators appear along the top row. Each station area contains a set of 11 points, with each scored out of 5 (1 is the lowest and 5 is the highest score). The last four columns in red represent the total points weighted accordingly, a multiplier to create a total scaling of the points out of 100, and the final letter grade. Since all place type grades are presented together by transit system, we list stations with the same letter grades from best to worst by their scaled numeric score. Finally, the grades are color-coded by place type: residential (blue), employment (green), and mixed (pink).

III. Grading Summary and Profiles of the Best and Worst Rail Transit Station Areas

Grading on a statewide curve, with each station separated into and competing within one of three place types (residential, employment, and mixed), we found that certain transit systems averaged better than others (see table 3). Generally, systems that served higher concentrations of jobs and residents scored better than systems serving low-density areas or areas without convenient access to amenities and services.

Table 3: Best and Worst Performing Stations Per Region

AGENCY	AVE	BEST	WORST
BART	B-	Civic Center/UN Plaza	SFO
LA METRO	C	Westlake/ MacArthur Park	Wardlow Station
SAN DIEGO MTS	C-	12th & Imperial Transit Center	Gillespie Field Station
SACRAMENTO RT	C	7th St and K St	Longview Dr and I-80
SF MUNI	B	Market St & Church St	Third St & Marin
SANTA CLARA VTA	C-	Japantown/ Ayer Station	Middlefield Station

To provide a detailed view of the rail transit station-area performance using the methodology, the following section includes profiles of some of the best and worst performers in the state, as well as the best and worst performers within each system (see Appendix B for a map of station locations within their rail systems). The profiles include the raw scores to provide a deeper understanding of the grades.

First, we profiled the overall best and worst performing stations, by total scaled score across the three place types:

OVERALL BEST	SF MUNI	Market St & Church St	93.8	**A+**
OVERALL WORST	SAN DIEGO MTS	Gillespie Field Station	23.5	**F**

Then we profiled some of the best and worst station areas per transit systems, which are included in this list:

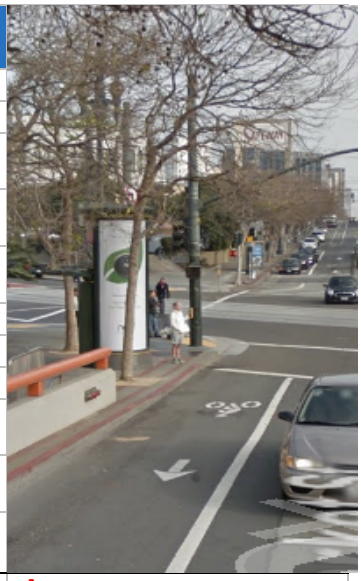
AGENCY	AVE	BEST	WORST
BART	B-	24th St. Mission; Ashby	SFO Airport
		Civic Center/UN Plaza; 16th St. Mission	South San Francisco; Orinda
		Montgomery St.; Powell St	North Concord/Martinez
LA METRO	C	Westlake/ MacArthur Park; Hollywood/ Western	Wardlow Station
		Wilshire/Vermont; Wilshire/Normandie Station	Del Amo
			Willow
SAN DIEGO MTS	C-	12th & Imperial Transit Center; Civic Center Station	Massachusetts Ave; Alvarado; Spring Street
			Gillespie Field Station; Santee Town Center Station; El Cajon Transit Center
			Fenton Parkway Station

SACRAMENTO RT	C	7th St and K St; 7th St and Capitol Mall; K St and 8th St	Longview Dr and I-80; Watt Ave and I-80
			Fruitridge Rd and 24th St
			Roseville Road and I-80
SF MUNI	B	***Market St & Church St***; Church St & 14th St; Church St & 16th; Metro Church Station; Church St & Market St; Market St & Sanchez; Church St & Duboce St; Duboce St/Noe St/Duboce Park; Right of Way/18th; Church St & 18th	Third St & Marin
		Market St & 7th St; Market St & 8th St; Metro Civic Center Station; Market St & Hyde	46th Ave and Vicente St; Ocean Ave & Westgate Dr; Wawona/26th Ave/SF Zoo
		Market St & New Montgomery St; California St & Front St; California St & Battery St; California St & Kearny St California St & Montgomery St; California St & Sansome St; Market St & 3rd St; Market St & Kearny St Metro Montgomery Station	
SANTA CLARA VTA	C-	Japantown/ Ayer Station	Middlefield Station

CALIFORNIA'S BEST RAIL TRANSIT STATION NEIGHBORHOOD
Market St & Church St | SF MUNI – *Place Type 1 Residential*

Generally, the Market St & Church St SF MUNI station performed well across all indicators. It has a near perfect Walk Score, benefits from appropriate land use policies, and has a high rate of transit use and zero-vehicle households in the half-mile radius. The station is located in a densely-populated residential district with multiple shopping opportunities and convenient access to transit.

MEASURES	Raw Data	Points	% of Final Grade
Transit Use: Residents	60.65%	5	15%
Transit Use: Workers	40.5%	5	15%
Transit Quality *Transit Access Shed Index*	109	4	15%
Transit Safety *Number of reported crimes in Dec 2014*	28	2	3%
Activity *Sum of jobs and households per Acre*	43.23	5	15%
Walkability – *Walk Score*	97	5	10%
Policies/ Plan Preparedness	3	5	5%
Market Performance	-	4	5%
Affordability *% of income spent on housing + transport*	37.21	5	10%
Transit Dependency *% of zero vehicle households*	38.94	5	5%
Health and Environmental Impact *GHG Emissions per Household*	3,077	4	2%
TOTAL and FINAL GRADE		**4.7/5**	**93.8/100**	**A+**



Restaurants:
Miyabi Japanese Restaurant .02mi

Coffee:
Thorough Bread and Pastry .04mi

Bars:
The Pilsner Inn .02mi

Groceries:
Church Street Groceteria .07mi

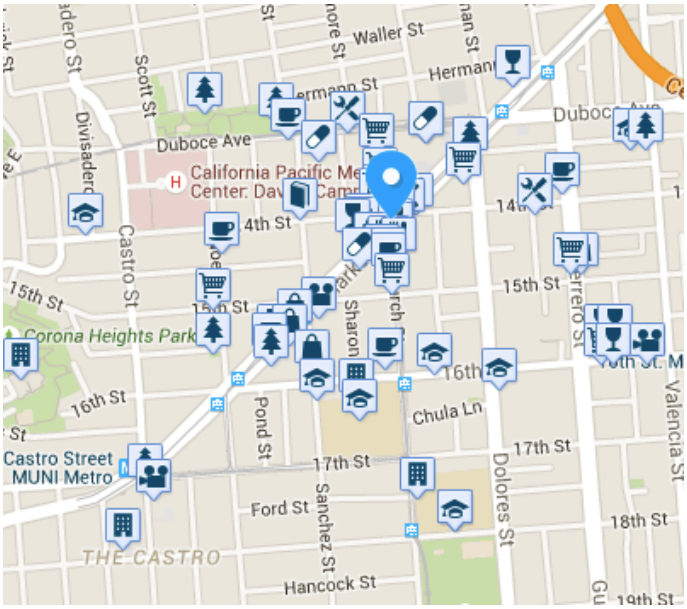
Parks:
California Volunteers Memorial .2mi

