MST
MONTEREY-SALINAS TRANSIT

"Advocating and delivering quality public transportation as a leader within our community and industry."

Comprehensive Operational Analysis

Choices Report

May 27, 2020

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1 Introduction

MST provides local and regional public transit in Monterey County.

MST Services

Monterey-Salinas Transit District (MST) is the public transit agency for Monterey County. MST's services include:

- **Fixed-route transit.** This includes all MST's numbered bus lines (1 to 95), as well as the JAZZ A and B. MST divides its fixed route services into:
  - **Local lines** provide service in the greater Monterey and Salinas urban areas. They account for about 2/3 of MST's fixed-line service and ridership.
  - **Regional lines** run longer-distance trips between Salinas, Monterey, cities in southern Monterey County, Watsonville and other destinations.
- **Demand-response** services, where people reserve a ride in advance. This includes:
  - **Paratransit** provided to passengers eligible under the Americans with Disabilities Act (ADA).
  - **On-call** service in Marina, Gonzales, Soledad, Greenfield and King City. This minibus service is available to the general public and allows for local rides within the on-call area and transfers to the nearest fixed route.

MST also operates a wide variety of specialized fixed and demand-responsive services, including the Monterey Trolley, Del Rey Oaks Shuttle, long-distance medical trips to the Bay Area, and a taxi voucher program for seniors and veterans.

Nonetheless, **most people experience MST service as fixed-route buses.** These account for about **75% of MST's in-service hours and 95% of ridership.**

MST's regional role

MST's county-wide scope and governance structure both tend to emphasize service to many communities over a large area.

This is reinforced by local geography: the Monterey Bay and Salinas Valley have historically developed as a string of small to mid-sized cities following Highway 1 and Highway 101. These communities have overlapping retail, social services and employment markets resulting in large amounts of intercity travel.

Furthermore, there has long been a gap in commercial long-distance bus service between Paso Robles and Salinas, reflecting the relatively "empty quarter" of California's central coast.

As a result, MST has carved out a relatively unique role as a public agency that handles both local and long-distance services, with service extending as far as Paso Robles to the south and San Jose to the north.

As of early 2021, several of MST's intercity lines have been suspended due to COVID-related service shifts. This includes long-distance services to San Jose and Santa Cruz, as well as secondary intercity lines like Marina-to-Watsonville.

MST Operations

As of 2019, approximately 60% of MST service is directly operated. The remaining 40%, including paratransit, on-call and most small-bus fixed routes were operated under contract by MV Transportation.

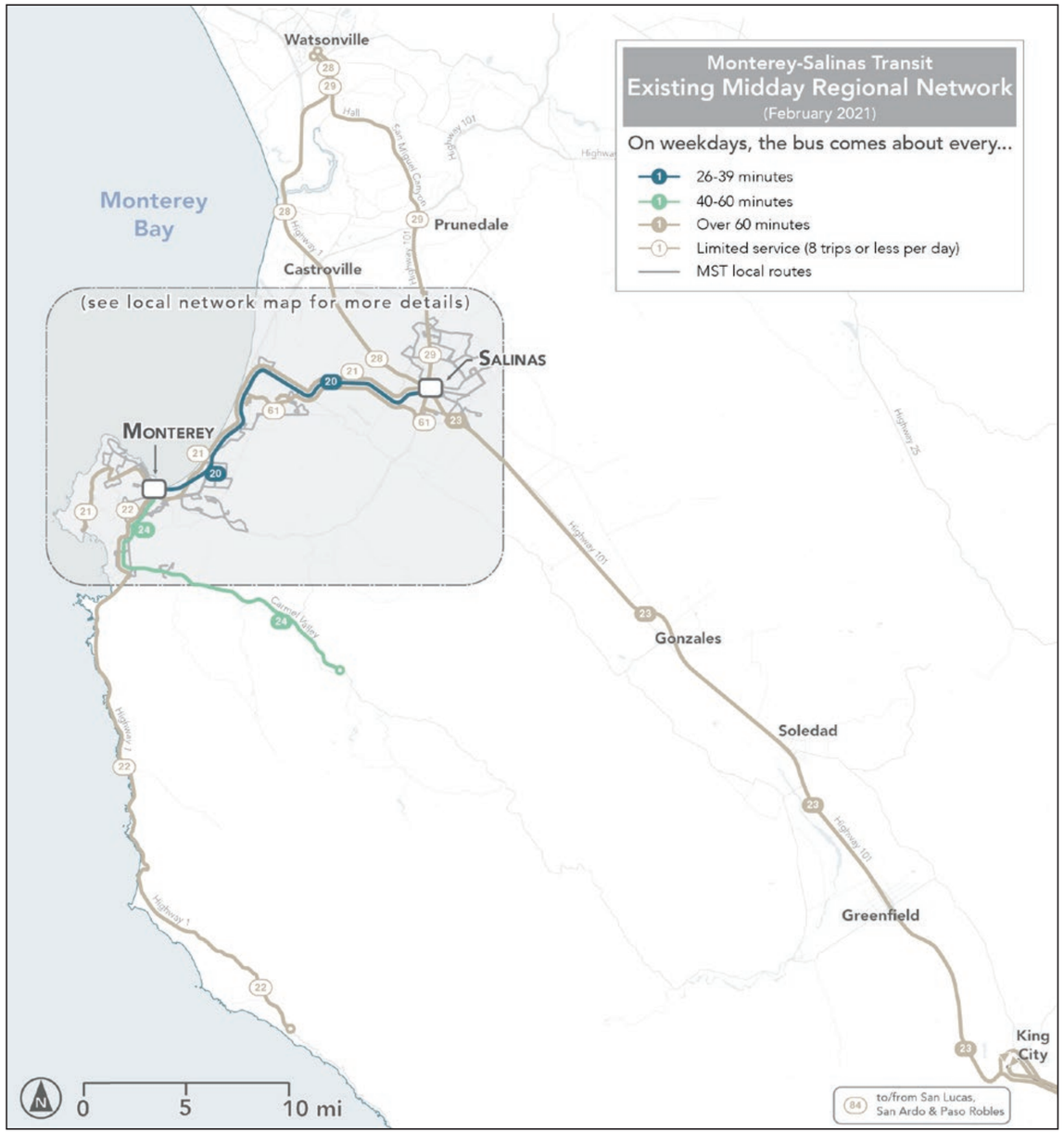


Figure 1: Map of MST's regional network in early 2021, with lines color-coded by frequency. Local lines are shown in gray.

Most of MST's network is in the Monterey and Salinas areas.

The MST fixed-route network in the greater Monterey and Salinas areas[1] is represented in Figure 2. Together, these areas account for about**:**

- **5% of the county land area**
- **65% of the county population**

Because so much of Monterey County's population is concentrated in this relatively small area, this is where buses have the most potential to connect many people to many destinations at relatively low cost to the public.

Accordingly this is where most of MST's service is provided and where the most people ride. As of 2019, the greater Monterey and Salinas areas accounted for about:

- **85% of MST service**
- **90% of MST ridership.**

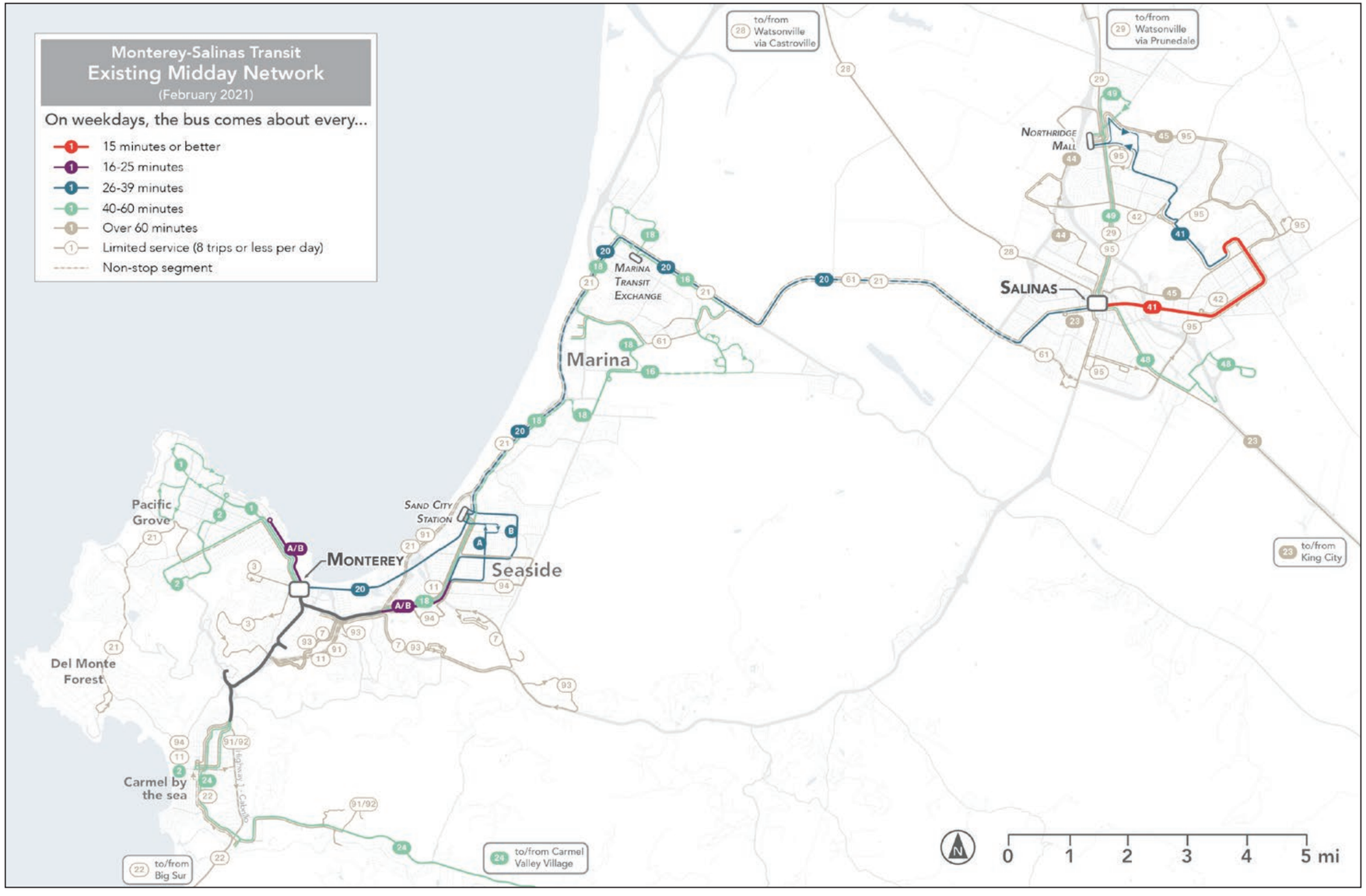


Figure 2: Map of MST's fixed-route network in the greater Salinas and Monterey areas in early 2021, with lines color-coded by frequency.

1 Including Carmel-by-the-Sea, Del Monte Forest, Pacific Grove, Monterey, Seaside, Del Rey Oaks, Sand City, Marina, Salinas, Boronda and adjacent developed area.

Why does the MST network need a redesign?

This document is the first step in MST's Comprehensive Operational Analysis (COA).

The COA is an opportunity to review MST's array of public transportation services, evaluate their performance, and help set a direction for the future.

Based on our initial assessment of the network, there are good reasons to envision a blank-slate redesign.

1. The last full system review was over two decades ago.

Many transit agencies review their entire network every five to ten years, to make sure service matches the community' needs. The last time MST undertook such a comprehensive study was in the late 1990s.

Since then, MST has conducted several sub-area studies[1], launched the JAZZ line, and responded to many community requests for shifts in service.

Many of these changes have taken place without a consistent policy on where and how much service to provide. In this context, responding to individual requests meets well-identified needs but does not always contribute to a more effective network for everyone.

The result is a network of many overlapping lines, each doing something that someone requested, but mostly running too infrequently to be worth the wait for anyone else travelling in the same direction.

2. Most lines operate at very low frequencies.

Only two MST lines consistently run every 30 minutes or better on weekdays: Line 41 in Salinas, and Line 20 from Monterey to Salinas. Almost everything else runs once an hour or less[2].

In fact, nearly half of MST lines operate just a few times a day[3], connecting very small numbers of people to specific buildings or facilities. These specialized and very infrequent services tend to overlap with other lines for most of their run, resulting in a very complex web of bus lines.

This is especially pronounced in the Monterey and Seaside area shown in Figure 3.

Many of the lines on this map operate less than once an hour, and have very short unique segments. **Because each line has to operate on its own schedule, overlapping lines don't result in high combined frequency.**

For example, there may be four direct buses per hour between Monterey Transit Plaza and Del Monte Center on weekdays from 7 AM to 6 PM, but there is a 30-minute gap between southbound buses at least 9 times in that time period.

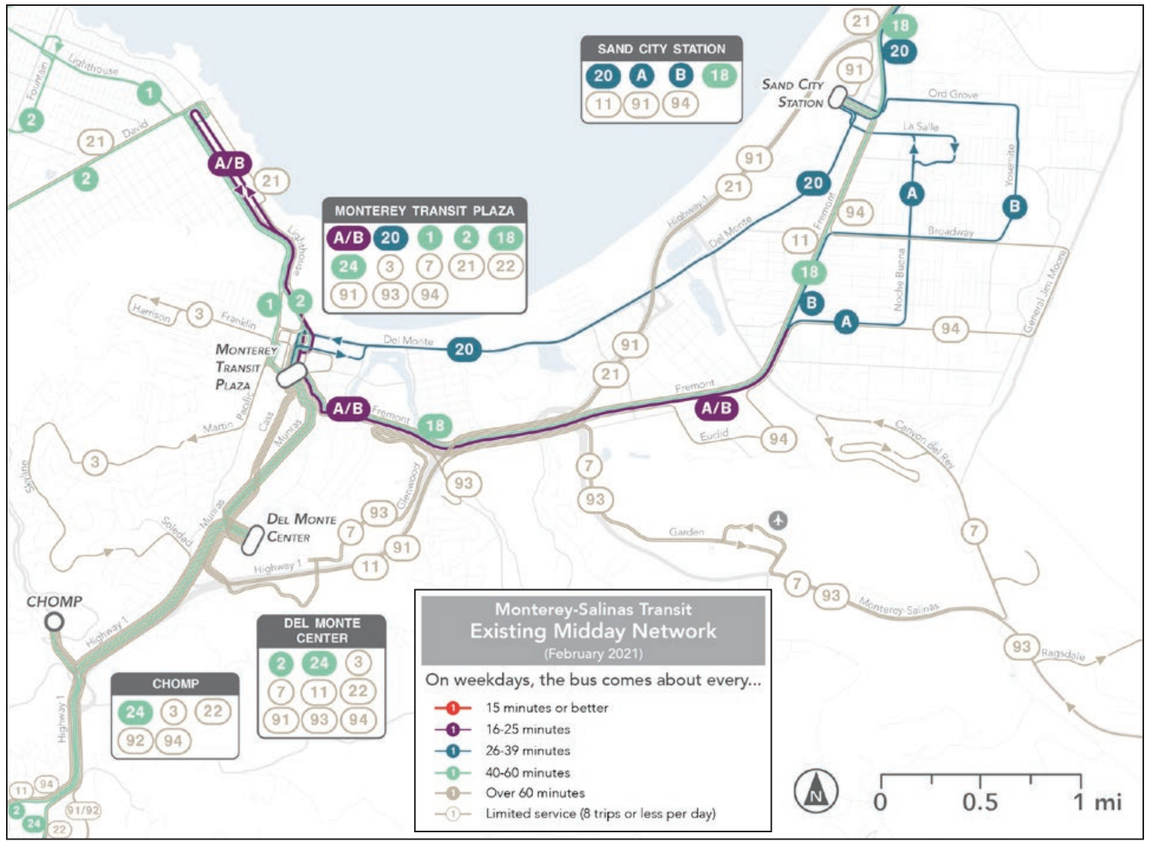


Figure 3: Map of MST's fixed-route network in Monterey and Seaside, with lines color-coded by frequency.

A number of MST lines operate just a few times per day, connecting small numbers of people to specific buildings or facilities.

1 Including reviews of service in the Peninsula (2006), Marina (2009), South County (2010; 2019) and Salinas (2005 and 2012).

2 There are two main exceptions: (a) the JAZZ A and B, which each run every 36 minutes on weekdays, and combine to every 18 minutes on Fremont Blvd, and (b) Line 24 from Monterey to Carmel Valley, which operates every 40 minutes on weekdays.

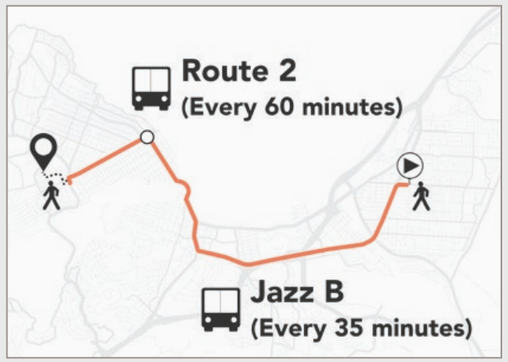
3 As of early 2021, 14 of the 32 MST lines currently in operation run 8 times per day or less.

3. It can take a very long time to get from A to B, even when those places are nearby.

Transit is useful to people when it extends the range of places they can go. But **low frequencies on the existing network mean that few people can use transit to get anywhere in a reasonable amount of time.** This is true even when travelling relatively short distances between relatively prominent locations, as in the following examples.

Example no. 1: How do you get from Seaside to Pacific Grove?

Let's imagine you are a retail worker living in the center of Seaside, and you need to reach your job at Country Club Gate Center in Pacific Grove (6 miles away) and your shift starts at noon on weekdays. Here's what you would need to do:



1 Hour 27 Minutes
5 minutes walking, 53 minutes waiting, 29 minutes riding

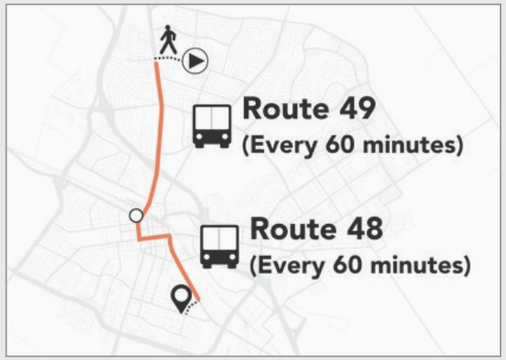
- Start trip at home at Olympia & Terrace (Seaside) at 10:33am.
- Walk 3 minutes to the stop at Olympia & Broadway.
- Wait 3 minutes for the Jazz B to the Aquarium.
- Ride **Jazz B** for 23 minutes to Foam & Irving (Monterey).
- Arrive 11:02am. Wait 16 minutes for Line 2. Get on at 11:18am.
- Ride **Line 2** for 6 minutes to Forest & Forest Hill (Pacific Grove)
- Walk 2 minutes to get to Country Club Gate Center at 11:26am.
- Wait 34 minutes for start of work at 12:00pm.

Notice that this trip only includes a total of 29 minutes actually riding the bus, and that *you would spend more time waiting at your destination than you would getting there*.

The key problem in this example is the low frequency of Line 2. If Line 2 came every 30 minutes instead of once an hour, this could halve the length of the trip. In that case, you could catch a later Jazz B at 11:15, wait only 10 minutes in Monterey to connect to Line 2 at 11:48, and wait only 6 minutes at the end, for a total of 48 minutes.

Example no. 2: How do you get from North Salinas to South Salinas?

Let's imagine you are a hospital worker living near North Salinas High School, you need to reach your job at Salinas Valley Memorial Hospital (4.5 miles away) and your shift starts at 9am on weekdays. Here's what you would need to do:



1 Hour 18 Minutes
17 minutes walking, 40 minutes waiting, 21 minutes riding

- Start trip at home at Alvin & McKinnon at 7:42am.
- Walk 11 minutes to the stop at Alvin & Main.
- Wait 3 minutes for Line 49 to Salinas Transit Center.
- Ride **Line 49** for 14 minutes to Salinas Transit Center.
- Arrive 8:10am. Wait 20 minutes for Line 48. Get on at 8:30am.
- Ride **Line 48** for 7 minutes to Abbott & Los Palos.
- Walk 6 mins. to get to Salinas Valley Memorial Hospital at 8:43am.
- Wait 17 minutes for start of work at 9:00am.

Notice that this trip only includes a total of 21 minutes actually riding the bus, and that *you would spend more time waiting at Salinas Transit Center than on either bus*. A healthy adult could walk from Salinas Transit Center starting at 8:10 and arrive at the hospital and arrive at the same time as someone who had waited for Line 48.

The key problem in this example is both low frequencies and the lack of a timed transfer at Salinas Transit Center. If Lines 48 and 49 were timed to arrive together at Salinas Transit Center at 8:25am and leave together at 8:30, you could leave home 15 minutes later. If they both came every half hour and were timed to leave Salinas Transit Center at 8:15 and 8:45, you could leave home 30 minutes later, for a 48 minute trip.

These are just two of many possible examples. Many prominent destinations are served once an hour or less, and people traveling to them by transit would have similar or even longer trips.

4. Where people live and work has changed.

The last 25 years have seen important shifts in where people live and work. Since the late 1990s:

- The population of the greater Monterey area and rural areas of the North County have stagnated.
- Marina experienced a significant decline in the 2000s, but has had the strongest growth of any community in the 2010s and continues to have the largest number of ongoing residential development projects.
- Salinas has grown slightly but unevenly. The population has grown significantly in North Salinas, while it has tended to decline or stagnated in East and South Salinas.
- Cities in the Highway 101 corridor south of Salinas grew strongly in the 2000s, but that growth slowed down significantly in the 2010s.
- The prominence of the military as a source of economic development has decreased following the closure of Fort Ord.
- The agriculture, retail, service, hospitality and higher education sectors have all become correspondingly more important.

Although some cities on the Monterey Peninsula are now showing renewed interest in growth and development, **the structure of existing water rights means that future growth will likely be concentrated in the the Highway 101 corridor south of Salinas.**

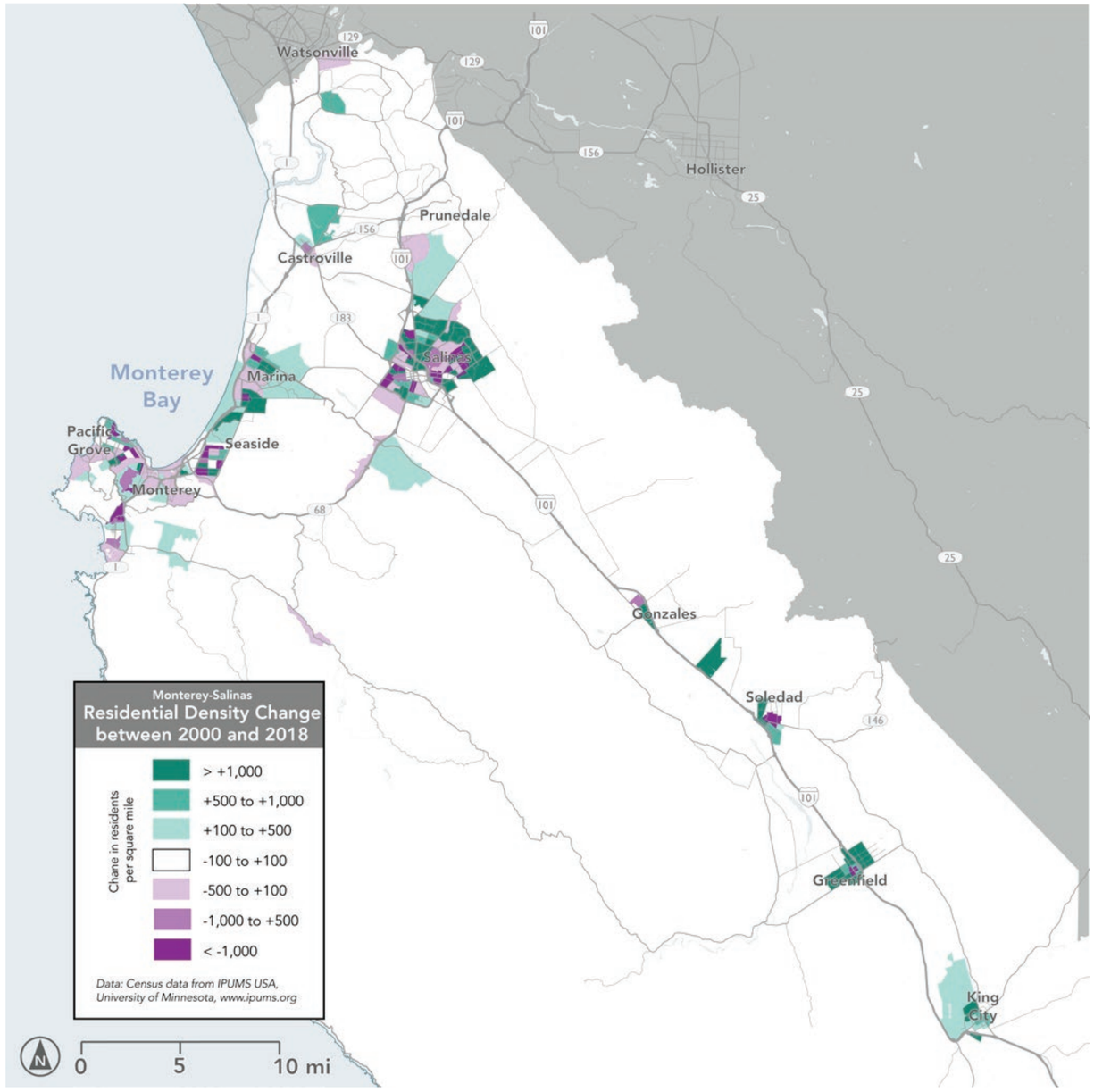


Figure 4: Regional map of change in population density. Growth has largely been concentrated in the outer neighborhoods of Salinas and in the cities of Gonzales, Soledad, Greenfield and King City.

5. There is unmet demand for service in Salinas.

Salinas is the largest population and job center in Monterey County, accounting for 36% of the population and 30% of jobs. And there are good reasons to think many of the trips that happen in Salinas could be served by transit.

For one, Salinas is relatively compact and dense. The entire city of 155,000 people fits in a 5x5 mile area, and a large share of its jobs are located either Downtown or on long, straight main streets. As a result:

- Most bus stops in Salinas are located within a 1/2-mile of several thousand residents.
- Many of the places people need to go can be reached in a relatively short trip, that could be effectively served by frequent transit.

Salinas also has a relatively high poverty rate, implying that many people are in need of public services, including transportation. Many people in Salinas live in large households, where there are often fewer cars than people who need to go places.

Despite this, large parts of the city are served by lines that operate once an hour or less. With such infrequent service, an able bodied adult can walk most of the way across Salinas in the time it takes before the next bus comes. But very few people have the time to do that.

6. The pandemic has altered everyone's reality. This is a good time to reassess MST's future role.

The impacts of the pandemic on MST's ridership and services are described in more detail in the following pages.

	Population	Jobs	% MST Service *(Fall 2020)*	% MST Ridership *(Fall 2020)*
Monterey Bay and Peninsula *(includes Carmel, Del Monte Forest, Pacific Grove, Monterey, Del Rey Oaks, Seaside, Marina)*	27% (115,000)	28% (48,000)	52% (2,000 hours/week)	45% (13,000/week)
Salinas *(includes Salinas, Boronda)*	36% (157,000)	30% (51,000)	35% (1,350 hours/week)	42% (12,200/week)

Figure 5: Table comparing the population and ridership in the Monterey and Salinas areas to the amount of MST weekly scheduled in-service hours.

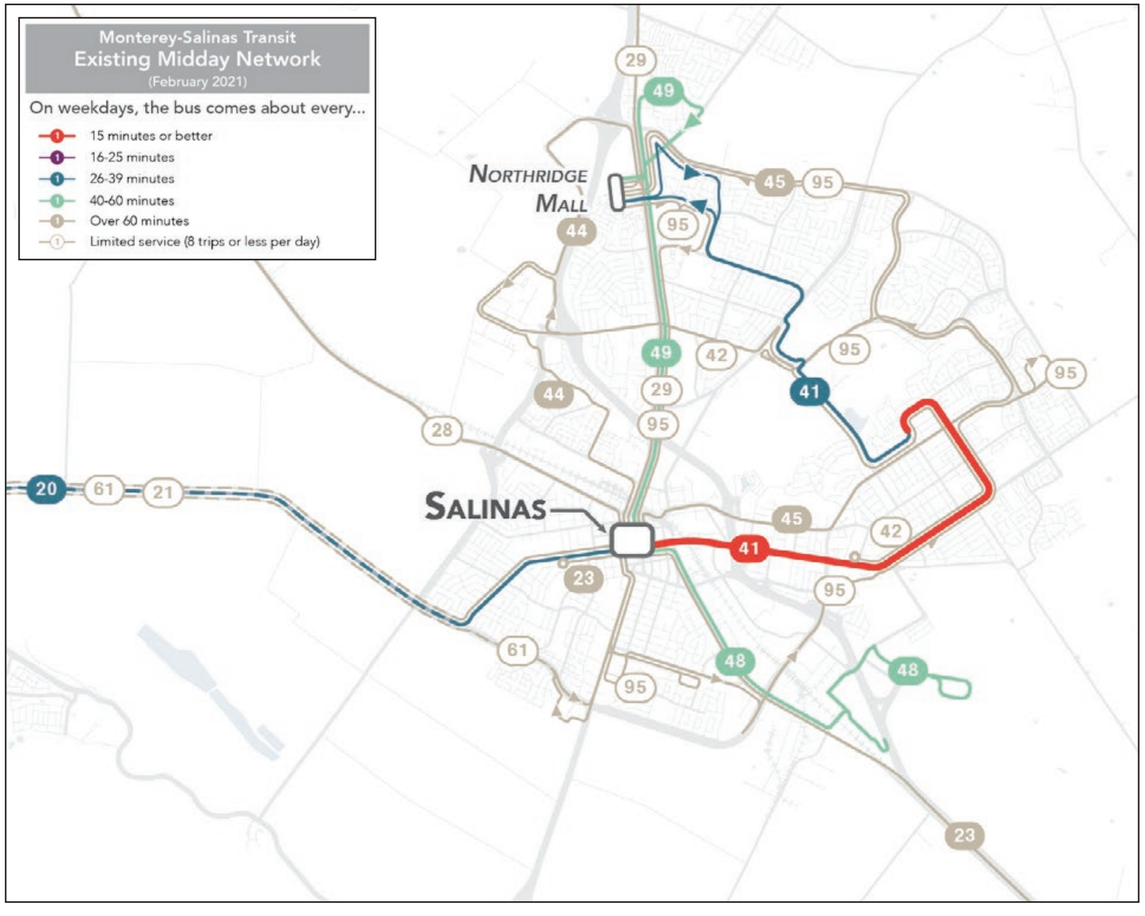


Figure 6: Map of MST's fixed-route network in Salinas, with lines color-coded by frequency. All but two lines (20 and 41) operate once an hour or less.

