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Grading California's Rail Transit Station Areas

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Publication Date

2015-10-01



GRADING CALIFORNIA'S RAIL TRANSIT STATION AREAS

October 2015

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ABOUT THIS REPORT

This report was prepared by the Center for Law, Energy & the Environment (CLEE) at UC Berkeley School of Law and issued by Next 10.

ABOUT CLEE

The Center for Law, Energy & the Environment (CLEE) channels the expertise of the Berkeley Law community into pragmatic policy solutions to environmental and energy challenges in California and across the nation. The Center works with government, business, and communities on initiatives that focus on reducing greenhouse gas emissions, advancing the transition to renewable energy, and ensuring clean water for California's future.

ABOUT NEXT 10

Next 10 is an independent, nonpartisan organization that educates, engages and empowers Californians to improve the state's future. With a focus on the intersection between the economy, the environment, and quality of life, Next 10 employs research from leading experts on complex state issues and creates a portfolio of nonpartisan educational materials.

ABOUT THE AUTHORS

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ACKNOWLEDGEMENTS

CLEE gratefully acknowledges the following experts who provided guidance on the project and draft report: Matthew Baker, Chris Calfee, Robert Cervero, Judy Corbett, Suzanne Hague, Troy Hightower, Curt Johansen, Christopher Jones, Chris Lepe, Hannah Lindelof, Juan Matute, Jen McGraw, Colin Parent, Woodie Tescher, Abigail Thorne-Lyman, Jeff Tumlin, Matthew Vander Sluis, Jerry Walters, Terry Watt, Michael Woo, and Jeff Wood. The report and recommendations are solely a product of the UC Berkeley School of Law and Next 10 and do not necessarily reflect the views of these experts.

Critical data for this report were donated by the Center for Neighborhood Technology. Walk Score® data were generously provided by Redfin Real Estate.

We also thank Claire Hermann for designing this policy report. Photos courtesy of the Greenbelt Alliance, Clint Sharp, and Nati Lafuente.

EXECUTIVE SUMMARY

How Well Do California's Rail Transit Station Areas Perform As Thriving, Walkable Areas That Encourage Transit Ridership?

How well do California's rail transit station areas encourage transit ridership, connect to amenities, and create walkable, equitable, and thriving locales? This report grades 489 neighborhoods within 1/2-mile radius of rail transit stations based on factors like these in 6 California systems:

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

This report also separately examines the busiest bus stops in the two largest San Joaquin Valley cities of Fresno and Bakersfield and includes the bus rapid transit Orange Line in Los Angeles, given its rail-like qualities. The grades do not cover long-distance Amtrak, cable cars, or less frequent commuter rail lines.

The most effective rail systems with the highest ridership serve significant concentrations of jobs, retail, services, and housing around the stations and along the corridors they travel, particularly those within 1/2 mile of the station.

Why grade these neighborhoods? The most effective rail systems with the highest ridership 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. Better station-area development also addresses important environmental and quality-of-life needs, by accommodating growth in a sustainable manner and meeting increasing market demand for rail-oriented neighborhoods. Grading rail transit station areas helps highlight strong performers and alerts underperformers about the need to improve.

METHODOLOGY

Grades are determined by dividing rail transit stations based on three place types, which appear color-coded on the grading sheet:

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

Scores are calculated on each of the following 11 indicators within those 3 place types, weighted according to expert input:



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)

METRIC 4 – EQUITY

- 9. transit affordability
- 10. dependency

METRIC 5 – HEALTH AND ENVIRONMENTAL IMPACT

- 11. greenhouse gas (GHG) emissions

We utilized the following existing data on rail transit station areas to determine the performance on the 11 indicators:

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.

Each transit station area competed within its place type to receive scores up to 5 points on each of the 11 indicators, with a 5 representing the top 20%.

Letter grades for each transit station area are based on the number of points obtained across all indicators, determined by the percentile rank within the place type. Grades are determined by scores at the following percentages.

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%	

GRADING RESULTS

With grading on a statewide curve, and each station separated into and competing within one of three place types (residential, employment, and mixed), certain transit systems averaged better than others:

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-	12 th & Imperial Transit Center	Gillespie Field Station
SACRAMENTO RT	C	7 th 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

TABLE 4: OVERALL BEST AND WORST 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

TABLE 5: BEST AND WORST STATIONS STATIONS PER TRANSIT SYSTEM

AGENCY	AVE	BEST	WORST
BART	B-	24 th St. Mission; Ashby	SFO Airport
		Civic Center/UN Plaza; 16 th 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-	12 th & 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	7 th St and K St; 7 th St and Capitol Mall; K St and 8 th St	Longview Dr and I-80; Watt Ave and I-80
			Fruitridge Rd and 24 th St
			Roseville Road and I-80
SF MUNI	B	Market St & Church St; Church St & 14 th St; Church St & 16 th ; Metro Church Station; Church St & Market St; Market St & Sanchez; Church St & Duboce St; Duboce St/ Noe St/Duboce Park; Right of Way/18 th ; Church St & 18 th	Third St & Marin
		Market St & 7 th St; Market St & 8 th St; Metro Civic Center Station; Market St & Hyde	46 th Ave and Vicente St; Ocean Ave & Westgate Dr; Wawona/26 th 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 & 3 rd St; Market St & Kearny St	
		Metro Montgomery Station	
SANTA CLARA VTA	C-	Japantown/ Ayer Station	Middlefield Station

The Fresno and Bakersfield grades are estimates based on the available but limited data for each of the eleven scorecard indicators.

San Joaquin Valley Transit-Oriented Areas Results

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.

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. The Blackstone/University or Blackstone/Clinton bus stop area is estimated to score a B, while the Kings Canyon/Peach and Kings Canyon/Clovis both scored estimated D grades.

Bakersfield Golden Empire Transit (GET) Bus Station Grades: Stations in Bakersfield that were included in the scorecard consist of high-use transit areas. The Downtown Transit Center is estimated to score a C+, while Bakersfield College and Southwest Transit both scored estimated D grades.

KEY CONCLUSIONS

The grades in this report reveal that 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. Overall, high-performing rail transit stations serve significant concentrations of housing, jobs, and other amenities in a walkable, equitable environment.

To be sure, some transit systems serve stations in areas where improved neighborhood development is not possible, such as due to proximity to airports and freeway interchanges. These stations may generate significant ridership anyway 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.

However, in cases where station areas are located in industrial or blighted areas, with little pedestrian access or incentive for private investment without massive public subsidies, transit system officials may want to avoid siting future rail stations there. And in some jurisdictions, local governments have deliberately prevented growth around the station areas out of concern for impacts on traffic, parking, and other local concerns.

To improve these underperforming areas:

- Federal and state leaders could ensure that 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 develop 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;
- State leaders could 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, through specific plans for the station areas.
- 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 and condition new transit funds on local governments allowing or planning for adequate development around rail transit station areas.

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 neighborhoods can develop, and build more walkable, convenient neighborhoods that transit can eventually serve.

Because land use changes often take years to implement, these grades will likely remain relatively constant for the near term. However, as new data become available, we may update them and possibly expand the geographic range. 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.

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

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 population.¹ 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.²

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;³ 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).⁴ 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 development produces more riders, due in large part to their proximity to the transit system.⁵ And more paying riders means reduced public subsidies required to operate the system, with more people benefitting from transit investments.⁶

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.⁷ 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.⁸ 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.⁹

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 2012.¹⁰ 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 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.¹¹ 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.¹² 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

More station-area development within one-half mile produces more riders, due in large part to their proximity to the transit system.

home prices and rents that take up more of residents' incomes.¹³ 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 average, and the Santa Clara Valley and San Diego systems showed need for improvement compared to their state-wide counterparts.

Grading the state's rail transit station areas helps highlight strong performers for other regions to emulate, while alerting underperformers about the need to improve.

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).

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.

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 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:

DATA SOURCES

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)

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

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	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%



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).

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:

Residential	Group 1 - Primarily residential, 33.3% or less workers relative to workers and residents
Mixed	Group 2 - Mixed between 33.4% to 66.6% of workers relative to workers and residents
Employment	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).

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-	12 th & Imperial Transit Center	Gillespie Field Station
SACRAMENTO RT	C	7 th 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:

TABLE 4: OVERALL BEST AND WORST 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:

TABLE 5: BEST AND WORST STATIONS STATIONS PER TRANSIT SYSTEM

AGENCY	AVE	BEST	WORST
BART	B-	24 th St. Mission; Ashby	SFO Airport
		Civic Center/UN Plaza; 16 th 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-	12 th & 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	7 th St and K St; 7 th St and Capitol Mall; K St and 8 th St	Longview Dr and I-80; Watt Ave and I-80
			Fruitridge Rd and 24 th St
			Roseville Road and I-80
SF MUNI	B	Market St & Church St; Church St & 14 th St; Church St & 16 th ; Metro Church Station; Church St & Market St; Market St & Sanchez; Church St & Duboce St; Duboce St/ Noe St/Duboce Park; Right of Way/18 th ; Church St & 18 th	Third St & Marin
		Market St & 7 th St; Market St & 8 th St; Metro Civic Center Station; Market St & Hyde	46 th Ave and Vicente St; Ocean Ave & Westgate Dr; Wawona/26 th 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 & 3 rd St; Market St & Kearny St	
		Metro Montgomery Station	
SANTA CLARA VTA	C-	Japantown/ Ayer Station	Middlefield Station