Schools:
Mission Dolores Academy .2mi

Shopping:
Fiat Lux .02mi

Entertainment:
San Francisco Pet Grooming .2mi

Errands:
The Apothecarium - Medical C... .04mi



CALIFORNIA'S WORST RAIL TRANSIT STATION NEIGHBORHOOD
Gillespie Field Station | San Diego MTS – *Place Type 2 Mixed*

This station area performed poorly across the board. Of note, we lacked data representing transit safety, so we assigned an average data point, which became one of the highest number points it received across the measures. The area experiences almost no transit use among residents and workers. Walk Score labels Gillespie Field Station as a 'car dependent' area. Only 5.94% of households in this area have no vehicles, and they emit a high volume of greenhouse gas emissions. However, the function of this transit node may primarily be access to the airport. It may therefore still generate adequate ridership relative to its cost. The location may also not be conducive to transit-oriented development.

MEASURES	Raw Data	Points	% of Final Grade
Transit Use: Residents	4.26%	1	15%
Transit Use: Workers	4.5%	1	15%
Transit Quality *Transit Access Shed Index*	77	1	15%
Transit Safety *Number of reported crimes in Dec 2014*	31.46	3	3%
Activity *Sum of jobs and households per Acre*	7.82	1	15%
Walkability – *Walk Score*	32	1	10%
Policies/ Plan Preparedness	2	3	5%
Market Performance	-	1	5%
Affordability *% of income spent on housing + transport*	52.1	1	10%
Transit Dependency *% of zero vehicle households*	5.94	1	5%
Health and Environmental Impact *GHG Emissions per Household*	6,814	1	2%
TOTAL and FINAL GRADE		**1/5**	**23.5/100**

Restaurants:
Grandstand Pizza .5mi

Coffee:
Gillespie Field Cafe .3mi

Bars:
Second Wind Santee .6mi

Groceries:
Ishtar .5mi

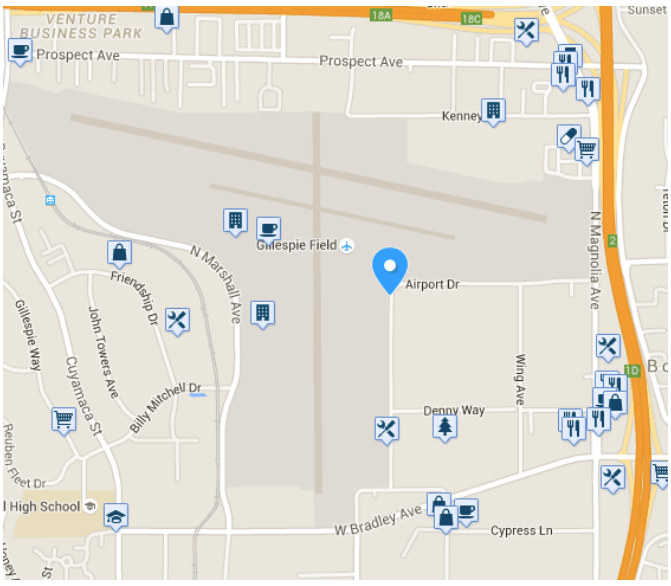
Parks:
East San Diego County Fairgro... .4mi

Schools:
Phoenix High School .8mi

Shopping:
Fit n Hip Wear .5mi

Entertainment:
Air Group One CAF .3mi

Errands:
Ward Lumber Co Inc .4mi

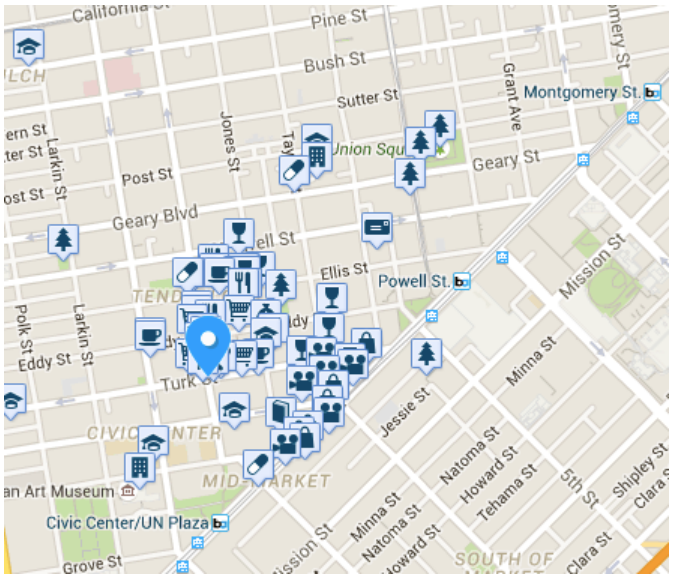


BEST SAN FRANCISCO BART STATION NEIGHBORHOOD:
Civic Center/UN Plaza - *Place Type 2 Mixed*

Civic Center performed well across almost all indicators, given its walkable environment close to multiple destinations and amenities. Notably, this station is located near the best performing station area in the state in the MUNI system (see the above profile of the Market St & Church St station area).

MEASURES	Raw Data	Points	% of Final Grade	
Transit Use: Residents	74.5%	5	15%	
Transit Use: Workers	55%	5	15%	
Transit Quality *Transit Access Shed Index*	137	4	15%	
Transit Safety *Number of reported crimes in Dec 2014*	91	1	3%	
Activity *Sum of jobs and households per Acre*	135.28	5	15%	
Walkability – *Walk Score*	97	4	10%	
Policies/ Plan Preparedness	3	5	5%	
Market Performance	-	3	5%	
Affordability *% of income spent on housing + transport*	22.55	5	10%	
Transit Dependency *% of zero vehicle households*	75.07	5	5%	
Health and Environmental Impact *GHG Emissions per Household*	450	5	2%	
TOTAL and FINAL GRADE		**4.5/5**	**90/100**	**A+**

Restaurants: Quintero Restaurant .03mi
Coffee: New Star Cafe .05mi
Bars: Power Exchange .07mi
Groceries: Battambang Market .03mi
Parks: Boeddeker Park .1mi
Schools: San Francisco City Academy .06mi
Shopping: Bayfitted .1mi
Entertainment: Market Street Theatre and Loft... .1mi
Errands: Bay Drug Pharmacy .05mi