How has the pandemic impacted MST service and ridership?

The COVID-19 pandemic has presented MST with many significant short-term challenges, and establishing the way out of pandemic-era planning is another key reason for this study.

Fall 2020 patterns of ridership suggest that **most pandemic-era transit users are likely essential workers with daytime hours, and people on non-work trips.** These riders are using transit despite much lower service levels. In response to reduced ridership and reduced driver availability, **MST reduced service by over 30% in 2020.**

As the pandemic recedes, transit ridership will likely increase and may return to pre-pandemic levels. But it will remain important to understand the needs of the people who rely most on transit, and whose travel purposes are so essential to society that they continue even in a public health emergency.

Ridership is way down.

As shown in Figure 7, comparing Fall 2019 to Fall 2020:

- **Weekday ridership is almost 75% lower**, from over 13,500 to less than 3,700 boardings per day on fixed routes.
- **Weekend ridership is about 60% lower, and at par with weekdays**. On weekends, boardings went from about 9,000 boarding per day to just under 3,500 per day.

Rush hour is nearly gone.

Prior to March 2020, MST experienced significantly higher ridership on weekdays between 7 and 8 AM and between 2 and 5 PM, and provided a higher level of service in response.

As schools, offices, and many hospitality businesses have either closed or significantly reduced their operations, rush hour ridership has come down to midday levels. Figure 8 shows that **MST now experiences about the same level of ridership from 7 AM to 6 PM**, and no longer provides additional service at peak hours.

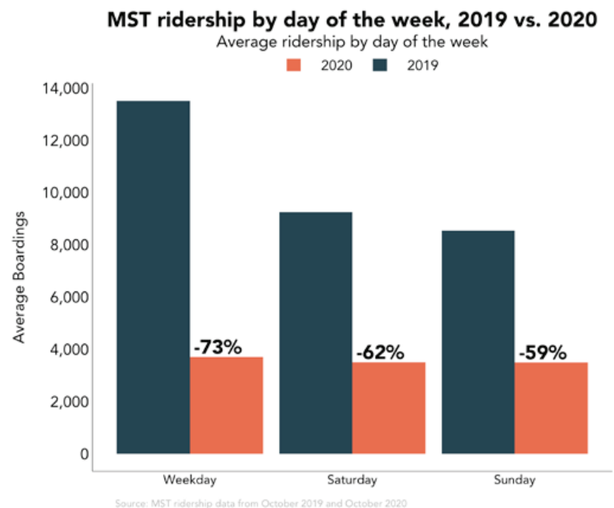
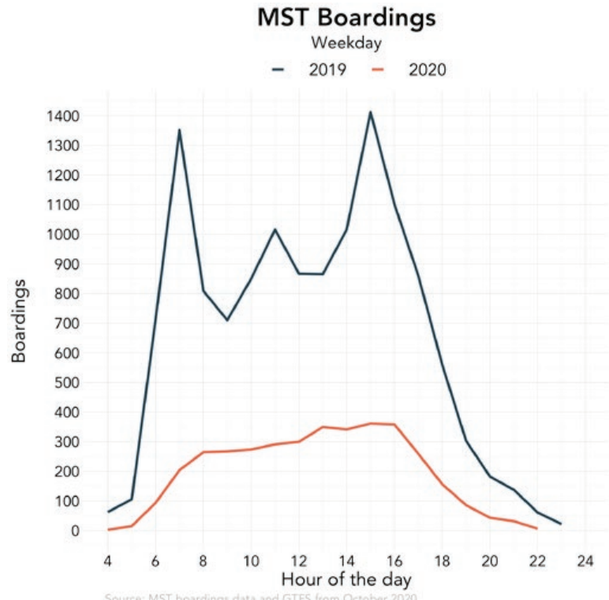


Figure 7: How MST ridership changed from Fall 2019 to Fall 2020, by day of the week.



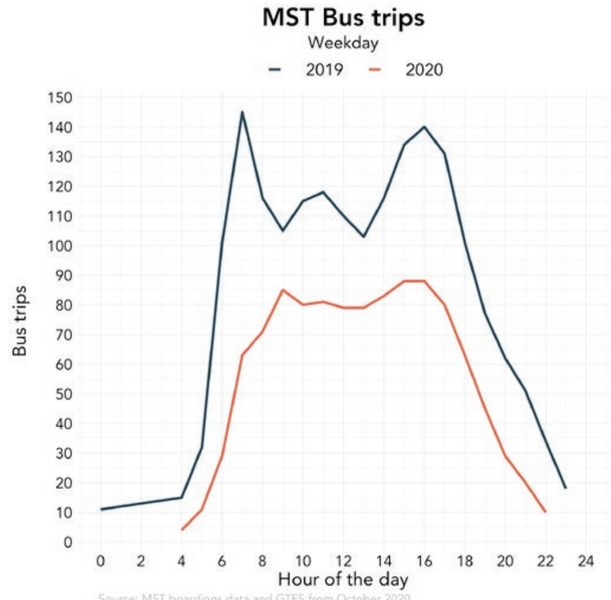


Figure 8: How MST boardings (left) and total bus departures (right) per hour on weekdays changed from Fall 2019 to Fall 2020.

Ridership change has been unequal

The chart in Figure 9 shows how ridership has changed by area. The maps in Figure 10 and Figure 11 give us further context for what we observe. Specifically:

- **Ridership has dropped the least in low-income areas and communities of color.** This reflects the areas that are most likely to house many essential workers, and where people are most likely to lack alternatives to transit for their mobility needs.
- During the pandemic, **college-related ridership has dropped the most.** The stops that experienced the largest drops in ridership directly serve Hartnell College, California State University - Monterey Bay (CSUMB), and Monterey Peninsula College (MPC). This can be explained by the prevalence of remote learning, and the cancellation of college-specific lines.
- **Military ridership also largely disappeared in 2020, but this is due to events that occurred just before the pandemic.** Up to late 2019, local military bases had funded 11 MST lines, 7 of which served the Presidio of Monterey. Budget shortfalls and changes in base command led to the cancellation of those services.

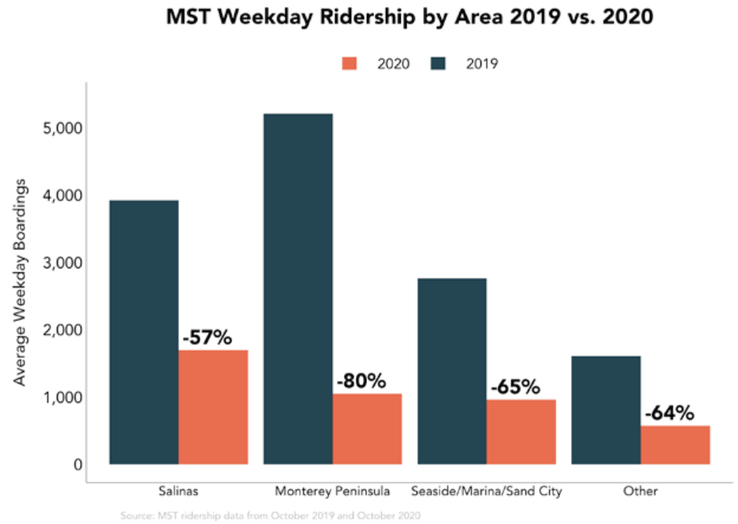


Figure 9: How MST ridership changed from Fall 2019 to Fall 2020, by area of Monterey County.

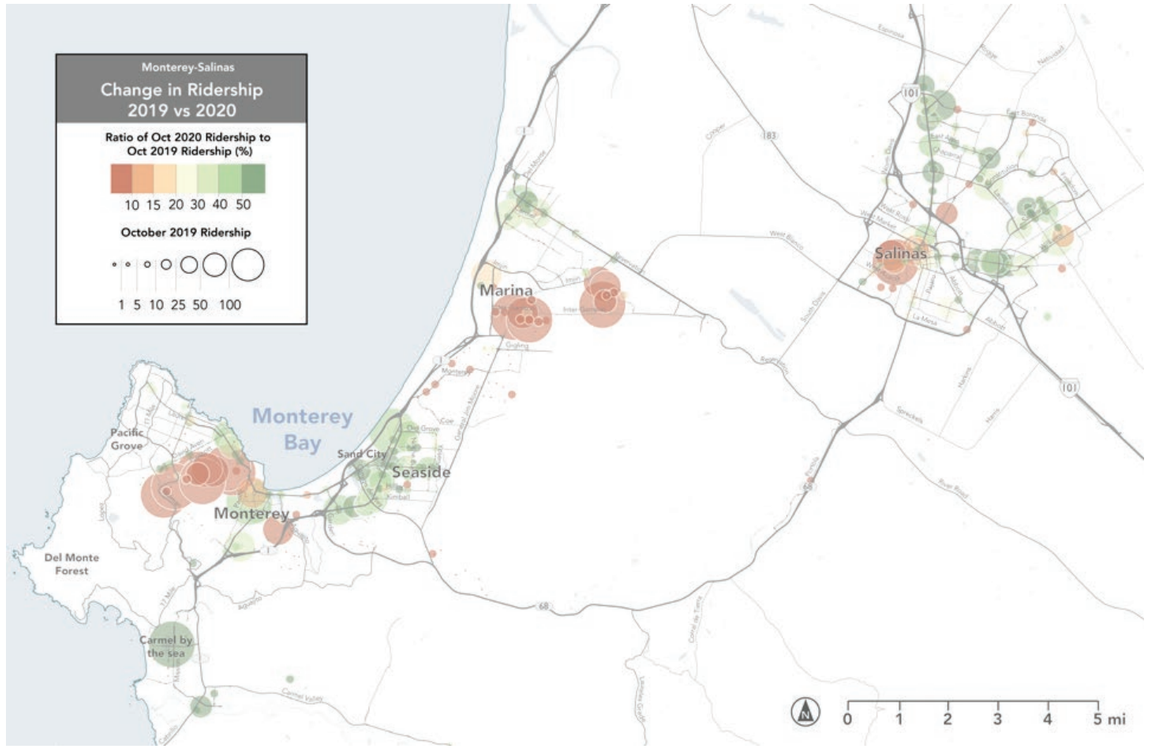


Figure 10: How MST ridership changed from Fall 2019 to Fall 2020, by bus stop. The size of each dot on this map indicates weekday boardings in 2019. Red dots are stops where ridership fell the most. Green dots are where ridership fell the least.

Figure 11: Density of residents living in households below 150% of the federal poverty line. The darker and more purple the area on this map, the more people in poverty are concentrated in that area.

The Challenge of Planning a Good Transit Network in Monterey County

1. Relatively few people live in cities.

Fixed-route transit relies on the ability and willingness of strangers to share a vehicle. To make this possible, several people along any bus line need to be interested in going to places the bus is going. To achieve high ridership, you must have many people near bus lines going to many destinations.

There are people and jobs throughout Monterey County. But **there are very few places where many people live in close proximity, or where many jobs are located in a small area.**

Almost all of those places appear shaded in color on the map in Figure 12, and all of MST's most productive lines (in ridership terms) focus on these areas:

- JAZZ A/B: Monterey-Seaside-Sand City.
- Line 18: Monterey-Seaside-Marina
- Line 20: Salinas-Marina-Sand City-Seaside-Monterey
- Line 41: East Salinas-Downtown Salinas
- Line 49: North Salinas-Downtown Salinas

With few exceptions[1], these are the areas where a well-funded, well-designed and well-operated transit system might be expected to generate high ridership, in the absence of a global pandemic. Taken together, they account for only half the population and jobs of Monterey County.

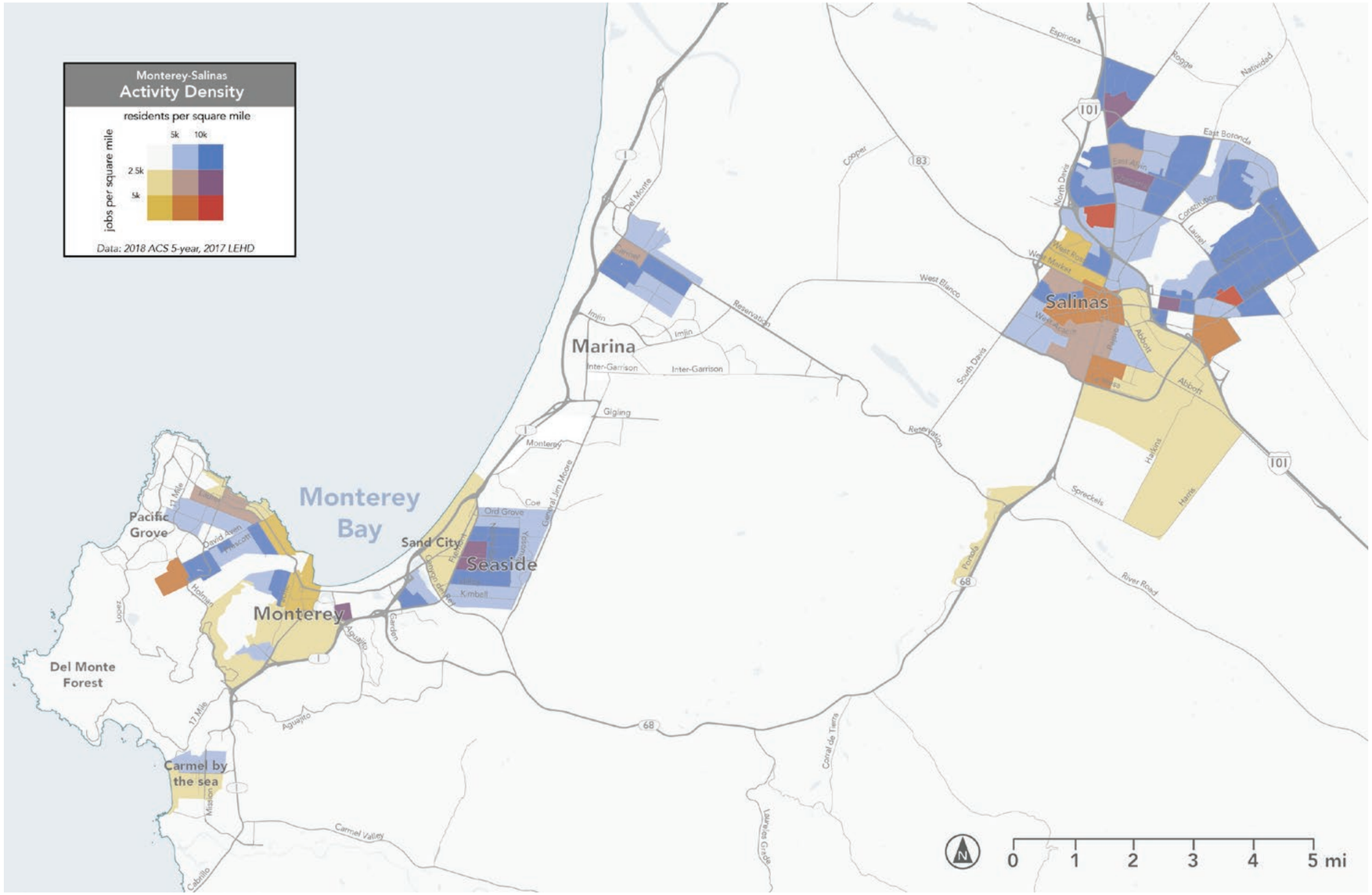


Figure 12: Map of combined population and job density in the greater Monterey and Salinas areas.

1 Most notably CSUMB, which does not appear in this map but is a large and growing center between Downtown Marina and Seaside.

2. There is no one "Downtown".

Even in a spread-out community, it may be possible to generate significant transit ridership if there are places where almost everybody needs to go on a regular basis.

We can identify these places on a map, by counting how many jobs are within walking distance of any point. Offices, retail, hotels, restaurants, social services, colleges, hospitals and many other destinations are all places where there are jobs and where people need to go. Places where many such destinations are within walking distance of each other are natural hubs for transit service.

The map in Figure 13 shows us that the largest such centers are in Downtown Monterey and Downtown Salinas. This is why MST builds most of its service around the Monterey Transit Plaza and the Salinas Transit Center.

But the map also shows a major challenge in generating high ridership even with this design: **neither of the county's two largest centers account for a large share of county-wide jobs[1].**

This reflects what anyone who lives in Monterey County already knows: there's no one "Downtown" where someone could go for nearly everything they might need.

That means that any successful transit system in Monterey County needs to connect the centers of Monterey and Salinas with a wide variety of smaller destinations that also generate many trips, like colleges, hospitals, smaller town centers and suburban shopping centers.

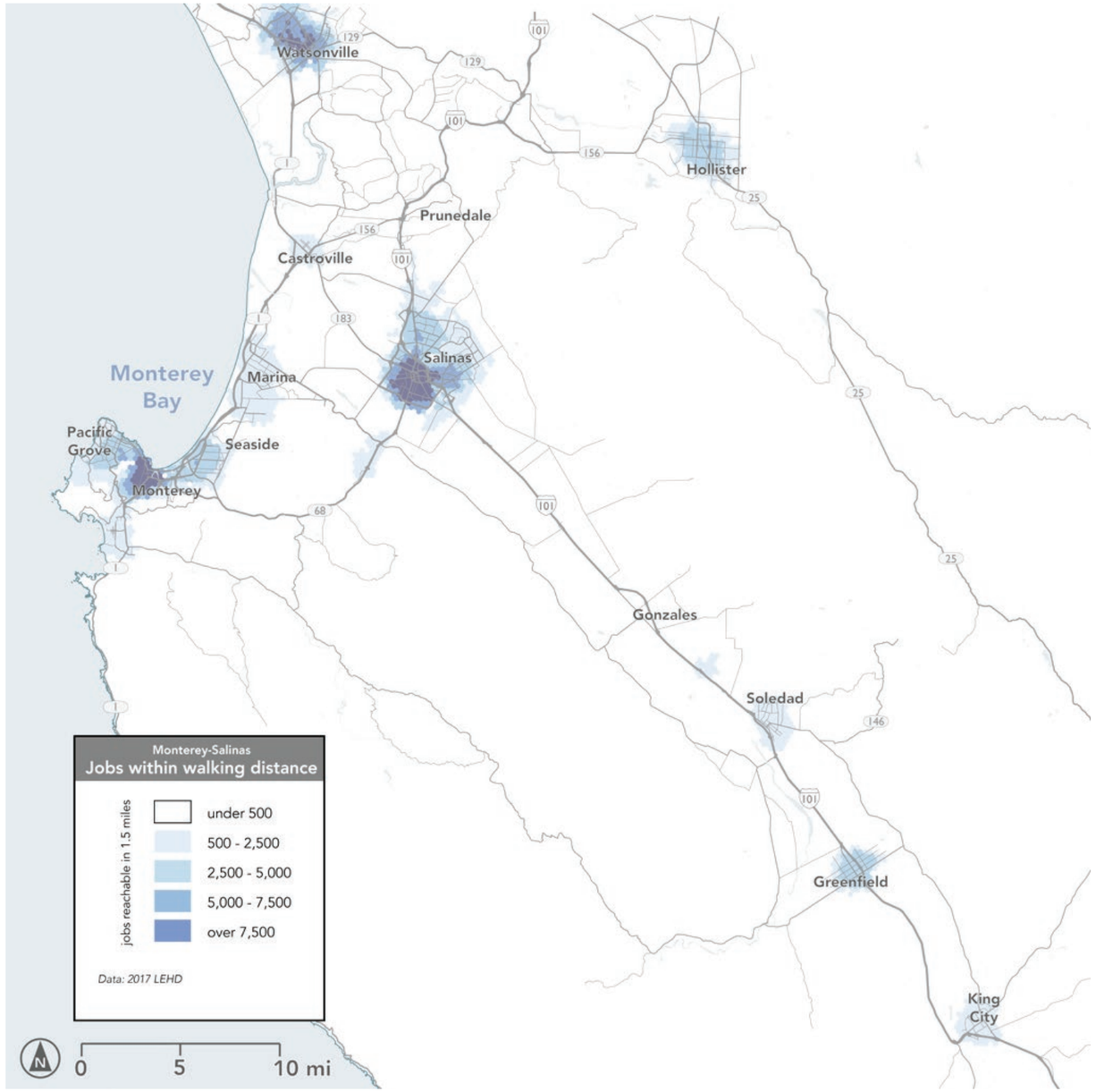


Figure 13: Regional map showing the number of job within walking distance, defined as 1.5 miles, or a 30 minute walk by an able bodied adult.

1 There were over 170,000 civilian jobs in Monterey County in 2017. The most central point in Downtown Monterey was within 1.5 miles of 9,900 jobs (6%) The most central point in Downtown Salinas was within 1.5 miles of 14,900 jobs (9%).

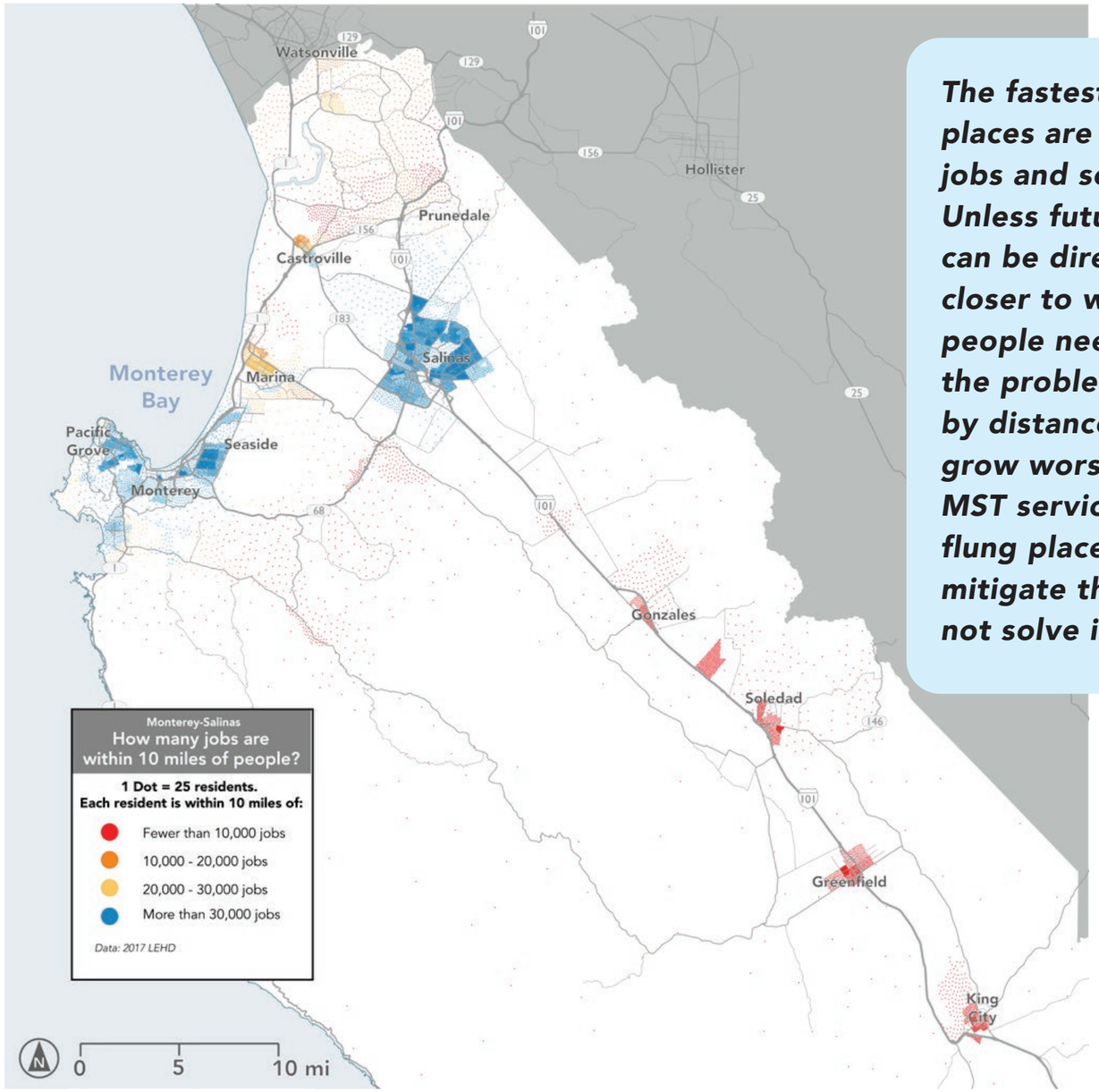
3. A growing number of people live very far from the places they need to go.

The places that are growing the fastest are the places that are the farthest from significant concentrations of jobs: Marina, and the cities of Gonzales, Soledad, Greenfield and King City.

Even in a future with fast bus service and more rail, **when so many people live so far away from the places they need to go, someone has to pay the price of distance.** Distance must be crossed, which takes time and money that can't be spent towards other things people value.

- More people bear the cost of owning and maintaining more cars, to access opportunities that might be accessible by transit if they lived closer in.
- Those who can't drive or get a ride from a friend spend hours on transit, and hours waiting, to cover that distance.
- To serve these often disadvantaged communities more equitably, MST needs to spend more of its budget on distance, which means less can be spent on high frequencies or long hours of service, undermining ridership potential.
- A long cascade of social, health, economic and environmental problems follow.

This network redesign will examine ways that transit access can be increased despite the high cost of distance. But unless future housing development can be redirected closer to where most people work, shop, and access services, the problems caused by distance will grow worse, and transit alone will not be the savior.



The fastest growing places are far from jobs and services. Unless future housing can be directed closer to where people need to go, the problems caused by distance will grow worse. More MST service to far-flung places can only mitigate this issue, not solve it.

Figure 14: Regional map showing the number of people living in locations that are near many jobs (in blue) vs. in locations that are near very few jobs (in red).

2 What makes transit useful?

What goals should transit serve?

Transit can serve many purposes; which purposes it should serve depends on your values.

Possible Goals for Transit

Transit can serve many different goals. Different people and communities value these goals differently. Understanding which goals matter most in Monterey County is a key step in redesigning the transit network.

Possible goals for transit include:

- **Social Safety Net.** Transit can help meet the needs of people in situations of disadvantage, with access to essential services and jobs.
- **Economic Development**. Transit can give businesses access to more workers; workers access to more jobs; and students more access to education and training.
- **Environmental**. By reducing car trips, transit use can reduce air pollution and greenhouse gas emissions. Frequent transit can also support compact development and help conserve land.
- **Congestion Mitigation.** Because buses carry more people than cars, transit use can mitigate traffic congestion by reducing Vehicle Miles Travelled (VMT). This is especially important in communities with significant jobs-housing imbalances and a preponderance of long commutes.
- **Health**. Transit can support physical activity. This is partly because most riders walk to their bus stop, but also because riders will tend to walk more in between their transit trips.
- **Personal Liberty**. By providing people the ability to reach more places than they otherwise would, a transit system can be a tool for personal liberty, empowering people to make choices and fulfill their individual goals.

Some of these goals are only served if many people use transit. For example, transit can only mitigate congestion and pollution if many people ride the bus rather than drive. We call such goals "ridership goals" because they are achieved through high ridership.

Other goals are served by the simple presence of transit. A bus line through a neighborhood provides residents insurance against isolation. A line may fulfill political or social obligations, for example by getting service close to every taxpayer or into every municipality. We call these types of goals "coverage goals" because they are achieved in large part by covering geographic areas with service, rather than by high ridership.

High ridership is not transit's only goal

If MST wanted to maximize transit ridership, it would focus service where and when it could be useful to the most potential riders. MST would then be thinking like a business, focusing on places where its service is competitive for a large number of people.

Businesses are under no obligation to operate where they would spend a lot of money to reach few customers. People understand that less populated areas will naturally have fewer stores. We don't describe this as stores being *unfair* to those areas; they are just acting like a business, maximizing profits.

Transit agencies are not for-profit businesses. Most agencies have some obligation to cover most or all of their service area. The officials who make transit decisions hear their constituents say things like "We pay taxes too" and "If you cut this bus line, I will be stranded". So they decide that some coverage, even in low-ridership places, is important to provide.

Transit agencies are often accused of failing to maximize ridership, as if that were their only goal. But in many cases, transit agencies are intentionally operating coverage services in areas that are not expected to generate high ridership. Coverage services are sometimes visible to the public as mostly-empty buses.

Agencies must balance the competing goals of high ridership and coverage. The smaller the agency's budget relative to its service area, the harder the trade-off between those goals.

Figure 15: Is an empty bus failing? It depends why you are running it.

Ridership and coverage goals conflict.

Ridership and coverage goals are both justifiable, but they lead us in opposite directions. Here is an illustration of how ridership and coverage goals conflict with one another, due to geometry and geography.