CALIFORNIA'S BEST RAIL TRANSIT STATION NEIGHBORHOOD

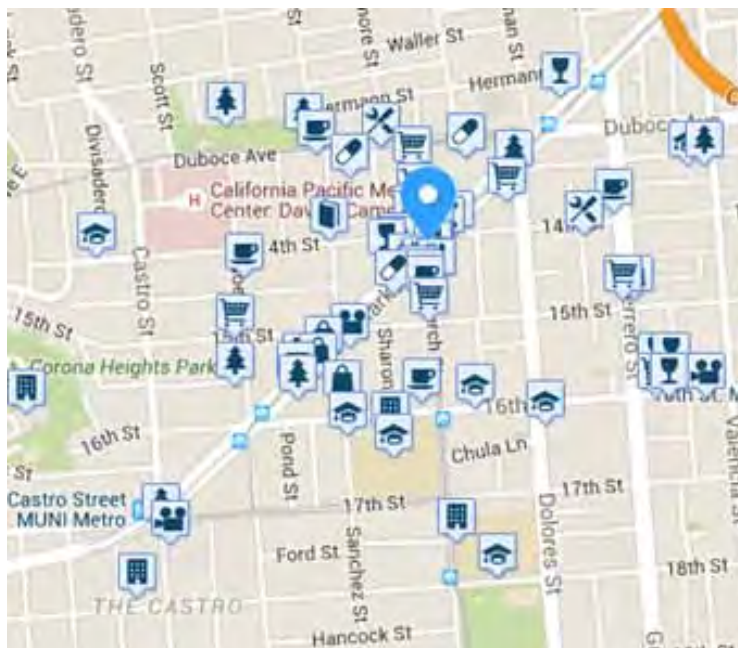
Market St & Church St | SF MUNI

Place Type 1 Residential

A+

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	40.50%	5	15%
Transit Quality <i>Transit Access Shed Index</i>	109	4	15%
Transit Safety <i>Number of reported crimes in Dec 2014</i>	28	2	3%
Activity <i>Sum of jobs and households per acre</i>	43.23	5	15%
Walkability – Walk Score	97	5	10%
Policies/ Plan Preparedness	3	5	5%
Market Performance	-	4	5%
Affordability <i>% of income spent on housing + transport</i>	37.21	5	10%
Transit Dependency <i>% of zero vehicle households</i>	38.94	5	5%
Health and Environmental Impact <i>GHG Emissions per Household</i>	3,077	4	2%
TOTAL and FINAL GRADE			4.7/5 (A+) 93.8/100



- 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

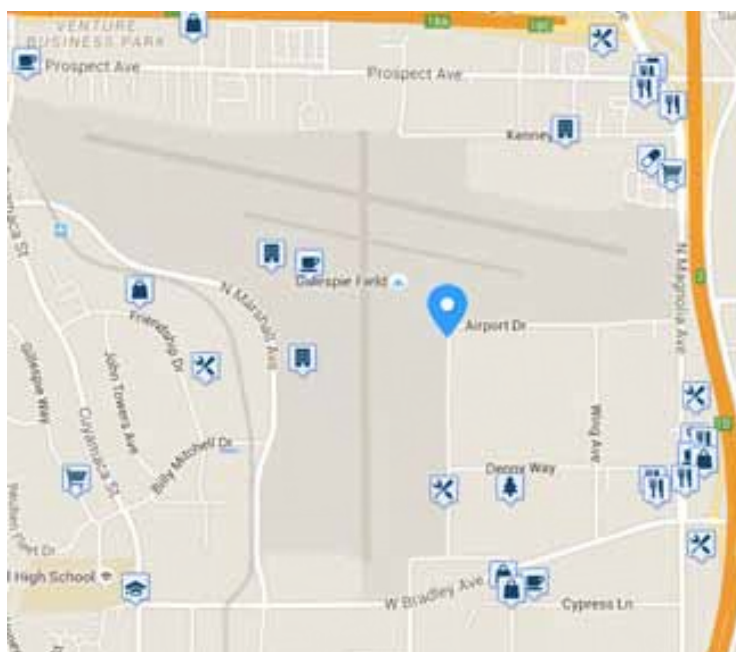
Gillespie Field Station | San Diego MTS

Place Type 2 Mixed

F

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	4.50%	1	15%
Transit Quality <i>Transit Access Shed Index</i>	77	1	15%
Transit Safety <i>Number of reported crimes in Dec 2014</i>	31.46	3	3%
Activity <i>Sum of jobs and households per Acre</i>	7.82	1	15%
Walkability – Walk Score	32	1	10%
Policies/ Plan Preparedness	2	3	5%
Market Performance	-	1	5%
Affordability <i>% of income spent on housing + transport</i>	52.1	1	10%
Transit Dependency <i>% of zero vehicle households</i>	5.94	1	5%
Health and Environmental Impact <i>GHG Emissions per Household</i>	6,814	1	2%
TOTAL and FINAL GRADE		1/5 (F)	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

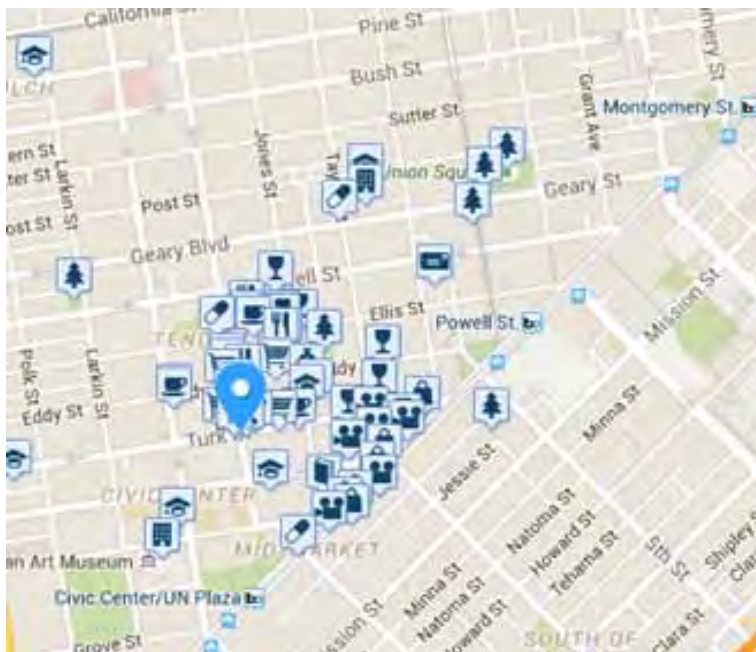
Civic Center/UN Plaza

Place Type 2 Mixed

A+

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	74.50%	5	15%
Transit Use: Workers	55.00%	5	15%
Transit Quality <i>Transit Access Shed Index</i>	137	4	15%
Transit Safety <i>Number of reported crimes in Dec 2014</i>	91	1	3%
Activity <i>Sum of jobs and households per Acre</i>	135.28	5	15%
Walkability – Walk Score	97	4	10%
Policies/ Plan Preparedness	3	5	5%
Market Performance	-	3	5%
Affordability <i>% of income spent on housing + transport</i>	22.55	5	10%
Transit Dependency <i>% of zero vehicle households</i>	75.07	5	5%
Health and Environmental Impact <i>GHG Emissions per Household</i>	450	5	2%
TOTAL and FINAL GRADE		4.5/5 (A+)	90/100



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

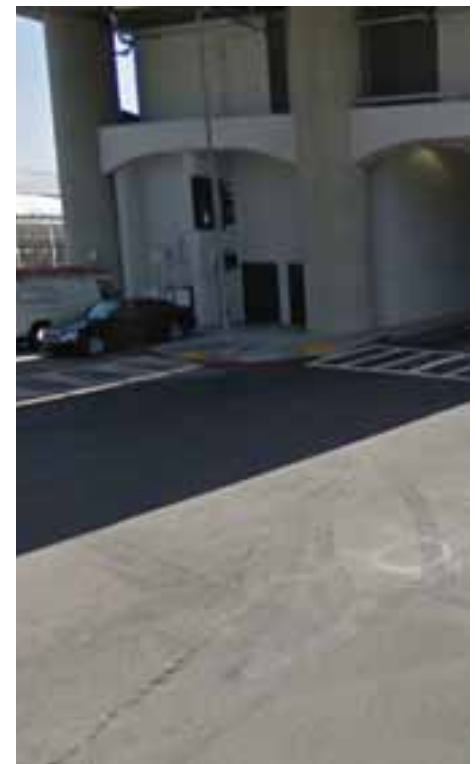
San Francisco International Airport

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	10.30%	2	15%
Transit Quality <i>Transit Access Shed Index</i>	22	1	15%
Transit Safety <i>Number of reported crimes in Dec 2014</i>	31.46	4	3%
Activity <i>Sum of jobs and households per Acre</i>	2.95	1	15%
Walkability – Walk Score	36	1	10%
Policies/ Plan Preparedness	3	5	5%
Market Performance	-	1.5	5%
Affordability <i>% of income spent on housing + transport</i>	49.51	1	10%
Transit Dependency <i>% of zero vehicle households</i>	6.98	1	5%
Health and Environmental Impact <i>GHG Emissions per Household</i>	7,843	1	2%
TOTAL and FINAL GRADE		1.5/5 (F)	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

A+

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	58.80%	5	15%
Transit Use: Workers	18.80%	3	15%
Transit Quality <i>Transit Access Shed Index</i>	219	5	15%
Transit Safety <i>Number of reported crimes in Dec 2014</i>	55	1	3%
Activity <i>Sum of jobs and households per Acre</i>	48.57	5	15%
Walkability – <i>Walk Score</i>	95	5	10%
Policies/ Plan Preparedness	3	5	5%
Market Performance	-	2	5%
Affordability <i>% of income spent on housing + transport</i>	27.33	5	10%
Transit Dependency <i>% of zero vehicle households</i>	50.56	5	5%
Health and Environmental Impact <i>GHG Emissions per Household</i>	2,551	4	2%
TOTAL and FINAL GRADE 4.4/5 (A+)			88.2/100



- Restaurants:**
Rincon De Los Sabores Restau... .03mi >
- Coffee:**
L A Metro Cafe .08mi >
- Bars:**
Tango Room & Bar .06mi >
- Groceries:**
Metro Market .03mi >
- Parks:**
MacArthur Park .2mi >
- Schools:**
Esperanza Elementary School .2mi >
- Shopping:**
E Z Clothing .04mi >
- Entertainment:**
Grier Musser Museum .4mi >
- Errands:**
Seventh Street Rx Pharmacy .01mi >

