

LINK21

CONNECT NORTHERN CALIFORNIA

MARKET ANALYSIS REPORT

APPENDIX E: MOSAIC MARKET SEGMENTATION

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MOSAIC MARKET SEGMENTATION

The market segmentation exercise aims to classify the broad, diverse Northern California travel market into relatively homogenous groups. Mosaic USA® customer segmentation data from Experian¹ were used to inform the development of a customized market segmentation scheme for the Link21 Program (Link21).

Mosaic USA® characterizes the United States population into 19 overarching groups and 71 unique types, summarized in **Figure 1** and **Figure 2**, respectively. These groups and types are created using cluster analyses based on a large number of demographic, lifestyle, economic, and financial variables.

Figure 1. Overarching Groups

Group/Type	Group/Type Name	One-Line Description
A	Power Elite	The wealthiest households in the US, living in the most exclusive neighborhoods, and enjoying all that life has to offer
B	Flourishing Families	Affluent, middle-aged families and couples earning prosperous incomes and living very comfortable, active lifestyles
C	Booming with Confidence	Prosperous, established couples in their peak earning years living in suburban homes
D	Suburban Style	Middle-aged, ethnically-mixed suburban families and couples earning upscale incomes
E	Thriving Boomers	Upper-middle-class baby boomer-age couples living comfortable lifestyles settled in suburban homes
F	Promising Families	Young couples with children in starter homes, living child-centered lifestyles
G	Young City Solos	Younger and middle-aged singles living active and energetic lifestyles in metropolitan areas
H	Bourgeois Melting Pot	Middle-aged, established couples living in suburban homes
I	Family Union	Middle income, middle-aged families living in homes supported by solid blue-collar occupations
J	Autumn Years	Established and mature couples living gratified lifestyles in older homes
K	Significant Singles	Diversely aged singles earning mid-scale incomes supporting active city styles of living
L	Blue Sky Boomers	Middle-class baby boomer-aged households living in small towns
M	Families in Motion	Working-class families with young children, earning moderate incomes in smaller residential communities
N	Pastoral Pride	Eclectic mix of lower middle-class consumers who have settled in country and small town areas
O	Singles and Starters	Young singles starting out and some starter families living a city lifestyle
P	Cultural Connections	Diverse, mid- and low-income families in urban apartments and residences
Q	Golden Year Guardians	Retirees living in old homes, settled residences and communities
R	Aspirational Fusion	Lower-income singles and single parents living in urban locations and striving to make a better life
S	Thrifty Habits	Cost-conscious adults living alone in urban areas

Source: Experian

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¹ More information about the Mosaic USA data product by Experian can be found here: <https://www.experian.com/content/dam/marketing/na/assets/ems/marketing-services/documents/brochures/mosaic-brochure.pdf>.



Figure 2. Unique Types

A01	American Royalty	K37	Wired for Success
A02	Platinum Prosperity	K38	Modern Blend
A03	Kids and Cabernet	K39	Metro Fusion
A04	Picture Perfect Families	K40	Bohemian Groove
A05	Couples with Clout	L41	Booming and Consuming
A06	Jet Set Urbanites	L42	Rooted Flower Power
B07	Across the Ages	L43	Homemade Happiness
B08	Babies and Bliss	M44	Creative Comfort
B09	Family Fun-tastic	M45	Growing and Expanding
B10	Cosmopolitan Achievers	N46	True Grit Americans
C11	Sophisticated City Dwellers	N47	Countrified Pragmatics
C12	Golf Carts and Gourmets	N48	Rural Southern Bliss
C13	Philanthropic Sophisticates	N49	Touch of Tradition
C14	Boomers and Boomerangs	O50	Full Steam Ahead
D15	Sport Utility Families	O51	Digitally Savvy
D16	Settled in Suburbia	O52	Urban Ambition
D17	Cul de Sac Diversity	O53	Colleges and Cafes
D18	Suburban Nightlife	O54	Influenced by Influencers
E19	Consummate Consumers	O55	Family Troopers
E20	No Place Like Home	P56	Mid-Scale Medley
E21	Unspoiled Splendor	P57	Modest Metro Means
F22	Fast Track Couples	P58	Heritage Heights
F23	Families Matter Most	P59	Expanding Horizons
G24	Ambitious Singles	P60	Striving Forward
G25	Urban Edge	P61	Simple Beginnings
H26	Progressive Assortment	Q62	Enjoying Retirement
H27	Life of Leisure	Q63	Footloose and Family Free
H28	Everyday Moderates	Q64	Established in Society
H29	Destination Recreation	Q65	Mature and Wise
I30	Potlucks and the Great Outdoors	R66	Ambitious Dreamers
I31	Hard Working Values	R67	Passionate Parents
I32	Steadfast Conventionalists	S68	Small Town Sophisticates
I33	Balance and Harmony	S69	Urban Legacies
J34	Suburban Sophisticates	S70	Thrifty Singles
J35	Rural Escape	S71	Modest Retirees
J36	Settled and Sensible		