In the fictional area at top right, the little dots indicate dwellings and commercial buildings and other land uses. The lines indicate roads. Most of the activity is concentrated around a few roads, as in most places.

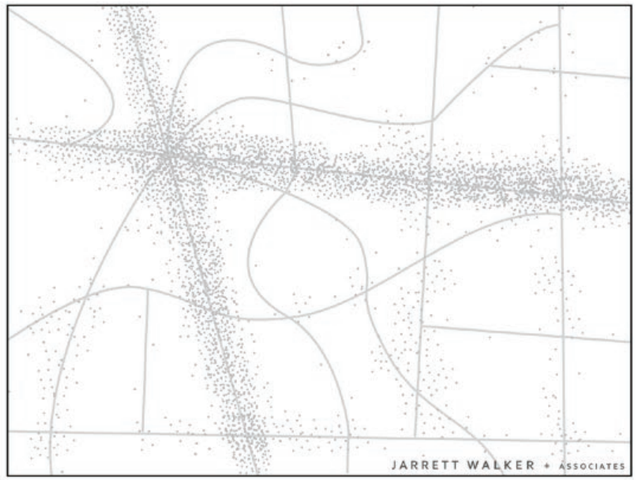
A transit provider pursuing only a ridership goal would focus service on the streets where there are large numbers of people, where walking to transit stops is easy, and where the lines feel direct and fast to customers. Because service is concentrated onto fewer lines, frequency is high and a bus is always coming soon. This would result in a network like the one at bottom-left.

If the city were pursuing only a coverage goal, on the other hand, it would spread out services so that every street had a bus line, as in the network at bottom-right. As a result, all lines would be infrequent, even those on the main roads.

On a fixed budget, designing transit for both ridership and coverage is a zero-sum game. In the networks at right, each bus that the transit provider runs down a main road, to provide more frequent and competitive service in that market, is not running on the neighborhood streets, providing coverage. **While an agency can pursue ridership and provide coverage within the same budget, it cannot do both with the same dollar. The more it does of one, the less it does of the other.**

These illustrations also show a relationship between coverage and complexity. **Networks offering high coverage are naturally more complex.** In high coverage networks, riders are more likely to use just one or two lines regularly. In high frequency networks, more riders use many lines regularly, because transferring among lines is easier and more reliable thanks to the high frequencies.

In this imaginary place, any person could keep the very simple high frequency network in their head, since it consists of just two lines, running in straight lines. They would not need to consult a schedule to catch a bus because a bus would always be coming soon. The coverage network would be harder to memorize, requiring people to consult a map (to understand the routing) and a schedule (to catch these infrequent services).



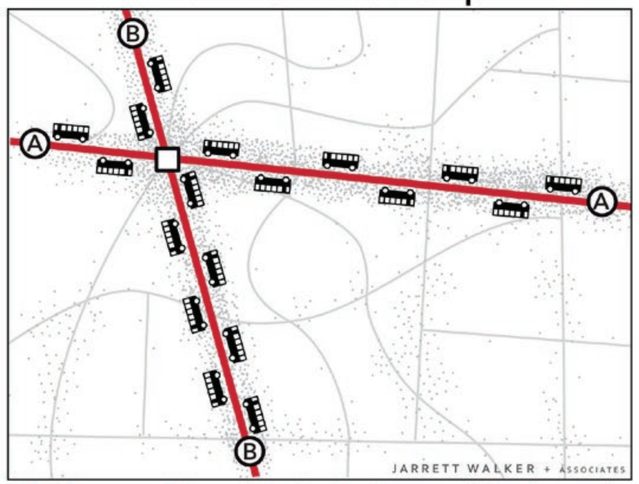
Imagine you are the transit planner working in this fictional neighborhood.

The dots scattered around the map are people and jobs.

The 18 buses are the resources the town has to run transit.

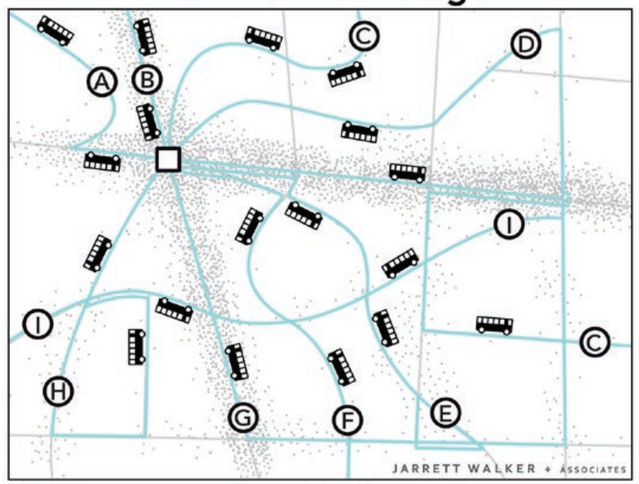
Before you can plan transit routes, you must first decide: What is the purpose of your transit system?

Maximum Ridership



All 18 buses are focused on the busiest area. Waits for service are short but walks to service are longer for people in less populated areas. Frequency and ridership are high, but some places have no service.

Maximum Coverage



The 18 buses are spread around so that there is a route on every street. Everyone lives near a stop, but every route is infrequent, so waits for service are long. Only a few people can bear to wait so long, so ridership is low.

Transit is useful because it expands where people can go.

Access and Freedom

Wherever you are, you can only reach so many places in a reasonable amount of time. These places can be viewed on a map as a blob around your location, as in Figure 16.

You can think of the edges of this blob as a "wall around your life." Beyond this area are things you can't do on most days because it simply takes too long to get there. The extent of this area affects your options in life: for employment, school, shopping, or any other places you might want to reach.

The technical term for this is access, but it's also fair to call it freedom, in the physical sense. If you can go to more places, you have more choices, so in an important sense you are more free.

How Transit Expands Access

Transit provides value when it increases people's freedom. That happens by increasing the number of useful places people can access in a reasonable amount of time without driving. On transit, the extent of your access is determined by:

- The **network,** including transit lines with their frequency, speed, and duration. These features determine how long it takes to get from any point on the network to anywhere else.
- The **layout of the city.** This determines how many useful destinations can be located near transit stops. For example, where there are more people or useful destinations near a given stop, good access from that point is of value to more people.
- Your **location** determines which lines are close and frequent enough to be useful.

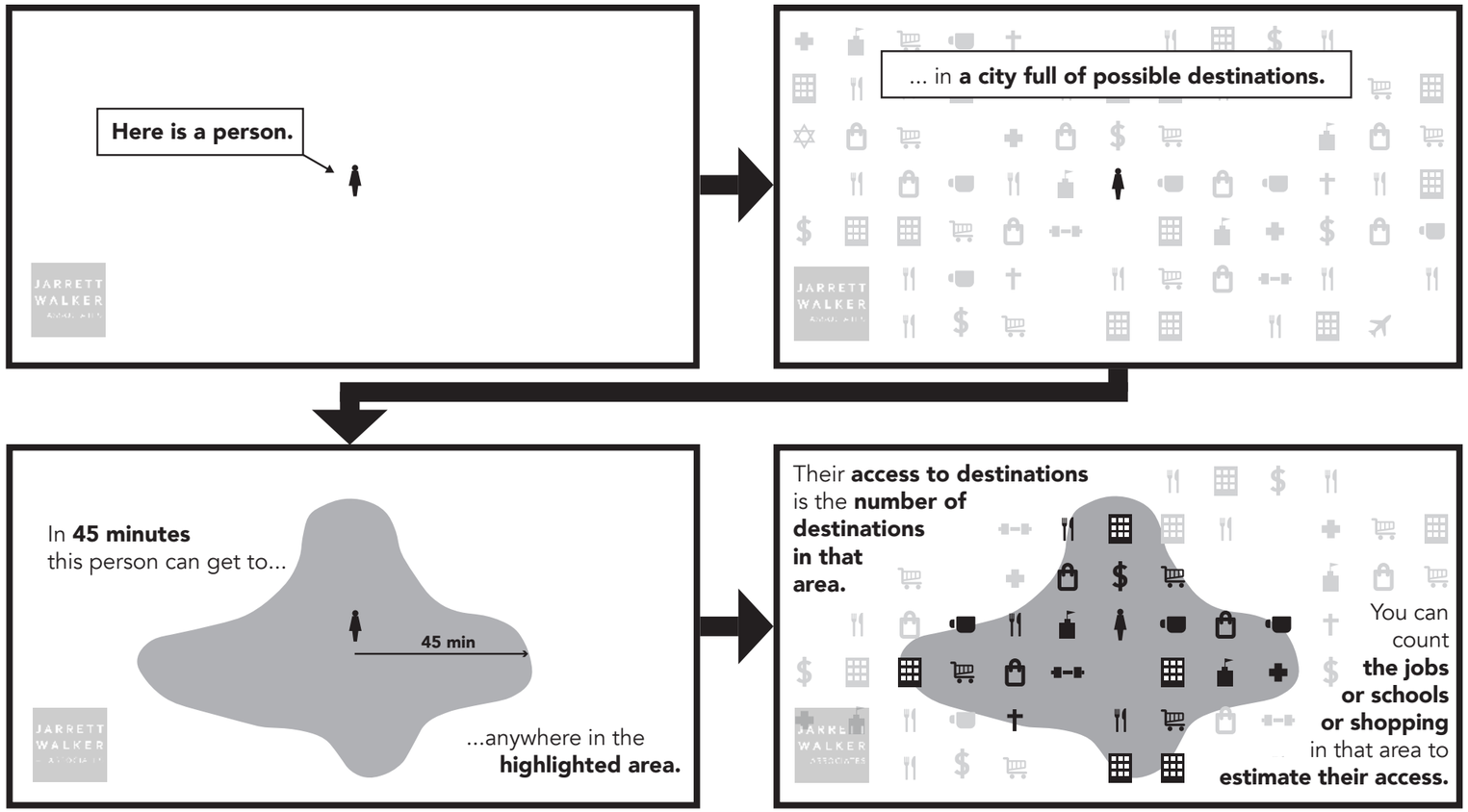


Figure 16: Access is the ability to get from your current location to places you need to go. The more places you can access in a reasonable amount of time, the more freedom you have to live your life in the way you need.

Access and Ridership

On an individual level, access represents convenience and the ability to do the things you need. As such, **the level of access transit provides is part of what determines ridership, but it is also something that many people will see as a worthy goal in itself.**

For example:

- Access to jobs is a key concern for keeping people employed.
- Access to many amenities from a particular location gives that location value. Real estate firms routinely outline where you can get to by car from a particular development parcel, and this is the same analysis for transit. In cities, transit access can be an important factor in overall property value.

If you are deciding where to live based on whether you'll be able to get to your job, school, or relatives, you are asking a question about access. Access by transit may be a factor in that decision.

Frequent transit is useful to more people and more trips.

A transit network is a pattern of lines and services, where each line:

- follows a **path**,
- at certain days and times (its **span**),
- at a given average **speed**, and
- buses come every certain number of minutes. This is known as the headway or **frequency**.

Frequency is invisible and easy to forget, and yet on transit it is often the most important factor determining where you can get to in a given amount of time.

Frequency Is Freedom

More frequent service dramatically improves access. High frequency reduces travel time by providing several linked benefits:

- **Shorter Waits.** Unless you plan your life around a bus schedule, the average wait for transit is half the frequency. If a bus comes every 30 minutes, your average wait will be 15 minutes. But if it comes every 15 minutes, your average wait will be 7.5 minutes.
- **Faster Transfers.** To go further than the places on the bus line you happen to be on, you'll need to connect to another line. Frequency makes this easy, because the next bus is always coming soon.
- **Easier Recovery from Disruption.** Frequent service is more reliable, because if a bus breaks down you don't have to wait as long until the next one shows up.
- **Spontaneity and Freedom.** When transit comes every few minutes, there's no need to build your day around a bus schedule. You can turn up at the stop and go, whenever you want.

Frequency and Ridership

The plot in Figure 17 shows all the lines operated by 33 different U.S. transit agencies, at various points in the 2010s.

Each line is located on the plot based on its frequency and its productivity (boardings per service hour). More frequent service is to the left, and more productive service is higher up. The shade of each hexagon indicates the number of lines in that place on the graph.

The plot shows that higher productivity is correlated with higher frequency, even though higher frequencies require more service hours. In other words, **ridership appears to rise exponentially as frequency increases.**

This is a two-way street: transit agencies rarely run high frequency service in places where they expect low ridership. But conversely, if frequency isn't very high, the amount of ridership transit can attract is fundamentally limited.

What is frequent enough?

Frequency is expensive, so it's important to think about just how frequent service needs to be.

A frequency of 15 minutes or better has a good chance of being useful to someone whenever they need to travel, especially if that frequency extends over many hours of the day, every day.

Adequate frequency depends on trip length, because it doesn't make sense to wait long to go a short distance. For many people, it wouldn't make sense to wait 15 minutes to go half a mile, because you could probably walk to your destination in that time. But it might make sense to wait that long to go several miles across town.

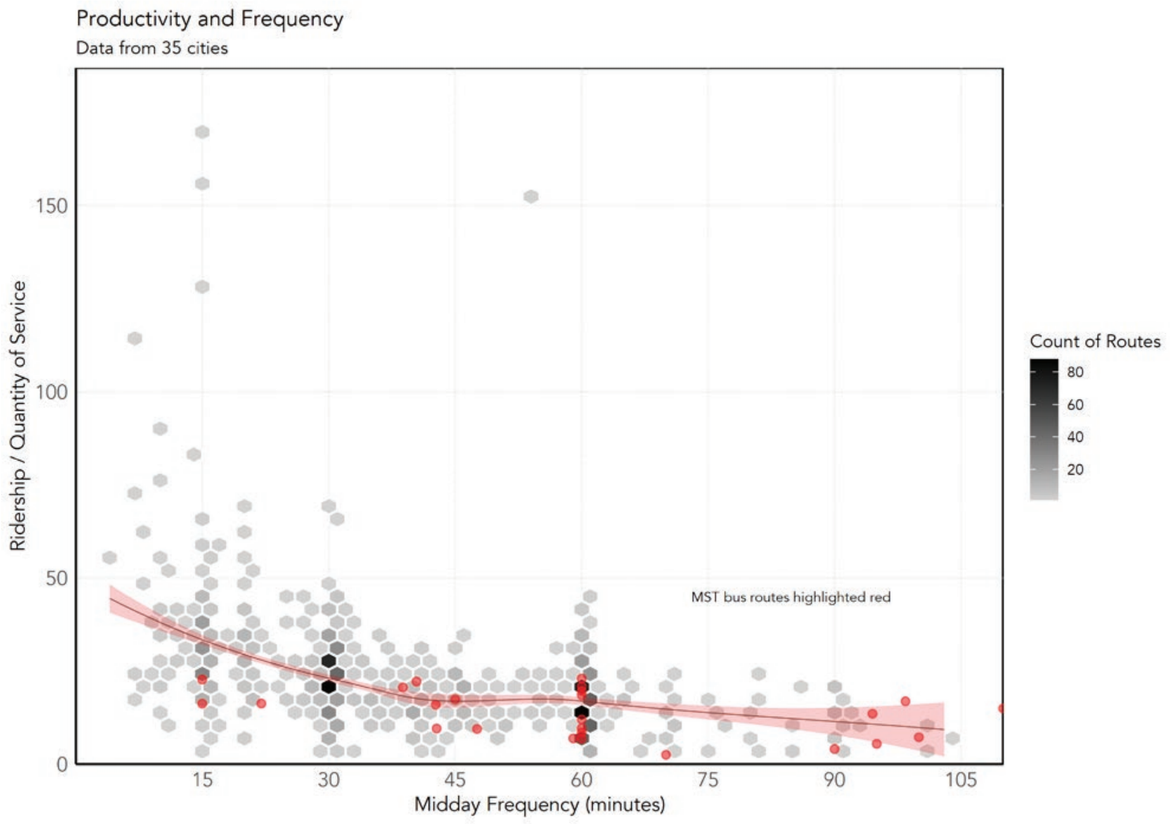


Figure 17: Transit Productivity and Frequency in 34 cities across the USA. Lines that operate more frequently tend to attract a higher number of riders per hour of service. This is because frequency makes transit trips shorter and more reliable.

Transit's ability to expand access depends on the build environment.

Creating a high-access transit network isn't just about faster or more frequent service. Many factors outside the control of MST – such as land use, development, urban design, street networks – affect transit's usefulness. This is why **land use and infrastructure decisions made by the cities and other agencies are an essential part of transit's success.**

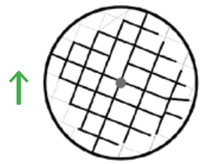
The built environment factors shown in Figure 18 are critical to facilitating a broadly useful transit network:

1. **Density.** Where there are many residents, jobs and activities in an area, there are many places people might want to go.
2. **Walkability.** An area only becomes accessible by transit if most people can safely and comfortably walk to and from the nearest transit stops.
3. **Linearity.** Direct paths between many destinations are faster and cheaper for MST to operate. Straight lines are also easier to understand and more appealing to most potential riders.
4. **Proximity.** The longer the distance between two places to serve, the more expensive it is to connect them. Areas with continuous development are more cost-effective to serve than areas with big gaps.
5. **Mix of Uses.** When there is a mix of land-uses along a direct path, transit can provide direct access to a broad range of destinations. Mixed-use transit corridors also tend to be very productive, because people ride in both directions at many times of the day.

Regardless of the intricacies of local geography, these five elements determine where transit can be useful for many people, at a relatively low cost.

1. Density *How many people, jobs, and activities are near each transit stop?*

2. Walkability *Can people walk to and from the stop?*

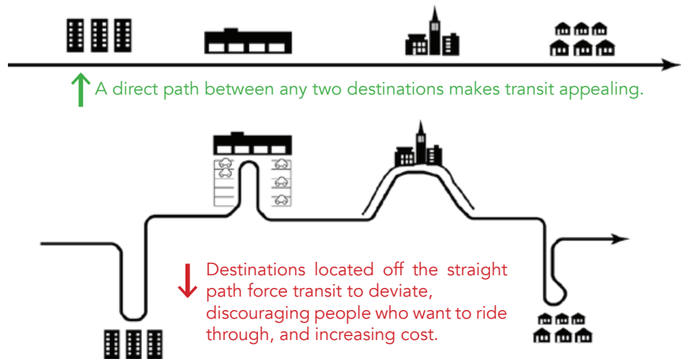


↑ The dot at the center of these circles is a transit stop, while the circle is a 1/4-mile radius.

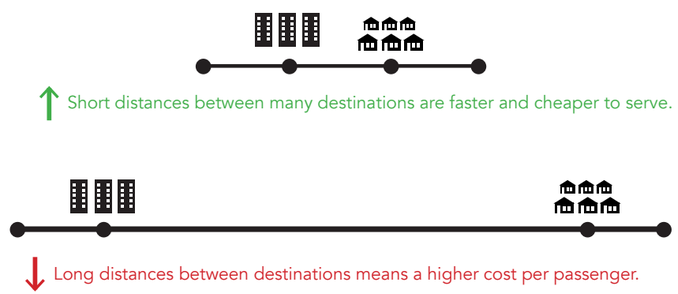
↓ The whole area is within 1/4 mile, but only the black-shaded streets are within a 1/4-mile *walk*.

↑ It must also be safe to cross the street at a stop. You usually need the stops on both sides for two-way travel!

3. Linearity *Can transit run in reasonably straight lines?*



4. Proximity *Does transit have to traverse long gaps?*



5. Mix of Uses *Do people travel in both directions, all day?*

Figure 18: More Freedom, Lower Costs - Five key built environment factors that determine how useful a transit network can be.

These geometric facts pose a difficult political challenge. A transit system focused on cost-effectively providing the most useful service possible tends to serve its constituents unevenly, concentrating service in areas where buses can run straight and demand is high.

Density and Walkability in Monterey County

Because dense areas often support multiple land uses in close proximity, density and walkability often go hand in hand. Nonetheless, there's nothing inherently walkable about a high-density neighborhood.

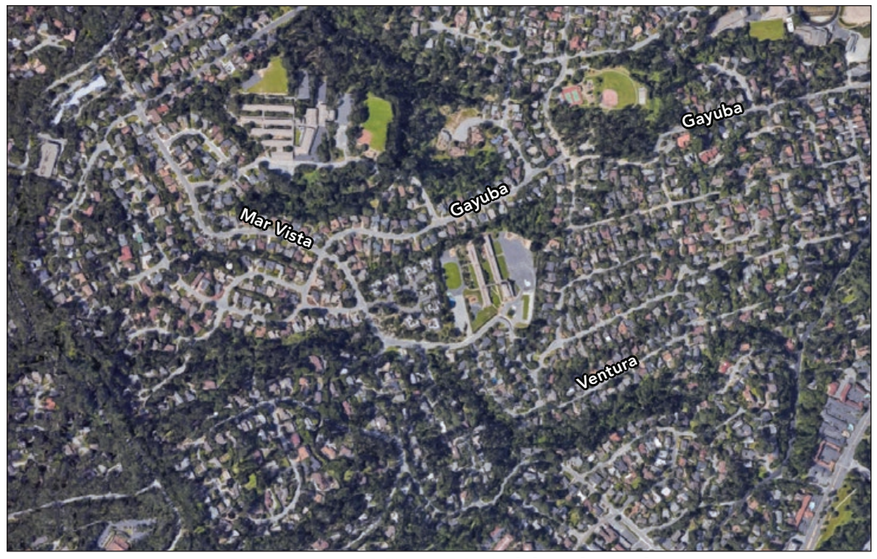
These aerial photos at right show three typical mixes of density and walkability in the Monterey County region. Specifically:

- **High density/high walkability-Cannery Row:** This area features one of the densest mixes of commercial and residential uses in the County, although it is worth noting that even here, most buildings don't exceed three stories. Many features make this area attractive for walking. Sidewalks and paths abound. There are relatively few places like this in Monterey County, and they tend to be economically exclusive.
- **High density/low walkability-North Salinas:** This area in North of Salinas has fairly high density, but is much less walkable. A combination of landscaping, extremely wide streets, serpentine roads, and dead-end roads backing into Highway 101 makes it impractical to walk in a straight path. There are several similar areas in Monterey County, particularly in Salinas, Seaside, and Marina. They tend to be disproportionately low-income.
- **Low density/low walkability-Monterey Vista:** This area of Monterey includes detached houses on a street network with numerous dead ends. There are no services or shopping destinations to walk to nearby.

Because these three neighborhoods are built very differently, providing the exact same amount of transit service in each area will result in very difficult access and ridership outcomes.

Cannery Row, Monterey
High Density; High Walkability

North Salinas
High Density;Low Walkability



Monterey Vista Neighborhood
Low Density;Low Walkability

Figure 19: Examples of Density and Walkability in Monterey County

Density and Walkability in Monterey County. Who lives near jobs?

Another way to see this is by thinking about how many opportunities (density) are near me in a walking distance (walkability).

The map on the right shows how many jobs are within 1.5 miles (roughly a 30 minute walk for an able-bodied adult) in most of Monterey County. Areas represented with a dark shade of blue have many jobs nearby, while areas in a light shade of blue have few.

Depending on where you live, the likelihood you are able to walk to your job or other places you might need to go is reflected by your neighborhood's shade on this map.

In cities like Salinas and Monterey, as you move farther from Downtown, it becomes harder to walk to jobs, services, recreation, etc.

In some areas, like central Marina and the northeast side of Salinas, there are both relatively high population densities and relatively few places to walk to within 30 minutes walking. These are the kinds of conditions which can create significant demand for transit.

Cities in the South County tend to have connected street grids in a compact area, but they are still not very walkable in that there are not that many jobs and destinations available locally. As a result, South County residents tend to need to travel longer distances to get to the places they need to go. MST can serve some of these long trips, but many of them will inevitably be more practical by other means.

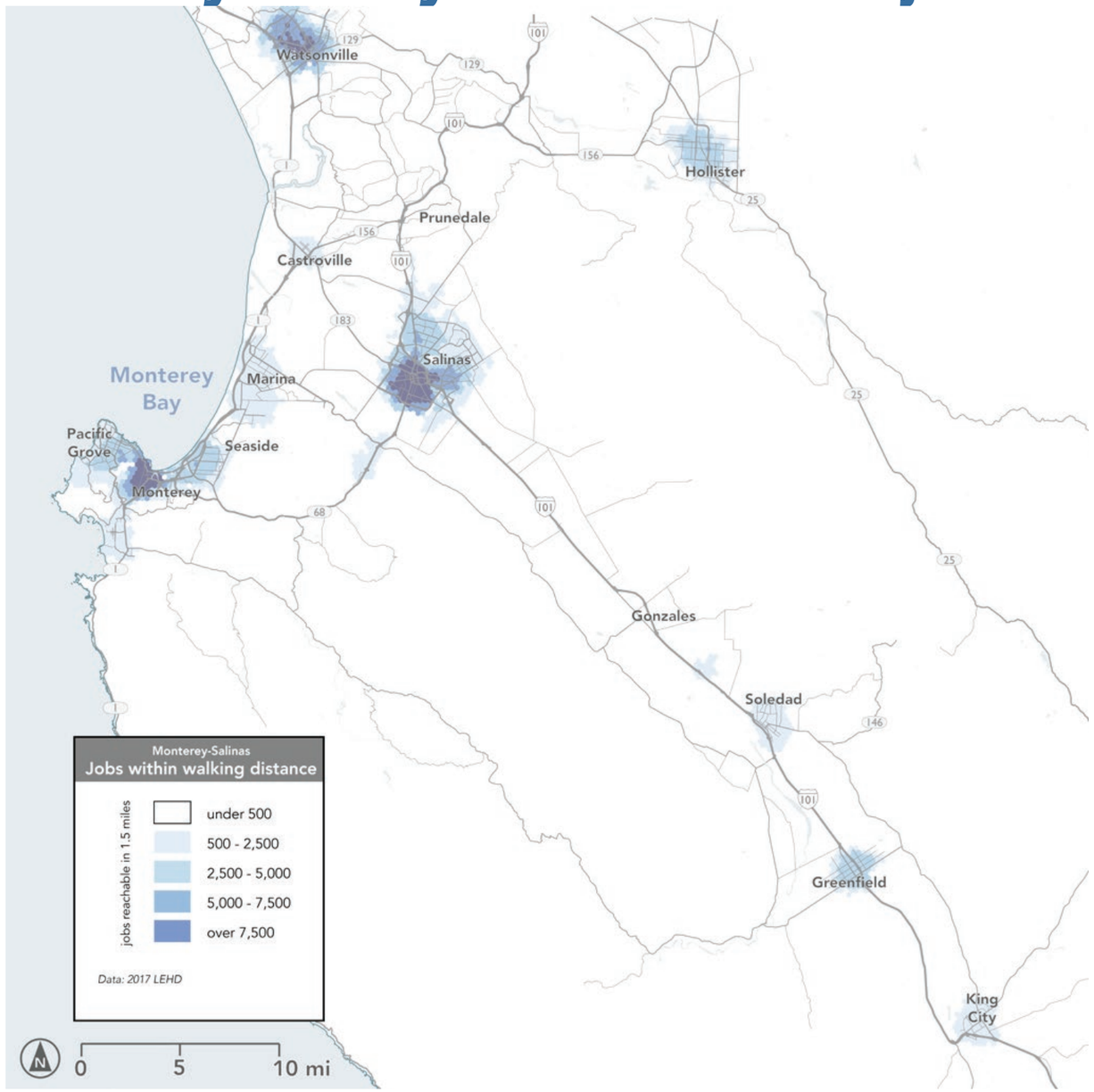


Figure 20: Regional map showing the number of job within walking distance, defined as 1.5 miles, or a 30 minute walk by an able bodied adult.

Linearity in Monterey County

The major factor governing transit operating cost is a vehicle and driver's time on the line. Longer distances take more time to drive. So, the more people and destinations a line can serve in a short distance, the less it costs to serve each rider.

Because of the way the cities in the County have developed, some major destinations can be served very directly by transit, while others require the bus to twist and turn off its path. The examples on this page contrast two situations a major destination requires more or less deviation from a straight path:

- **Somewhat Linear: Salinas Valley Memorial Hospital.** The hospital is located directly on a reasonable straight street (Romie) with pedestrian facilities that can accommodate people getting on and off a bus. A logical transit line can connect this place in a direct path to other origins and destinations.
- **Not Linear: Community Hospital of the Monterey Peninsula (CHOMP).** Similar scale facility, but impossible to serve linearly. Any bus lines serving this hospital must deviate off Highway 1. As a result, anyone travelling between Carmel-by-the-Sea and Monterey on the bus has to sit through the time it takes to pull off of the freeway, drive through the parking lot, and come back. Putting development at the top of a hill or at the end of a long cul-de sac makes it harder to serve conveniently.

To support good transit service, it's important that major destinations locate on the way between other places that support good transit service. A linear street pattern is critical for MST to be able to run straight lines, but beyond that, a linear pattern of density and development is also important.

Figure 21: Examples of Linearity in Monterey County

Proximity in Monterey County

MST decides where transit goes, but it has no control over where jobs, housing and opportunities are located. Housing and job locations are decided by cities, counties, state and federal authorities, banks and businesses, but they directly impact MST's potential to be useful to people.

The map in Figure 22 shows how many civilian jobs are within 10 miles of most locations in Monterey County and adjacent areas. Areas shown in a dark shade of blue have many jobs within 10 miles, and areas in a light shade have few.

10 miles is significant as a distance, because transit tends to be most cost-effective at serving trips that are in the range of 1-15 miles. **Dark blue areas on this map are areas where a bus could in theory take people to many places in a reasonable amount of time.**

People who live in the white and light blue areas in South County need to travel very far to reach economic opportunities. It is possible to serve them with transit, but the cost per rider will inevitably be higher, and the service will inevitably be less effective. People who have no choice but to live far from where they need to go will spend more time than they want travelling, be it on the bus or in a car.