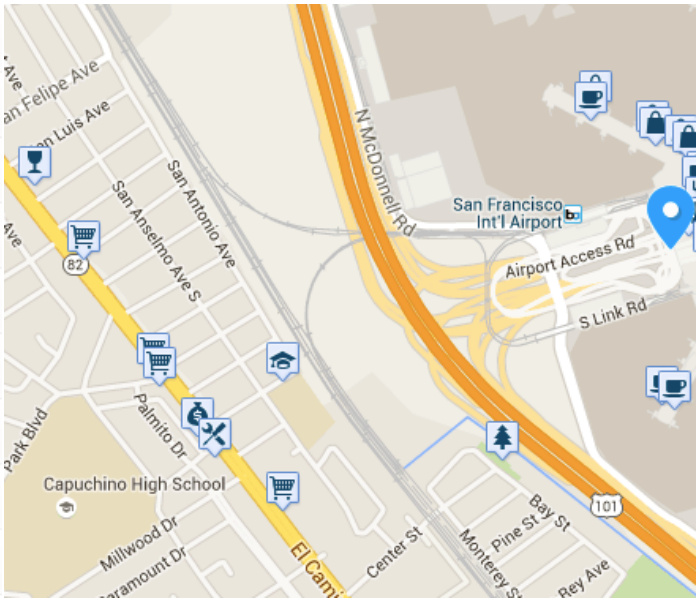


WORST SAN FRANCISCO BART STATION NEIGHBORHOOD:
San Francisco International Airport – *Place Type 3 Employment*

The BART station at San Francisco International Airport performed worst overall across all indicators. However, the function of this transit node is access to the airport and therefore may still generate adequate ridership relative to its cost, even if that ridership does not originate with residents or employees within the station area. In addition, the location may not be conducive to transit-oriented development given the presence of major airport and related infrastructure.

MEASURES	Raw Data	Points	% of Final Grade
Transit Use: Residents	9.41%	1	15%
Transit Use: Workers	10.3%	2	15%
Transit Quality *Transit Access Shed Index*	22	1	15%
Transit Safety *Number of reported crimes in Dec 2014*	31.46	4	3%
Activity *Sum of jobs and households per Acre*	2.95	1	15%
Walkability – *Walk Score*	36	1	10%
Policies/ Plan Preparedness	3	5	5%
Market Performance	-	1.5	5%
Affordability *% of income spent on housing + transport*	49.51	1	10%
Transit Dependency *% of zero vehicle households*	6.98	1	5%
Health and Environmental Impact *GHG Emissions per Household*	7,843	1	2%
TOTAL and FINAL GRADE		**1.5/5**	**29.3/100**

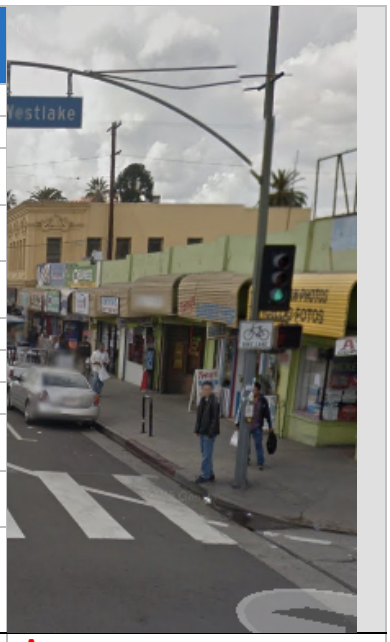
Restaurants: Ebisu .04mi
Coffee: Emporio Rulli .06mi
Bars: The Dog House 1mi
Groceries: Napa Farms .4mi
Parks: Marina Vista Park .4mi
Schools: Lomita Park Elementary School .6mi
Shopping: Gucci .1mi
Entertainment: San Francisco Airport Museum .01mi
Errands: Kelly-Moore Paints .8mi

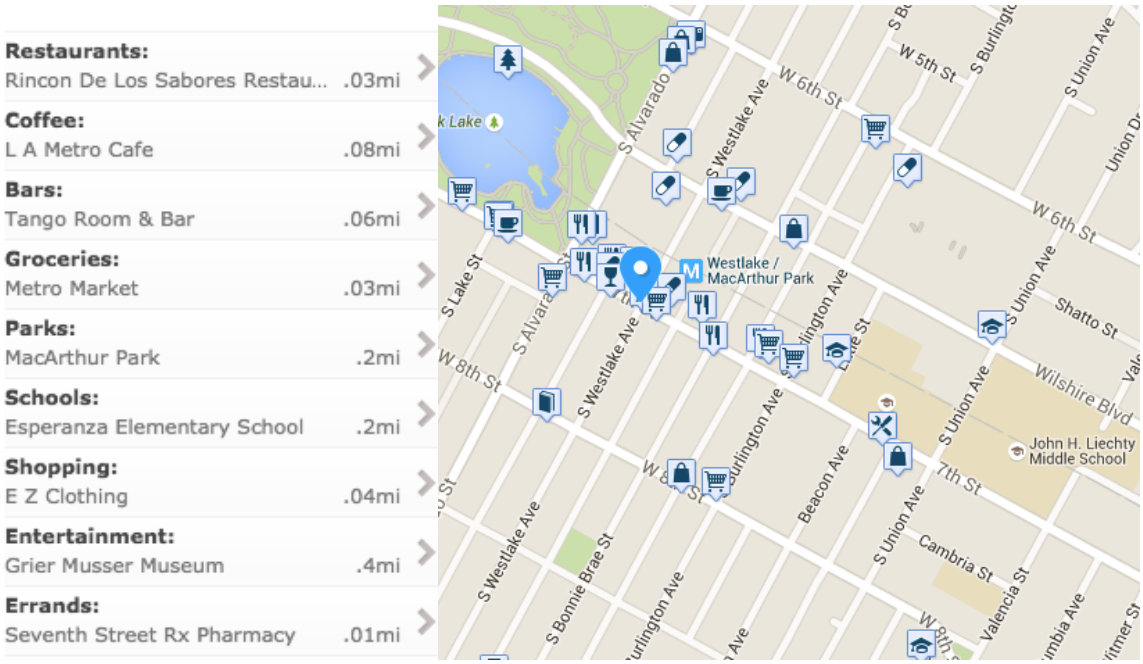


BEST LOS ANGELES METRO RAIL STATION NEIGHBORHOOD:
Westlake/ MacArthur Park – *Place Type 1 Residential*

LA Metro's Westlake/ MacArthur Park station scored best in the Los Angeles region. Like BART's Civic Center, this station scored well across almost all indicators. The station area is characterized by a diversity of destinations, walkability, transit access, and affordability.