WORST LOS ANGELES METRO RAIL STATION NEIGHBORHOOD

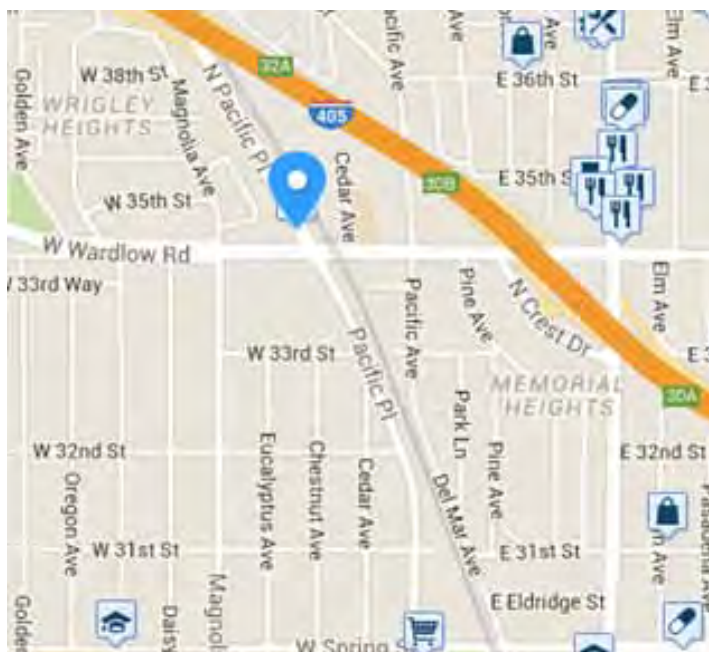
F

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	8.40%	1	15%
Transit Quality <i>Transit Access Shed Index</i>	75	1	15%
Transit Safety <i>Number of reported crimes in Dec 2014</i>	9	4	3%
Activity <i>Sum of jobs and households per Acre</i>	9.25	2	15%
Walkability – Walk Score	57	1	10%
Policies/ Plan Preparedness	2	3	5%
Market Performance	-	3.5	5%
Affordability <i>% of income spent on housing + transport</i>	55.21	1	10%
Transit Dependency <i>% of zero vehicle households</i>	12.92	3	5%
Health and Environmental Impact <i>GHG Emissions per Household</i>	6,538	1	2%
TOTAL and FINAL GRADE		1.6/5 (F)	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

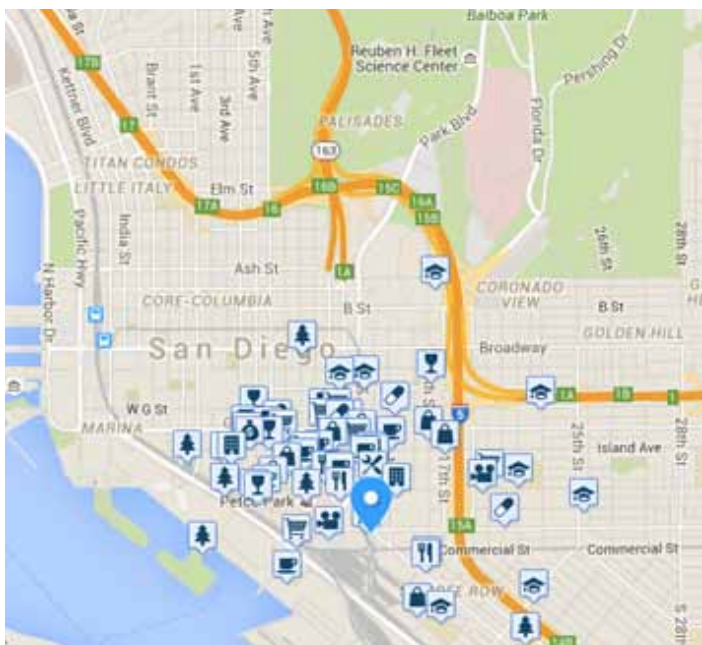
12th & Imperial Transit Center

Place Type 2 Mixed

B

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	13.70%	3	15%
Transit Quality <i>Transit Access Shed Index</i>	138	4	15%
Transit Safety <i>Number of reported crimes in Dec 2014</i>	31.46	3	3%
Activity <i>Sum of jobs and households per Acre</i>	28.24	3	15%
Walkability – <i>Walk Score</i>	86	3	10%
Policies/ Plan Preparedness	3	5	5%
Market Performance	-	1.5	5%
Affordability <i>% of income spent on housing + transport</i>	38.15	3	10%
Transit Dependency <i>% of zero vehicle households</i>	26.45	3	5%
Health and Environmental Impact <i>GHG Emissions per Household</i>	2,603	4	2%
TOTAL and FINAL GRADE		3.2/5 (B)	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:	
Crofton Boutique & Gallery	.3mi
Entertainment:	
PL/CO Park	.2mi
Errands:	
Southwest Marine Hardware	.2mi

BEST SACRAMENTO RAIL STATION NEIGHBORHOOD

7th St and K St

Place Type 1 Residential

A-

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	17.00%	3	15%
Transit Quality <i>Transit Access Shed Index</i>	260	5	15%
Transit Safety <i>Number of reported crimes in Dec 2014</i>	31.46	4	3%
Activity <i>Sum of jobs and households per Acre</i>	164.37	4	15%
Walkability – Walk Score	96	4	10%
Policies/ Plan Preparedness	2	3	5%
Market Performance	-	3.5	5%
Affordability <i>% of income spent on housing + transport</i>	19.38	4	10%
Transit Dependency <i>% of zero vehicle households</i>	42.73	4	5%
Health and Environmental Impact <i>GHG Emissions per Household</i>	2,118	3	2%
TOTAL and FINAL GRADE		3.8/5 (A-)	75.4/100



Restaurants:	All Baba's Kabob House	.04mi
Coffee:	Caffe Breesie	.1mi
Bars:	Preflite Lounge	.1mi
Groceries:	City Market	.03mi
Parks:	Plaza Park	.3mi
Schools:	Bret Harte Elementary School	.2mi
Shopping:	Victoria's Secret - Downtown P...	.06mi
Entertainment:	Downtown Plaza	.05mi
Errands:	First Northern Bank	.1mi

WORST SACRAMENTO RAIL STATION NEIGHBORHOOD

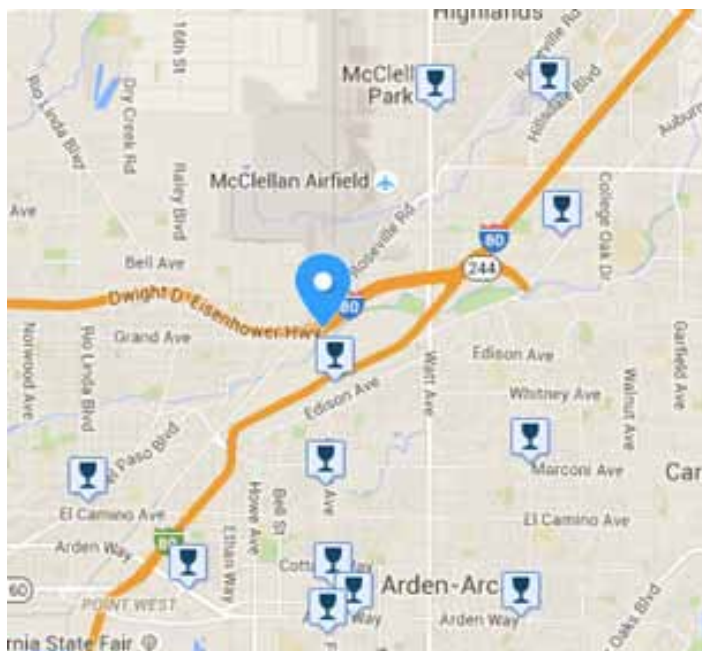
Longview Dr and I-80

Place Type 3 Employment

F

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	5.60%	1	15%
Transit Quality <i>Transit Access Shed Index</i>	136	2	15%
Transit Safety <i>Number of reported crimes in Dec 2014</i>	1	5	3%
Activity <i>Sum of jobs and households per Acre</i>	2.87	1	15%
Walkability – Walk Score	15	1	10%
Policies/ Plan Preparedness	0	3	5%
Market Performance	-	1	5%
Affordability <i>% of income spent on housing + transport</i>	39.78	2	10%
Transit Dependency <i>% of zero vehicle households</i>	0	1	5%
Health and Environmental Impact <i>GHG Emissions per Household</i>	6,473	1	2%
TOTAL and FINAL GRADE		1.5/5 (F)	29.4/100



- Restaurants:**
Ay Caramba Mexican Restaurant .6mi >
- Coffee:**
Haggin Oaks Cafe .3mi >
- Bars:**
Viba Lounge .5mi >
- Groceries:**
Circle D .6mi >
- Parks:**
Del Paso Park .6mi >
- Schools:**
Nova Community Day .9mi >
- Shopping:**
express stop .5mi >
- Entertainment:**
Discovery Museum - Science a... 1.2mi >
- Errands:**
Buttes Center State Pipe .6mi >

WORST SAN FRANCISCO MUNI STATION NEIGHBORHOOD

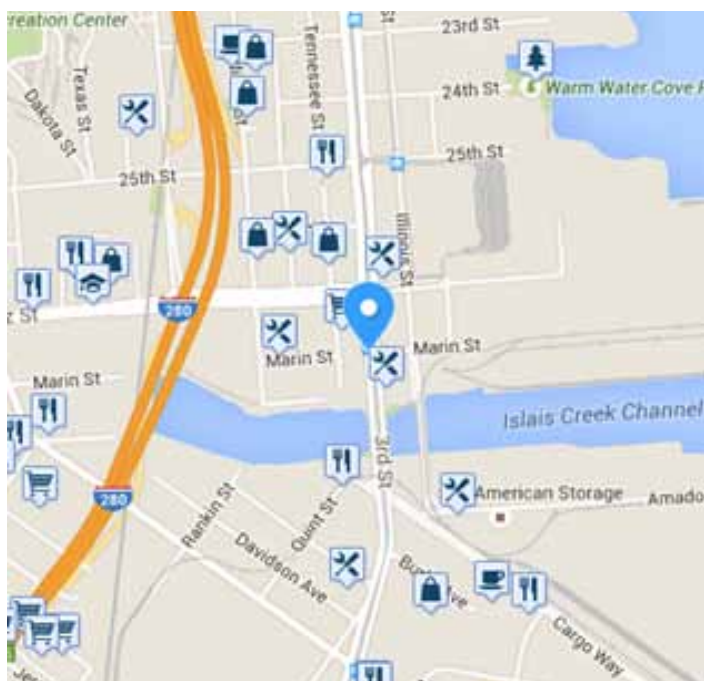
3rd St and Marin | SF MUNI

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	41.60%	3	15%
Transit Use: Workers	14.00%	32	15%
Transit Quality <i>Transit Access Shed Index</i>	84	1	15%
Transit Safety <i>Number of reported crimes in Dec 2014</i>	3	5	3%
Activity <i>Sum of jobs and households per Acre</i>	10.1	1	15%
Walkability – <i>Walk Score</i>	63	2	10%
Policies/ Plan Preparedness	2	3	5%
Market Performance	-	1.5	5%
Affordability <i>% of income spent on housing + transport</i>	53.02	1	10%
Transit Dependency <i>% of zero vehicle households</i>	14.01	2	5%
Health and Environmental Impact <i>GHG Emissions per Household</i>	5,241	2	2%
TOTAL and FINAL GRADE		2.0/5 (D)	39.3/100