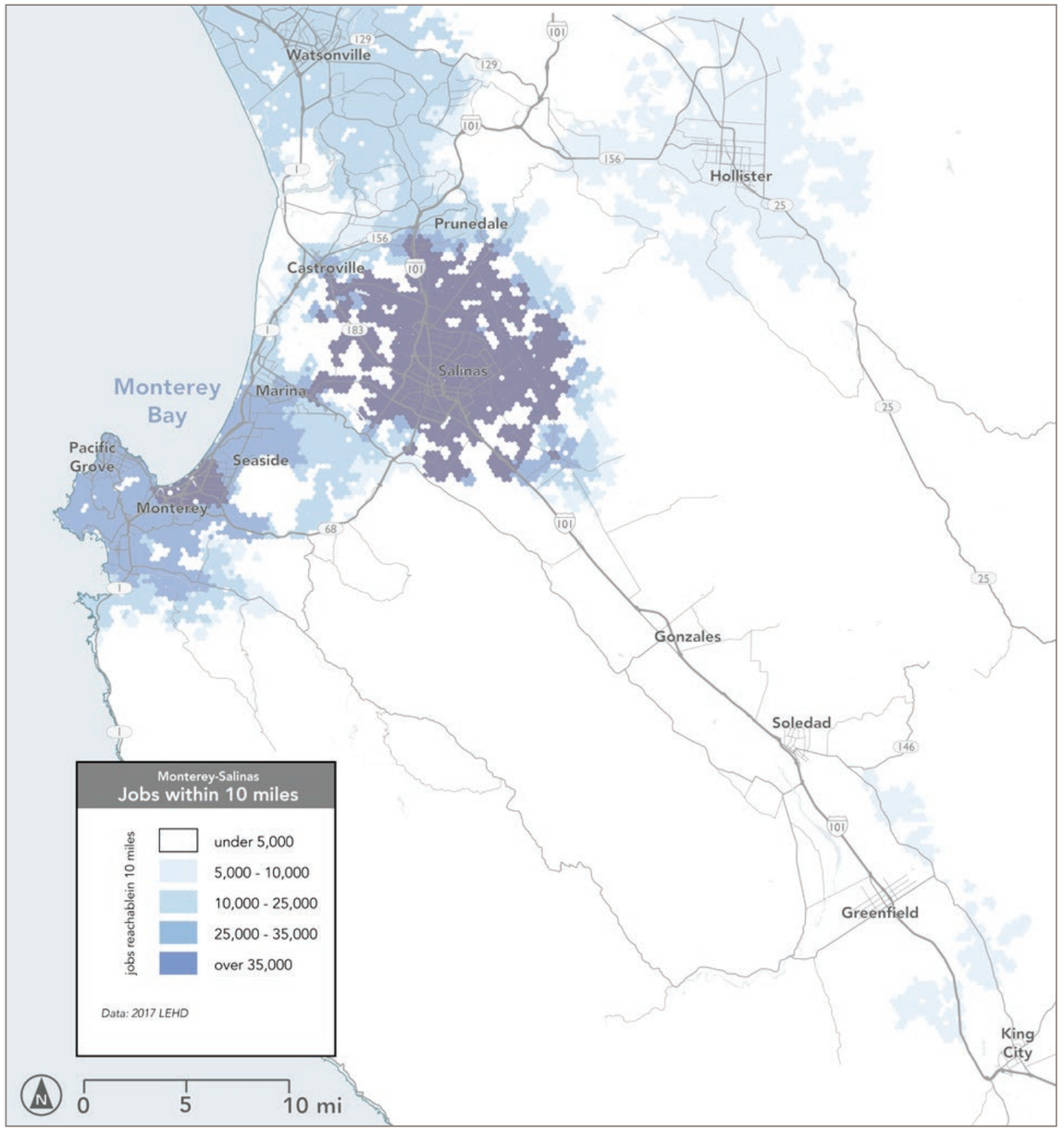


Figure 22: Jobs within a 10 mile distance

3 The Challenges and Opportunities of Monterey County's Geography

The Market and Need for Transit

In this chapter, we present and discuss data that inform two different types of considerations in transit planning:

- **Where are the strongest markets for transit, with potential for high ridership and low operating costs?**
- **Where are there moderate or severe needs for transit, where coverage services may be important even if they do not attract high ridership?**

A "strong transit market" is mostly defined by where people are, and how many of them are there, rather than by who people are. We learn about transit needs mostly by examining *who* people are and what life situation they are in.

Measuring Demand and Need

On the following pages, these maps and diagrams help us visualize potential transit markets and needs[1]:

- **Residential density**
- **Job density**
- Activity density (combined residential and jobs)
- Maps of **walkability**
- Pre-pandemic **commute patterns**
- **Zero-Vehicle households**
- **Poverty** density map
- Density of **Residents under age 18** (Youth)
- Density of **senior residents**

1 The maps in this chapter are based on data from the U.S. Census Bureau (2010 Census and 2018 American Community Survey)

How to Use These Measures

No one measure tells us that a place has high ridership potential or high needs. Rather, we must consider them in combination.

Designing for Ridership

If you asked a transit planner to draw you a very high-ridership bus line, that planner would look mostly at densities of all residents and jobs; at the walkability of streets and neighborhoods; and at the cost of running a bus line long enough to reach them.

Only secondarily would that planner look into the income or age of those residents or workers. However, the "who" attribute that has the strongest influence on transit ridership potential is income. A lower income person is often more likely to choose transit than someone with a higher income. This is especially true in outlying areas where driving and parking cars is so easy, so transit tends to be used mostly by people who don't have the option to drive.

Designing for Coverage

If you asked a transit planner to draw a line that helped as many people with severe needs as possible, they would look at where low income people, seniors, youth and people with disabilities live and where they need to go.

The densities at which these people live matters, because at higher densities a single bus stop can be useful to more people in need. However, the transit planner might also try to get the line close to small numbers of people. In fact, the more distant and scattered people are, the more isolated they can be and the more critically they might need access to transit.

Civil Rights and Equity

Another important set of maps in this chapter is not strictly related to *need* but rather to civil rights. These maps show **where members of different racial and ethnic groups live**.

Unequal treatment on the basis of race or ethnicity is prohibited by Civil Rights Act of 1964. (Unequal treatment on the basis of other characteristics, including income and age, is also prohibited by law.)

A person's race or ethnicity does not tell us if they need transit, or if they have a propensity to use transit. However, we know that race and ethnicity are correlated with income.

Providing equitable and supportive levels of service to people of all races and ethnicities, even in areas that are costly to serve or that do not generate much transit ridership, can be an important element of a coverage goal.

Data Limitations

Detailed Census 2020 data is not yet available at the time of publication of this report.

The majority of the maps shown in this chapter are based on 5-year American Community Survey (ACS) data produced by the U.S. Census Bureau for the 2014-2018 period.

As such, they may not reflect very recent changes in population and job distribution that may have occurred in 2019 and 2020, or changes that started after 2014.

While the larger patterns of population distributions and population change shown in the maps likely reflect current reality, there may be deficiencies in specific locations of high growth (or population loss) in the second half of the 2010s.

Indicators of Demand: Residential Density

Anyone who travels makes at least one round-trip from their home each day. This makes residential density an essential consideration when thinking about transit market and where to locate service.

Figure 23 is a map of residential density taking a closer look at Monterey and Salinas, and the adjacent cities. Figure 24 on the next page is a map of the same data, but zoomed out to see the Gonzales, Soledad, Greenfield and King CIty.

It is important to understand that these maps only represent one side of the overall transit market. The other half is where people go once they leave their homes, such as offices, schools, universities, retail, recreational areas, houses of worship and other gathering places.

This map shows that the areas of highest residential density are located in Seaside and Salinas. Most of the residential density in these cities consists of tightly spaced one to two story house units on small lots.

Density in Seaside is located mostly east of Fremont Blvd, in an almost totally residential area with very little mix of uses.

Salinas in general has the highest density relative to other cities in the County. However, the mostly undeveloped area south and east of Natividad Hospital (around Laurel Drive) splits the areas of high density into two zones: one starting in the core of the city and spreading north, and the other one in the Alisal neighborhood, east of the city.

The highest density pockets in Salinas and Seaside are also located in very walkable streets, making them capable of generating substantial transit demand.

There are other isolated pockets of density in Marina, Monterey, Pacific Grove and

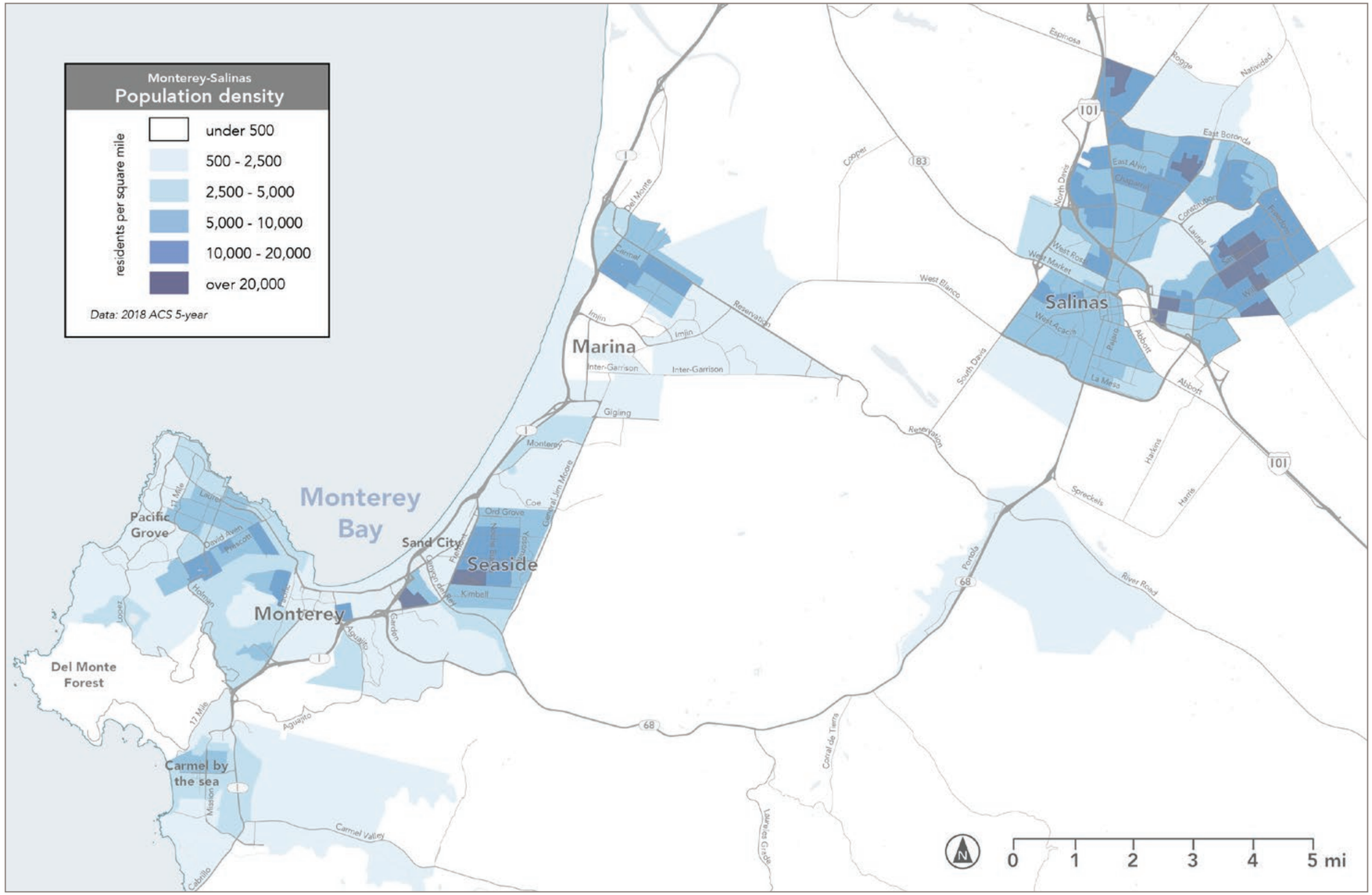


Figure 23: Map of residential density in the Monterey-Salinas area

Indicators of Demand: Residential Density

Castroville. Marina has grown faster than any other community over the last ten years, and it seems likely that similar map prepared five to ten years from now would show significantly higher density in the area around CSUMB.

In the North County, the development pattern of Castroville (a small town) contrasts clearly with Prunedale (a large semi-rural area). But Castroville is too small to be a significant transit market on its own. However, it is on the way to Watsonville, where many people and jobs are located.

In South County, the only pockets of density are the series of small towns around Highway 101.

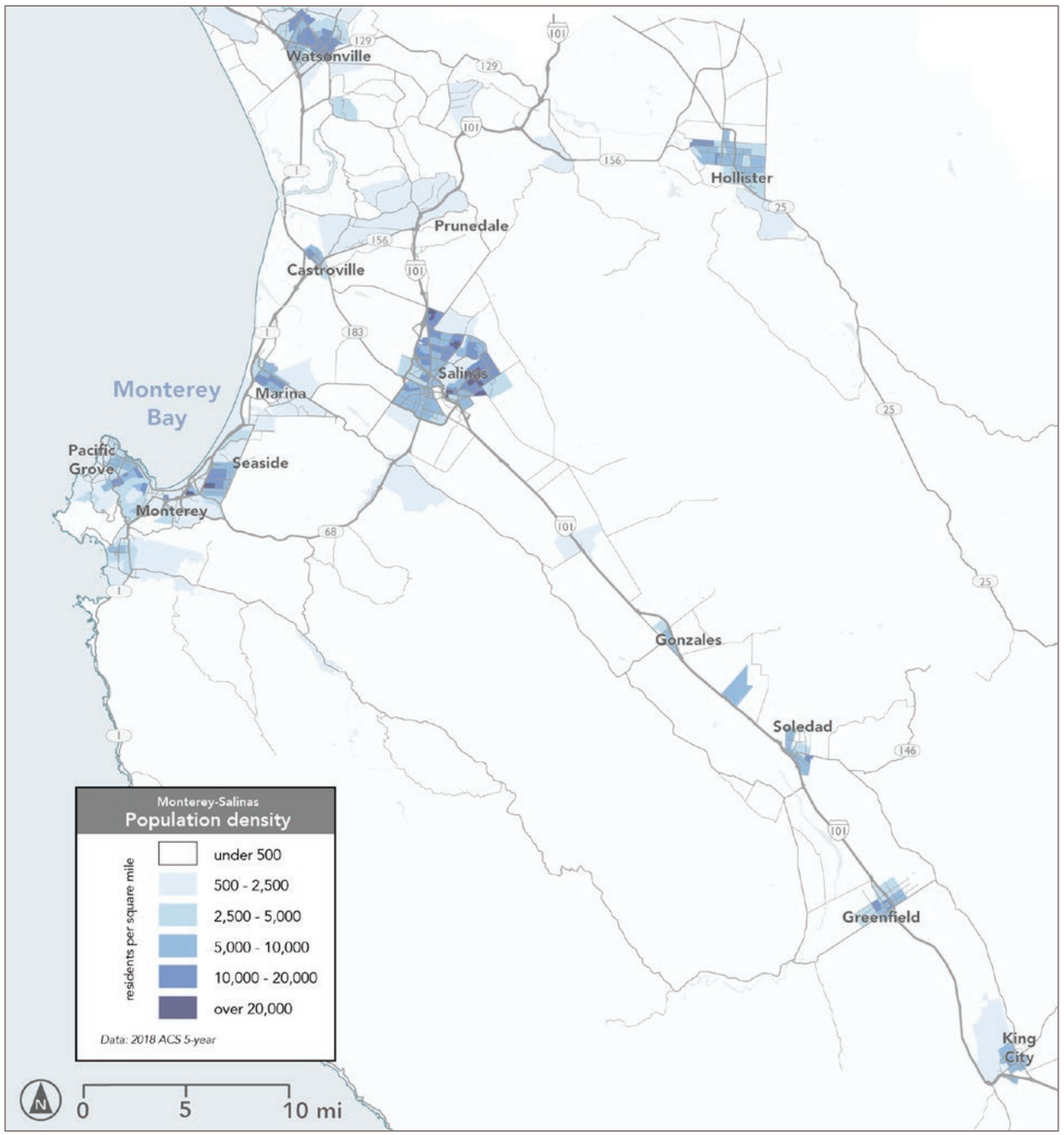


Figure 24: Regional map of residential density.

Figure 25: Housing typology in Salinas.

Indicators of Demand: Job Density

Job density can tell us not just about where people might be going to work, but also about important destinations people travel to: where they go for services, shopping, social life and other activities. Civic and service destinations like hospitals and universities also appear on job density maps because they have so many employees.

Only 5% of people in Monterey County live in areas where job densities exceed 5,000 jobs per square mile. And most of the highest job density in the county is concentrated in a few places in Monterey and Salinas.

Monterey has relatively low residential densities, but the map in Figure 26 shows that it does hold high job densities, especially by the Aquarium (Cannery Row) and Downtown, along the commercial streets of Washington St., Alvarado St., and Munras Ave.

These areas matter not just because they are places where people work, but also places that are likely to have a high density of customers, particularly in the retail and service sectors. Smaller centers of employment and services also appear on this map, in Pacific Grove, Sand City, Marina and Carmel-by-the-Sea.

Salinas also has a high density employment between Blanco Road and Highway 101. A few of the main spots in this area are Downtown Salinas, Salinas Valley Memorial Hospital, and Hartnell College.

One place notably missing on this map is California State University (CSUMB) in Marina. This is mostly due to a quirk of census geography: CSUMB is located in a large census block group and so its job density appears to be low. Nonetheless, MST knows that many people will travel to and from CSUMB for work and school.

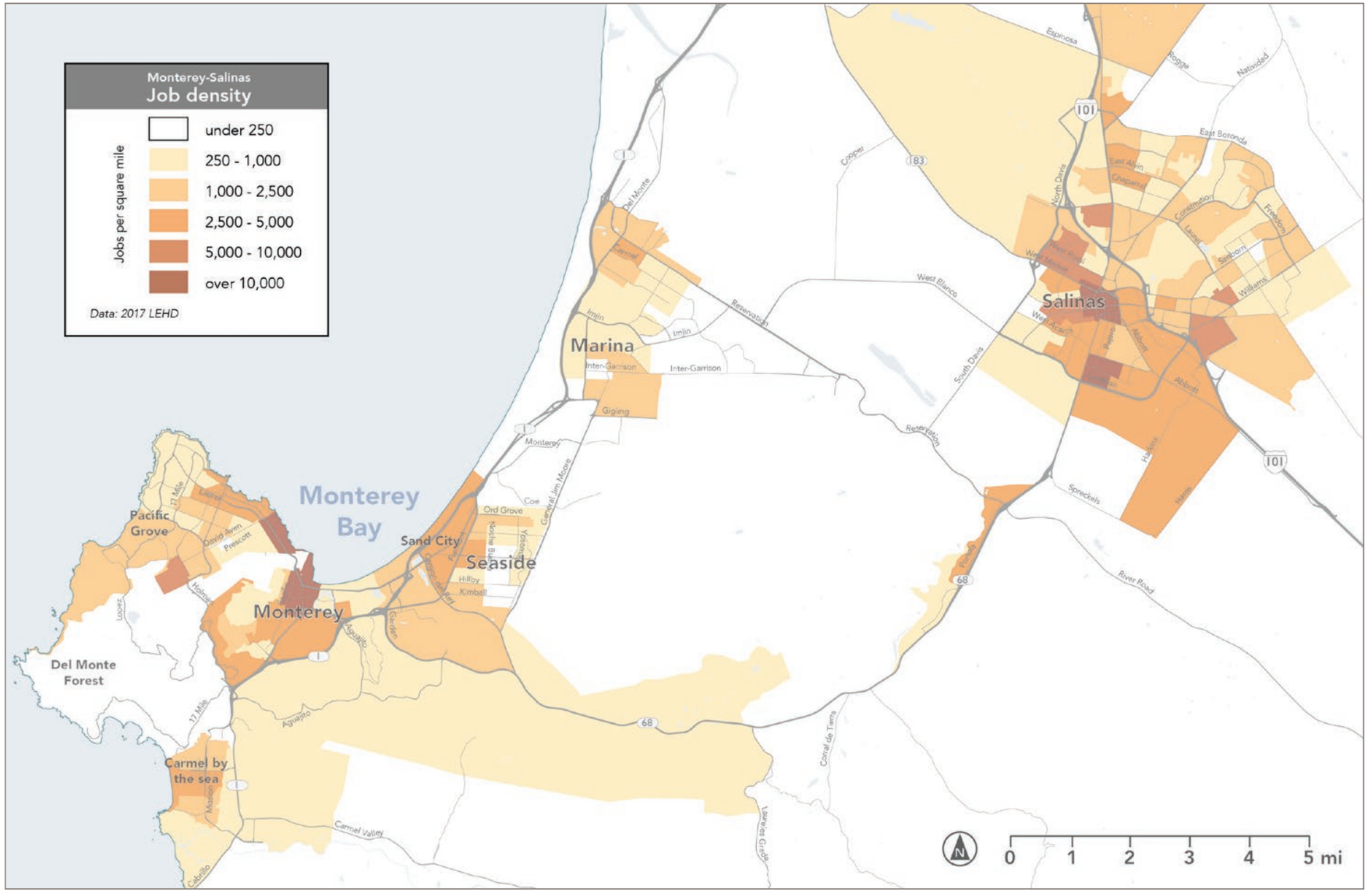


Figure 26: Map of job density in the Monterey-Salinas area

Indicators of Demand: Job Density

Outside of the greater Monterey and Salinas areas, the nearest areas of high employment density are in Watsonville, particularly along highway 129 and Main St.

Areas in the rest of the region tend to have significantly lower job densities, even if they support many jobs. This is particularly true for agricultural jobs, which tend to be spread out over a very large area.

Smaller cities like Soledad, Greenfield and King City have relatively low job densities overall compared to more urban areas, despite the presence of some regionally-significant locations like the Soledad prison complex, Mee Memorial Hospital in King City.

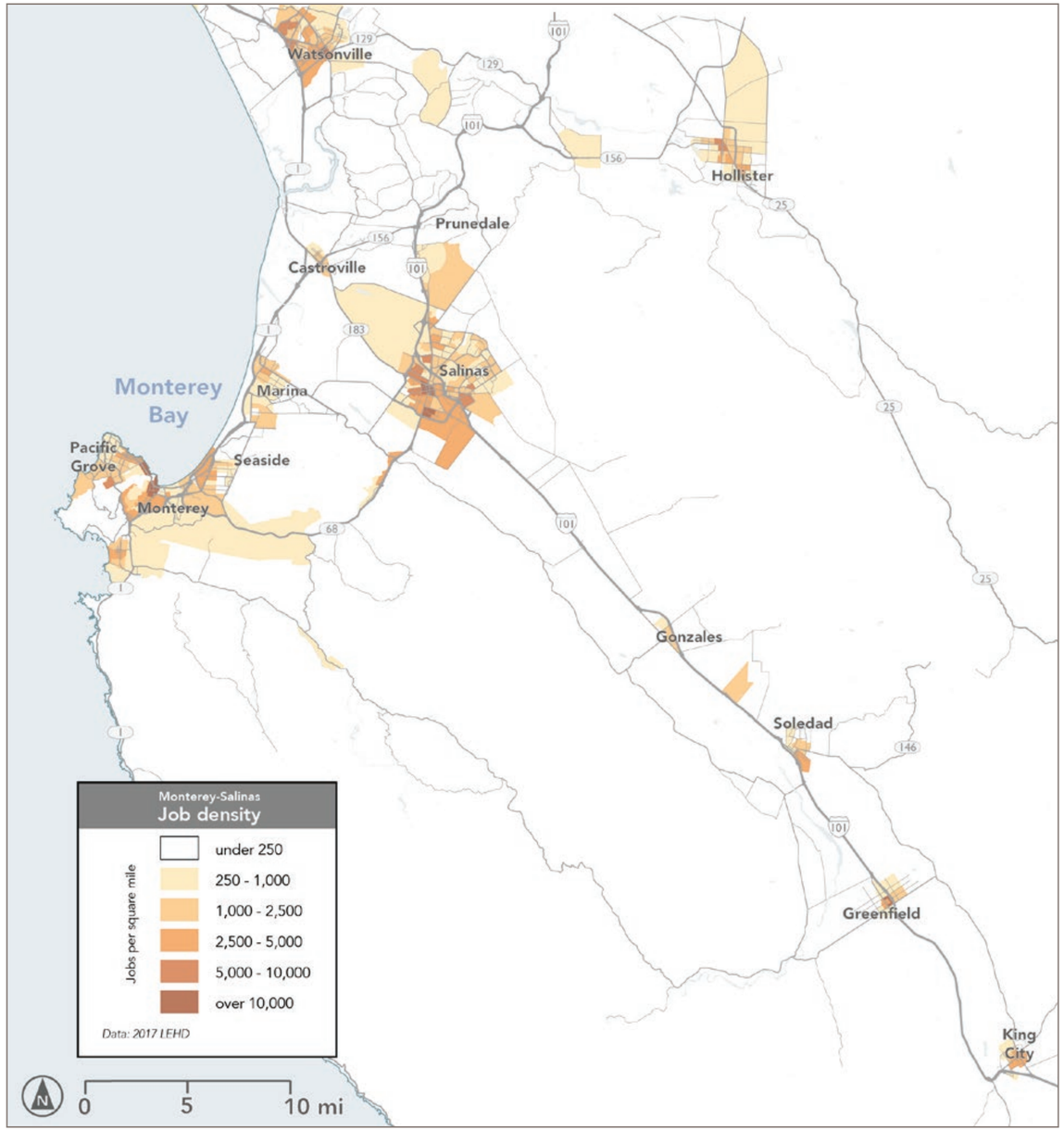


Figure 27: Regional map of job density.

Indicators of Demand: Activity Density

The maps in Figure 28 and Figure 29 allow us to see not only high density, but also the mix of activities in an area, which contributes to ridership potential.

Transit lines serving purely residential neighborhoods tend to be used in only one direction each morning and evening rush hour. In contrast, on corridors where residential, commercial and other uses are mixed, people are traveling in both directions so buses can be full in both directions. Travel demand also goes beyond the weekday rush hours, and is high throughout the midday, evening and weekends, as people move in all directions for work, socializing, shopping and other activities.

These maps use a three-color scale: residential density is shown in shades of blue, job density is shown in shades of yellow, and places where residents and jobs are both present are shown in shades of red. The darker the color, the greater the number of jobs or residents in the area.

Note that some busy places like malls and hospitals are underrepresented on these maps, because only the workers are counted, and not the many visitors. In addition, data from schools and universities counts only employees, not students, even though many students commute every day.

By comparing this map to the map of the existing network on page 6, we can see that many places in Salinas have both relatively high density and a significant mix of uses, and yet are mostly served by infrequent lines. We can also see that all the densest places in the Monterey Peninsula have at least some transit service, but these areas tend to have high residential density or high employment density, not both.

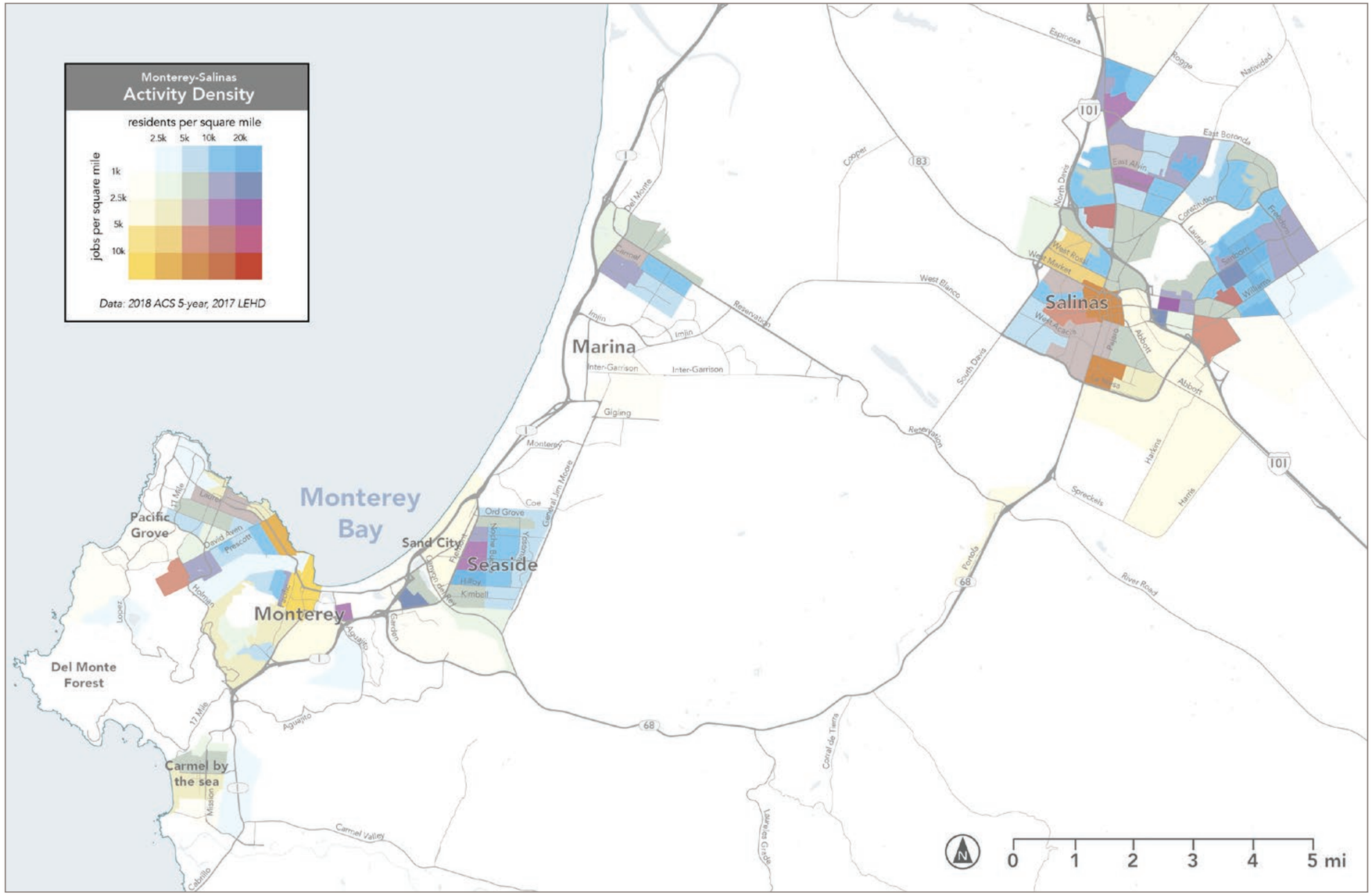


Figure 28: Map of combined population and job density in the Monterey-Salinas area

Indicators of Demand: Activity Density

Ultimately, the activity density maps allow us to see three ingredients in the Ridership Recipe: high **density**, arranged in **linear** patterns, and **proximate** to other dense places.