MEASURES	Raw Data	Points	% of Final Grade
Transit Use: Residents	58.8%	5	15%
Transit Use: Workers	18.8%	3	15%
Transit Quality *Transit Access Shed Index*	219	5	15%
Transit Safety *Number of reported crimes in Dec 2014*	55	1	3%
Activity *Sum of jobs and households per Acre*	48.57	5	15%
Walkability – *Walk Score*	95	5	10%
Policies/ Plan Preparedness	3	5	5%
Market Performance	-	2	5%
Affordability *% of income spent on housing + transport*	27.33	5	10%
Transit Dependency *% of zero vehicle households*	50.56	5	5%
Health and Environmental Impact *GHG Emissions per Household*	2,551	4	2%
TOTAL and FINAL GRADE		**4.4/5**	**88.2/100**





WORST LOS ANGELES METRO RAIL STATION NEIGHBORHOOD:
Wardlow Station – *Place Type 3 - Employment*

Wardlow Station transit area on the Blue Line light rail system performed the worst in Los Angeles County. It scored poorly across all indicators except for transit safety, where only two criminal incidents were reported during December 2014 (likely due to the lack of activity in the area more generally). The area is generally auto-dominated by a major boulevard and parking lots without significant pedestrian activity or concentrations of jobs or housing.

MEASURES	Raw Data	Points	% of Final Grade
Transit Use: Residents	8.54%	1	15%
Transit Use: Workers	8.4%	1	15%
Transit Quality *Transit Access Shed Index*	75	1	15%
Transit Safety *Number of reported crimes in Dec 2014*	9	4	3%
Activity *Sum of jobs and households per Acre*	9.25	2	15%
Walkability – *Walk Score*	57	1	10%
Policies/ Plan Preparedness	2	3	5%
Market Performance	-	3.5	5%
Affordability *% of income spent on housing + transport*	55.21	1	10%
Transit Dependency *% of zero vehicle households*	12.92	3	5%
Health and Environmental Impact *GHG Emissions per Household*	6,538	1	2%
TOTAL and FINAL GRADE		**1.6/5**	**31.6/100**

Restaurants:
Guadalupe's Grill .05mi

Coffee:
The Mirage Cafe .9mi

Bars:
Rocks Cocktail Lounge .4mi

Groceries:
Mixta Publishing Co .5mi

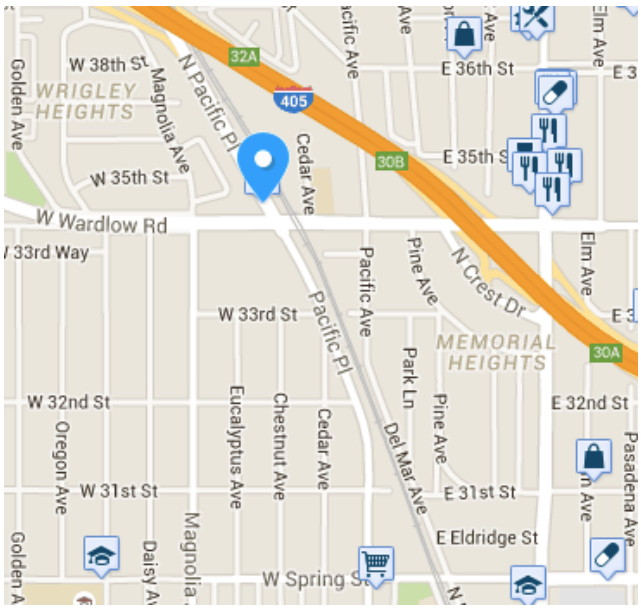
Parks:
Los Cerritos Park .5mi

Schools:
Parkridge Private School .5mi

Shopping:
Classic Curves International .4mi

Entertainment:
Grande Vista Productions Inc. .8mi

Errands:
Saint Thomas Pharmacy .5mi

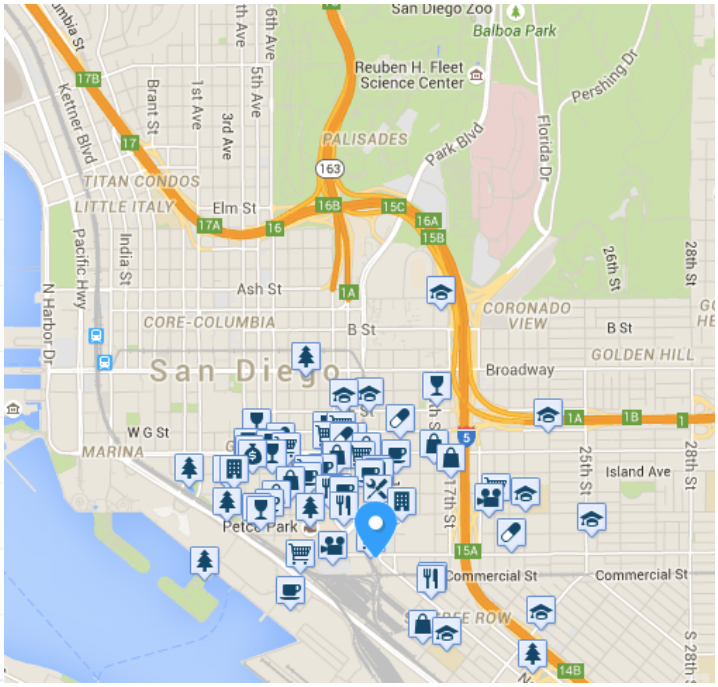


BEST SAN DIEGO RAIL STATION NEIGHBORHOOD:
12th & Imperial Transit Center – *Place Type 2 Mixed*

San Diego's 12th & Imperial Transit Center of the MTS performed best overall within the region. However, its overall grade of B is much lower than the best-performing station in this study, Market St & Sanchez St in San Francisco, which received an A+. In fact, the grade for this station is equal to the average grade of the San Francisco BART transit areas. The station benefitted from its location in a downtown, walkable environment with access to significant destinations and job centers.