Source: Experian

As Mosaic is primarily used for consumer marketing purposes, its groups and types are oriented around purchase potential with key variables being age, discretionary income, interests, activities, and media consumption. While these key variables are related to travel and transportation, the groups and types are not optimized for differentiating between different travel behaviors. As such, a customized segmentation based on key variables, such as public transit and car usage for commuting, is needed for the Link21 market analysis.

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That said, there are certain limitations to using Mosaic data for segmentation - primarily, structural issues regarding access to and quality of transit may be the true underlying cause propensity to use transit, rather than demographic characteristics. However, we associate demographics with propensity to use transit because these structural issues and under-investments tend to occur along demographic lines.

The remainder of this appendix describes the methodology used to develop 12 custom market segments and to estimate changes in the segments as the Northern California population continues to grow and change through 2040. It then presents pen portraits, or brief descriptions, for each of the 12 market segments.

Development of Market Segments

The following principles informed the development of market segments for Link21:

- The size of the segments should neither be too small nor too large relative to each other; ideally all segments should be similarly sized.
- The demographic profiles of the segments should be relatively homogeneous to aid in their visualization and in the creation of pen portraits.
- The segments should be created consistent with the principles of the Link21 equity framework.

The process of developing the market segments followed five steps:

1. Define the key variables that will define the segmentation, including an order of priority.
2. Combine the Mosaic USA® types based on the primary variable (transit use).
3. Subdivide the resulting groups based on each additional key variable in turn.
4. Review the resulting segment solution and repeat steps 2 and 3 as necessary.
5. Select the preferred segment solution and develop segment profiles and pen portraits.

The data source used to create the segmentation is Experian's Grand Index, which includes more than 700 variables spread across the topics identified previously. Transportation variables are limited to work/commute travel, and no breakdown of public transit modes is available.

Table 1 summarizes the 13 key variables used to define the market segmentation. In selecting these key variables, priority was placed on data associated with current and potential future travel behavior, including income, occupation, ethnicity, urbanicity, and family composition.

**Table 1. Key Variables Summary**

VARIABLE	RATIONALE FOR INCLUSION
Travel to work: Public transportation	This is the primary variable of interest.
Travel to work: Car alone	Relevant in terms of the potential for mode shift and the potential use of park-and-ride facilities.
Travel to work: Bicycle	Relevant in terms of the need to provide for cyclists either at stations or on board.
Vehicle classification – no vehicle in household	An alternative indicator to Travel to work: Car alone that also takes into account the availability of a car for leisure travel.
Household occupation	People from different types of occupation (e.g., white vs. blue collar) are more or less likely to travel by rail.
Income	An alternative indicator to occupation that is more directly related to equity.
Household size	The number of people in the household can affect the availability and attractiveness of auto, which tends to be more attractive when people are traveling in groups, such as a family group (or couple).
Children in the household	Presence of children in the household is an alternative to household size, which also takes into account the point that it can be easier to travel by auto with young children.
Age	There is a relationship between age and transportation use with public transportation use generally higher among younger age groups. However, age is also closely related to other factors, such as the presence of young children in the household, working status, and income.
Retired	The proportion of the population in a segment that is retired will have a major impact on transportation.
Urbanicity	There is a strong relationship between urbanicity and use of public transportation, though to a substantial degree this is connected to the availability of transport options. In metropolitan city areas, transit is relatively attractive and auto unattractive while in rural areas the opposite is the case.
Travel – domestic travel for vacation	This is potentially an indicator of use of long-distance rail, though the reliability of its use in this way is uncertain.
How green we are	Attitudes towards the environment may have an impact on the propensity to use transit rather than auto, though the evidence for this tends to be quite weak.

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As steps 2 through 4 (from page 3) can result in multiple segmentation solutions, Steer developed a customized segmentation evaluation tool, customized for Link21, to help select the optimal combination of the various groups and types. The tool assesses how homogenous the Mosaic USA® types are within each of the proposed market segments, accounting for the relative population size of each type and the relative importance of each variable. The output is a series of market segments, which are then used to profile the Northern California travel market in terms of propensity to use rail, as described in the following section.

Application of Market Segments

The resulting optimal market segmentation from the segmentation tool contains 12 segments that are broken down by share of the Northern California Megaregion’s (Megaregion) population in **Table 2**.