- Restaurants:**
 - Polarica Inc .2mi
- Coffee:**
 - Vasquez Coffee Company .4mi
- Bars:**
 - Smokestack .6mi
- Groceries:**
 - Super Buy Foods Inc .03mi
- Parks:**
 - Warm Water Cove Park .5mi
- Schools:**
 - Rise Institute .4mi
- Shopping:**
 - Skunkfunk USA .1mi
- Entertainment:**
 - The Museum of Craft and Desi... .5mi
- Errands:**
 - Pro Stone Supply .07mi

BEST SANTA CLARA VTA STATION NEIGHBORHOOD

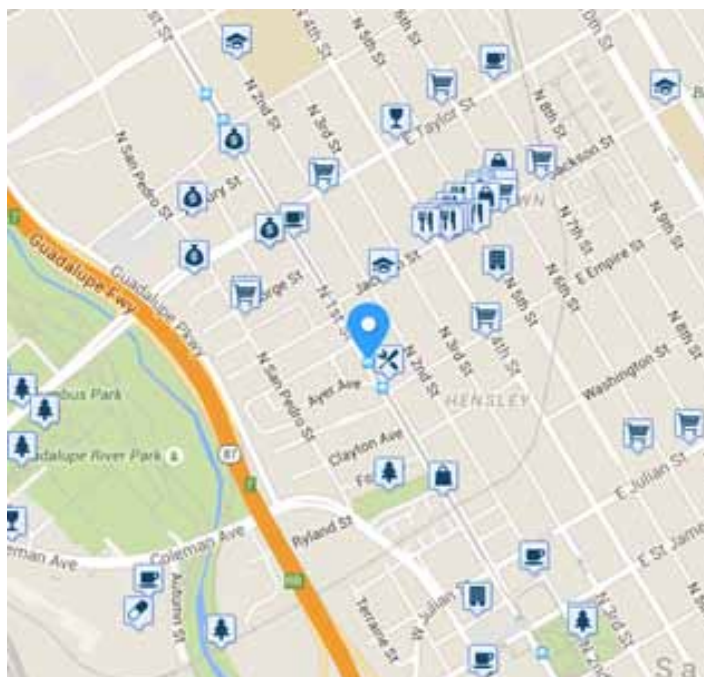
Japantown/ Ayer Station

Place Type 2 Mixed

B+

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	7.70%	2	15%
Transit Quality <i>Transit Access Shed Index</i>	222	5	15%
Transit Safety <i>Number of reported crimes in Dec 2014</i>	55	2	3%
Activity <i>Sum of jobs and households per Acre</i>	47.43	4	15%
Walkability – Walk Score	85	3	10%
Policies/ Plan Preparedness	3	5	5%
Market Performance	-	3	5%
Affordability <i>% of income spent on housing + transport</i>	33.76	4	10%
Transit Dependency <i>% of zero vehicle households</i>	15.73	3	5%
Health and Environmental Impact <i>GHG Emissions per Household</i>	4,617	3	2%
TOTAL and FINAL GRADE			3.3/5 (B+) 66.4/100



- Restaurants:**
Wing's Chinese Restaurant .2mi >
- Coffee:**
Mercy Cafe .2mi >
- Bars:**
Seven Bamboo .2mi >
- Groceries:**
Smile Market Inc .2mi >
- Parks:**
Ryland Park .2mi >
- Schools:**
Notre Dame High School .1mi >
- Shopping:**
Elusive .2mi >
- Entertainment:**
Japanese American Museum of... .3mi >
- Errands:**
Hardware Yard .04mi >

WORST SANTA CLARA VTA STATION NEIGHBORHOOD

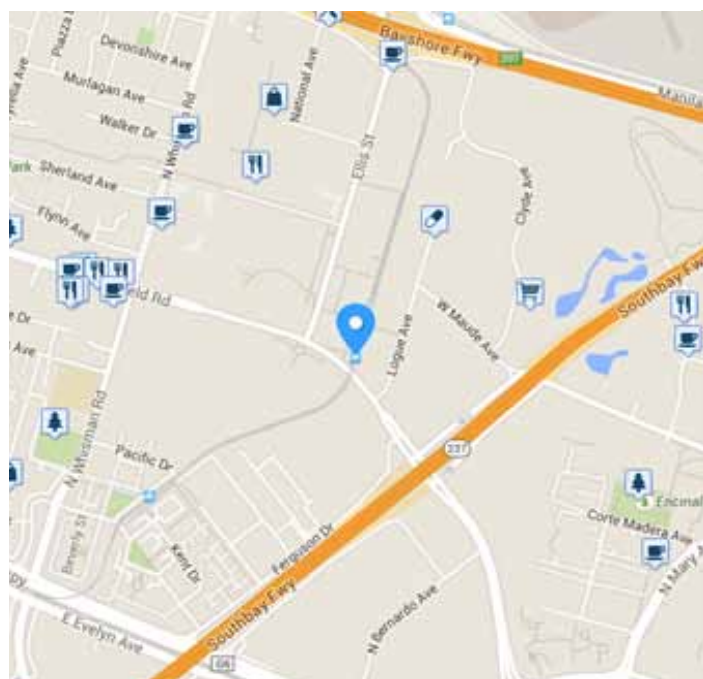
F

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	3.20%	1	15%
Transit Quality <i>Transit Access Shed Index</i>	106	1	15%
Transit Safety <i>Number of reported crimes in Dec 2014</i>	4	5	3%
Activity <i>Sum of jobs and households per Acre</i>	18.81	1	15%
Walkability – Walk Score	37	1	10%
Policies/ Plan Preparedness	2	3	5%
Market Performance	-	2.5	5%
Affordability <i>% of income spent on housing + transport</i>	48.45	1	10%
Transit Dependency <i>% of zero vehicle households</i>	5.4	1	5%
Health and Environmental Impact <i>GHG Emissions per Household</i>	6,936	1	2%
TOTAL and FINAL GRADE		1.3/5 (F)	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 >

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 2050.¹⁴ 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)

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.

This report 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.

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 User (% Workers in station areas taking transit)	Transit Quality (Areas reached within 30 minutes)	Transit Safety (Number of Reported Crimes)	Walkability (Walk Score)	Policy Preparedness Points (i.e. station area or specific plan)	Market Performance Points (i.e. 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 User (% 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

Bakersfield Golden Empire Transit (GET) Bus Station Grades

Stations in Bakersfield that were included in the scorecard consist of high-use transit areas.

	Transit User (% Workers in station areas taking transit)	Transit Quality (Areas reached within 30 minutes)	Transit Safety (Number of Reported Crimes)	Walkability (Walk Score)	Policy Preparedness Points (i.e. station area or specific plan)	Market Performance Points (i.e. 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 User (% 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

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.¹⁵ 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 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.

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.

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.¹⁶

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.
- Provide financial and technical support to local governments with underperforming 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 should remove restrictive local land use policies on station-area development.

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.

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.

APPENDIX A: GRADES AND LIST OF FULL SCORES

Full breakdown of scores
available in the online appendix via:

next10.org/transitscorecard

San Francisco Bay Area Rapid Transit (BART) **B-**

Best performing stations:
 24th St. Mission
 Ashby
 Civic Center/UN Plaza
 Montgomery St.
 Powell St

Worst performing stations:
 SFO Airport
 South San Francisco
 Orinda
 North Concord/Martinez