MEASURES	Raw Data	Points	% of Final Grade
Transit Use: Residents	31.07%	3	15%
Transit Use: Workers	13.7%	3	15%
Transit Quality *Transit Access Shed Index*	138	4	15%
Transit Safety *Number of reported crimes in Dec 2014*	31.46	3	3%
Activity *Sum of jobs and households per Acre*	28.24	3	15%
Walkability – *Walk Score*	86	3	10%
Policies/ Plan Preparedness	3	5	5%
Market Performance	-	1.5	5%
Affordability *% of income spent on housing + transport*	38.15	3	10%
Transit Dependency *% of zero vehicle households*	26.45	3	5%
Health and Environmental Impact *GHG Emissions per Household*	2,603	4	2%
TOTAL and FINAL GRADE		**3.2/5**	**63.9/100**

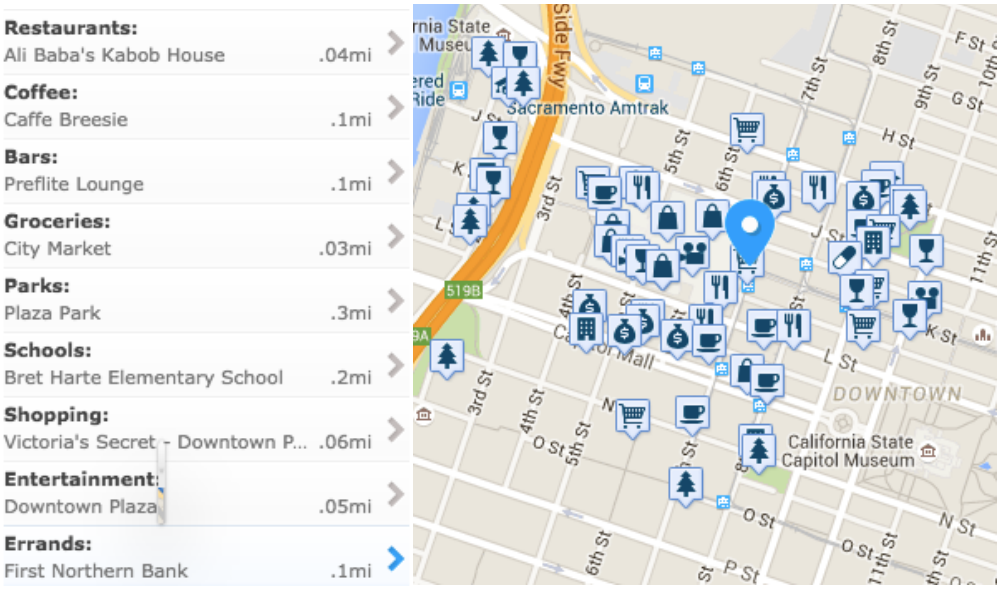
Restaurants: Lolitas Restaurants .2mi
Coffee: The Bean Bar .2mi
Bars: Midnight Oil .4mi
Groceries: A-Mart .02mi
Parks: Petco Park .3mi
Schools: Perkins Elementary School .4mi
Shopping: Caption Boutique & Gallery .3mi
Entertainment: PETCO Park .2mi
Errands: Southwest Marine Hardware .2mi



BEST SACRAMENTO RAIL STATION NEIGHBORHOOD:
7th St and K St – *Place Type 1 Residential*

This Sacramento RT station performed best overall in the region. It scored highly for transit quality access, which is apparent from the number and density of amenities shown in the map below. This station is located in a downtown environment that is walkable and has access to many destinations.

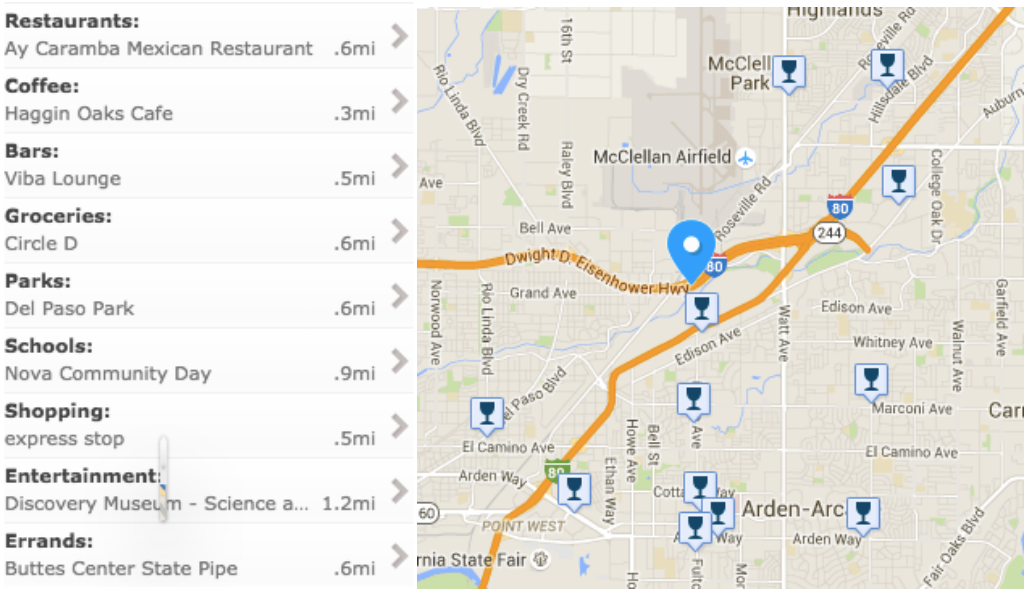
MEASURES	Raw Data	Points	% of Final Grade	
Transit Use: Residents	45.77%	3	15%	
Transit Use: Workers	17%	3	15%	
Transit Quality *Transit Access Shed Index*	260	5	15%	
Transit Safety *Number of reported crimes in Dec 2014*	31.46	4	3%	
Activity *Sum of jobs and households per Acre*	164.37	4	15%	
Walkability – *Walk Score*	96	4	10%	
Policies/ Plan Preparedness	2	3	5%	
Market Performance	-	3.5	5%	
Affordability *% of income spent on housing + transport*	19.38	4	10%	
Transit Dependency *% of zero vehicle households*	42.73	4	5%	
Health and Environmental Impact *GHG Emissions per Household*	2,118	3	2%	
TOTAL and FINAL GRADE		**3.8/5**	**75.4/100**	**A-**



WORST SACRAMENTO RAIL STATION NEIGHBORHOOD:
Longview Dr and I-80 – *Place Type 3 Employment*

The Longview Dr and I-80 station in Sacramento performed the worst in the region. It has very low transit use among residents and workers and had no tailored local land use policy. Furthermore, no households in the station area have zero vehicles, meaning that the households in the area are car dependent. Notably, this station is primarily used for park-and-ride services adjacent to a major interstate, as opposed to fostering a vibrant transit neighborhood.