We can see how some mix dense places like Monterey, Seaside and Salinas are dense and proximate to each other, and others like Soledad, Greenfield and King City are placed along a linear path, but very far from opportunities.

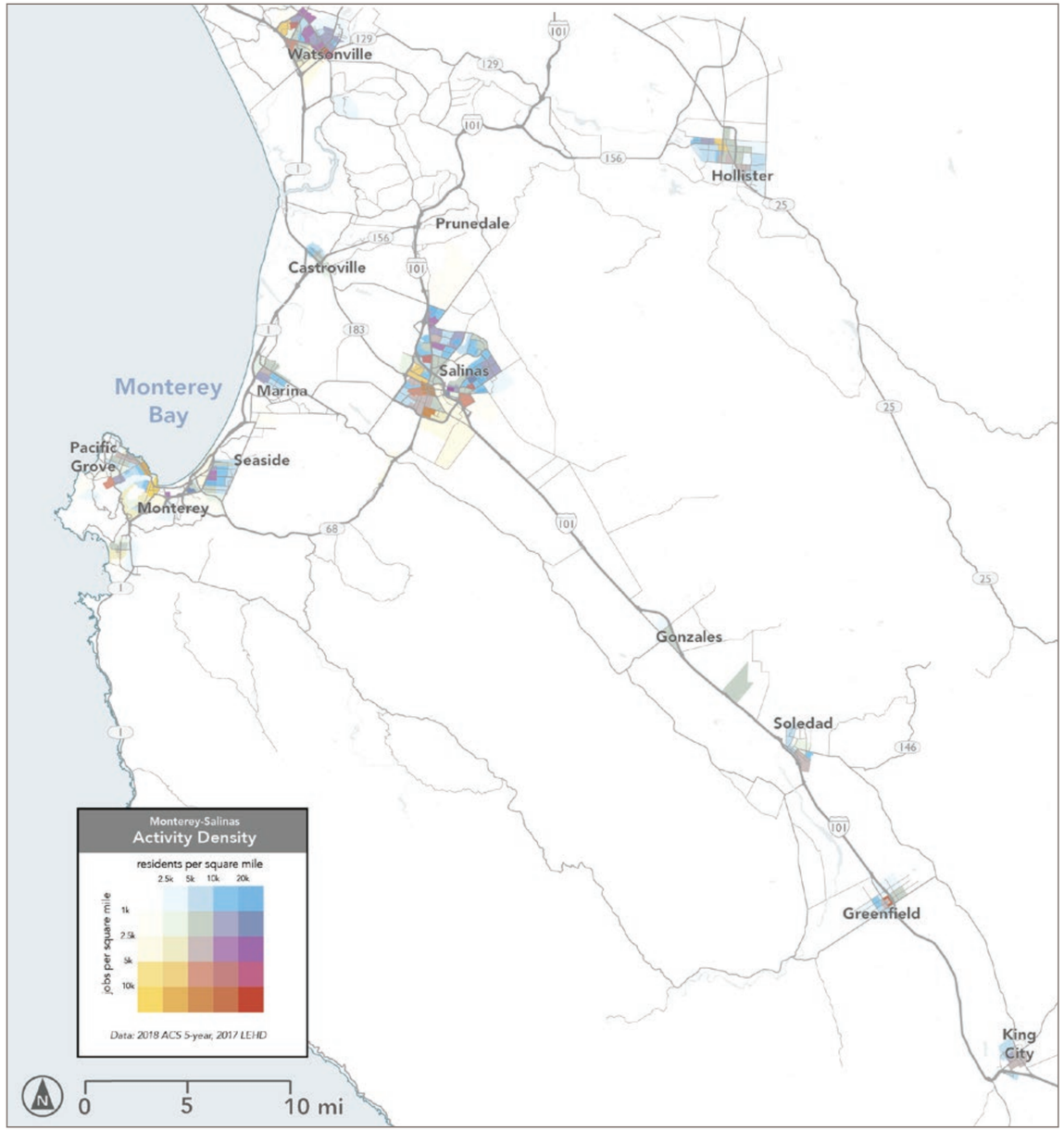


Figure 29: Regional map of combined population and job density.

Indicators of Demand: Walkability

Walkability is the second ingredient in the Ridership Recipe because it governs whether the people nearby can actually reach the transit stop. *How many potential riders nearby can actually reach a transit stop?*

Street connectivity is fundamental to walkability – it governs whether a walking trip is possible at all, and how long it is. It also has influence over how safe and comfortable a walking trip is, because poor street connectivity causes arterial roads to be wider, and safe crossings of those roads to be farther apart.

The map in Figure 30 illustrates how connective the street network is, as a proxy for walkability. Only the street network is considered, so areas lacking in sidewalks, lighting, or safe crossings are generally less walkable than they appear on this map.

In historic neighborhoods that were laid out before the private car was dominant, nearly all transportation was originally done on foot, by bicycle or by transit. A walkable and well-connected street network was therefore of existential importance to the usefulness and value of land, and so neighborhoods built in those times have very high street connectivity. Old town centers in Monterey, Pacific Grove and Salinas epitomize this urban form.

More recent developments can have high street connectivity, even without a traditional grid of streets. However, many newer developments are designed to minimize car traffic past the most valuable real estate. This is done in part with intentionally poor street connectivity, as is evident in some of the more recent developments at the northern edges of Salinas.

Areas adjacent to highways (e.g. Highway 101 in Salinas, or Highway 1) and areas surrounded by big lots and cul-de-sac developments are mostly inaccessible on foot, due to a lack of connections.

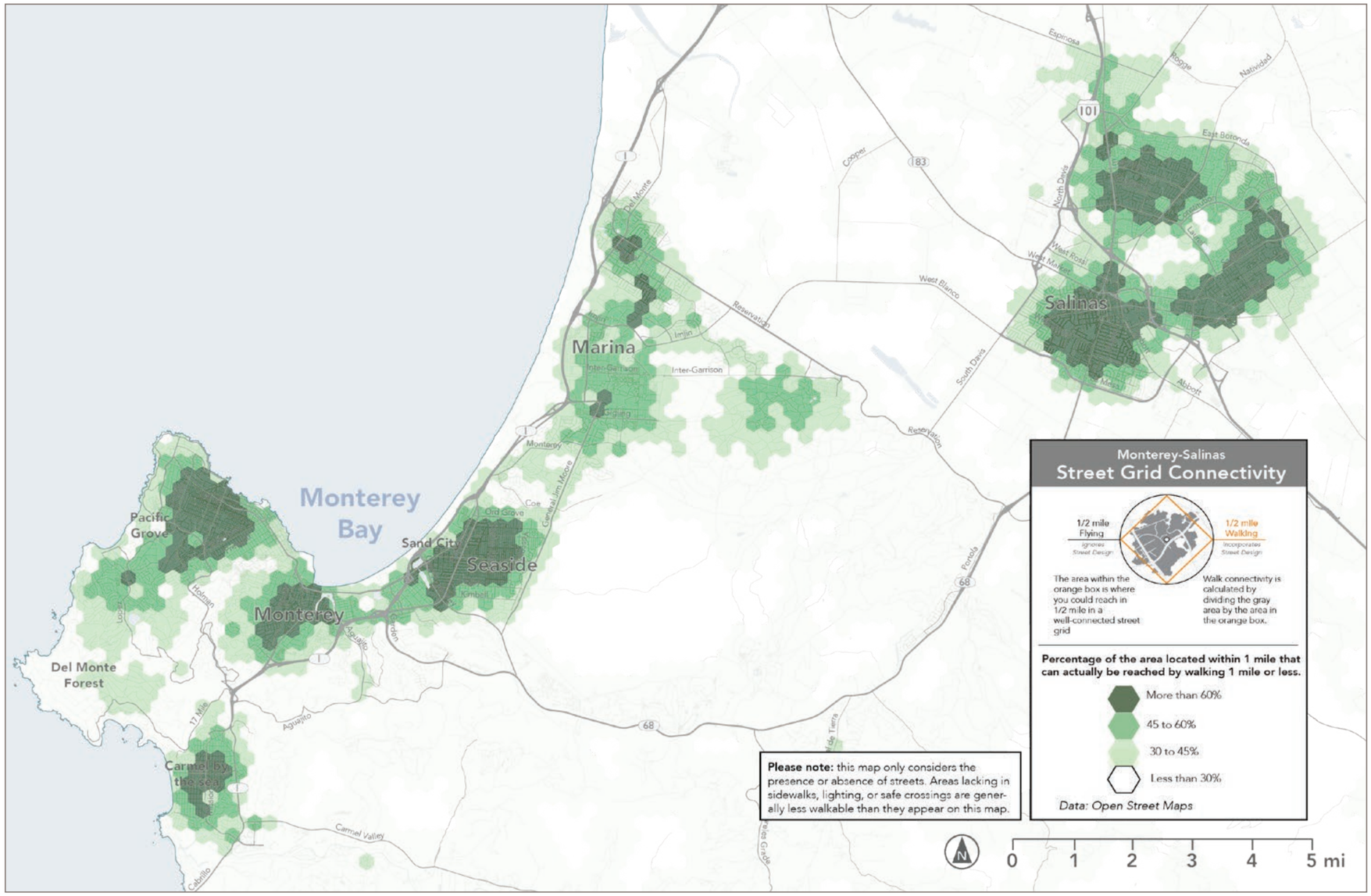


Figure 30: Map of Street Grid Connectivity in the Monterey-Salinas area

Indicators of Demand: Commute Patterns

The map in Figure 31 shows the major pre-pandemic (2017) commute patterns in most of Monterey County. Specifically, this map shows:

- For each community, a dot sized according to the number of people who commute daily within their community. For example, about 25,000 people commuted daily from a home in Salinas to a workplace in Salinas.
- Between communities, arrows that show where people commute to and from. For example, about 3,400 people commuted on a daily basis from Salinas to Monterey.

To make this map more legible, we only show communities with at least 1,000 total commute trips, and flows of at least 1,500 daily commutes between communities.

But there is also a ridership-related rationale to this simplification: transit can only efficiently serve commute flows where many people are going to similar places. So while a few people do commute from, e.g. the Carmel Valley to Del Monte Forest, the numbers are too low to justify designing a ridership-oriented transit service that connect these two areas.

This map tells us two important things:

- Salinas is the largest internal commute market, by far. This is consistent with Salinas' position as the place with the highest population and number of jobs.
- Monterey is the largest attractor of commute trips from other places, but especially from Salinas, Marina, Seaside and Pacific Grove.

The implications of this are clear: **a purely ridership-oriented transit network would concentrate on local lines within Salinas, and on lines connecting Salinas, Marina, Seaside, Monterey and Pacific Grove.**

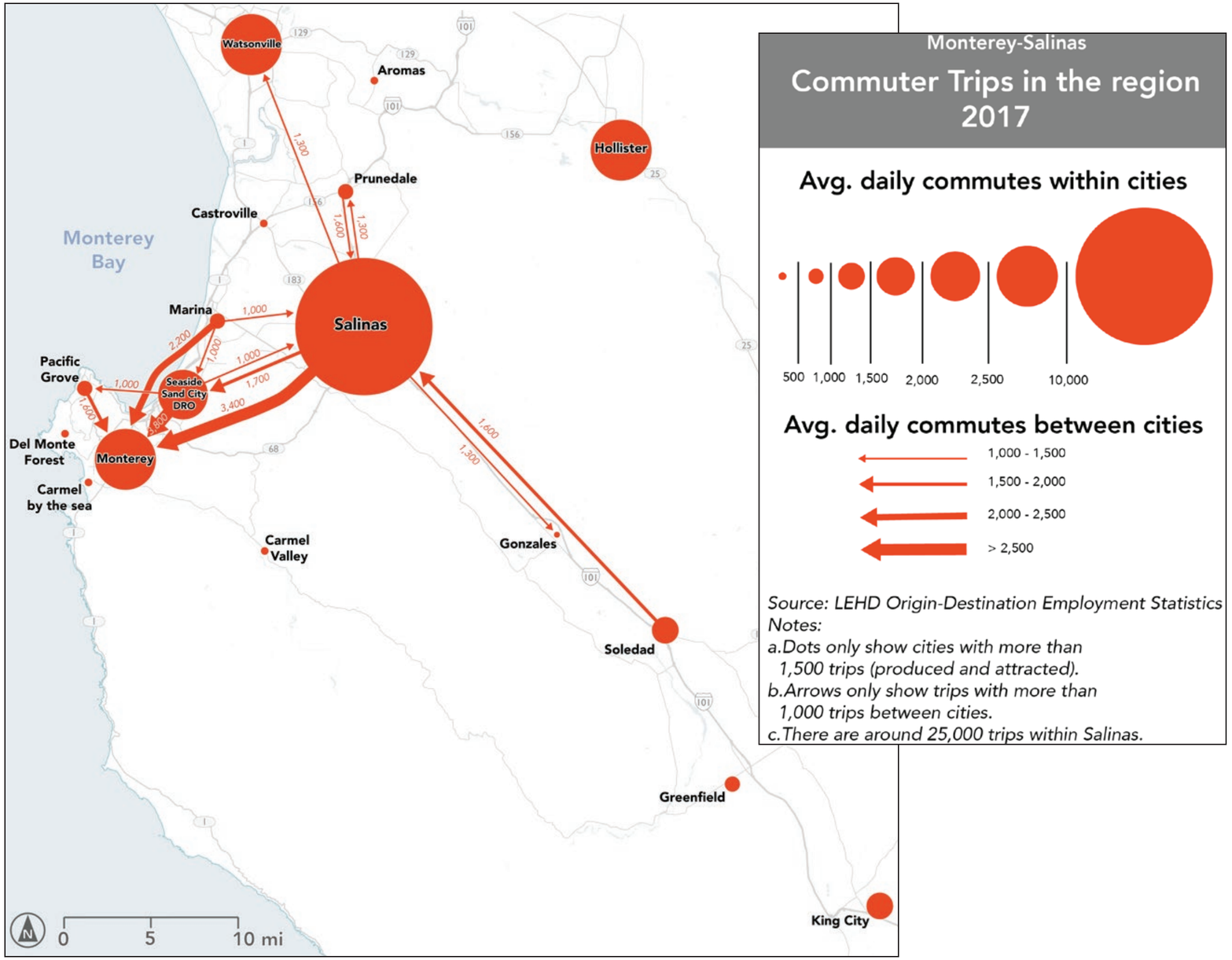


Figure 31: Regional map of major commute patterns.

Indicators of Demand and Need: Zero Vehicle Households

Another factor affecting transit's competitiveness in an area is the availability of personal vehicles. The map at right shows the density of households with zero vehicles.

While people who don't own cars don't use transit by default, they have fewer options than those people who do have access to personal automobiles. As a result, if transit is a useful method (fast, reliable, available when they need to travel) of reaching the places they need to go, it can be a compelling option.

If transit does not present a realistic travel option, then people without cars will find other ways of reaching the places they need to go, by getting rides from friends or family members, cycling, walking, or using taxis or ridesharing services.

Only 5% of the households in Monterey County don't have a vehicle. In the Monterey-Salinas area, the highest densities of zero-vehicle households are found in Seaside and Salinas, in many of the same areas that have high densities of residents in poverty. There also appears to be a relationship in some areas (e.g. Pacific Grove) between concentrations of seniors and households with zero vehicles.

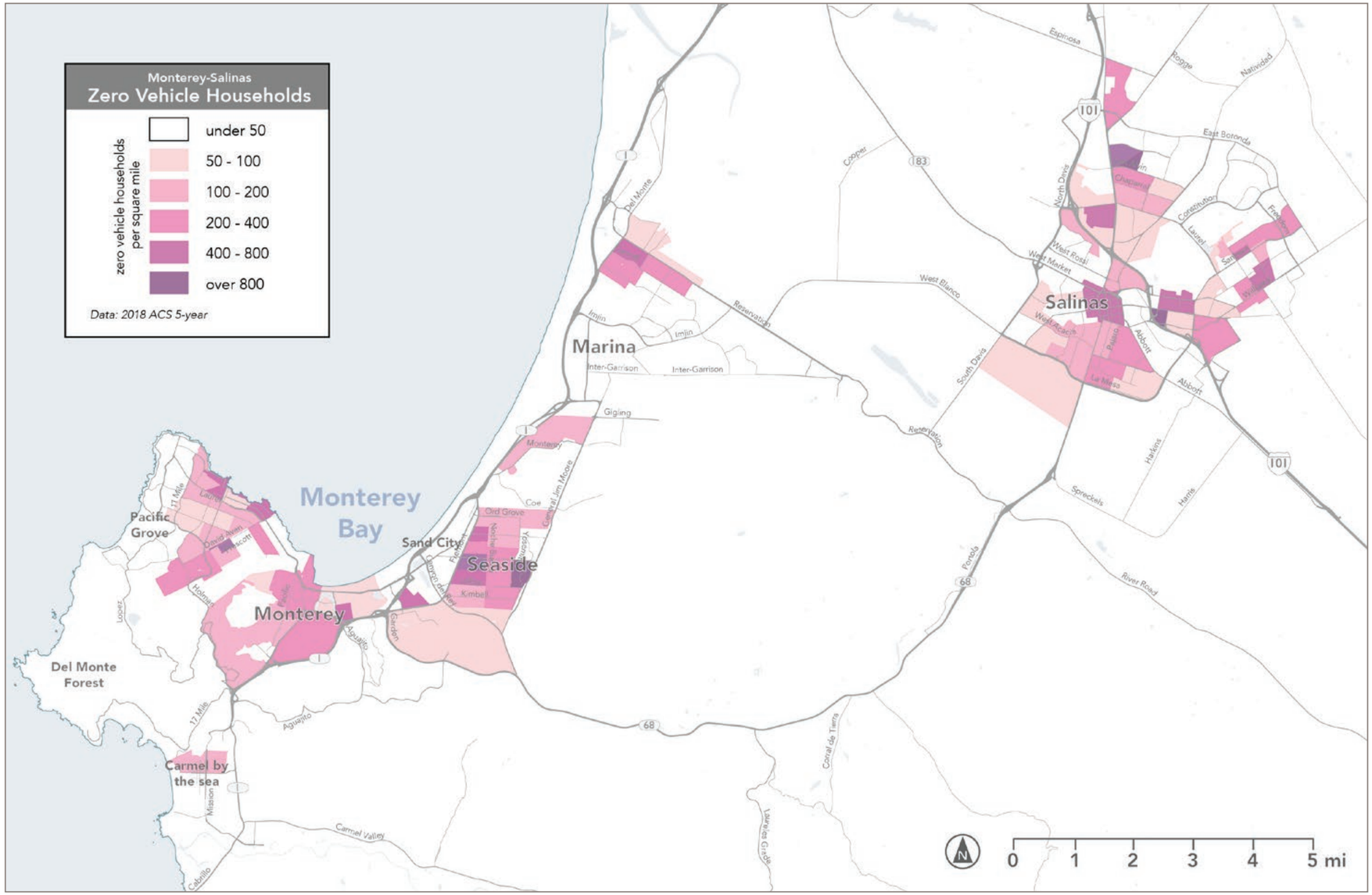


Figure 32: Map of the density of zero-vehicle households in the Monterey-Salinas area

Indicators of Demand and Need: Zero Vehicle Households

Overall, the concentration of households with zero vehicles is low outside the urbanized area. This reflects the higher importance of vehicle ownership when people need to travel very long distances on a regular basis. This is true even though many rural communities have relatively high poverty rates.

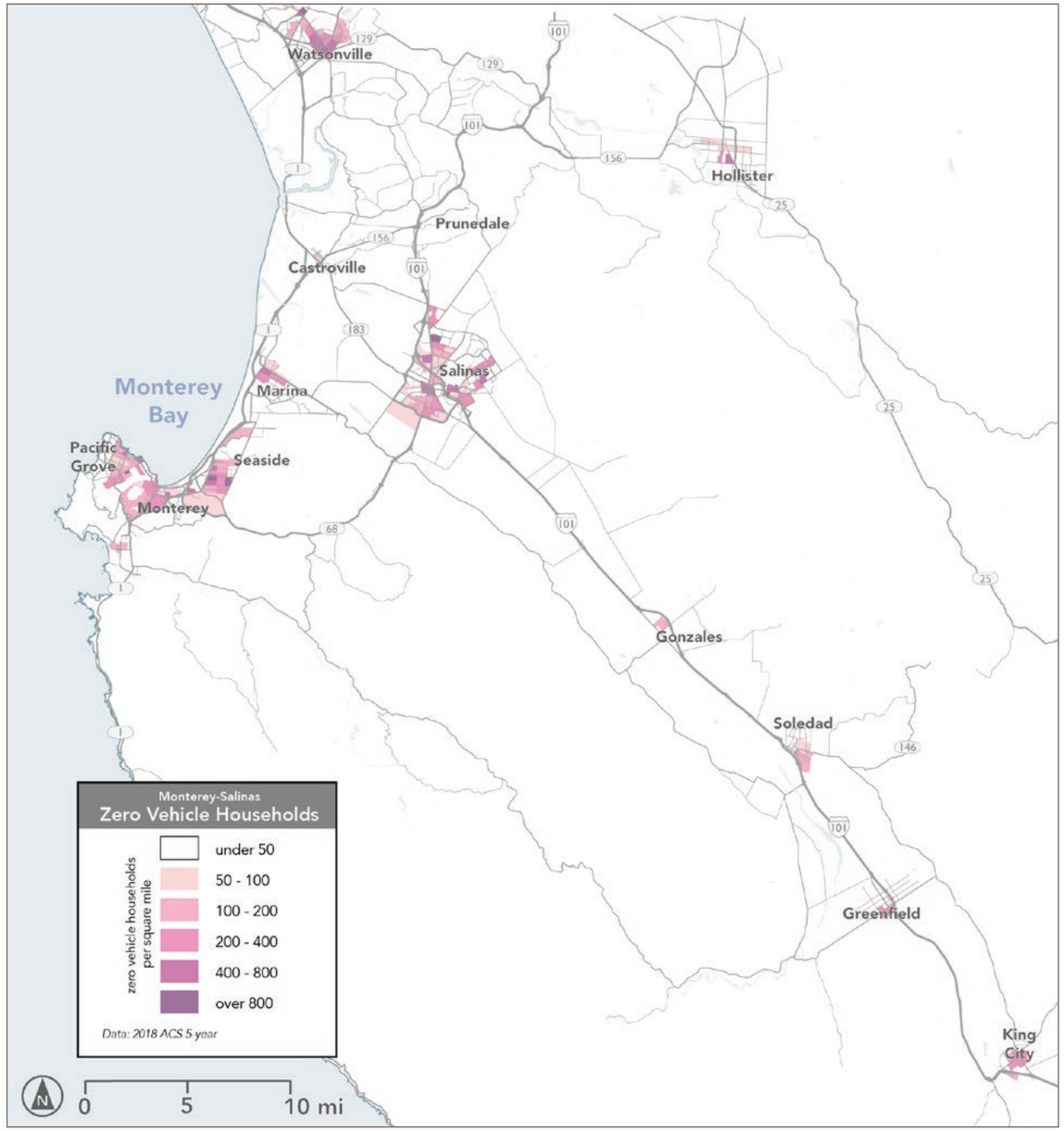


Figure 33: Regional map of the density of zero-vehicle households.

Indicators of Demand and Need: Residents in Poverty

When many people live on low incomes in a given area, this can either suggest a strong market for transit or a significant need for coverage service, depending on the built environment around them.

The more carefully a person must manage their money, the more attractive transit's value proposition may be. This doesn't mean that lower-income people will automatically choose transit because it's the cheapest option.

Transit service must be useful and reliable for the kinds of trips they need to make, to compete for their ridership. For a long time the transit industry has described lower-income people as "dependent" riders and higher-income people as "choice" riders. Yet the drop in ridership over the past decade demonstrates that lower-income people have some choices too!

If transit doesn't actually allow people to make the trips they need in a reasonable amount of time, even lower-income people will not use it. They will seek other options, such as buying a used car or getting a ride from a friend, even if those cause financial or social stress.

The maps in Figure 34 and Figure 35 show the density of people in poverty in the Monterey and Salinas area. Around 25% of residents in Monterey County are under 150% of the federal poverty line.

In Salinas, Seaside and Marina, the densest areas in Salinas tend to also be home to many people in poverty. These three communities together account for about 60% of County residents under 150% of the federal poverty level.

These concentrations of low-income residents in the densest places in the county, relatively close to job opportunities suggest significant

Figure 34: Map of the density of residents below 150% of the Federal Poverty Level in the Monterey-Salinas area

Indicators of Demand and Need: Residents in Poverty

markets for transit service, if it is convenient enough.

On the other hand, areas with high densities of low-income residents in southern Monterey County are not near many opportunities. It is much more costly for MST to serve these areas than similarly disadvantaged neighborhoods in Salinas or Seaside because of the long distances with low demand that MST buses have to traverse.

So although these communities are places that MST might want to serve due to high needs, their isolation should limit any expectations of high ridership on bus lines serving them.

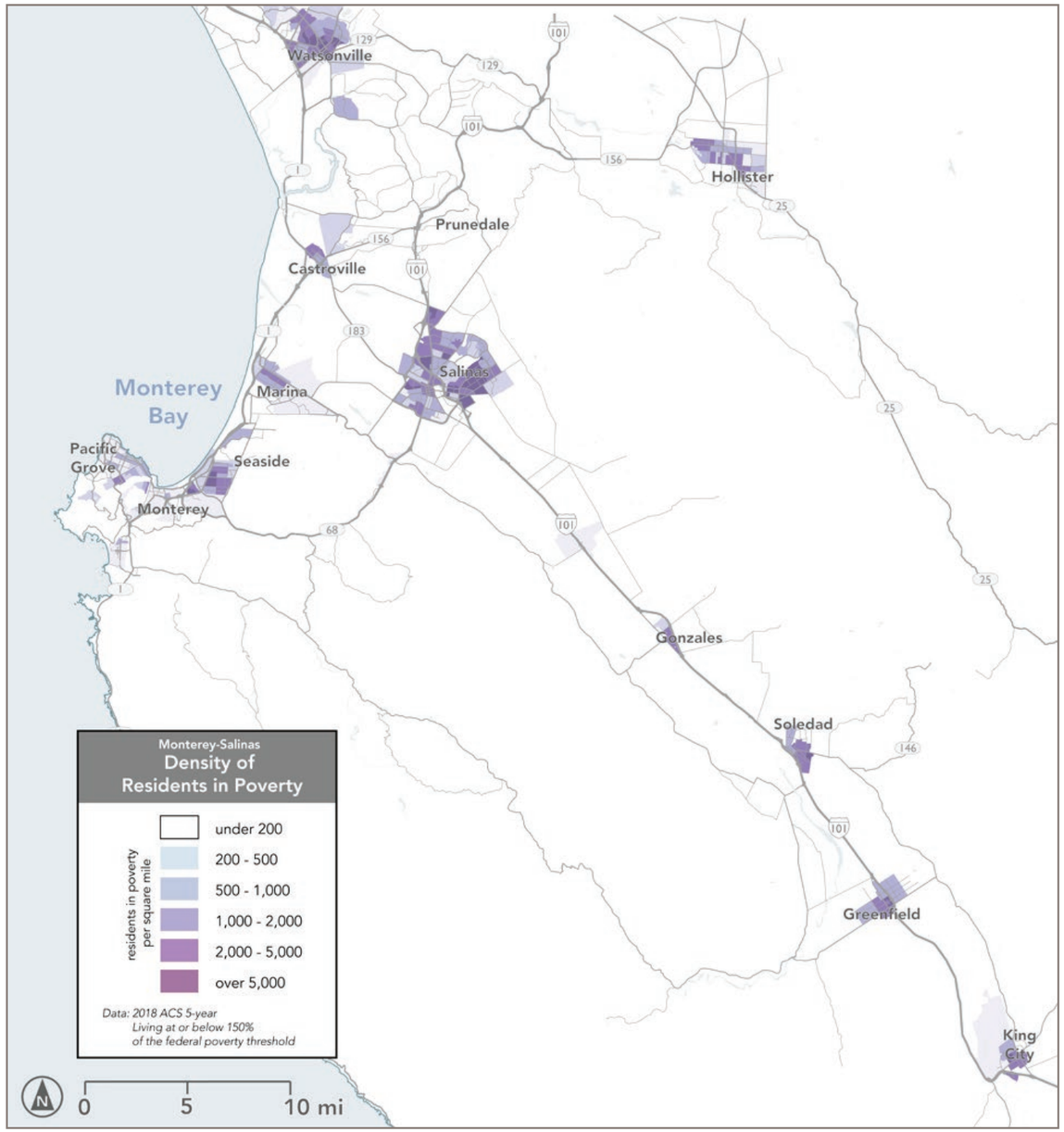


Figure 35: Regional map of the density of residents below 150% of the Federal Poverty Level.