SAN FRANCISCO BAY AREA RAPID TRANSIT (BART) ALL STATIONS

					Residential	Mixed	Employment			
CITY	LINE	STATION	RAW SCORE	FINAL GRADE	CITY	LINE	STATION	RAW SCORE	FINAL GRADE	
San Francisco	SFO-Millbrae	Civic Center / UN Plaza BART	90.60	A	Oakland	Fremont	Coliseum / Oakland Airport Station	59.60	B-	
San Francisco	SFO-Millbrae	Montgomery St. BART	88.20	A	Oakland	SFO-Millbrae	West Oakland BART	55.70	B-	
San Francisco	SFO-Millbrae	24th St. Mission BART	87.30	A	Hayward	Fremont	Hayward Station BART	55.63	C+	
San Francisco	SFO-Millbrae	16th St. Mission BART	84.30	A	Ashland	Fremont	Bay Fair BART	53.50	C	
San Francisco	SFO-Millbrae	Powell St. BART	84.10	A	Daly City	SFO-Millbrae	Daly City BART	53.40	C	
San Francisco	SFO-Millbrae	Embarcadero BART	83.80	A	Colma	SFO-Millbrae	Colma BART	52.50	C	
Oakland	Fremont	Lake Merritt BART	77.60	A	Concord	Pittsburg / Bay Point	Concord BART	51.27	C	
Berkeley	Dublin / Pleasanton to Daly City	Downtown Berkeley BART	74.50	A	Walnut Creek	SFO-Millbrae	Walnut Creek BART	48.53	C	
Berkeley	Richmond	Ashby BART	75.30	A-	El Cerrito	Richmond	El Cerrito Del Norte BART	49.70	D+	
Berkeley	Richmond	North Berkeley BART	74.30	A-	Castro Valley	Dublin / Pleasanton	Castro Valley BART	48.80	D+	
San Francisco	SFO-Millbrae	Glen Park BART	74.10	A-	Millbrae	SFO-Millbrae	Millbrae BART	42.90	D+	
Oakland	Fremont	Fruitvale BART	73.50	A-	Pleasanton	Dublin / Pleasanton	West Dublin / Pleasanton BART	42.90	D+	
Oakland	SFO-Millbrae	19th St. Oakland BART	72.90	B+	Pleasanton	Dublin / Pleasanton	Dublin / Pleasanton BART	40.40	D+	
San Francisco	SFO-Millbrae	Balboa Park BART	69.80	B+	Bay Point	SFO-Millbrae	Pittsburg / Bay Point BART	47.40	D	
Oakland	SFO-Millbrae	12th St. Oakland City Center BART	71.70	B	Union City	Fremont	Union City BART	47.30	D	
Contra Costa Centre	SFO-Millbrae	Pleasant Hill / Contra Costa Centre BART	66.20	B	Lafayette	SFO-Millbrae	Lafayette BART	46.80	D	
Oakland	Pittsburg / Bay Point	MacArthur BART	65.70	B	Hayward	Fremont	South Hayward BART	43.83	D	
Fremont	Fremont	Fremont BART	64.20	B	San Bruno	SFO-Millbrae	San Bruno BART	38.87	D	
El Cerrito	Richmond	El Cerrito Plaza BART	63.10	B	Concord	Pittsburg / Bay Point	North Concord / Martinez BART	38.37	D	
San Leandro	Fremont	San Leandro BART	62.30	B	Orinda	SFO-Millbrae	Orinda BART	37.47	D	
Oakland	Pittsburg / Bay Point	Rockridge BART	57.80	B	South San Francisco	SFO-Millbrae	South San Francisco BART	37.07	D	
Richmond	Richmond	Richmond BART	59.97	B-	San Francisco	SFO-Millbrae	San Francisco Int BART	29.30	F	

**LA Metro
Average
Score:**



Best performing stations:

- Westlake / MacArthur Park
- Hollywood / Western
- Wilshire / Normandie
- Mariachi Plaza / Boyle Heights
- Wilshire / Vermont
- Vermont / Beverly

Worst performing stations:

- Wardlow Station
- Del Amo
- Willow

LOS ANGELES COUNTY METRO RAIL (METRO) ALL STATIONS

					Residential	Mixed	Employment					
CITY	LINE	STATION	RAW SCORE	FINAL GRADE	CITY	LINE	STATION	RAW SCORE	FINAL GRADE			
Los Angeles	Red Line	Westlake / MacArthur Park Station	88.20	A	East Los Angeles	Gold Line	Atlantic Station	58.70	B-			
Los Angeles	Red Line	Hollywood / Western Station	85.30	A	Florence-Graham	Blue Line	Slauson Station	58.60	B-			
Los Angeles	Purple Line	Wilshire / Western Station	83.20	A	Los Angeles	Orange Line	Laurel Canyon Station	58.50	B-			
Los Angeles	Gold Line	Mariachi Plaza / Boyle Heights Station	82.40	A	Pasadena	Gold Line	Fillmore Station	56.83	B-			
Los Angeles	Red Line	Vermont / Beverly Station	80.90	A	Los Angeles	Orange Line	Van Nuys Station	56.30	B-			
Los Angeles	Gold Line	Soto Station	80.80	A	Pasadena	Gold Line	Lake Station	56.03	B-			
Los Angeles	Purple Line	Wilshire / Vermont Station	77.90	A	Long Beach	Blue Line	Long Beach Transit Mall	55.73	B-			
Los Angeles	Purple Line	Wilshire / Normandie Station	75.80	A	Los Angeles	Blue Line	103rd Street Station	58.40	C+			
Los Angeles	Gold Line	Chinatown Station	75.10	A	Compton	Blue Line	Compton Station	57.40	C+			
Los Angeles	Blue Line	Grand Station	74.50	A	East Los Angeles	Gold Line	Maravilla Station	55.20	C			
Los Angeles	Red Line	Hollywood / Highland Station	73.20	A	Pasadena	Gold Line	Memorial Park Station	54.13	C			
Los Angeles	Red Line	7th Street / Metro Center Station	79.20	A-	Los Angeles	Green Line	Harbor Freeway Station	53.00	C			
Los Angeles	Blue Line	7th Street / Metro Center Station	79.20	A-	Los Angeles	Orange Line	Woodman Station	51.50	C			
Los Angeles	Red Line	Pershing Square Station	79.10	A-	Hawthorne	Green Line	Redondo Beach Station	50.90	C			
Los Angeles	Red Line	Vermont / Sunset Station	72.10	A-	Pasadena	Gold Line	Del Mar Station	50.53	C			
Los Angeles	Gold Line	Lincoln Heights / Cypress Park Station	72.00	A-	Los Angeles	Orange Line	De Soto Station	50.20	C			
Los Angeles	Red Line	Hollywood / Vine Station	71.80	A-	Los Angeles	Orange Line	Sepulveda Station	48.40	C			
Los Angeles	Red Line	Vermont / Santa Monica Station	69.10	A-	El Segundo	Green Line	El Segundo Station	48.40	C			
Los Angeles	Gold Line	Highland Park Station	69.50	B+	Los Angeles	Orange Line	Warner Center Transit Hub Layover	47.20	C			
Los Angeles	Orange Line	North Hollywood Station Layover	68.40	B+	Hawthorne	Green Line	Crenshaw Station	46.40	C			
Los Angeles	Blue Line	San Pedro Station	68.10	B+	Los Angeles	Orange Line	Balboa Station	45.90	C			
Los Angeles	Blue Line	Washington Station	67.80	B+	South Pasadena	Gold Line	Mission Station	51.30	C-			
Los Angeles	Gold Line	Pico / Aliso Station	66.70	B+	Los Angeles	Orange Line	Woodley Station	50.40	C-			
Los Angeles	Gold Line	Little Tokyo / Arts District Station	72.00	B	West Athens	Green Line	Vermont Station	50.40	C-			
Los Angeles	Blue Line	Vernon Station	67.60	B	Pasadena	Gold Line	Sierra Madre Villa Station	45.73	C-			
Los Angeles	Gold Line	Indiana Station	66.50	B	Los Angeles	Orange Line	Pierce College Station	44.40	C-			
Los Angeles	Blue Line	Pico Station	66.00	B	Los Angeles	Green Line	Aviation Station (LAX Shuttle Connection)	42.90	C-			
Los Angeles	Red Line	Union Station	66.00	B	El Segundo	Green Line	Mariposa Station	42.70	C-			
Los Angeles	Gold Line	Union Station	66.00	B	Los Angeles	Green Line	Avalon Station	49.40	D+			
Los Angeles	Orange Line	North Hollywood Station	65.40	B	Lynwood	Green Line	Long Beach Station	48.53	D+			
Los Angeles	Red Line	North Hollywood Station	65.40	B	El Segundo	Green Line	Douglas Station	42.30	D+			
East Los Angeles	Gold Line	East LA Civic Center Station	64.20	B	Florence-Graham	Blue Line	Firestone Station	48.10	D			
Los Angeles	Red Line	Civic Center Station	63.90	B	Los Angeles	Orange Line	Valley College Station	47.40	D			
Long Beach	Blue Line	PCH Station	63.63	B	Willowbrook	Green Line	Imperial / Wilmington (Rosa Parks) Station	45.80	D			
Los Angeles	Red Line	Universal City Station	62.20	B	Willowbrook	Blue Line	Imperial / Wilmington (Rosa Parks) Station	45.80	D			
Lennox	Green Line	Hawthorne Station	62.20	B	Los Angeles	Orange Line	Tampa Station	42.40	D			
Long Beach	Blue Line	Pacific Station	58.63	B	Downey	Green Line	Lakewood Station	41.80	D			
Long Beach	Blue Line	5th Street Station	58.13	B	Pasadena	Gold Line	Allen Station	41.73	D			
Los Angeles	Orange Line	Canoga Station	57.70	B	Long Beach	Blue Line	Willow Station	40.63	D			
Long Beach	Blue Line	1st Street Station	57.13	B	Norwalk	Green Line	Norwalk Station	40.20	D			
Long Beach	Blue Line	Anaheim Station	60.63	B-	Compton	Blue Line	Artesia Station	37.80	D			
Los Angeles	Gold Line	Southwest Museum Station	60.20	B-	Compton	Blue Line	Del Amo Station	31.40	D			
Florence-Graham	Blue Line	Florence Station	60.10	B-	Long Beach	Blue Line	Wardlow Station	31.63	F			
Los Angeles	Gold Line	Heritage Square / Arroyo Station	59.20	B-								
Los Angeles	Orange Line	Reseda Station	58.80	B-								

San Francisco MUNI Average Score:

B

Best performing stations:

- Market St & Church St
- Market St & 7th St
- Market St & New Montgomery St

Worst performing stations:

- Third St & Marin
- 46th Ave and Vicente St

SAN FRANCISCO MUNICIPAL RAILWAY (MUNI) ALL STATIONS

					Residential		Mixed		Employment		
STATION	RAW SCORE	FINAL GRADE	STATION	RAW SCORE	FINAL GRADE	STATION	RAW SCORE	FINAL GRADE	STATION	RAW SCORE	FINAL GRADE
Market St & Church St	93.80	A+	Market St & Drumm St	83.80	A	The Embarcadero & Broadway	70.90	B	Third Street / Gilman / Paul	56.70	C+
Church St & 14th St	93.80	A+	Metro Embarcadero Station	83.80	A	Taraval St & 17th Ave	68.20	B	Judah St & 43rd Ave	56.60	C+
Church St & 16th St	93.30	A+	Market St & Battery St	83.30	A	Ocean Ave / CCSF Pedestrian Bridge	68.20	B	Ocean Ave & San Leandro Way	56.40	C+
Metro Church Station	93.20	A+	Market St & 1st St	83.30	A	San Jose Ave & Santa Rosa Ave	68.10	B	West Portal / Sloat / St. Francis Circle	56.40	C+
Church St & Market St	93.20	A+	Market St & Gough St	83.20	A	Taraval St & 19th Ave	67.20	B	Third Street / Hudson / Innes	54.20	C+
Market St & 7th St	93.10	A+	Church St & 24th St	82.60	A	Taraval St & 22nd Ave	67.20	B	19th Ave & Winston Dr	53.80	C+
Market St & 8th St	93.10	A+	Right Of Way / 22nd St	82.60	A	The Embarcadero & Folsom St	67.10	B	Right Of Way / Eucalyptus Dr	53.30	C+
Metro Civic Center Station	93.10	A+	Church St & 22nd St	82.60	A	San Jose Ave & Santa Ynez Ave	66.30	B	Right Of Way / Ocean Ave	51.90	C+
Market St & Hyde St	93.10	A+	California St & Van Ness Ave	82.60	A	15th Ave & Ulloa St	65.70	B	4th St & King St	57.20	C
Market St & New Montgomery St	93.10	A+	Judah St & 15th Ave	82.50	A	Carl St & Hillway Ave	65.70	B	King St & 4th St	56.60	C
Market St & Taylor St	92.60	A+	Church St & Clipper St	82.00	A	The Embarcadero & Green St	65.50	B	Taraval St & 32nd Ave	56.30	C
Market St & 6th St	92.60	A+	Carl St & Cole St	81.60	A	The Embarcadero & Bay St	65.40	B	Ocean Ave & Dorado Ter	55.80	C
Market St & Sanchez St	92.40	A+	Judah St & 16th Ave	81.50	A	Judah St & 28th Ave	65.20	B	Embarcadero & Sansome St	55.70	C
Market St & Larkin St	91.60	A+	Judah St & 19th Ave	81.50	A	Taraval St & 28th Ave	64.70	B	King St & 2nd St	55.60	C
Market St & 9th St	91.60	A+	Church St & 27th St	81.00	A	Third Street & Mission Rock St	64.70	B	Broad St & Capitol Ave	55.30	C
California St & Front St	90.80	A+	Market St & Laguna St	80.30	A	Mission Rock St	64.70	B	Orizaba Ave & Broad St	55.30	C
Church St & Duboce Ave	90.80	A+	Market St & Guerrero St	80.30	A	Taraval St & 23rd Ave	64.20	B	Judah St & 40th Ave	54.80	C
California St & Battery St	90.80	A+	Church St & 29th St	79.90	A	Taraval St & 24th Ave	64.20	B	Broad St & Orizaba Ave	54.80	C
California St & Kearny St	90.70	A+	Church St & Day St	79.90	A	Taraval St & 26th Ave	64.20	B	Taraval St & 40th Ave	54.20	C
California St & Montgomery St	90.70	A+	30th St & Dolores St	79.90	A	Beach St & Stockton St	63.70	B	Judah St & 46th Ave	54.10	C
California St & Sansome ST	90.70	A+	Market St & Buchanan St	79.80	A	15th Ave & Taraval St	63.70	B	Taraval St & 44th Ave	53.80	C
Duboce Ave & Church St	90.20	A+	San Jose Ave & Randall St	78.20	A	Ocean Ave & Miramar Ave	63.70	B	Ocean Ave & Aptos Ave	53.40	C
Market St & 3rd St	90.10	A+	Church St & 30th St	77.50	A	Third Street & Carroll Ave	63.30	B	Randolph St & Arch St	53.40	C
Market St & Kearny St	90.10	A+	Market St & Dolores St	77.40	A	The Embarcadero & Stockton St	62.30	B	Taraval St & 35th Ave	53.20	C
Metro Montgomery Station	90.10	A+	California St & Mason St	78.70	A-	Beach St & Mason St	62.20	B	Taraval St & Sunset Blvd	53.20	C
Duboce St / Noe St / Duboce Park	89.40	A+	California St & Powell St	78.60	A-	19th Ave & Junipero Serra Blvd	62.20	B	Ocean Ave & Jules Ave	52.80	C
Right Of Way / 18th St	88.90	A+	Don Chee Way/Steuart St	75.90	A-	Third Street / Revere / Shafter	62.00	B	Judah / La Playa / Ocean Beach	52.70	C
Church St & 18th St	88.90	A+	Judah St & 22nd Ave	75.50	A-	San Jose Ave & Lakeview Ave	61.90	B	19th Ave & Randolph St	52.40	C
California St & Jones St	90.60	A	19th Ave & Holloway Ave	75.20	A-	Jefferson St & Powell St	61.70	B	Ocean Ave & Fairfield Way	52.40	C
California St & Taylor St	90.10	A	San Jose Ave & Ocean Ave	72.30	A-	Third Street & Williams Ave	61.40	B	Ocean Ave & Victoria St	52.40	C
Sunset Tunnel East Portal	90.10	A	Judah St & 25th Ave	71.10	A-	Third Street / Oakdale / Palou	61.40	B	Randolph St & Bright St	52.30	C
Church St & 17th St	88.80	A	San Jose Ave / Glen Park Station	71.10	A-	Taraval St & 30th Ave	61.30	B	Third Street & Mariposa St	51.70	C
Market St & 2nd St	88.20	A	Irving St & Arguello Blvd	70.70	A-	West Portal Station	61.20	B	Junipero Serra Blvd & Ocean Ave	50.30	C
California St & Stockton St	87.70	A	Judah St & 23rd Ave	70.50	A-	Jefferson St & Taylor St	60.20	B	Third Street & 20th St	48.70	C
California St & Grant Ave	87.70	A	Irving St & 4th Ave	70.10	A-	Carl St & Stanyan St	57.20	B	Third Street & 23rd St	46.20	C
California St & Hyde St	87.60	A	Irving St & 2nd Ave	70.10	A-	The Embarcadero & Harrison St	64.70	B-	Judah St & 34th Ave	51.30	C-
California St & Larkin St	87.60	A	9th Ave & Irving St	69.10	A-	The Embarcadero & Brannan St	62.20	B-	Third Street & Le Conte Ave	51.20	C-
California St & Leavenworth St	87.60	A	Irving St & 9th Ave	69.10	A-	West Portal Ave & 14th Ave	60.20	B-	Ocean Ave & Cerritos Ave	50.40	C-
Market St & 4th St	87.10	A	Irving St & 7th Ave	69.10	A-	UCSF / Mission Bay	55.70	B-	Metro Forest Hill Station / Downtown	50.20	C-
Market St & Stockton St	87.10	A	The Embarcadero & Washington St	73.40	B+	The Embarcadero & Greenwich St	59.10	C+	Forest Hill Station	50.20	C-
Market St & Noe St	87.10	A	The Embarcadero / Ferry Building	72.90	B+	Third Street / Kirkwood / La Salle	58.40	C+	Bay Shore Blvd / Arleta / Blanken	49.80	C-
Right Of Way / 21st St	86.90	A	Ocean Ave & Lee St	69.60	B+	The Embarcadero & La Salle	58.20	C+	Judah St & Sunset Blvd	49.80	C-
Right Of Way / 20th St	86.00	A	Ulloa St & Forest Side Ave	69.20	B+	San Jose Ave & 57.90	57.90	C+	Third Street & Evans Ave	42.80	C-
Right Of Way / Liberty St	85.40	A	San Jose Ave & Geneva Ave	69.20	B+	Farallones St	57.20	C+	Bay Shore Blvd & Sunnysdale Ave	49.00	D+
Judah St & 9th Ave	85.40	A	San Jose Ave & Geneva Ave	69.20	B+	Judah St & 31st Ave	57.20	C+	46th Ave & Taraval St	48.80	D+
17th St & Noe St	85.00	A	San Jose Ave & Niagra Ave	69.20	B+	Broad St & Plymouth Ave	56.90	C+	46th Ave & Ulloa St	48.80	D+
Metro Castro Station	84.80	A	Balboa Park BART / Mezzanine Level	69.20	B+	Taraval St & 42nd Ave	56.80	C+	Taraval St & 46th Ave	48.80	D+
17th St & Castro St	84.80	A	Balboa Park BART / Mezzanine Level	69.20	B+				Wawona / 46th Ave / SF Zoo	48.30	D
California St & Polk St	84.60	A	San Jose Ave & Mt Vernon Ave	68.80	B+				Ocean Ave & Westgate Dr	47.40	D
Judah St & 12th Ave	84.50	A	Jones St & Beach St	66.20	B+				46th Ave & Vicente St	46.30	D
Judah St & Funston Ave	84.50	A	Market St & South Van Ness Ave	72.80	B				Third Street & Marin St	39.30	D
California St & Drumm St	84.40	A	Market St & Van Ness Ave	72.80	B						
Market St & 5th St	84.10	A	Metro Van Ness Station	72.80	B						
Metro Powell Station	84.10	A									
California St & Davis St	83.80	A									
Market St & Main St	83.80	A									

**Sacramento
RT Average
Score:**



Best performing station:
7th St and K St

Worst performing stations:
Longview Dr and I-80
Fruitridge Rd and 24th St
Roseville Road and I-80