MEASURES	Raw Data	Points	% of Final Grade
Transit Use: Residents	5.22%	1	15%
Transit Use: Workers	5.6%	1	15%
Transit Quality *Transit Access Shed Index*	136	2	15%
Transit Safety *Number of reported crimes in Dec 2014*	1	5	3%
Activity *Sum of jobs and households per Acre*	2.87	1	15%
Walkability – *Walk Score*	15	1	10%
Policies/ Plan Preparedness	0	3	5%
Market Performance	-	1	5%
Affordability *% of income spent on housing + transport*	39.78	2	10%
Transit Dependency *% of zero vehicle households*	0	1	5%
Health and Environmental Impact *GHG Emissions per Household*	6,473	1	2%
TOTAL and FINAL GRADE		**1.5/5**	**29.4/100**



WORST SAN FRANCISCO MUNI STATION NEIGHBORHOOD:
3rd St and Marin | SF MUNI – *Place Type 1 Residential*

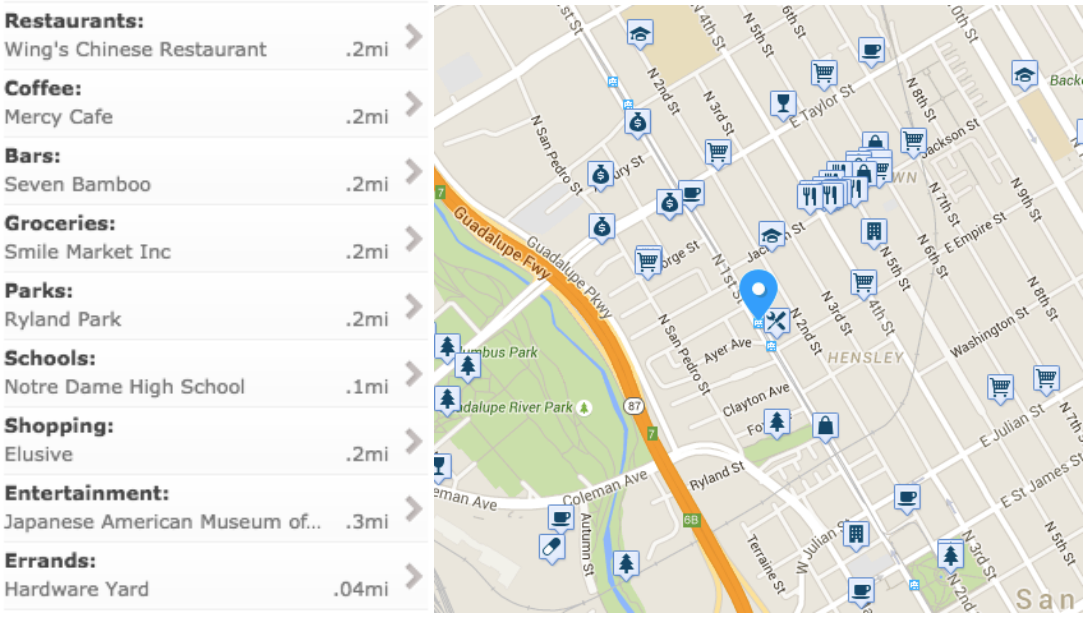
The SF MUNI station at 3rd St and Marin performed the most poorly in the region. It scored low for transit quality access, activity, and affordability. This station is in a low-density residential area with a number of industrial uses.

MEASURES	Raw Data	Points	% of Final Grade	
Transit Use: Residents	41.6%	3	15%	
Transit Use: Workers	14%	32	15%	
Transit Quality *Transit Access Shed Index*	84	1	15%	
Transit Safety *Number of reported crimes in Dec 2014*	3	5	3%	
Activity *Sum of jobs and households per Acre*	10.10	1	15%	
Walkability – *Walk Score*	63	2	10%	
Policies/ Plan Preparedness*	2	3	5%	
Market Performance*	-	1.5	5%	
Affordability *% of income spent on housing + transport*	53.02	1	10%	
Transit Dependency *% of zero vehicle households*	14.01	2	5%	
Health and Environmental Impact *GHG Emissions per Household*	5,241	2	2%	
TOTAL and FINAL GRADE		**2.0/5**	**39.3/100**	**D**

BEST SANTA CLARA VTA STATION NEIGHBORHOOD:
Japantown/ Ayer Station – *Place Type 2 Mixed*

The Japantown/ Ayer Station in Santa Clara performed the best in the region. However, it scored quite poorly for transit use, receiving 2 points for each indicator. This means that despite scoring highly on walkability and transit quality access, most people in this station area choose to drive instead of take transit. It is located in a downtown-like setting with access to destinations and good affordability, which improved its score.

MEASURES	Raw Data	Points	% of Final Grade	
Transit Use: Residents	18.72%	2	15%	
Transit Use: Workers	7.7%	2	15%	
Transit Quality *Transit Access Shed Index*	222	5	15%	
Transit Safety *Number of reported crimes in Dec 2014*	55	2	3%	
Activity *Sum of jobs and households per Acre*	47.43	4	15%	
Walkability – *Walk Score*	85	3	10%	
Policies/ Plan Preparedness	3	5	5%	
Market Performance	-	3	5%	
Affordability *% of income spent on housing + transport*	33.76	4	10%	
Transit Dependency *% of zero vehicle households*	15.73	3	5%	
Health and Environmental Impact *GHG Emissions per Household*	4,617	3	2%	
TOTAL and FINAL GRADE		**3.3/5**	**66.4/100**	**B+**

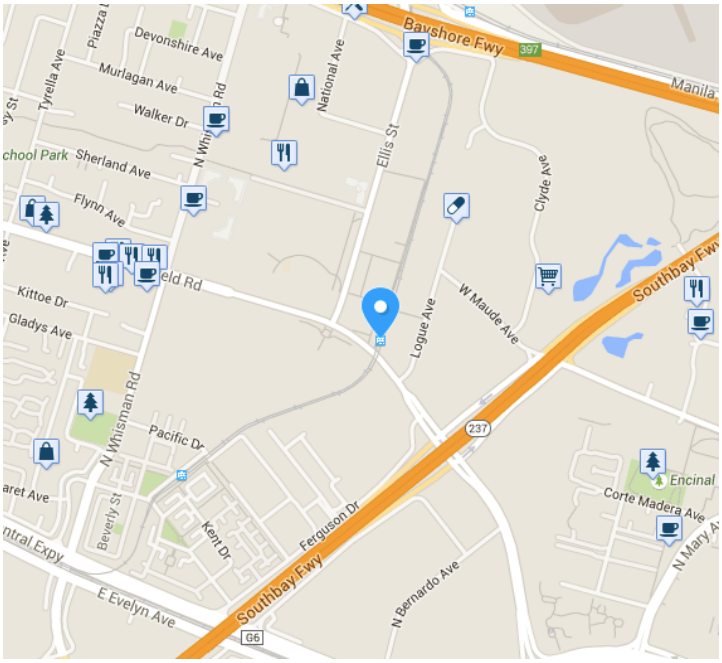


WORST SANTA CLARA VTA STATION NEIGHBORHOOD:
Middlefield Station – *Place Type 3 Employment*

Middlefield Station performed the worst in the Santa Clara region. It scored very low across all indicators, including a bottom quintile score (1) for eight indicators. This station is located in a low-density area toward the edge of the system's service area.