Indicators of Need: Seniors and Youth

The map in Figure 36 show the density of senior residents in the Monterey-Salinas area. Seniors constitute around 13% of the total population of Monterey County.

Seniors tend to be spread out among the general population, and so senior density is similar in many places to overall population density. The main exceptions to this here are the notably high concentrations of seniors in Pacific Grove and parts of Carmel-by-the-Sea, as well as the tendency for seniors to live mostly in outlying neighborhoods in Salinas.

Some seniors cannot drive and may be more likely to use transit. As a group, senior-headed households are less likely to own cars than the general population, an advantage for transit in places where other characteristics for high ridership (such as density, walkability) are present.

But seniors' travel needs and preferences are, on average, different from those of younger people. Seniors tend to be more sensitive to walking distance, because of limits on their physical ability. Seniors also tend to be less sensitive to long waits, because many are retired and have a relatively flexible schedule. For the same reason, seniors are, on average, less likely to be discouraged by slow or indirect lines that take them out of their way.

Because of these factors, **transit service designed primarily to meet the needs of seniors rarely attracts high overall ridership.** Most riders who are employed, in school or caring for kids in school will find service with long waits to be intolerable. Thus, the amount of focus that transit agencies place on meeting the needs of seniors should be carefully balanced with the needs and desires of the broader community.

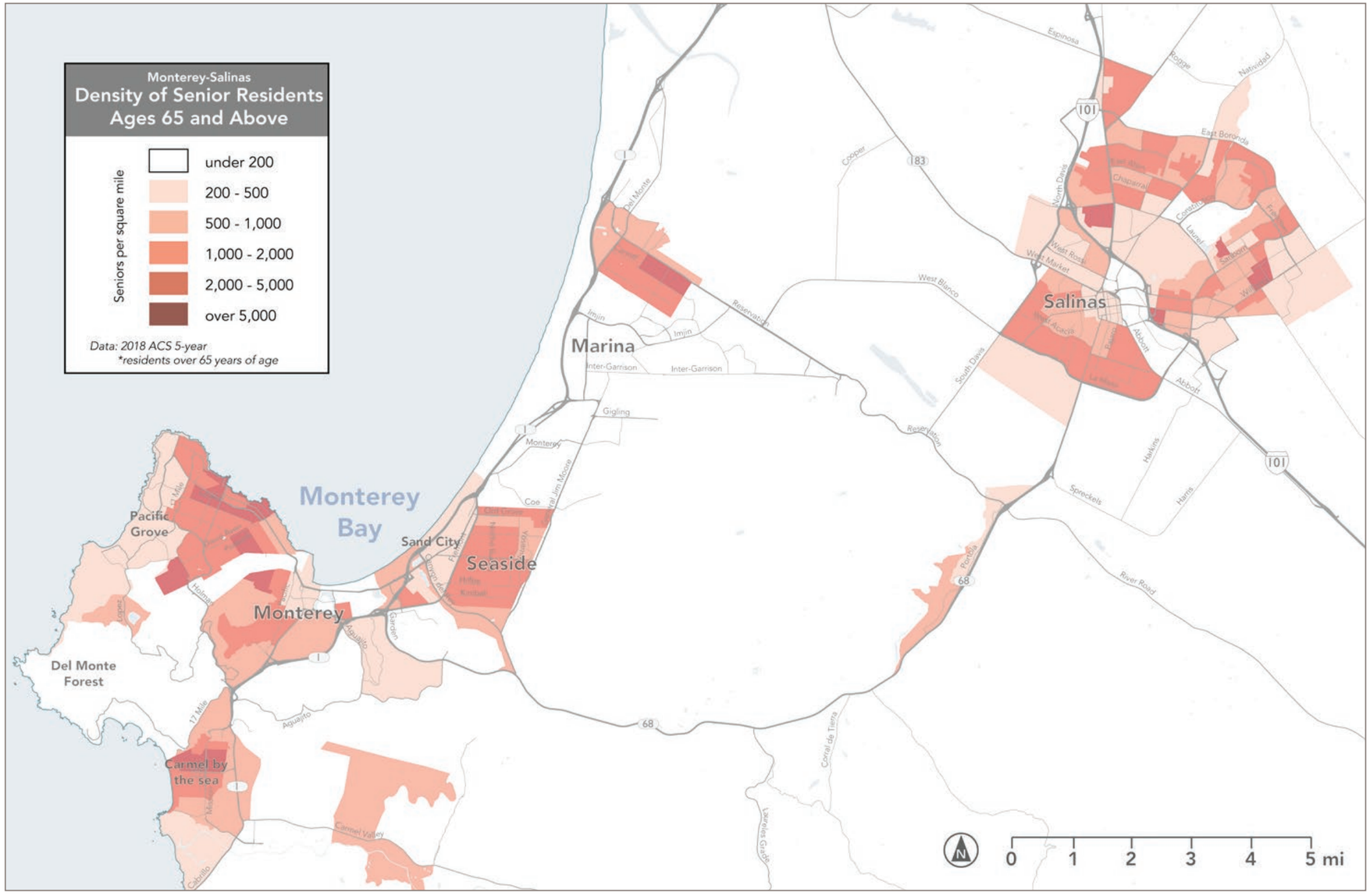


Figure 36: Map of the density of seniors (ages 65 and above) in the Monterey-Salinas area

Indicators of Need: Seniors and Youth

Just as transit coverage can meet the needs of seniors who cannot or choose not to drive, transit coverage can also meet the needs of children and teenagers who are too young to drive.

The map at right shows the density of residents under the age of 18 in each Census block group in the Monterey-Salinas area. Children under the age of 18 constitute around 26% of the total population in the County, or twice as many people as the senior population.

Because low-income households in Monterey County tend to have more children, the highest densities of residents under 18 tend to correlate with higher densities of people in poverty.

Figure 37: Map of the density of youths (ages 18 and under) in the Monterey-Salinas area

Indicators of Need: Seniors and Youth

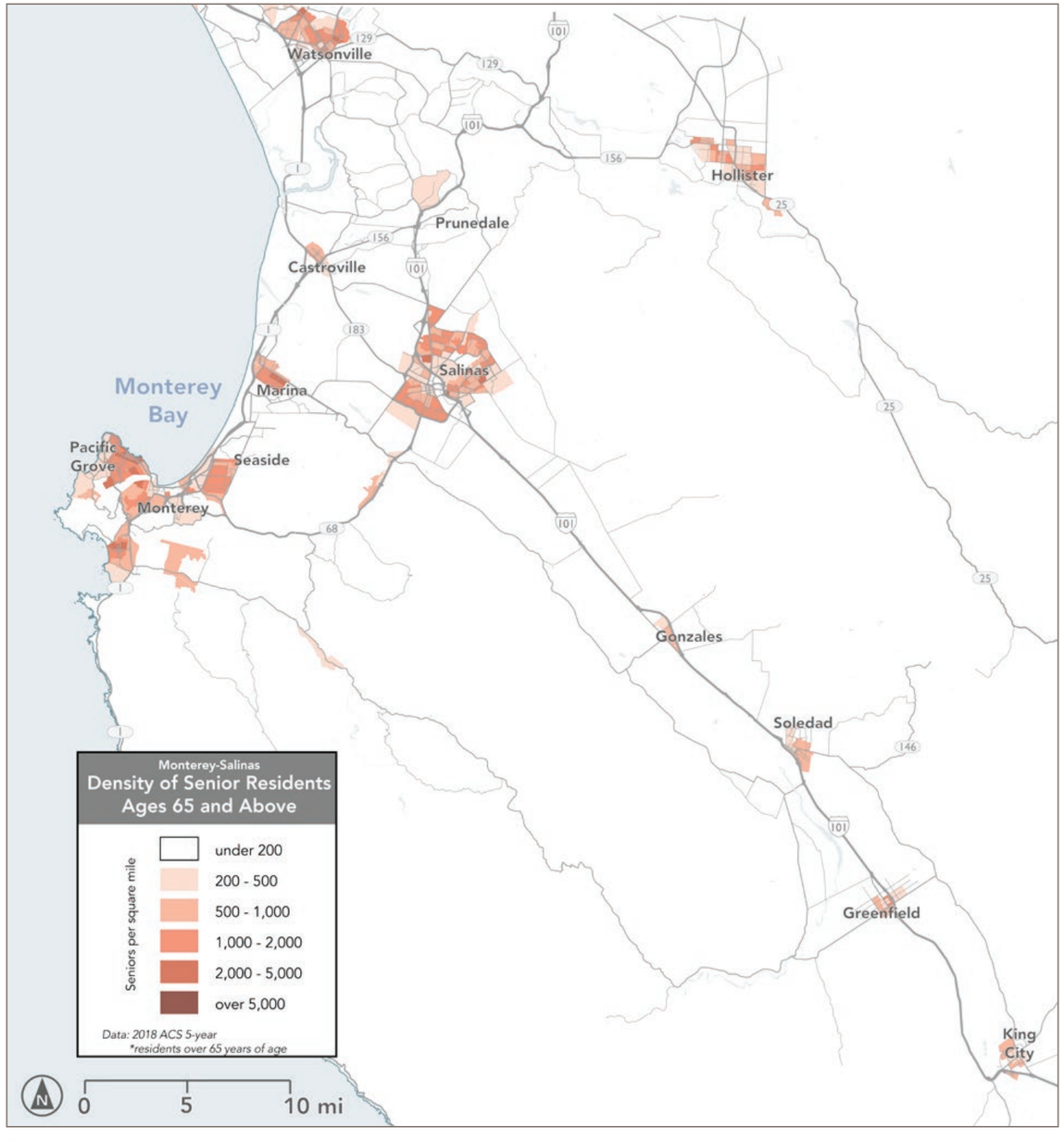


Figure 38: Regional map of the density of seniors (ages 65 and above)

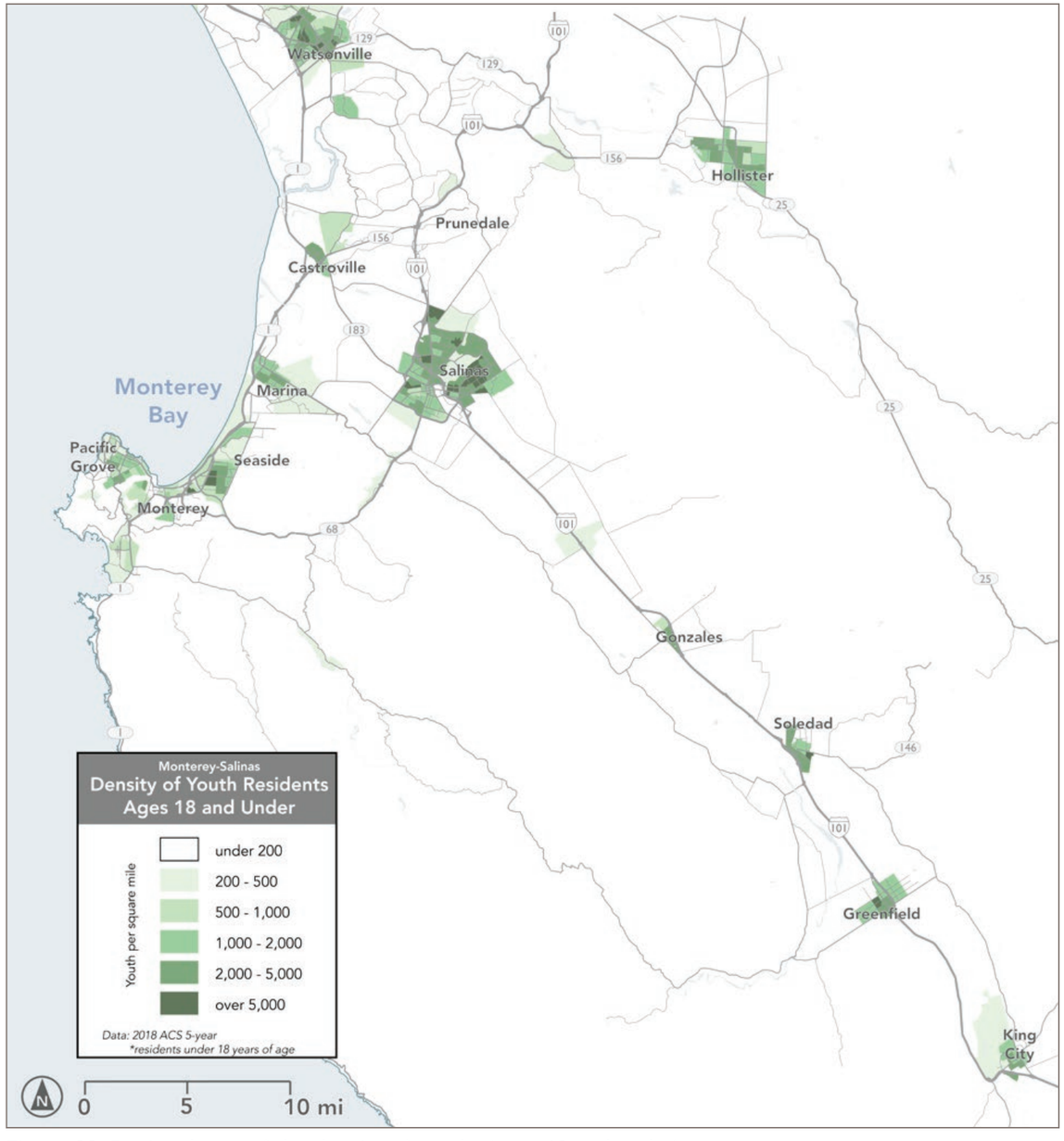


Figure 39: Regional map of the density of youths (ages 18 and under)

Civil Rights: Race and Ethnicity

The map in Figure 40 shows where people of different races and ethnicities live in the Monterey-Salinas Area. Each dot represents 5 residents. Where many dots are very close together, the overall density of residents is higher. Where dots of a single color predominate, people of a particular race or ethnicity make up most of that area's residents.

While information about people's income tells us something about their potential interest in or need for transit, information about ethnicity or race do not alone tell us how likely someone is to use transit. However, **avoiding placing disproportionate burdens on minority people, through transportation decisions, is essential to the transit planning process.**

Transit agency policies that protect minority people from negative impacts are one type of coverage goal, because they pursue an outcome that is valuable regardless of ridership. Such policies might state, for example, that service to high-density and high-minority neighborhoods should be prioritized even if such service would not maximize ridership.

It is important to understand where large numbers of non-white people live, so that public outreach during this project can be sensitive to language and cultural barriers, and so that service changes can be evaluated in light of impacts to protected people.

As of 2018, approximately 70% of the population in Monterey County identified as non-White. The largest group is Latinos, who account for 58% of the population. In Salinas, 80% percent of people are Latino, while they account for 37% of the population in Seaside/Marina/Sand City, and only 13% in the Monterey Peninsula.

Outside of the urbanized areas, cities in the South County and Castroville are all

Figure 40: Map showing where people of different races and ethnicities live in the Monterey-Salinas area

Civil Rights: Race and Ethnicity

predominantly Latino, while Prunedale and the hills south of Monterey and Salinas are predominantly white.

It's important to note that Latinos are most likely to be living in dense neighborhoods where many people have low incomes, and Latinos are also the predominant population in the more isolated high-need communities.

This suggests that all of MST's public-facing communications should be available in both English and Spanish, including messages provided at transit centers and on the buses themselves.

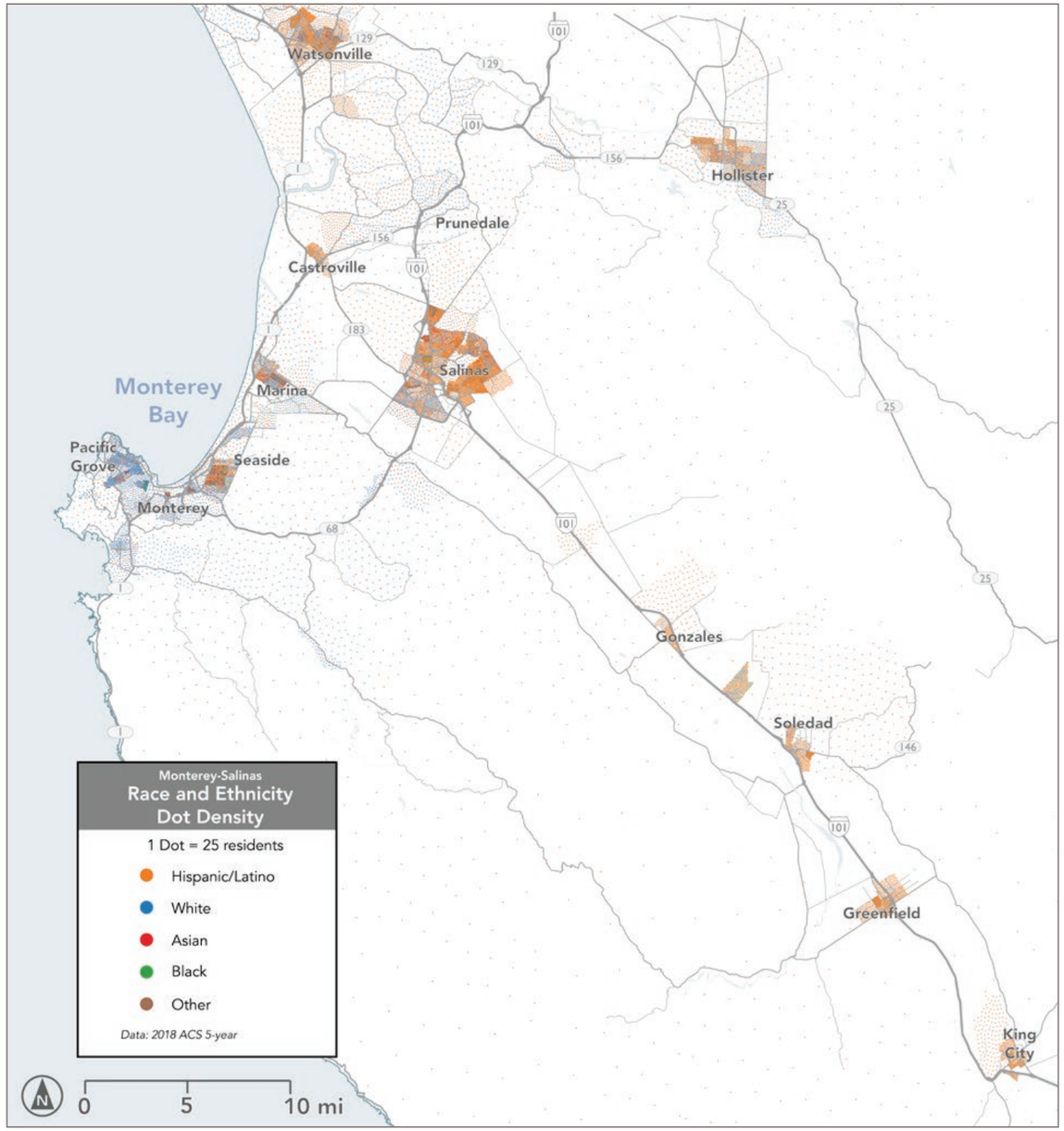


Figure 41: Regional map showing where people of different races and ethnicities live

4 MST's Fixed-Route Network

Regional Network

MST's regional role

MST's county-wide scope and governance structure both tend to emphasize service to many communities over a large area.

This is reinforced by local geography: the Monterey Bay and Salinas Valley have historically developed as a string of small to mid-sized cities following Highway 1 and Highway 101. These communities have overlapping retail, social services and employment markets resulting in large amounts of intercity travel.

Furthermore, there has long been a gap in commercial long-distance bus service between Paso Robles and Salinas, reflecting the relatively "empty quarter" of California's central coast.

As a result, MST has carved out a relatively unique role as a public agency that handles both local and long-distance services, with service extending as far as Paso Robles to the south and San Jose to the north.

As of early 2021, several of MST's intercity lines have been suspended due to COVID-related service shifts. This includes long-distance services to San Jose and Santa Cruz, as well as secondary intercity lines like Marina-to-Watsonville.

Regional Lines, early 2021

As of early 2021, MST is operating the following regional lines, shown on the map in Figure 42:

- Line 20. Salinas to Monterey.
- Line 21. Salinas to Pebble Beach.
- Line 22. Monterey to Big Sur.
- Line 23. Salinas to King City.
- Line 24. Monterey to Carmel Valley.
- Line 28. Salinas to Watsonville (via Castroville)
- Line 29. Salinas to Watsonville (via Prunedale)

As can be seen on the map, the frequency and distances covered by these lines vary greatly.

- Lines 20 (Salinas-Monterey) and 24 (Carmel Valley) operate all-day at consistent frequencies (every 30 and 40 minutes, respectively).
- Line 23 (King City) operates almost hourly all day, but has extra runs at peak hours, and two 2-hour gaps in the middle of the day.
- Lines 28 and 29 add up to hourly service between Salinas Transit Center and Watsonville, but for anyone on the way, it's every two hours.
- Line 21 (Salinas-Pebble Beach) is a peak-only extension to Line 20. It runs three times in the morning, and three times in the afternoon.
- Line 22 (Big Sur) runs only three times per day.

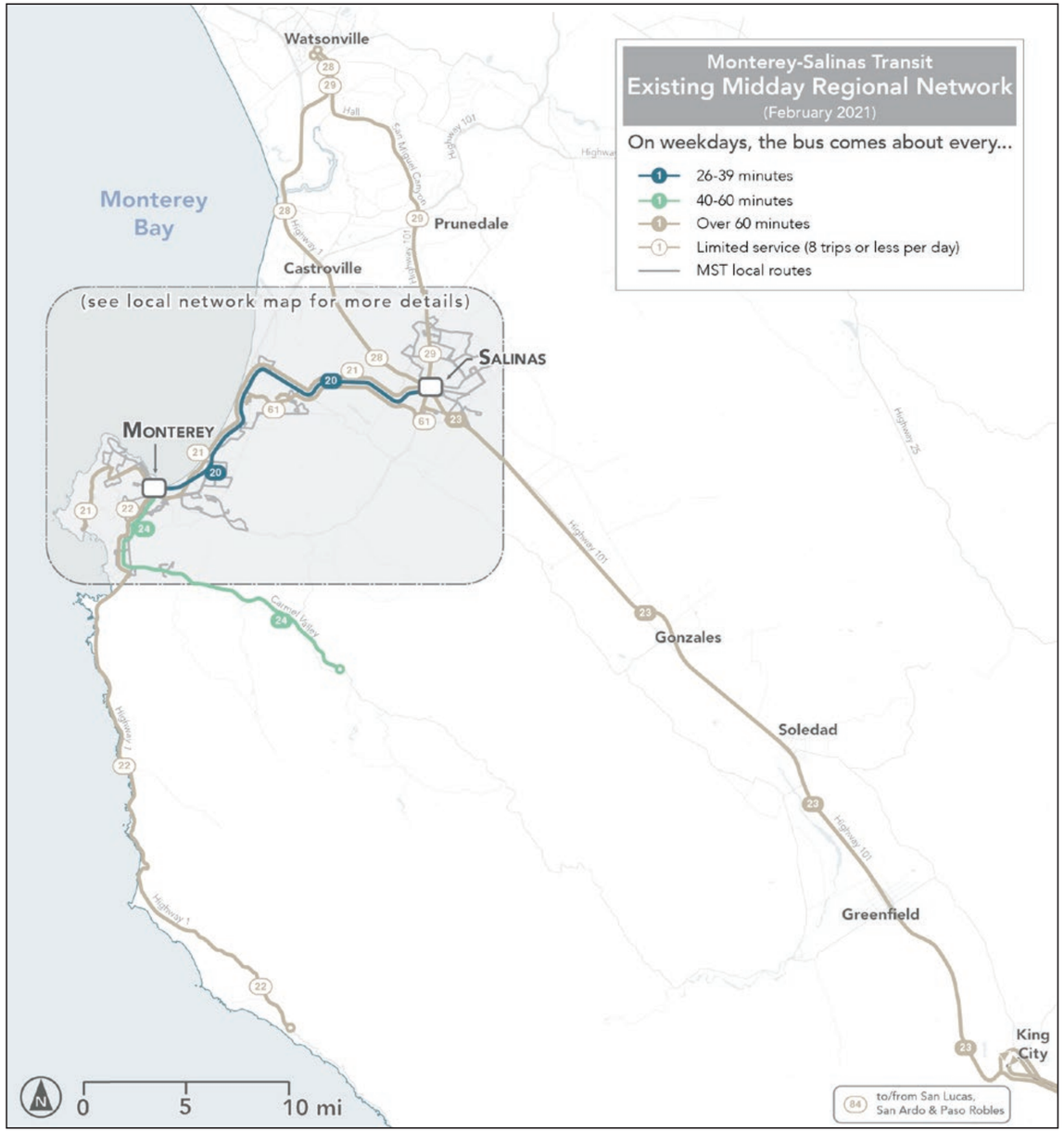


Figure 42: Map of MST's regional network in early 2021, with lines color-coded by frequency. Local lines are shown in gray.

Core Local Network

The vast majority of MST service (85% of in-service hours[1]) is operated in the greater Monterey and Salinas areas, represented on the map in Figure 43.

Some important facts about the MST network can be gleaned from this map:

- The greater Monterey and Salinas areas each have their own local network. Local lines in Salinas are generally numbered in the 40s.
- Three lines stand out in particular:
  - **Line 41 in East Salinas.** This line operates every 15 minutes, seven days a week. **This is MST's only "frequent" line**, in the sense that the bus comes often, and consistently throughout the day and week.
  - The **JAZZ A and JAZZ B**, from the Aquarium to Sand City via Monterey and Seaside. These two lines combine to operate nearly every 15 minutes on weekdays and every 30 minutes on weekends. However, the JAZZ lines' frequency is more variable, largely because the JAZZ A does a long deviation to serve Monterey Peninsula College in the southbound direction.
  - **Line 20** from Salinas to Monterey, MST's primary regional line, which runs every 30 minutes, seven days a week.
- All other lines operate once an hour or less. These lines tend to have long and circuitous routings, with many deviations, intended to maximize the area covered by bus service.