Table 2. Identified Market Segments and Megaregion Population Share

NAME	SHARE OF MEGAREGION POPULATION	RAIL/TRANSIT PROPENSITY INDEX (100 = NATIONAL AVERAGE)
Multimodal Urbanites	10%	469
Lower Income Transit Riders	6%	386
Middle Income Metro Families	12%	211
Young Starters	7%	162
Higher Income Empty Nesters	6%	132
Middle Aged and Middle Income	7%	111
Comfortable Retirement	10%	119
Nonurban Midlife Singletons	8%	87
Blue Collar Suburban Families	7%	61
Young Suburban Families	8%	42
Lower Income Suburban Families	16%	36
Lower Income Rural Retirees	4%	26

The primary application of this segmentation is to profile the Northern California travel market in terms of propensity to use rail. This informs the rail ridership potential by cluster and along various corridors.

Each of the 12 segments has a different propensity to travel by rail/transit, as measured by a normalized index (see Table 2 for the index by market segment). The relative rail

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potential originating from each hexcell is calculated by weighting a given hexcell's population by the rail/transit propensity index. This index is determined according to the market segment(s) of the hexcell in question.

Table 3 shows the rail/transit propensity index by cluster, which was obtained by calculating a population-weighted average of all hexcells belonging to a given cluster.

Table 3. Rail/Transit Propensities by Cluster

CLUSTER NAME	AVERAGE POPULATION-WEIGHTED RAIL/TRANSIT PROPENSITY
Gilroy	1.34
San Martin	0.83
Morgan Hill	0.92
Blossom Hill	1.67
Capitol	1.86
Tamien	1.59
San Jose Diridon	1.70
Merced	0.69
College Park	1.76
Santa Clara	1.80
Berryessa	2.10
Lawrence	2.10
Sunnyvale	2.31
Mountain View	2.96
San Antonio (Caltrain)	2.30
Santa Clara-Great America	2.47
Milpitas	2.07
California Avenue	1.61
Stanford Stadium	1.73
Palo Alto	2.36
Menlo Park	2.12
Atherton	1.76

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CLUSTER NAME	AVERAGE POPULATION-WEIGHTED RAIL/TRANSIT PROPENSITY
Redwood City	1.71
San Carlos	1.49
Warm Springs-South Fremont	1.73
Belmont	1.91
Hillsdale	1.82
Turlock-Denair	0.64
Hayward Park	1.63
Fremont-Centerville	1.96
Fremont	2.03
San Mateo	2.61
Burlingame	2.96
Broadway	1.94
Union City	1.94
Millbrae	1.89
SFO International Airport	2.75
San Bruno (Caltrain)	1.56
South Hayward	1.84
San Bruno (BART)	2.18
South San Francisco (Caltrain)	2.28
Pleasanton	1.22
South San Francisco (BART)	2.02
Hayward (Amtrak)	1.83
Hayward (BART)	2.05
Colma	2.10
Modesto (Existing)	0.62
Castro Valley	1.65
Livermore	1.08

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CLUSTER NAME	AVERAGE POPULATION-WEIGHTED RAIL/TRANSIT PROPENSITY
Bay Fair	1.79
Daly City	2.03
West Dublin Pleasanton	1.15
Vasco Road	0.85
Bayshore	2.26
Dublin-Pleasanton	1.24
Tracy (ACE)	0.90
Balboa Park	2.00
San Leandro	2.03
Glen Park	2.55
West Portal	2.29
Forest Hill	3.50
24th Street & Mission	4.39
Oakland Coliseum	2.34
Castro	4.63
22nd St	3.72
Church	4.64
16th Street & Mission	4.69
Van Ness	4.69
Civic Center-UN Plaza	4.69
San Francisco (Caltrain)	4.69
Fruitvale	2.66
Powell Street	4.69
Montgomery Street	4.53
Embarcadero	4.69
Oakland Jack London	3.20
Lake Merritt	3.23

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CLUSTER NAME	AVERAGE POPULATION-WEIGHTED RAIL/TRANSIT PROPENSITY
West Oakland	3.00
12th Street-Oakland City Center	3.73
19th Street-Oakland	3.32
Lathrop-Manteca	0.59
MacArthur	4.07
Emeryville	4.37
Rockridge	2.84
Ashby	3.28
West Berkeley	3.46
North Berkeley	3.64
Downtown Berkeley	3.13
Orinda	1.07
Lafayette	1.17
El Cerrito Plaza	2.03
Walnut Creek	1.21
El Cerrito Del Norte	1.82
Pleasant Hill-Contra Costa	1.46
Richmond	2.25
Larkspur	1.69
Stockton (Amtrak)	0.82
Stockton (ACE)	0.94
Downtown San Rafael	2.18
Concord	1.24
Marin Civic Center	1.36
North Concord-Martinez	0.77
Martinez	0.98
Pittsburg-Bay Point	1.31