MEASURES	Raw Data	Points	% of Final Grade
Transit Use: Residents	6.47%	1	15%
Transit Use: Workers	3.2%	1	15%
Transit Quality *Transit Access Shed Index*	106	1	15%
Transit Safety *Number of reported crimes in Dec 2014*	4	5	3%
Activity *Sum of jobs and households per Acre*	18.81	1	15%
Walkability – *Walk Score*	37	1	10%
Policies/ Plan Preparedness	2	3	5%
Market Performance	-	2.5	5%
Affordability *% of income spent on housing + transport*	48.45	1	10%
Transit Dependency *% of zero vehicle households*	5.4	1	5%
Health and Environmental Impact *GHG Emissions per Household*	6,936	1	2%
TOTAL and FINAL GRADE		**1.3/5**	**26.2/100**

Restaurants: Hangout Cafe .4mi
Coffee: QD6 .4mi
Bars: E Lounge .8mi
Groceries: Frontier Snacks .3mi
Parks: Encinal Park .6mi
Schools: Western Montessori Day School .9mi
Shopping: CostumesForSeasons .5mi
Entertainment: Moffett Field Historical Society ... 1.1mi
Errands: PneumRx .3mi



IV. San Joaquin Valley Transit-Oriented Area Grades: Fresno and Bakersfield

The San Joaquin Valley is the fastest-growing region in terms of population growth in California and therefore important to include in this project. According to the California Department of Finance, household population is likely to increase almost 60 percent in the eight-county region by mid-century, from 4.188 million in 2015 to 6.691 million in 2050.[17] However, San Joaquin Valley cities lack rail transit, other than long-haul passenger rail. This report therefore grades future bus rapid transit station areas in Fresno and busy bus transit station areas in Bakersfield, representing the San Joaquin Valley's two largest cities.

Scoring Process for San Joaquin Valley Transit-Oriented Areas

Unlike the grades for California's rail transit station areas, the Fresno and Bakersfield grades are *estimates* based on the available but limited data for each of the eleven scorecard indicators. Data that are *not* available for Fresno and Bakersfield transit-oriented areas include those in the Center for Transit-Oriented Development "TOD Database," specifically:

1) Transit Use for Residents
2) Activity (sum of jobs and households per acre)
3) Transit Dependency (% of zero-vehicle households).

Notably, these missing indicators constitute 35 percent of the total grade for rail transit station areas statewide (transit use and activity at 15 percent each and 5 percent for transit dependency). For these missing indicators, we automatically assigned points to each station based on the place type/group average of three points in order to provide an equal comparison to the other stations across the state.

The seven indicators available for San Joaquin Valley transit-oriented areas include:

1) Transit Use for Workers (% Workers in station areas taking transit)
2) Transit Quality (areas reached within 30 minutes)
3) Walkability (Walk Score)
4) Policy Preparedness Points (i.e. station area or specific plan)
5) Market Performance Points (% change in monthly median home value over 5 yrs)
6) Affordability (% of income spent on housing + Transport)
7) Health & Environment Impact (greenhouse gas emissions per household, kg)

[17] "Report P-1 (County): State and County Total Population Projections, 2015-2060," California Department of Finance, December 15, 2014. Available at: http://www.dof.ca.gov/research/demographic/reports/projections/P-1/ (accessed August 10, 2015).

In addition, “Transit Safety” (number of reported crimes in December 2014) was available for the Fresno stations but not for the Bakersfield stations. As a result, points were assigned based on the place type/group average.

1. Fresno Area Express and Future Bus Rapid Transit Grades: Stations in Fresno that were included in the scorecard consist of high-use areas and areas likely to become high-use areas with new transit infrastructure.

	Transit Use (% Workers in station areas taking transit)	Transit Quality (Areas reached within 30 minutes)	Transit Safety (Number of Reported Crimes in Dec 2014)	Walkability (WalkScore)	Policy Preparedness Points (i.e. station area or specific plan)	Market Performance Points (% change in monthly median home value over 5 yrs	Affordability (% of income spent on housing + transport)	Health & Environment Impact (GHG Emissions per Household, kg)	Transit Use (% Residents in station area taking transit, walk/bike) *	Activity (sum of jobs and households per Acre)*	Transit Dependency (% of zero vehicle households)*	Grade
L SHELTER/ MARIPOSA	2	2	4	3	3	3.5	4	2	3	3	3	**C**
Kings Canyon/Clovis (Fancher Creek)	1	1	3	1	3	3	3	1	3	3	3	**D**
Kings Canyon/Peach	1	1	1	1	3	2	5	1	3	3	3	**D**
Manchester Transit Center (Blackstone/ Shields or Blackstone/Griffith)	1	4	1	3	3	2	4	1	3	3	3	**C+**
Blackstone/Shaw	1	3	3	2	3	3	3	1	3	3	3	**C-**
Blackstone/University or Blackstone/Clinton	1	4	5	2	3	4	5	1	3	3	3	**B**

*Due to missing data, place type average scores were allocated

2. Bakersfield Golden Empire Transit (GET) Bus Station Grades: Stations in Bakersfield that were included in the scorecard consist of high-use transit areas.

	Transit Use (% Workers in station areas taking transit)	Transit Quality (Areas reached within 30 minutes)	Transit Safety (Number of Reported Crimes in Dec 2014)*	Walkability (WalkScore)	Policy Preparedness Points (i.e. station area or specific plan)	Market Performance Points (% change in monthly median home value over 5 yrs	Affordability (% of income spent on housing + transport)	Health & Environment Impact (GHG Emissions per Household, kg)	Transit Use (% Residents in station area taking transit, walk/bike) *	Activity (sum of jobs and households per Acre)*	Transit Dependency (% of zero vehicle households)*	Grade
Downtown Transit Center	2	1	3	3	5	3	3	1	3	3	3	C+
Bakersfield College	1	1	3	1	5	3	3	1	3	3	3	D
Southwest Transit Centre	1	1	3	1	5	3	2	4	3	3	3	D
Cal State University Bakersfield	1	1	3	1	5	3	5	5	3	3	3	C

*Due to missing data, place type average scores were allocated

V. Implications of the Grades

At a basic level, the grades reveal which station areas are performing well in terms of encouraging ridership, walkability, equity, and convening, as well as which station areas need improvement – in some cases major modifications. The stations that perform well provide lessons for both other jurisdictions and other stations within their transit systems. Transit decision-makers and elected officials can attempt to discern a typical or specific formula for success and apply it to station areas that do not perform well.

Generally, the better-performing areas were located in the middle of the transit systems in downtown-like environments, while the poorest-performing areas were located at the outer edges of the system and often the outer edges of the urban areas without significant development, even when compared against similar place types. Overall, the formula for success is not complicated: well-performing rail transit stations serve significant concentrations of housing, jobs, and other amenities in a walkable, equitable environment.