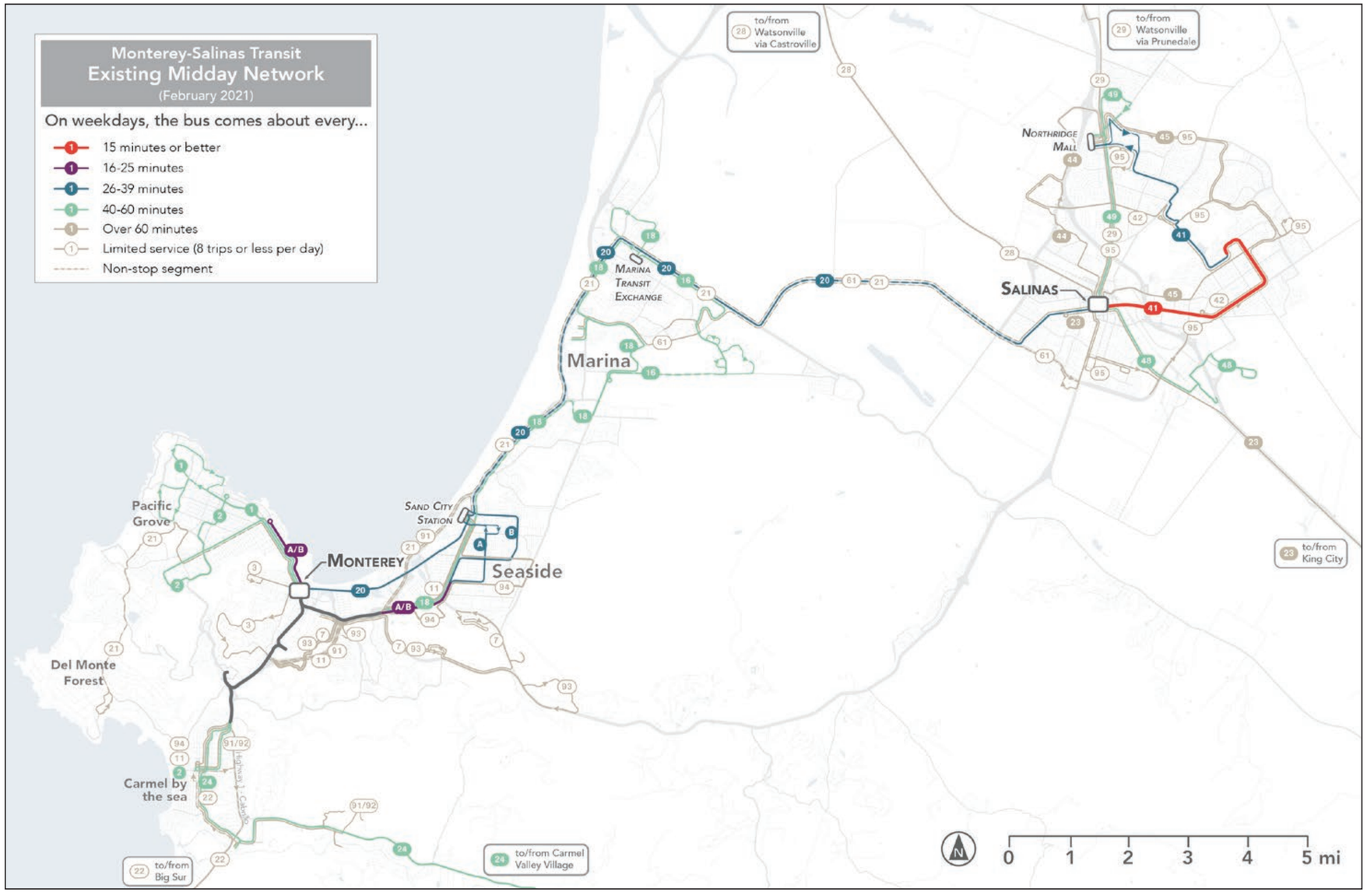
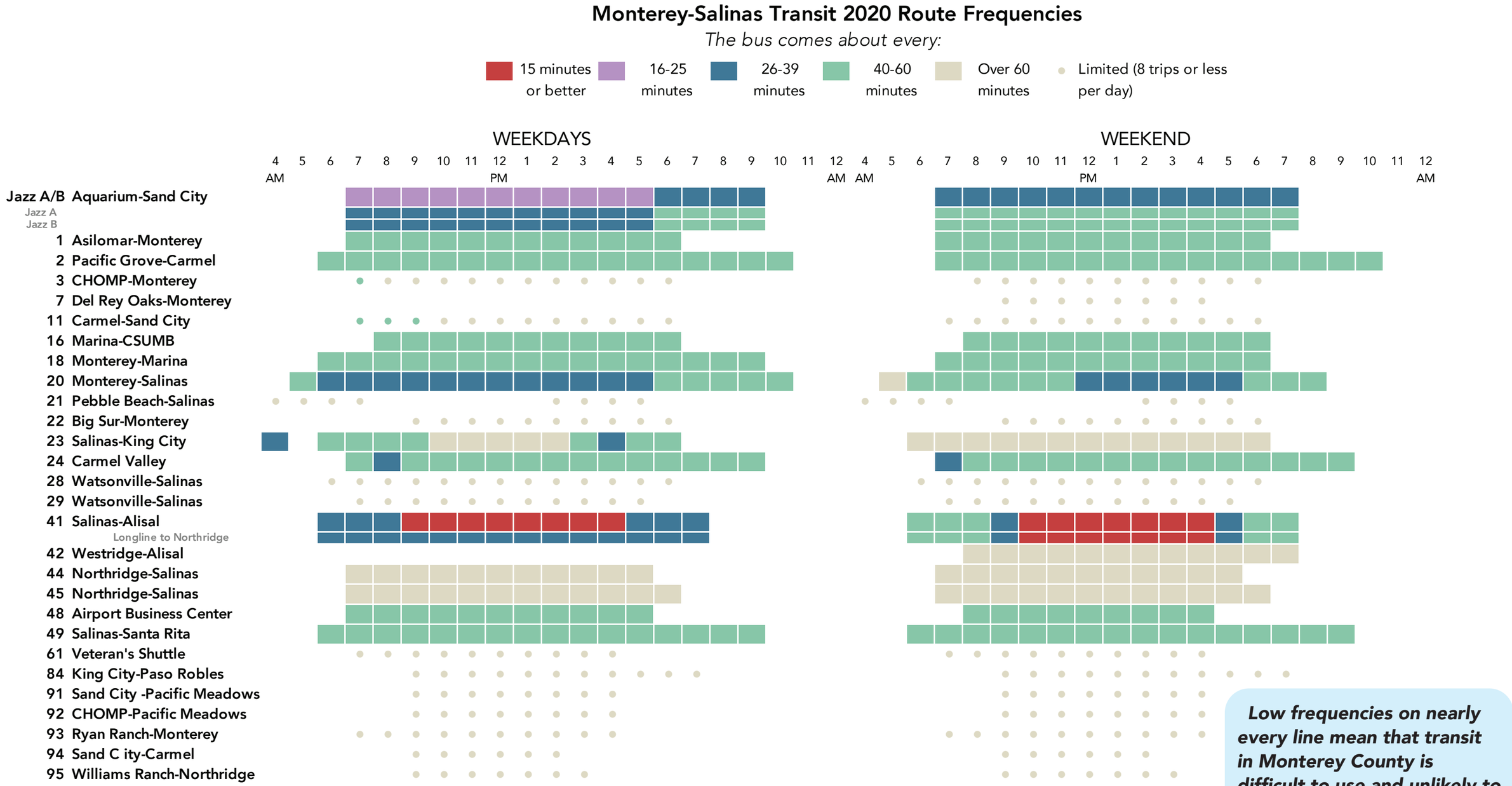


Figure 43: Map of MST's fixed-route network in the greater Salinas and Monterey areas in early 2021, with lines color-coded by frequency.

1 The total number of hours spent by all MST buses on the road and in service.

Service Frequency by Line and Time of Day



Low frequencies on nearly every line mean that transit in Monterey County is difficult to use and unlikely to attract new riders.

Figure 44: Frequency table, showing how often buses on MST lines operate, by time and day of the week.

Many bus lines are not currently operating. Some may not come back.

Nearly half of the fixed routes that had been operating until early 2020 (26 out of 55) are no longer in service as of early 2021. Together, these lines accounted for over 30% of MST's weekly service hours in 2019. These massive service suspensions occurred in response to two separate events.

Pandemic-related cuts

11 lines have been suspended due to pandemic-related considerations. Specifically:

- Lines 4, 8, 27, 46, 55, 56, 86 and the Del Rey Oaks Shuttle were low-ridership lines suspended to allow lines with more riders (such as the 20, 41 and JAZZ) to operate at higher frequency and avoid overcrowding.
- Lines 19, 25, 26 and 47 were suspended because CSUMB and Hartnell College have been operating remotely.
- The Monterey Trolley operated under a special contract with the City of Monterey that was suspended during lockdown and has not yet restarted.

Military-related cuts

Leading up to March 2020, Department of Defense budget cuts led to the loss of MST's prior contracts with local military facilities. As a result, all of the lines previously targeted to those facilities have been cancelled, although ongoing discussions with base command has led to some very limited MST buses again stopping at the Presidio in June 2020.

What does this mean for the future?

Barring changes to base budgets, the prior military lines are unlikely to be restored, although ongoing discussions with base command may lead to some MST buses again stopping at the Presidio.

College-related lines are likely to return in Fall 2021, if schools are open at that time. They may change slightly in response to this network redesign. The Monterey Trolley is also likely to be restored at some point, as pandemic restrictions ease and pending the City of Monterey's willingness to restore funding.

The future of general-fund lines that were cut due to low ridership is less clear, and depends in large part on the outcome of this network redesign. If the redesign results in a more ridership-oriented network, it's unlikely they will be restored.

2019 MST Line not currently operating	Funding source	Why cancelled?	2020 Lines covering the same areas	Areas no longer served
4 Carmel - Carmel Rancho	General	**Low ridership**	22,91,92	
8 Ryan Ranch - Sand City			Jazz A and B, 7, 94	
12 Monterey - The Dunes	Military Service	**No military contract**	Jazz B, 11, 20, 21 ,94	General Jim Moore Blvd
14 Monterey - NPS via La Mesa				La Mesa
19 CSUMB-Monterey/DMC	CSUMB	**Colleges closed**	18, 21,91	
25 Salinas - CSUMB			16, 20	
26 CSUMB - East Campus			16	
27 Watsonville - Marina	General	**Low ridership**	28	
46 Natividad				Natividad Rd.
47 Hartnell East Alisal - W Alisal		**Colleges closed**	41	
55 Monterey - San Jose Express	General/Amtrak	**Low ridership**		San Jose, Gilroy
56 Monterey - Salinas via Hwy 68	General			Highway 68
67 Presidio - Marina	Military Service	**No military contract**	20, 21	Presidio
68 Presidio Shuttle				
69 Presidio - Del Monte Center			2	
70 Presidio - La Mesa			7	La Mesa
72 Presidio - North Salinas			20	Presidio
74 Presidio - Toro Park			18	Presidio
75 Presidio - Marshall Park			18, 20	
76 Presidio - Stillwell Park			20, 21	
78 Presidio - Santa Cruz				Santa Cruz
82 Salinas - Fort Hunter Liggett	General/5311f	**Low ridership**	23	Fort Hunter Ligett
85 Fort Hunter Liggett - PASO				
86 San Jose - King City			23	San Jose
920 Del Rey Oaks DRO Shuttle	General		7, 20	
950 Monterey Trolley	Contract	**Suspended**	Jazz A, Jazz B, 1, 21	

Figure 45: Table of recent MST lines cancelled or suspended as of early 2021.

In the urban areas, most people are near transit but frequencies are low.

We can see that most of the greater Monterey and Salinas areas are served by some form of bus service, just by looking at the map in Figure 43 on page 47.

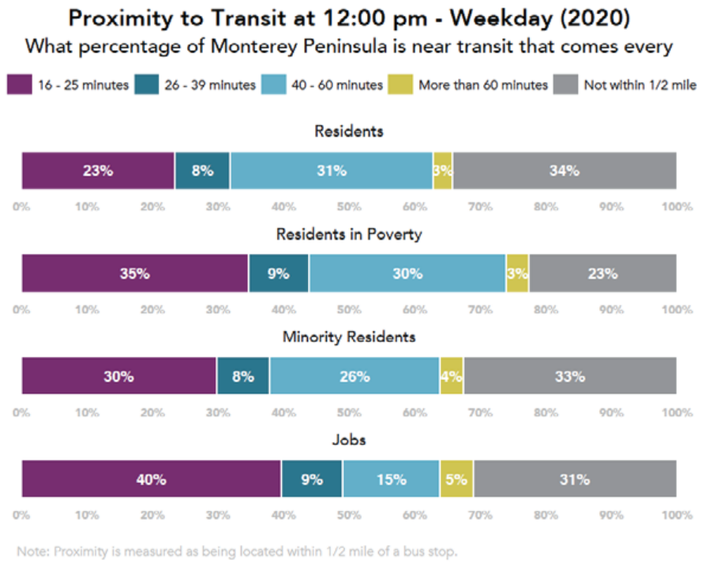
The charts on this page go deeper, showing us what percentage of actual people and jobs are within walking distance of service, and how frequent that service is on weekdays in the middle of the day.

Based on these charts, we can see that, **within the greater Monterey and Salinas areas**:

- **Most people live near some transit service.**
  - 66% of residents and 69% of jobs are within 1/2-mile of a bus stop.
  - 69% of residents and 64% of job in Seaside/Marina/Sand City are within 1/2-mile of a bus stop.
  - 77% of Salinas residents are within a 1/2-mile of a bus stop, compared to only 62% of jobs. This is likely because there are many agricultural and warehousing jobs at the very edges from Salinas, just beyond reach of the bus network.
- **Proximity to transit is relatively equitable across income and race.**
  - Low-income residents are slightly more likely to live close to bus service than all residents.
  - Non-white residents are not more or less likely to live near bus service than all residents.
- **Most people live near very infrequent service, or no service at all.**
  - Only 50% of Salinas residents, 49% of Seaside residents, and 31% of Monterey Peninsula residents live near service that comes at least every 30 minutes on weekdays.

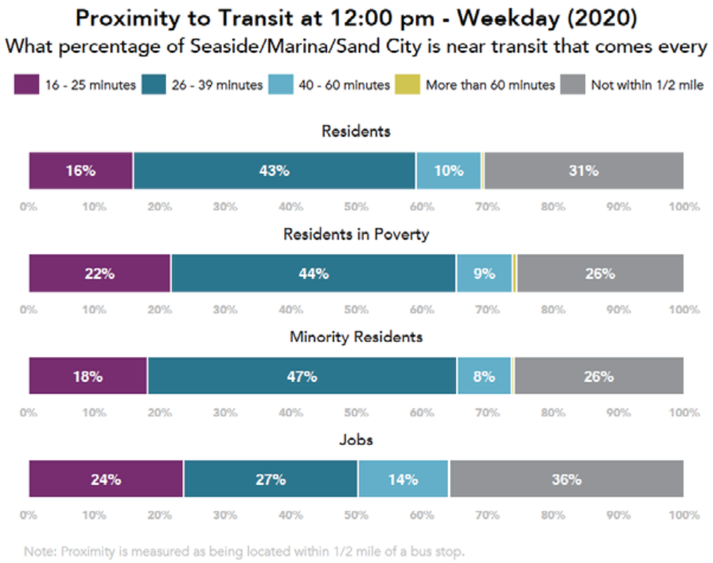
Figure 46: Charts showing the number of people and jobs within a 1/2-mile walk of a bus stop in the Monterey Peninsula (top left), Seaside/Marina/Sand City (top right), Salinas (bottom center), and in all of Monterey County (lower left).

Monterey Peninsula



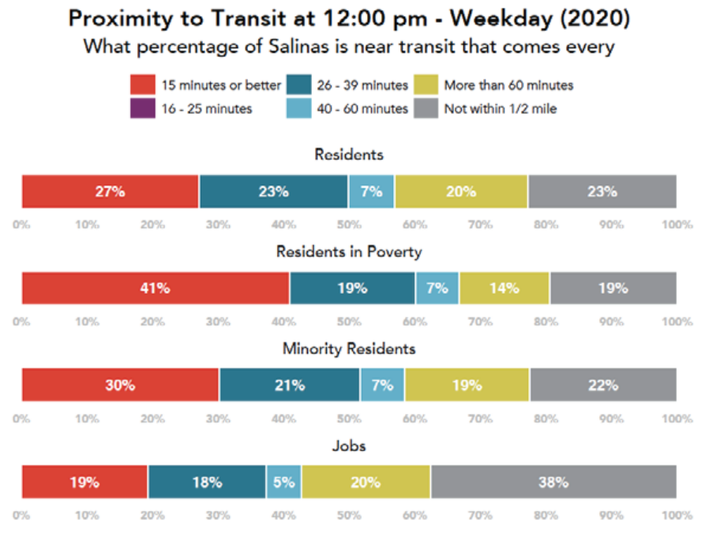
Note: Proximity is measured as being located within 1/2 mile of a bus stop.

Seaside / Marina / Sand City



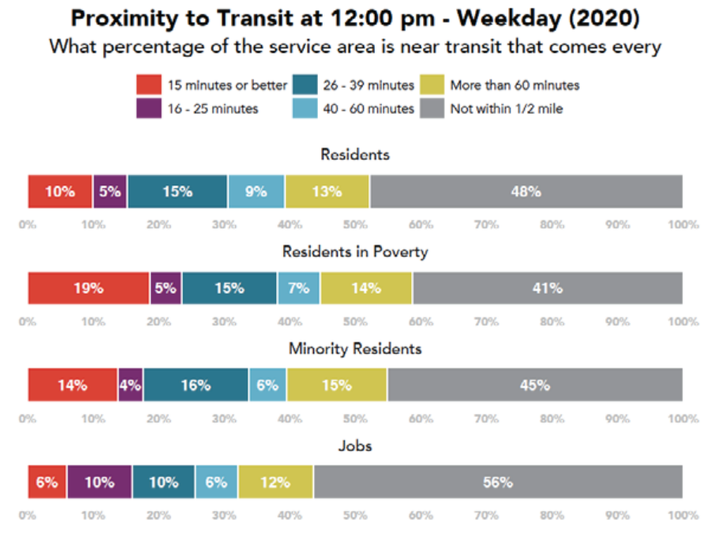
Note: Proximity is measured as being located within 1/2 mile of a bus stop.

Salinas



Note: Proximity is measured as being located within 1/2 mile of a bus stop.

Countywide



Note: Proximity is measured as being located within 1/2 mile of a bus stop.

Outside urban areas, most people live far from transit.

In Figure 47, every 25 residents in Monterey County is represented by a dot. If those 25 residents live within 1/2-mile of a bus stop, the dot is blue. If the closest bus stop is farther away, the dot is red. The location of the dots is based on Census population estimates at the block group level, but only in areas located within 100 feet of a road.

This map shows that outside the urbanized area, very few people are near a bus stop. In rural Monterey County, MST fixed route coverage is limited to:

- The centers of the county's small towns: Castroville, Gonzales, Soledad, Greenfield and King City.
- Narrow strips along rural roads in the Carmel Valley, and between Prunedale and Watsonville.

Looking closely at this map, we can also see the kinds of places that are far from service within the urbanized areas. These are either:

- The hilly edges south of Monterey, which are in large part not operable by buses.
- Neighborhoods of Marina and Salinas where poor street connectivity makes walking distances farther than 1/2-mile.

We can also see that many of the people not covered by the transit network live in North County, at densities that are high for rural areas but too low to feel suburban.

It's important to note that some of the residents represented in red dots do have access to MST's on-call service. This service allows people to reserve for point-to-point travel within several cities: Marina, Gonzales, Soledad, Greenfield and King City[1].

1 Note that On-Call service does not allow for direct travel between cities. However, it is possible to use On-Call service to collect to an MST bus line.

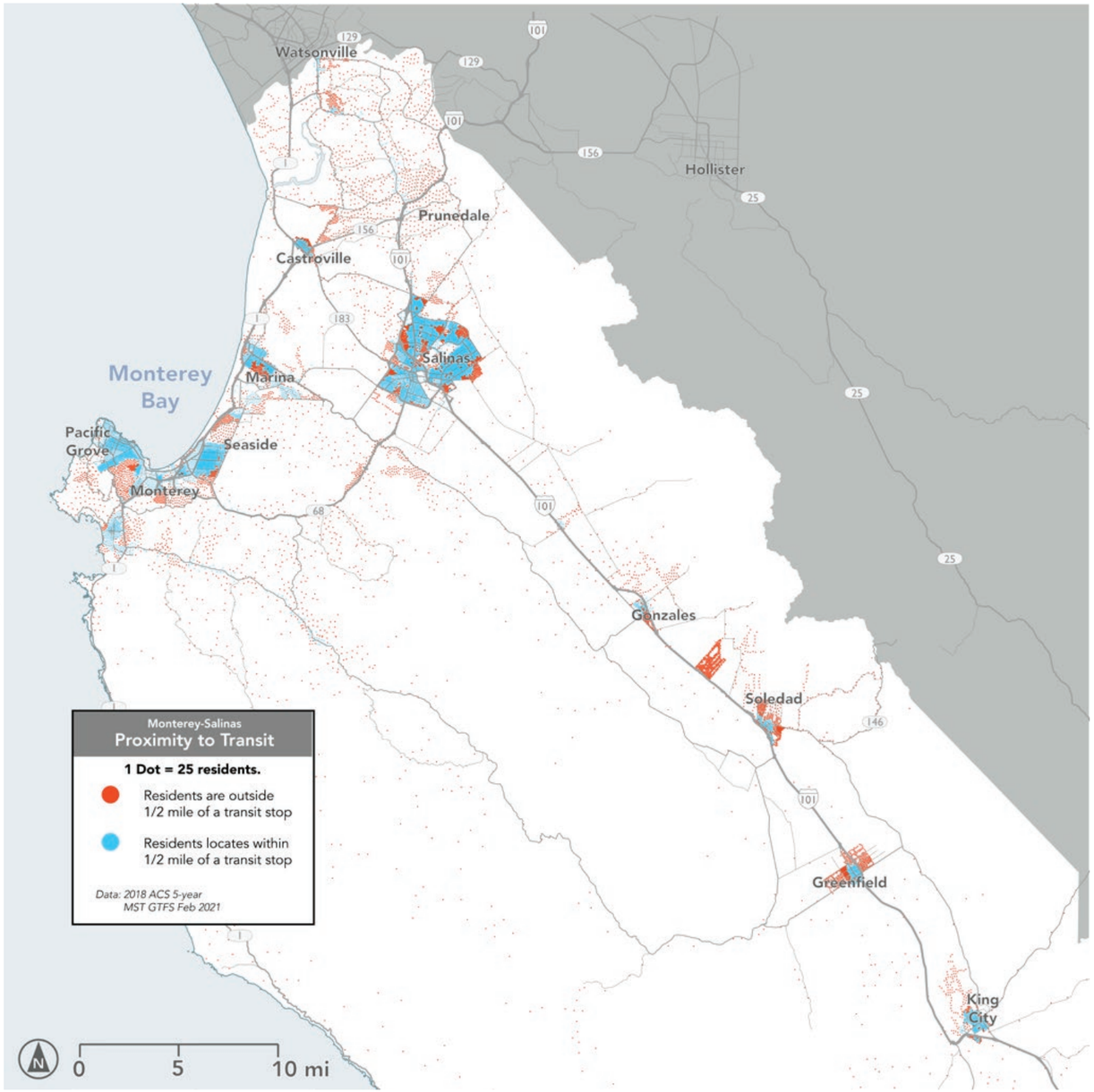


Figure 47: Regional map representing the location of residents within and beyond 1/2-mile from the nearest MST bus stop with weekday service.

In several important corridors, lines overlap but don't produce frequency.

1. Munras/Highway 1 between Monterey and Carmel-by-the-Sea

No fewer than 9 bus lines operate in dife-rent parts of this corridor linking Downtown Monterey, CHOMP and Carmel-by-the-Sea.

- Each of these lines is designed individually to meet a particular travel pattern, at a dif-ferent frequency.
- Some lines deviate off the main path on the way (e.g. Line 3). Only five lines stop at CHOMP; and only five lines continue all the way to Carmel-by-the-Sea (but not exactly the same five that go to CHOMP).

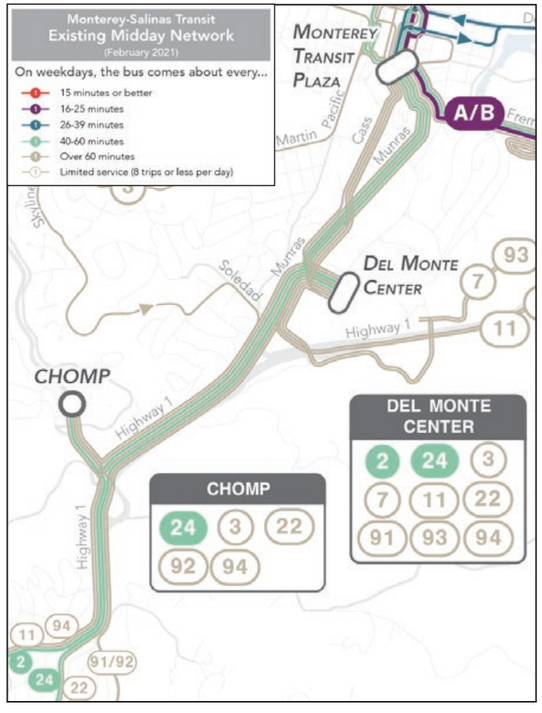


Figure 48: Map of bus lines between Monterey Transit Plaza, Del Monte Center, and CHOMP.

- Coming into Monterey and Carmel-by-the-Sea, lines split into multiple paths.

As a result, the actual frequency between major destinations is completely random from one hour to the next. It would be impossible for a casual customer to understand which line to take to get from A to B without using an app like Google Transit, or poring through multiple schedules. And it's quite likely that existing riders are not taking full advantage of all the service in this corridor, because they can't predict what will happen if they get on a different bus than their usual line.

Even assuming someone had gained perfect knowledge of which bus went where, the effective frequency of service experienced by customer would remain low. Between 7 AM and 6 PM:

- Monterey Transit Plaza -> Del Monte Center. Average of 4 direct buses per hour, but nearly every hour features a 30 minute empty period between two buses.
- Monterey Transit Plaza -> CHOMP. Average of 2 direct buses per hour. Most of the time, the interval between two of these buses is 40 minutes.
- Monterey Transit Plaza -> Downtown Carmel-by-the-Sea. Average of 3 direct buses per hour. Most the time, the interval between two of these buses is about 30 minutes.

In other words, it might be as convenient for most customers if the nine lines and four buses per hour operating in this corridor were simplified to a single line, operating every 30 minutes. It might then be possible to reinvest the remaining service in either higher frequency, or more service elsewhere.

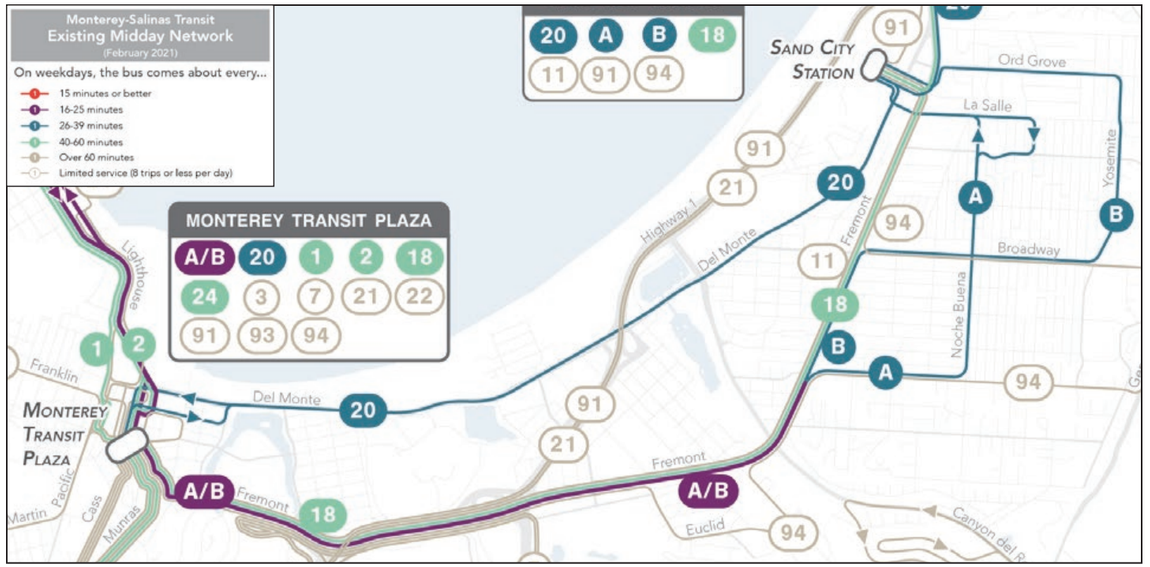


Figure 49: Map of bus lines between Monterey and Sand City..

2. Fremont between Monterey and Sand City

The primary overlap in this corridor is between the JAZZ A, JAZZ B and Line 18. All three lines serve the corridor from Monterey to Sand City, but they split into three distinct patterns in Seaside.

The JAZZ A and B schedules are mostly coor-dinated, with the goal of achieving a shared high frequency from Monterey Transit Plaza to Seaside. However, because the JAZZ A and JAZZ B are slightly different lengths, the overlapping frequency is imperfect in the southbound direction.

When the JAZZ buses are scheduled to a combined 15 minutes apart northbound, they come every 10 to 20 minutes southbound. When they are scheduled to a combined 18 minutes apart northbound, they come every 13 to 23 minutes southbound.

If the JAZZ lines were the same length (and, in particular, if either both or neither of them deviated into Monterey Peninsula College), the frequency could be scheduled to be the same in both directions.

Line 18 operates only once an hour, and con-tinues from Sand City to CSUMB and Marina. Because of this, it does not add any effective frequency between Monterey and Seaside. Once an hour, a lucky rider may find out that their expected wait is much shorter than usual thanks to a lucky strike, but they cannot count on a regular bus every 12 minutes.

Several other lines operate in various parts of Fremont between Monterey and Seaside (7, 11, 21, 91, 93, 94). However, nearly all of these lines are extremely infrequent, operating just a few times a day. And nearly all of them do not continue to Monterey Transit Plaza directly, but instead go to Del Monte Center first.

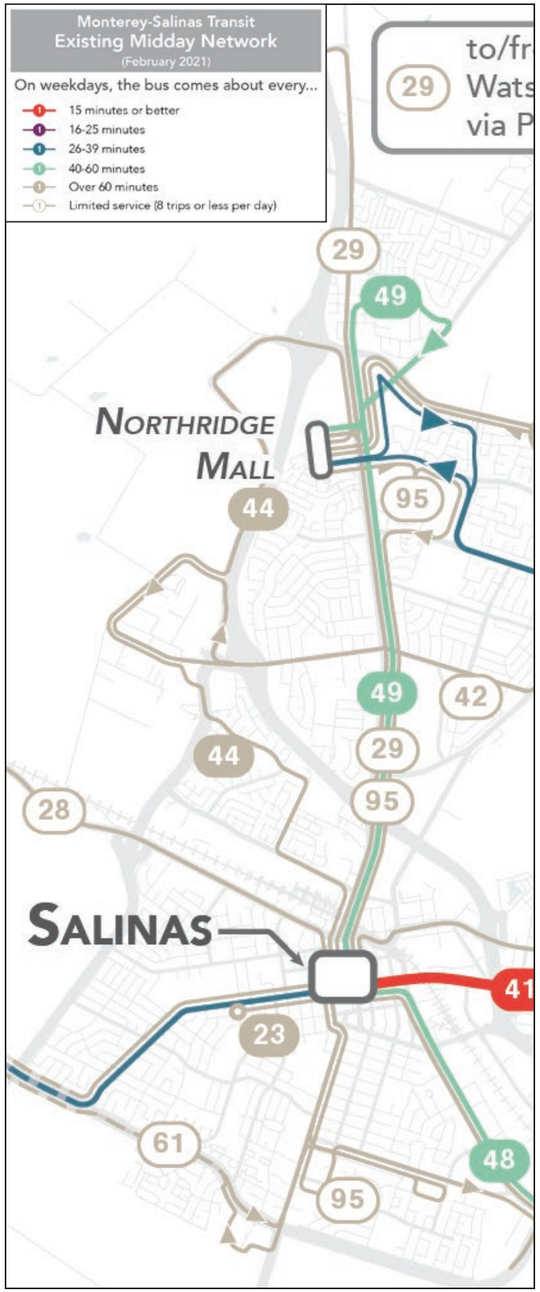


Figure 50: Map of bus lines on and near Main Street in Salinas.

3. Main Street in Salinas

Main Street is the main arterial corridor connecting North, Downtown and South Salinas.

Many important destinations lie on Main Street or within a short walk, including Northridge Mall, Harden Ranch Plaza, North Salinas High School, Salinas DMV, Salinas Sports Complex, Downtown Salinas, Monterey County Social Services, and many other stores and places of employment.

Furthermore, the Salinas Valley Memorial Hospital, while not on Main Street, is on a logical path that a bus coming from Main Street might follow on its way to the government and healthcare offices on Blanco Road.