SACRAMENTO REGIONAL TRANSIT (RT) ALL STATIONS

					Residential	Mixed	Employment		
CITY	LINE	STATION	RAW SCORE	FINAL GRADE	CITY	LINE	STATION	RAW SCORE	FINAL GRADE
Sacramento	Meadowview (Blue) Folsom / Sunrise (Gold)	7th St and K St	75.43	A-	Sacramento	Meadowview (Blue) Folsom / Sunrise (Gold)	R St and 13th St	62.43	B-
Sacramento	Meadowview (Blue) Folsom / Sunrise (Gold)	7th St and Capitol Mall	75.43	A-	Sacramento	Meadowview - Watt / I-80(Blue)	12th St and E St	61.53	B-
Sacramento	Meadowview (Blue) Sunrise (Gold)	K St and 8th St	75.43	A-	Sacramento	Meadowview (Blue)	Broadway and 19th St	56.43	B-
Sacramento	Meadowview (Blue) Sunrise (Gold)	8th St and Capitol Mall	73.43	B+	Sacramento	Meadowview (Blue)	12th St and D St	55.03	C
Sacramento	Meadowview (Blue) Folsom / Sunrise (Gold)	O St and 11th St	72.43	B	Sacramento	Meadowview (Blue)	Arden Way and Royal Oaks Dr	50.33	C
Sacramento	Meadowview (Blue) Sunrise (Gold)	K St and 11th St	71.93	B	Sacramento	Meadowview (Blue)	Arden Way and Del Paso Blvd	48.43	C
Sacramento	Meadowview (Blue) Folsom / Sunrise (Gold)	O St and 7th St	71.43	B	Sacramento	Meadowview (Blue)	Dixie Ave and Selma St	47.33	C
Sacramento	Meadowview (Blue)	12th St and I St	69.43	B	Sacramento	Meadowview (Blue)	Freeport Blvd and 21st St	45.03	C-
Sacramento	Meadowview (Blue)	12th St and H St	66.43	B	Sacramento	Meadowview (Blue)	Del Paso Blvd and Globe Ave	42.93	D+
Sacramento	Meadowview (Blue) Folsom / Sunrise (Gold)	R St and 16th St	64.93	B	Sacramento	Meadowview (Blue)	Florin Rd and Indian Ln	45.63	D
Sacramento	Folsom - Amtrak(Gold), Meadowview - Watt / I-80(Blue)	R St and 15th St	64.93	B	Sacramento	Meadowview (Blue)	24th St and Sutterville Rd	44.63	D
					Sacramento	Meadowview (Blue)	Auburn Blvd and Marconi Ave	41.63	D
					Sacramento	Meadowview (Blue)	47th Ave and 27th St	40.33	D
					Sacramento	Meadowview (Blue)	Meadowview Rd and Tisdale Way	39.83	D
					Sacramento	Meadowview (Blue)	Employee Platform and Light Rail	37.93	D
					Sacramento	Meadowview (Blue)	Fruitridge Rd and 24th St	37.33	D
					Sacramento	Meadowview (Blue)	Roseville Rd and I-80	36.53	D
					North Highlands	Meadowview (Blue)	Watt Ave and I-80	29.40	D-
					North Highlands	Meadowview (Blue)	Longview Dr and I-80	29.40	D-

Santa Clara (VTA): C-

Best performing station:
Japantown/Ayer Station

Worst performing station:
Middlefield Station

SANTA CLARA VALLEY TRANSPORTATION AUTHORITY (VTA) ALL STATIONS

					Residential	Mixed	Employment		
CITY	LINE	STATION	RAW SCORE	FINAL GRADE	CITY	LINE	STATION	RAW SCORE	FINAL GRADE
San Jose	Mountain View	Japantown / Ayer Station	66.40	B+	San Jose	Santa Teresa	Tamien Station	46.00	D
San Jose	Mountain View	San Antonio Station	65.90	B	San Jose	Santa Teresa	Cottle Station	45.10	D
San Jose	Mountain View	Civic Center Station	63.90	B	San Jose	Santa Teresa	Ohlone-Chynoweth Station	43.70	D
San Jose	Mountain View / Winchester	Diridon Station	59.20	B	San Jose	Santa Teresa	Capitol Station	43.60	D
San Jose	Mountain View	Race Station	57.50	B	San Jose	Alum Rock	Cropley Station	43.60	D
San Jose	Mountain View	Santa Clara Station (1)	59.90	B-	Campbell	Mountain View	Winchester Station	42.73	D
San Jose	Mountain View	Santa Clara Station (0)	59.90	B-	Sunnyvale	Mountain View	Moffett Park Station	41.60	D
San Jose	Mountain View	Convention Center Station	58.00	C+	Milpitas	Alum Rock	Great Mall Station	40.60	D
San Jose	Mountain View	St. James Station (1)	57.90	C+	San Jose	Almaden	Almaden Station	40.40	D
Sunnyvale	Mountain View / Winchester	Fair Oaks Station	57.20	C+	San Jose	Alum Rock	Berryessa Station	40.10	D
San Jose	Mountain View	San Antonio Station (0)	56.40	C	Mountain View	Mountain View	Evelyn Station	39.73	D
Sunnyvale	Mountain View	Vienna Station	55.80	C	San Jose	Alum Rock	Penitencia Creek Station	39.60	D
San Jose	Mountain View	San Fernando Station	55.00	C	Santa Clara	Mountain View	Lick Mill Station	39.40	D
San Jose	Mountain View	St. James Station (0)	53.40	C	Mountain View	Mountain View	Whisman Station	38.73	D
San Jose	Santa Teresa	Children's Discovery Museum	52.60	C	San Jose	Santa Teresa	Snell Station	38.70	D
San Jose	Mountain View	Fruitdale Station	51.40	C	San Jose	Mountain View	Metro / Airport Station	38.70	D
Mountain View	Mountain View	Mountain View Station	50.33	C	San Jose	Santa Teresa	Branham Station	38.60	D
San Jose	Santa Teresa	Curtner Station	49.70	C	Sunnyvale	Mountain View	Borregas Station	38.40	D
San Jose	Santa Teresa	Virginia Station	49.10	C	San Jose	Santa Teresa	Blossom Hill Station	37.50	D
San Jose	Mountain View	Bascom Station	49.10	C	San Jose	Mountain View	River Oaks Station	37.40	D
Sunnyvale	Mountain View	Crossman Station	47.40	C	San Jose	Mountain View	Gish Station	36.60	D
Campbell	Mountain View	Campbell Station	47.23	C	San Jose	Alum Rock	Hostetter Station	36.60	D
San Jose	Alum Rock	Baypointe Station	46.20	C	San Jose	Mountain View	Karina Court Station	36.40	D
Milpitas	Alum Rock	Montague Station	45.90	C	San Jose	Mountain View	Champion Station	36.40	D
San Jose	Almaden	Oakridge Station	45.80	C-	San Jose	Mountain View	Bonaventura Station	36.40	D
Sunnyvale	Mountain View	Reamwood Station	45.40	C-	Santa Clara	Mountain View	Great America Station	35.90	D
Campbell	Winchester	Hamilton Station	44.73	C-	San Jose	Mountain View	Orchard Station	35.40	D
San Jose	Alum Rock	McKee Station	49.40	D+	San Jose	Santa Teresa	Santa Teresa Station	34.90	D
San Jose	Alum Rock	Alum Rock Station	48.50	D+	Santa Clara	Mountain View	Old Ironsides Station	34.00	D
Sunnyvale	Mountain View	Lockheed Martin Station	39.90	D+	San Jose	Alum Rock	Cisco Station	32.40	D
San Jose	Mountain View	Tasman Station	39.40	D+	Mountain View	Mountain View	Bayshore NASA Station	30.23	D
San Jose	Mountain View	Component Station	39.40	D+	Milpitas	Alum Rock	I-880 Station	29.90	D
					Mountain View	Mountain View	Middlefield Station	26.23	F

San Diego MTS Average Score:



Best performing stations:
 12th & Imperial Transit Center
 Civic Center Station

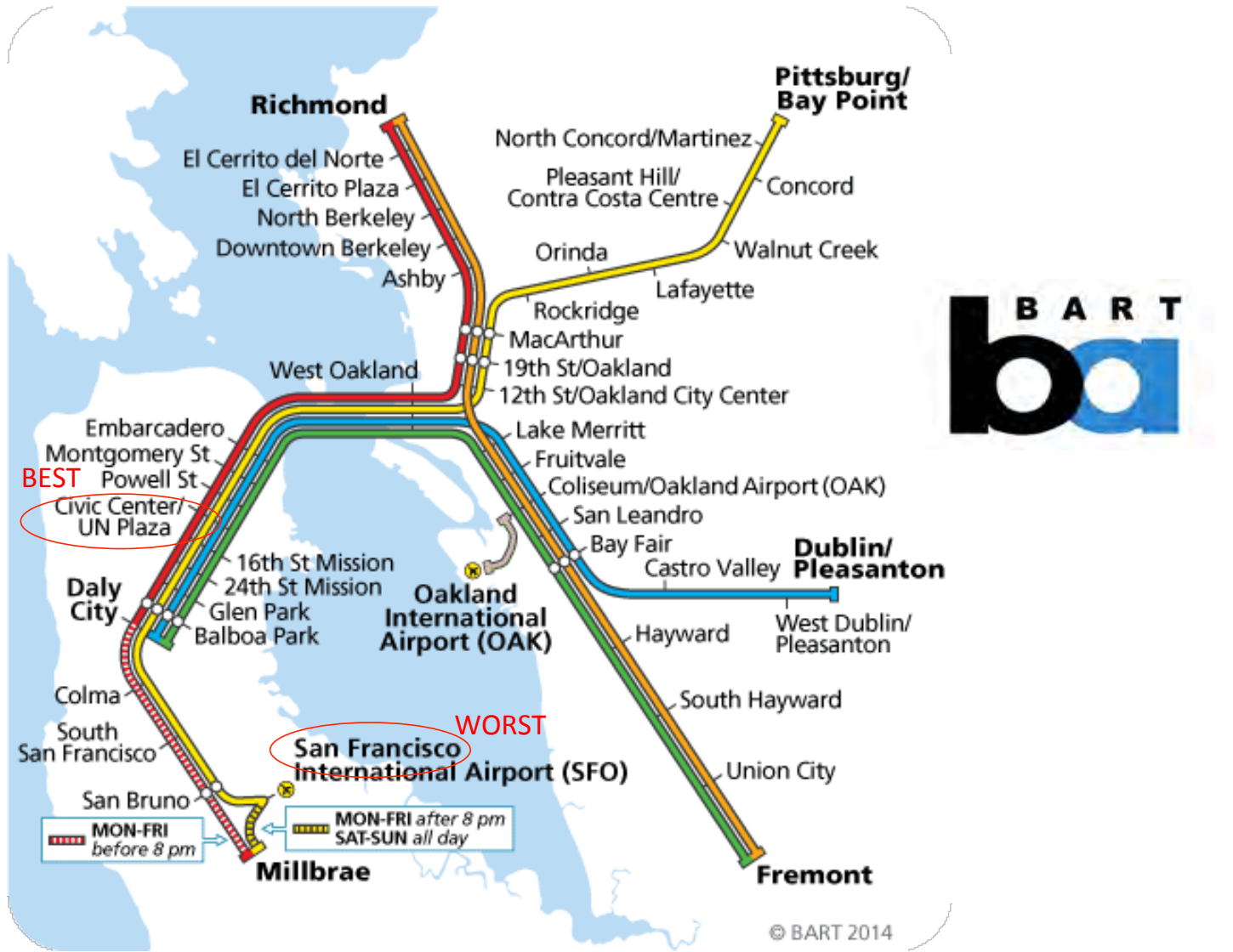
Worst performing stations:
 Massachusetts Ave
 Alvarado
 Spring Street
 Gillespie Field Station
 Santee Town Center Station
 El Cajon Transit Center
 Fenton Parkway Station