Achieving this success is not as simple as the formula might suggest, however, given the number of poor grades in the report. Some transit systems serve stations in areas where improved neighborhood development is not possible, such as due to proximity to airports and freeway interchanges. In some cases, it may not be appropriate to expect thriving neighborhoods to develop in these areas. They may already generate significant ridership due to their non-neighborhood destinations, or serving these areas may be a relatively low-cost option given the specific route of the rail line. In other cases, the station areas may be located in industrial or blighted areas, with little pedestrian access or incentive for private investment without massive public subsidies.

In such fundamentally limited station areas, perhaps the lesson for transit system officials is simply to avoid siting future rail stations there unless more development is feasible. It is no coincidence, for example, that some of the worst-performing station areas were located in freeway medians. While these routes represent relatively inexpensive options, due to the existing public rights-of-way and lack of neighbors to object to the routes, they may ultimately cost the systems significant ridership and therefore missed opportunities for revenue and new transit-oriented neighborhoods.

In some jurisdictions, wealthier areas have deliberately prevented growth around the station areas out of concern for impacts on traffic, parking, and other local concerns.[18] State leaders and transit officials should encourage these jurisdictions to allow new development to support the multi-billion dollar rail systems that serve and benefit those communities at regional taxpayers' expense.

As noted, certain transit systems perform better overall than others. San Francisco, for example, features the most successful station areas on a statewide basis, as do certain

[18] For example, the Orinda BART station area scored poorly, with a corresponding lack of appropriate local land use policies.

parts of Los Angeles. Perhaps no coincidence, these areas were mostly built before the rise of the automobile, and they retain their walkable, compact character, which is well-suited to support rail investments. These areas do not necessarily feature "high-rise" development such as in commercial centers but rather a pedestrian-friendly mix of compact, multifamily developments with easy access to destinations and amenities. Other cities that wish to have successful rail transit systems should emulate these development patterns.

Since California already has invested billions of dollars in our existing rail transit systems, in sometimes less-than-optimal locations, how best can underperforming areas improve? In this section, we include recommendations drawn from research on best practices for facilitating transit-oriented development.[19]

Federal leaders could:

Ensure that federal money for rail transit is conditioned on supportive local land use policies for station-area development or is prioritized for areas that already contain significant concentrations of jobs and housing.

State leaders could:

Steer public investment, particularly for state facilities like courthouses, agency offices, and other uses, to underperforming rail station areas to jumpstart private investment.

Streamline environmental review and other permitting regulations for new development projects in the worst-performing station areas, in order to lower costs for new developments.

Condition state support for rail transit on local land use plans that promote more station-area development.

Develop state-supported financing programs for new development projects in under-performing areas, such as through infrastructure finance districts, "green bank" revolving loan funds, and tax increment financing.

[19] For more information on these and other relevant recommendations, please read the CLEE/UCLA Law reports "Removing the Roadblocks," "Plan for the Future," "All Aboard," "High Speed Foundation," and "Moving Dollars." They are available at: https://www.law.berkeley.edu/centers/clee/research/climate-change-and-business-research-initiative/ (accessed August 13, 2015). *See also* Christopher Williams and Ethan Elkind, "Infill Planning Template: A Guide for How California Local Governments Can Plan for Downtown Growth," CLEE, October 2014. Available at: https://www.law.berkeley.edu/files/CLEE/Infill_Template_--_September_2014.pdf (accessed August 13, 2015).

Provide financial and technical support to local governments with under-performing station areas to help them plan for new development and the associated infrastructure upgrades.

Develop a permanent source of funding for affordable housing projects near transit and otherwise eliminate costs for these developments, such as by eliminating excessive parking requirements.

Local leaders could:

Remove restrictive local land use policies on station areas, such as height limits, bans on mixed-use development, and excessive parking requirements on new development projects in rail station areas.

Undertake specific or area plans for rail transit station areas to encourage new and appropriate development.

Improve walkability and bicycle access in rail transit station areas by shortening blocks and building safe pedestrian and bicycle infrastructure.

Transit agency leaders could:

Site new transit lines and stations in areas that are likely to be high-performing for ridership based on existing or planned land use patterns.

Condition new transit funds on local governments allowing or planning for adequate development around rail transit station areas.

Consider reducing or eliminating rail service to the worst-performing stations, barring significant improvement.

Consider improving rail transit service to high-performing areas to better serve the greatest number of riders.

Ultimately, policy makers should encourage new development around transit stations by lifting restrictions and investing in underperforming areas, locate new transit stations in places where robust neighborhoods can develop, and build more walkable, convenient neighborhoods that transit can eventually serve.

VI. Next Steps

Land use changes often take years to implement. The simple process of construction, of course, can take at least a year or more for a mid-sized building. But the planning, code changes, and building designs can take even longer. New, thriving neighborhoods do not happen overnight in the United States. And many of these rail transit station areas have a substantial stock of existing buildings which will not change ownership or be torn down anytime soon. As a result, subject to the caveats noted in the methodology, the grades in this report will likely remain relatively constant for the near term.

However, as new data become available, we may update these grades to reflect the changes and encourage leaders to improve underperforming grades. We may change the weighting and indicators in light of new information, such as on new stations that have become operational since 2010. We may also expand the geographic range to other states or nationally to grade all of America's rail transit station areas, which could help broaden our understanding about what makes transit stations successful. It could also encourage more utilization of rail transit station areas across the country.

Ultimately, we hope that California's leaders in both the public and private sectors consider the lessons from these grades as they bring new neighborhoods into the fold of the state's rail transit network.

VII. Appendix A: Grades and List of Full Scores (Attached)

VIII. Appendix B: Maps of Best and Worst Profiled Stations (Attached)

IX. Appendix C: List of Experts Consulted

Matthew Baker, The Environmental Council of Sacramento
Chris Calfee, Governor's Office of Planning and Research
Robert Cervero, UC Berkeley Institute of Urban and Regional Development
Judy Corbett, Local Government Commission (retired)
Suzanne Hague, Strategic Growth Council
Troy Hightower, Kern Council of Governments
Curt Johansen, Terra Verde Ventures/Council of Infill Builders
Christopher Jones, UC Berkeley
Chris Lepe, TransForm
Hannah Lindelof, BART
Juan Matute, UCLA Luskin School of Public Affairs
Jen McGraw, Center for Neighborhood Technology
Colin Parent, Circulate San Diego
Woodie Tescher, PlaceWorks
Abigail Thorne-Lyman, BART
Jeff Tumlin, Nelson\Nygaard Consulting
Matthew Vander Sluis, Greenbelt Alliance
Jerry Walters, Fehr & Peers
Terry Watt, Planning Consultant
Michael Woo, California State Polytechnic University, Pomona
Jeff Wood, Natural Resources Defense Council