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CLUSTER NAME	AVERAGE POPULATION-WEIGHTED RAIL/TRANSIT PROPENSITY
Antioch	0.88
Novato Hamilton	0.78
Novato Downtown	1.10
Novato San Marin	0.88
Lodi (Existing)	0.82
Downtown Petaluma	1.02
Suisun-Fairfield	1.18
Fairfield-Vacaville	0.58
Cotati	0.70
Rohnert Park	0.70
Santa Rosa Downtown	1.25
Santa Rosa North	0.98
Sonoma County Airport	0.72
Davis	1.08
Sacramento	0.45
Roseville	0.61
Rocklin	0.62
Auburn	0.45

Future Year Growth

Growth is applied to the various market segments to reflect future year conditions that are driven by various trends. This exercise aims to ensure that changes to population profiles, specifically those that can affect rail and transit use, are taken into account. For example, nationally, the proportion of the population aged 65+ is forecast to increase from 15% to 22% with this potentially having a knock-on effect for rail use.

The Link21 population profile approach allocated population increases to the market segments that were expected to grow whereas segments that were not expected to grow remained at their current size. Given that significant population growth is forecast, this process will result in a change in the mix of segments. Additionally, given the aging national and megaregional population, this means that older Link21 groups will represent a higher proportion of the total in the future.



The steps taken to estimate future growth are as follows:

1. Identify links between variables in Metropolitan Planning Organization (MPO) forecasts and Link21 market segmentation.
2. Calculate county-level changes by market segment.
3. Distribute changes to each hexcell by market segment.

Note that the process does not involve more fundamental changes, such as some neighborhoods (or hexcells) changing Mosaic USA® group or type or the appearance of new segments. Rather, it reflects an underlying process of people aging and mostly being replaced by people like themselves through a mixture of natural population growth and net inward migration.

It is also worth noting that the profiles of each segment are expected to change over time and that these changes will vary between segments. This process is captured within the Uncertainty Analysis, described further in Chapter 10 and Appendix J.

Table 4 details the changing megaregional population share of each market segment.

**Table 4. Changing Megaregional Population Share for Select Market Segments**

NAME	SHARE OF MEGAREGION POPULATION (2040)	CHANGE IN SHARE FROM 2015
Multimodal Urbanites	10%	---
Lower Income Transit Riders	12%	+6%
Middle Income Metro Families	6%	-6%
Young Starters	7%	---
Higher Income Empty Nesters	7%	+1%
Middle Aged and Middle Income	6%	-1%
Comfortable Retirement	8%	-2%
Nonurban Midlife Singletons	10%	+2%
Blue Collar Suburban Families	7%	---
Young Suburban Families	8%	---
Lower Income Suburban Families	16%	---
Lower Income Rural Retirees	4%	---

Pen Portraits

The following pages present pen portraits for each of the 12 market segments, covering several key characteristics described in **Table 5**.


Table 5. Key Characteristics used in Pen Portraits

VARIABLE	DESCRIPTION
Demographics and Travel Behavior	
Transit use	The propensity to commute by public transportation and the propensity for households in the segment to have no vehicle based on an index where 100 is the national average (and therefore an index of 200 would be twice the average and 50 would be half the national average).
Race/ethnicity	The racial/ethnic mix of the segment based on the race/ethnicity of the head of the household.
Method of travel to work	Mode share for travel to work for the segment and the national average. The data are from the U.S. Census Bureau.
Percent of population where household income <\$35,000	The percentage of the segment living in households where the income is less than \$35,000, which is the Metropolitan Transportation Commission (MTC) definition of a low-income household. Also, it shows the average for comparative purposes, which is based on the mean of all segments in the Megaregion weighted by their relative population.
Group income distribution	The proportion of the segment population falling into different income bands. Also, it shows the average distribution for the Megaregion.
Lifestyle Indicators	
Travel	Relative frequency of traveling abroad for vacations: jet setter, occasional travel, and vacation at home.
Technology	Relative capability to use new technologies: technophile, competent with technology, and technophobe.
Environmentalism	Experian categorization of how aware people are about green issues: Behavioral Greens, Think Greens, Potential Greens, and True Browns.
Social media	Relative use of social media, such as Facebook, Twitter, YouTube, and LinkedIn: regular multiplatform user, below average user, and avoids social media.
Sports and interests	Describes participation in sports or other recreational activities.

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