SAN DIEGO METROPOLITAN TRANSIT STATION (MTS) ALL STATIONS

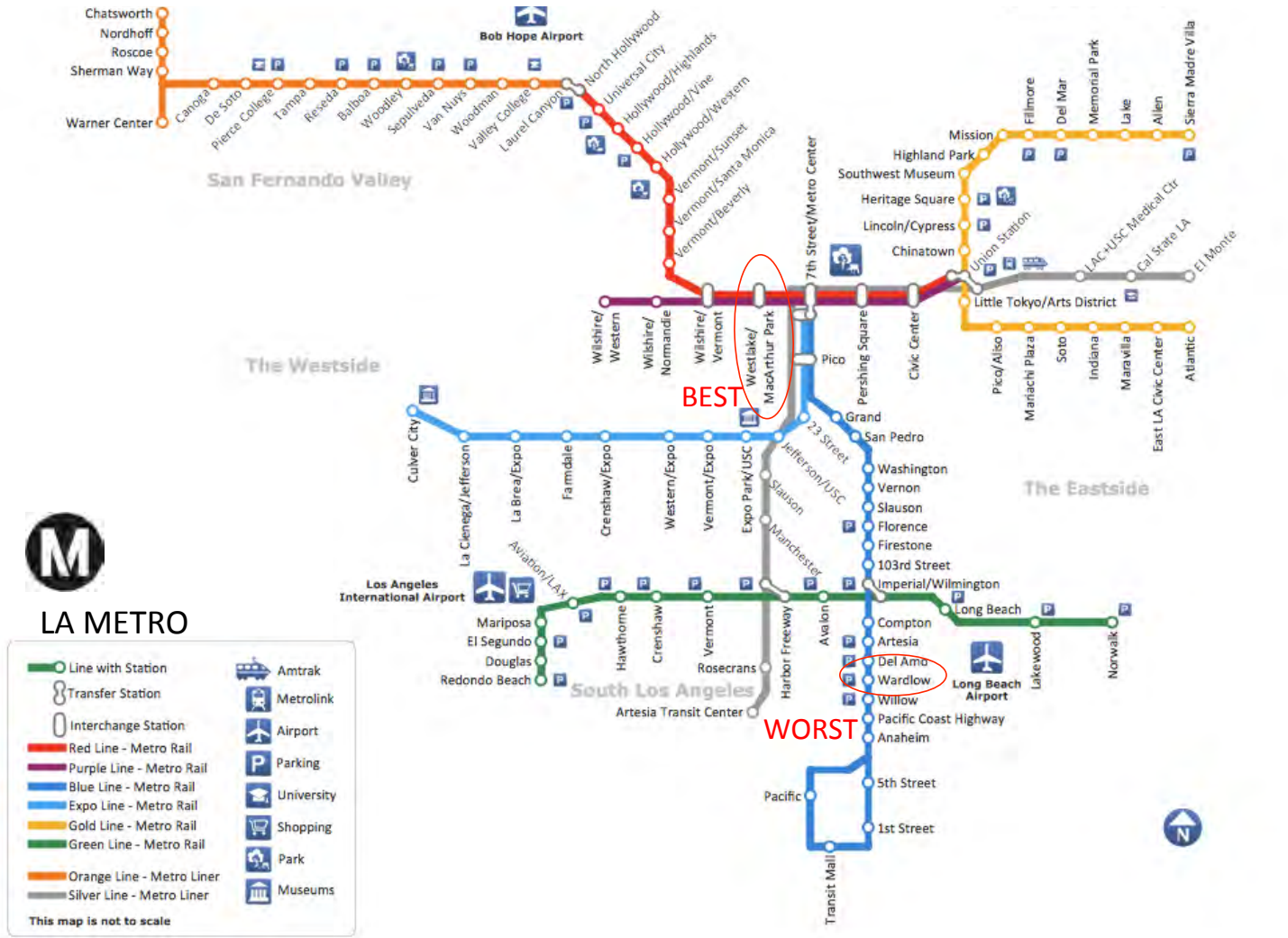
SAN DIEGO METROPOLITAN TRANSIT STATION (MTS) ALL STATIONS					Residential	Mixed	Employment		
CITY	LINE	STATION	RAW SCORE	FINAL GRADE	CITY	LINE	STATION	RAW SCORE	FINAL GRADE
San Diego	Orange/Blue Line	12th & Imperial Transit Center	63.90	B	Chula Vista	Blue Line	Palomar Street Station	41.60	D
San Diego	Orange/Blue Line	Civic Center Station	63.90	B	La Mesa	Orange Line	La Mesa Blvd Station	40.93	D
San Diego	Orange/Blue Line	City College Station	60.60	B-	San Diego	Green Line	Mission Valley Center Station	40.60	D
San Diego	Orange/Blue Line	Fifth Avenue Station	58.60	C+	San Diego	Blue Line	San Ysidro / Intl Border	40.20	D
San Diego	Orange Line	Convention Center Station	58.00	C+	San Diego	Green Line	Rio Vista Station	39.60	D
San Diego	Blue Line	Barrio Logan Station	53.50	C+	La Mesa	Orange Line, Green Line	Grossmont Transit Center	39.03	D
San Diego	Blue Line	Harborside Station	53.10	C+	Lemon Grove	Orange Line	Lemon Grove Depot	38.93	D
Chula Vista	Blue Line	H Street Station	53.80	C	San Diego	Coronado Ferry	Broadway Pier	38.20	D
San Diego	Orange/Blue Line	Park & Market Station	53.60	C	La Mesa	Green Line	70th St Station	35.63	D
Chula Vista	Blue Line	Bayfront/E Street Station	52.80	C	San Diego	Blue Line	Washington St Station	34.20	D
San Diego	Orange Line	25th / Commercial St Station	52.30	C	La Mesa	Green Line, Orange Line	Amaya Drive Station	34.03	D
San Diego	Orange Line	Euclid Trolley Station	51.90	C	El Cajon	Green Line, Orange Line	Arnele Avenue Station	34.03	D
San Diego	Orange/Blue Line	America Plaza Station	50.70	C	San Diego	Blue Line	Iris Avenue Station	33.00	D
San Diego	Orange Line	Gaslamp Quarter Station	49.10	C	San Diego	Orange Line	Encanto / 62nd St Station	32.50	D
San Diego	Orange Line	Seaport Village Station	46.80	C	San Diego	Green Line	Grantville Station	29.80	D
San Diego	Green Line	SDSU Transit Center	51.30	C-	Coronado	Coronado Ferry	Coronado Ferry Landing	32.60	D-
San Diego	Orange Line	47th St Station	49.90	C-	San Diego	Blue Line	Middletown Station	32.20	D-
San Diego	Coronado Ferry	5th Av Pier	46.60	C-	San Diego	Green Line	Mission San Diego Station	30.10	D-
San Diego	Special Event Red Line, Blue Line	Santa Fe Depot	46.20	C-	San Diego	Green Line	Hazard Center Station	29.70	D-
San Diego	Blue Line	County Center / Little Italy Station	45.20	C-	San Diego	Green Line	Qualcomm Stadium Station	29.70	D-
National City	Blue Line	8th Street Station	45.13	C-	San Diego	Blue Line	Palm Avenue Station	31.50	F
San Diego	Special Event Red Line, Blue Line	Fashion Valley Transit Center	44.10	D+	El Cajon	Orange Line, Green Line	El Cajon Transit Center	30.03	F
San Diego	Green Line	Morena / Linda Vista Station	43.60	D+	San Diego	Green Line	Fenton Parkway Station	27.80	F
San Diego	Blue Line	Pacific Fleet Station	43.10	D+	La Mesa	Orange Line	Spring Street Station	27.33	F
National City	Blue Line	24th Street Station	42.93	D+	San Diego	Green Line	Alvarado Station	25.00	F
San Diego	Blue Line	Old Town Transit Center	39.70	D+	Santee	Green Line	Santee Town Center Station	23.87	F
San Diego	Green Line, Special Event Red Line	Old Town Transit Center	39.70	D+	Lemon Grove	Orange Line	Massachusetts Ave Station	23.83	F
San Diego	Blue Line	Beyer Blvd Station	44.50	D	El Cajon	Green Line	Gillespie Field Station	23.53	F
San Diego	Orange Line	32nd St / Commercial Station	42.40	D					

APPENDIX B:
MAPS OF BEST AND
WORST PROFILED
STATIONS

San Francisco Bay Area Rapid Transit (BART)



LA Metro



Sacramento Regional Transit

SACRAMENTO Regional Transit Light Rail System Map



San Diego MTS



San Francisco MUNI



Santa Clara VTA Transit

VTA LIGHT RAIL




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

ENDNOTES

- 1 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).
- 2 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).
- 3 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).
- 4 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).
- 5 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.
- 6 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>
- 7 "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).
- 8 "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).
- 9 Marilyn A. Brown, Frank Southworth, and Andrea Sarzynski, *Shrinking the Carbon Footprint of Metropolitan America*, Brookings Institute, May 2008, p. 3.
- 10 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).
- 11 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).
- 12 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).
- 13 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).
- 14 "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).
- 15 For example, the Orinda BART station area scored poorly, with a corresponding lack of appropriate local land use policies.
- 16 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).



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