Despite this, there is relatively little service on North Main Street, even on weekdays in the daytime.

- The vast majority of service on North Main Street is provided by Line 49, which runs only once an hour.
- Line 29 operates every two hours on North Main Street. It is, however, spaced such that every other hour the wait between two buses is reduced to 30 minutes.
- Line 95 operates only four times per day, and only in the southbound direction, as it is part of a much larger one-way loop around nearly every major destination in Salinas.

There is even less service on South Main Street, which has just Line 95, plus a few runs a day on Line 61, which is actually designed as a regional veterans' medical shuttle from Salinas to the VA outpatient facility in Marina.

In other words, the four lines that operate on different parts of Main Street add up to only hourly service on North Main Street, and less than hourly service on South Main Street.

This contrasts markedly with the high level of service available between Downtown Salinas and Alisal on Line 41, which operates every 15 minutes.

Line productivities are low, reflecting a coverage-oriented system.

Productivity is a measure of how efficient a transit system is at attracting ridership. It is usually expressed as boardings per hour of service, i.e. the number of people who get on a bus for every hour that bus is out on the road, following a transit line.

For longer distance lines, productivity is sometimes measured in terms of boardings per bus trip. This adjusts for the fact that long-distance buses inevitably spend long amounts of time not picking up more passengers.

As explained in Chapter 2 on page 20, **more frequent lines tend to be more productive.** This is partly because transit becomes exponentially more convenient as it becomes more frequent, so frequent lines attract more riders. The other part is that transit agencies tend to locate more frequent lines in the places where the most people might ride.

The graphs in Figure 51 show that **this relationship doesn't hold for MST's bus network.** These graphs compare frequency and productivity in 2019[1]. These graphs show that:

- Productivity averaged about 17 boardings per hour, and under 20 boardings per trip. This is generally very low.
- Lines that come every 2 hours are almost as productive as lines that come every 15 minutes.

These patterns suggest that **MST has generally not invested in high frequency in places where high ridership might be expected in return.** MST has instead preferred to maximize coverage, spreading service out to as many places as possible, even though that results in lower ridership overall.

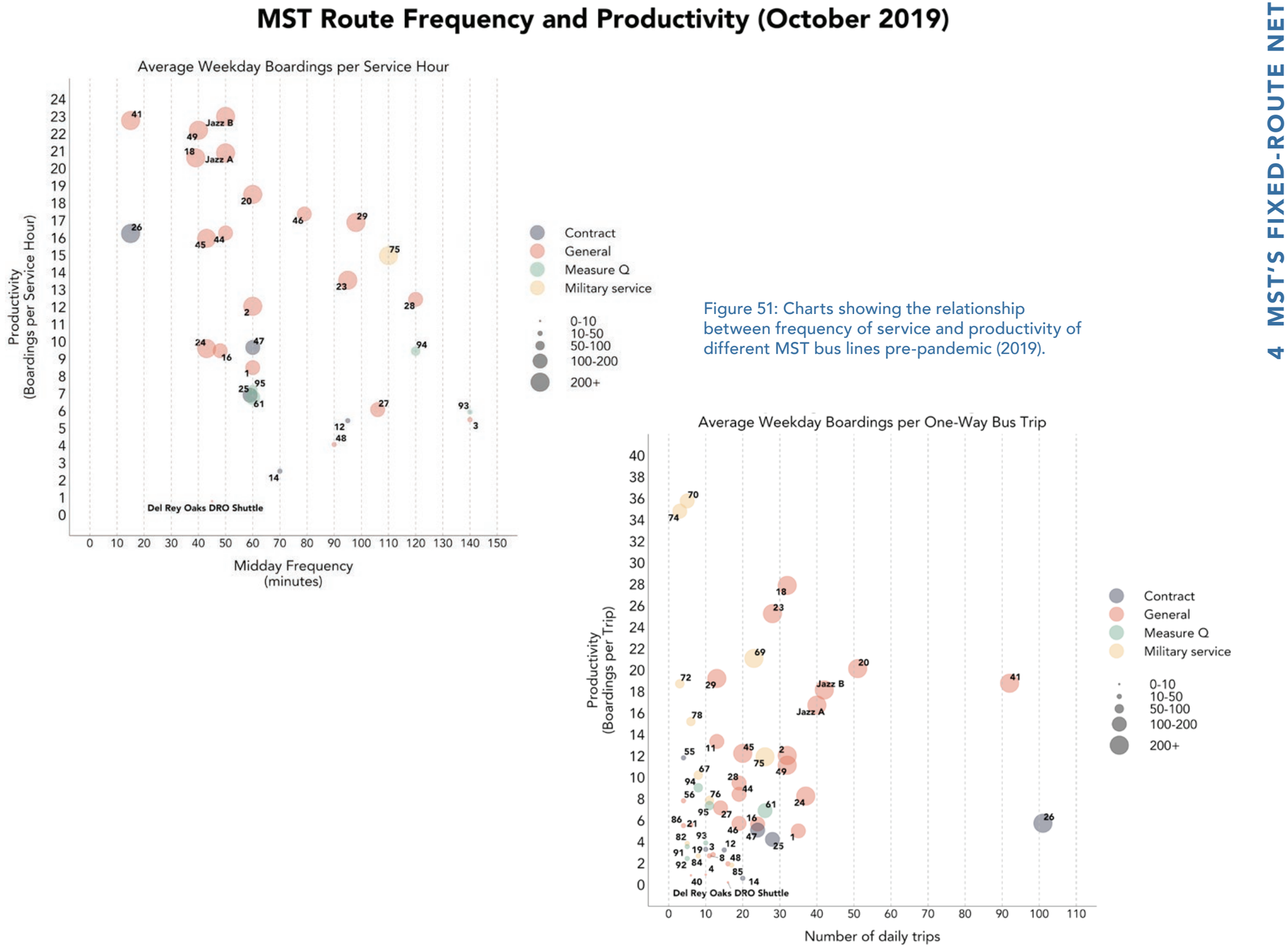


Figure 51: Charts showing the relationship between frequency of service and productivity of different MST bus lines pre-pandemic (2019).

1 This is because pandemic ridership conditions are so uniquely low and reflect fast-changing conditions that are not necessarily comparable to the past or the future.

The network is hampered by a lack of consistent timed transfers.

It's unlikely that all the places you might want to go will be located on the bus line nearest to your house. Transit agencies like MST know this, and organize their system to allow for transfers, or connections between different lines.

Connections allow people to travel in many directions. But the amount of time a transfer takes depends largely on the frequency of the connecting lines.

If you are connecting to a frequent line, you can rely on a short wait, since the next bus is always coming soon. But you could wait a long time to connect to a bus that only comes every hour or two, if the line schedule is not deliberately designed to connect with other lines.

Timed Connections at Transfer Points

To make connections between low-frequency lines more tolerable, many transit networks are often operated with a "pulse" at key locations. To offer a pulse, an agency must design its lines to be a certain length so that buses can all arrive at the central hub at the same time, each hour or half-hour. The buses dwell together for a few minutes, passengers connect among them, and then they depart again. This can happen at any regular interval, though half-hourly and hourly pulses are common in most networks with a timed connections.

Pulses dramatically improve people's ability to get where they need to go in a reasonable amount of time on infrequent transit networks. Well-functioning pulses tend to increase ridership, through the increased convenience they provide.

Current Situation

The existing MST network features transfer points at Monterey Transit Plaza, Sand City Station, Marina Transit Exchange and Salinas Transit Center. But **because most MST lines operate on unique frequencies, have different lengths, and operate from different start and end points, there are very few timed transfers in the existing network.**

This means customers end up waiting a long time. This is illustrated by the tables in Figure 53, which show how long it would take to connect to and from Line 49 at Salinas Transit Center in the middle of the day on a weekday.

Furthermore, MST customers are discouraged from transferring by the requirement to pay a new full fare every time they change buses. This is discussed further in Chapter 7.

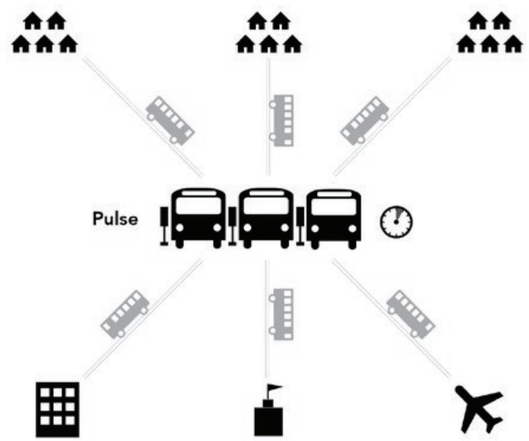


Figure 52: In a "pulse" timed transfer system, multiple low-frequency lines are scheduled to come together regularly, dwell for a few minutes so that passengers may transfer among them, and then depart again.

If you were arriving from North Salinas on Line 49 at 11:10 AM, how long would you wait at Salinas Transit Center?

You would have to wait...	...to go to...	..leaving at...	...on MST Line...	Why?
5 minutes	Monterey	11:15	20	Consistent timed connection
	South County	11:15	23	Lucky timed connection
	Alisal	11:15	41	Frequent service on Route 41
20 minutes	Salinas Airport	11:30	48	Untimed connection
	Boronda	11:30	44	Unlucky - Frequency mismatch
35 minutes	Watsonville	11:45	29	Untimed connection
45 minutes	South Salinas	11:55	95	Unlucky - Frequency mismatch

If you were trying to go to North Salinas on Line 49 leaving at 12:15 PM how long would you have to wait at Salinas Transit Center?

You would have to wait...	...coming from...	...arriving at...	...on MST Line...	Why?
7 minutes	Alisal	12:08	41	Frequent service on Route 41
15 minutes	Boronda	12:00	44	Unlucky - Frequency mismatch
32 minutes	Monterey	11:43	20	If you take the bus that arrives at 12:13, you might miss your connection.
36 minutes	Watsonville	11:39	28	Untimed connection
56 minutes	Salinas Airport	11:19	48	Untimed connection
1 hour 28 minutes	South County	10:47	23	Unlucky - Frequency mismatch
1 hour 45 minutes	South Salinas	10:30	61	Unlucky - Frequency mismatch

Figure 53: Tables showing how long you would have to wait if you were trying to connect to or from Line 49 (North Main Street) at Salinas Transit Center, coming from or going to seven other locations. Because most MST lines operate at unique frequencies, there are relatively few opportunities for timed connections in MST's existing system. People trying to transfer from one line to another often have to wait a very long time.

MST service levels and ridership are low compared to peers.

In preparing this report, the project team compared MST to agencies serving similarly-sized communities. We focused on agencies with a relatively large service area, in mid-sized counties, at the edges or just outside major metro areas. Specifically, we compared MST to:

- San Joaquin RTD in Stockton, CA.
- Gold Coast Transit in Oxnard/Ventura, CA.
- Marin County Transit in Marin County, CA.
- Santa Cruz Metro in Santa Cruz, CA.
- Santa Barbara MTD in Santa Barbara, CA.
- Lane Transit District in Eugene, OR.
- Intercity Transit in Olympia, WA.

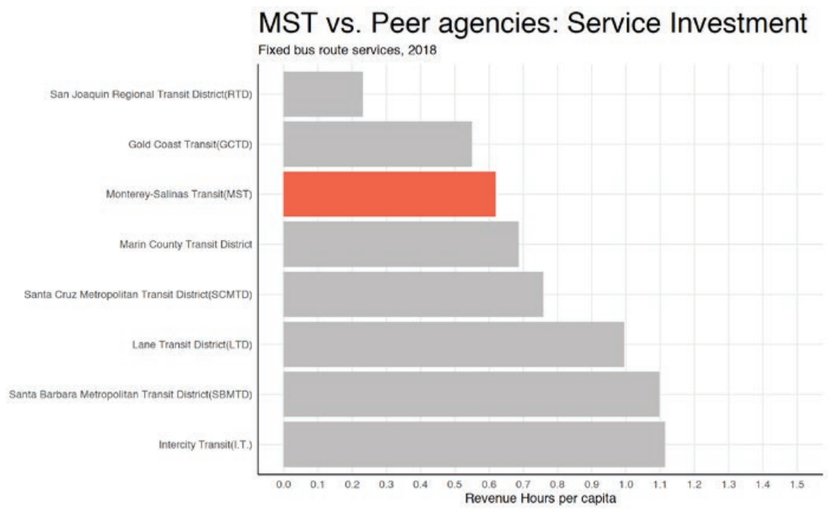
This analysis reveals that:

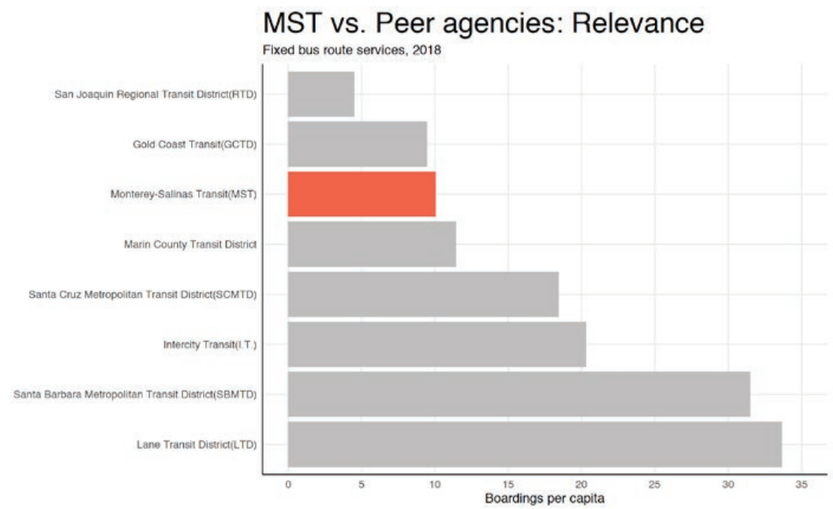
- **MST provides relatively little service.** Only 2 of the 7 peers compared provided less service per capita than MST. And in the case of Gold Coast Transit, this is probably because intercity transit in Ventura County is handled by a different agency.
- **MST ridership is correspondingly low.** Studies comparing many agencies over time show that the single largest contributor to ridership is the amount of service provided. So it is not surprising that, among the agencies we compared, those that provide more service generate more ridership.
- **MST productivity is very low.** We have seen how MST ridership has likely been suppressed by low frequencies. As a result, MST's average productivity has tended to be lower even than other agencies who provide similar total amount of service.

These facts are not permanent, nor are they inevitable. They reflect conditions in pre-pandemic times, and the likely outcomes if not much changes in MST's funding model and service planning practices post-pandemic. But this trajectory can still change.

MST provides the amount of service it can afford within existing public funding sources. Monterey County voters could approve more, as they did with Measure Q in 2014.

And MST's relatively low productivity compared to peers could change as a result of a network redesign that more deliberately matched service location and frequency with ridership potential.





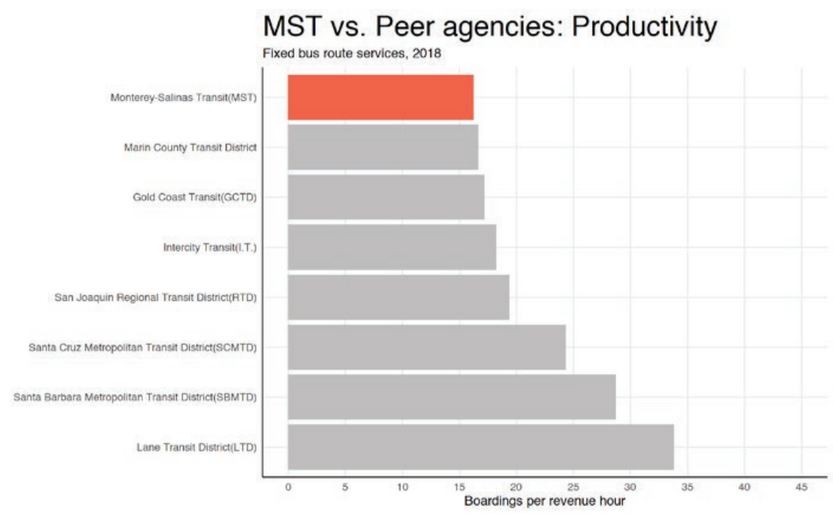


Figure 54: Charts comparing MST to peer agencies on three measures: service investment per capita (top left), relevance in annual boardings per resident (top right), and productivity in boardings per hour (bottom right).

5 MST Paratransit and Specialized Services

MST specialized services include RIDES paratransit and other programs.

MST RIDES is a civil rights obligation.

MST is required by the Americans with Disabilities Act (ADA) of 1990 to provide a complementary paratransit service to persons who are unable to use public transit fixed route services. MST provides this service under the name RIDES.

Two recent Federal and State audits found the MST organization to be in full compliance with relevant Federal ADA regulations. This analysis, therefore, examines selected aspects of the RIDES program to identify opportunities for improved cost efficiency and service effectiveness

Paratransit is Just One Component of the Contractor's Responsibilities

A private operator operates MST's RIDES ADA paratransit program and other assigned services under a contract secured through competitive processes conducted every seven years. MV Transportation, MST's contractor, is responsible for all service operations and uses MST-provided vehicles to do so.

MST RIDES hours comprised 46% of contractor-provided service in FY 2020. The chart in Figure 55 shows the growth in contractor hours, by service type, since 2013. Note that MV Transportation's contract also extends to some of the fixed routes discussed in Chapter 4.

MST provides other specializes transportation services

In addition to RIDES, MST also provides a general public demand response service, where riders book a trip through an app to secure a shared-ride trip to their destination within that community.

On-Call services operate in Soledad, Gonzales, Greenfield and King City on weekdays and in Marina on weekdays and weekends. Greenfield has shown the highest use levels, as illustrated in Figure 56.

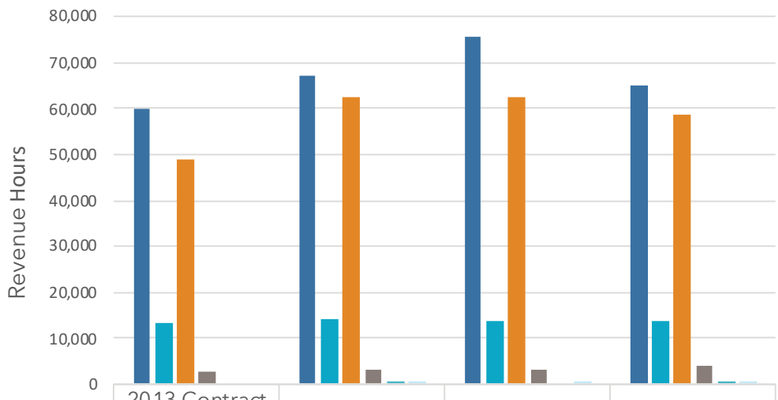
Special Medical Transportation provides non-emergency medical trips to out-of-county facilities, as requested. Use levels are low, less than one round-trip per month.

Non-Vehicle Programs

MST supports several non-vehicle programs oriented to older adults, persons with disabilities and military veterans. Funded with Measure Q tax receipts, these include:

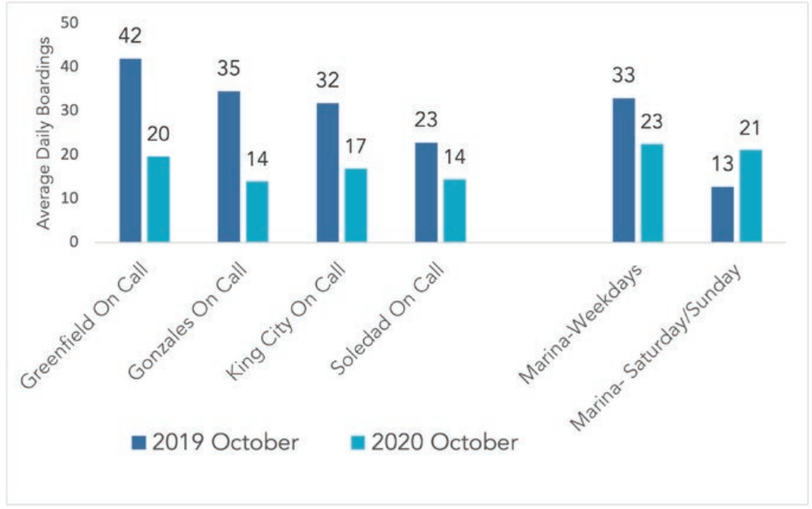
- Taxi Voucher Program – providing taxi coupons to older adults and ADA certified riders at half-off, to subsidize taxi trips -
  - 48,083 taxi trips provided in FY 2020
- MST's TRIP Mileage Reimbursement Program – providing a per-mile stipend to volunteer drivers assisting older adults and persons with disabilities –
  - 4,579 trips provided in FY 2020
- Travel Training – providing one-on-one training assistance to persons who need support in learning to use MST fixed route services
  - 487 training session in FY 2020

Figure 55: This chart presents revenue hour history by program for contracted services



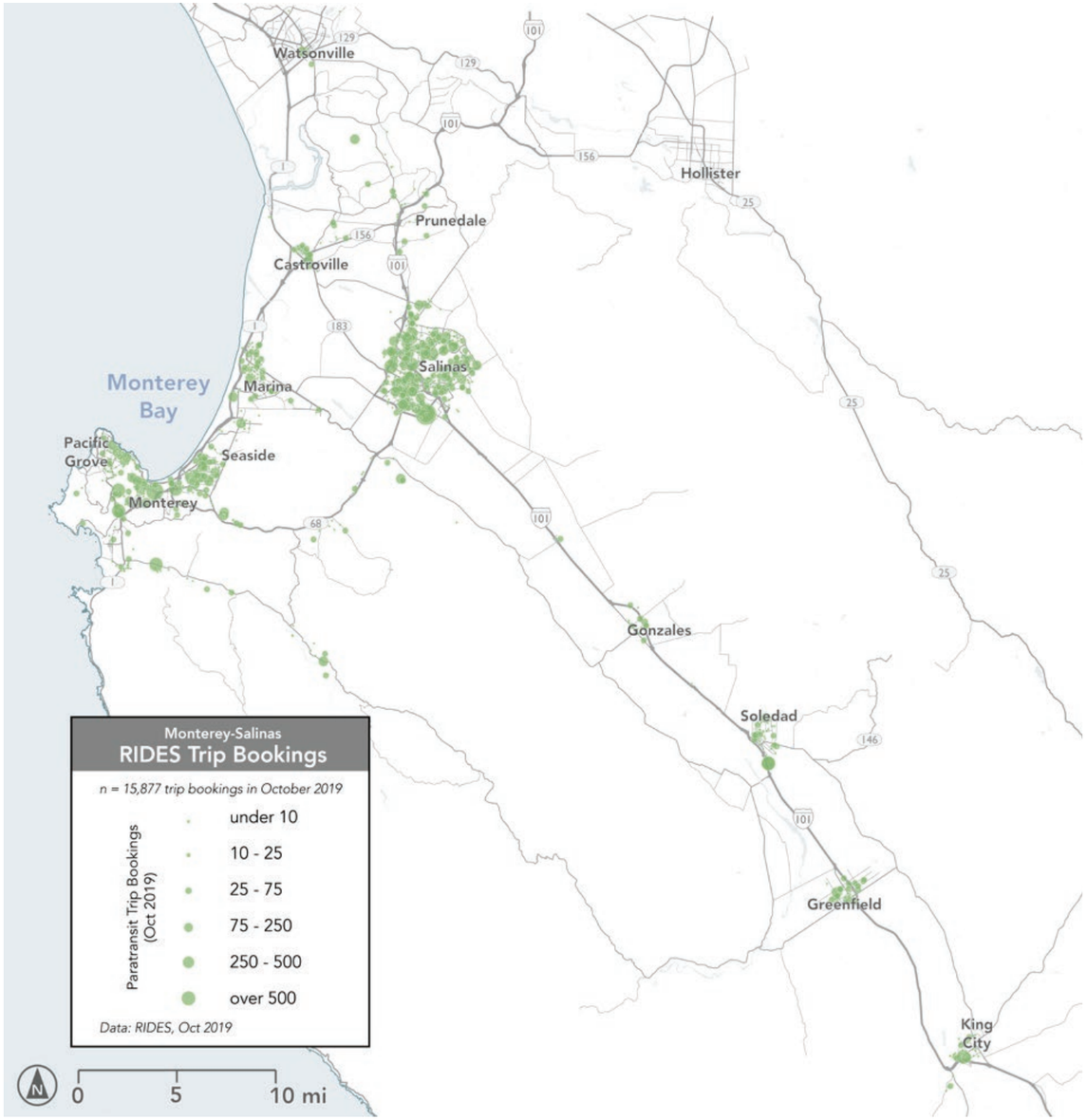
	2013 Contract Basis	FY 2018	FY 2019	FY 2020
Paratransit Rev. Hours	60,000	67,285	75,830	65,167
On-Call Rev. Hours	13,328	14,019	13,932	13,921
Fixed Route Rev. Hours	48,906	62,379	62,298	58,498
Trolley Rev. Hours + Extra	2,859	2,961	3,287	3,903
Out-of-County Spec. Medical	0	8	0	14
Misc. Rev. Hours		207	258	687

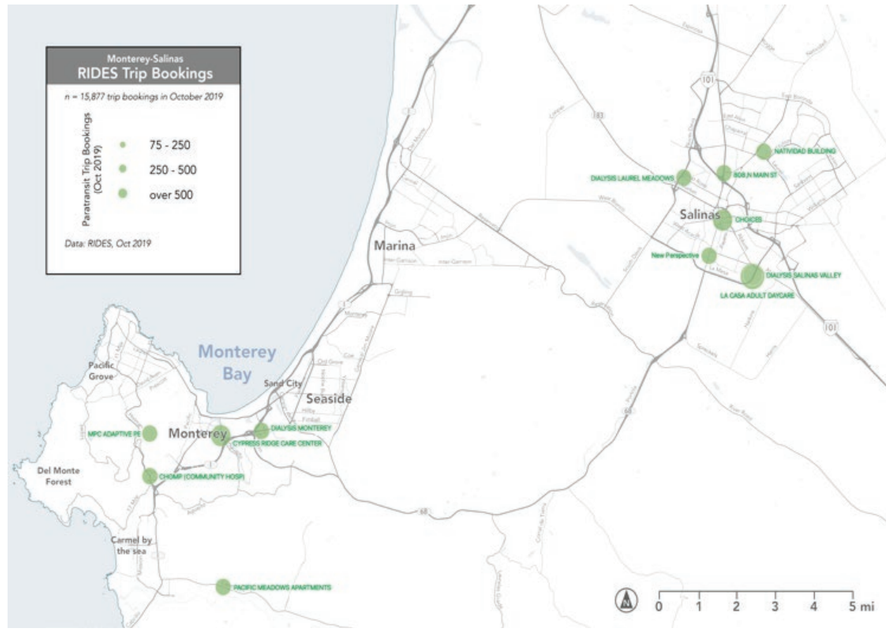
Figure 56: This chart presents MST On-Call ridership by city for October 2019, October 202



MST RIDES is a comprehensive, countywide program.

Figure 57: These maps present MST RIDES bookings in October 2019. Distribution of these trips was: Salinas area: 55%; Peninsula area: 20%; Marina/Seaside: area: 12%; South County area: 10%; North County area: 3%.





MST received 15,877 trip booking requests in October 2019. Of these, 21% were not completed due to various types of cancellation, with MST providing 12,489 completed trips.

Figure 58 depicts the full set of trip booking origins. These cover the majority of the populated areas in the county, although origin and destination must typically be within 3/4 mile of an MST fixed-route to qualify as ADA complementary paratransit.

Key origins and destinations (with 500+ trips per month) were concentrated in the Monterey and Salinas areas. They included adult day health care programs, sheltered workshops, behavioral health programs, dialysis facilities and Monterey Peninsula College.

RIDES service includes:

ADA Service - RIDES provides complementary paratransit to MST's fixed route services . ADA certified riders can travel within ¾ mile of an MST line with an advance reservation.

Beyond the ADA - RIDES also serves limited trips outside the ADA service area to ADA certified riders traveling into the service area.

RIDES performance indicators document a solid, responsive program.

Boardings steadily increased Pre-COVID.

RIDES passenger boardings, by ADA certified persons, showed steady increases, prior to COVID-19 impacts which began in the final quarter of FY 19/20. FY 18/19 increased 9% over the prior year and FY 19/20 was on track to increase similarly, until the fourth quarter.

The chart at the right shows ridership for the past three years, illustrating the growth before and decline after the pandemic.

RIDES operates with both dedicated vehicles and taxi back-ups, a best practice employed in many ADA paratransit programs to cost-effectively provide for supplemental taxi service when on-time pick-ups cannot otherwise be achieved. During FY 2020, dedicated MST vehicles provided 85% of trips. Non-dedicated, private taxis provided 15% of trips.

RIDES Unit Costs are Reasonable

Measure Q, passed in 2014, supports transportation for seniors and persons with disabilities, including funding the RIDES program. FY 2019 costs of $35.66 per passenger boarding[1], were just above the median per trip cost of $32.45 for a group of 29 public paratransit programs, reported in *TCRP Synthesis 135, Paratransit Service Models (2018).*

No-Show, Late Cancel and Missed Trips Collectively Run High

Overall, 21% of MST RIDES booked were not completed in October 2019. Most of these (12%) are due to passenger no-shows, late cancellations, or because the vehicle can't connect with the rider. These represent lost resources as the vehicle was dispatched.

Subscription Trips Running High

Subscription trips are recurring reservations, useful to building overall trip manifests. Pre-COVID, 59% of trips were subscription. Managing the proportion of subscription trips to 50% or less, particularly during peak travel times, helps to ensure that riders with single trip requests can also travel.

Productivity Above Contract Standard of 1.9 Trips per Hour

A favorable 1.97 in passenger boardings per hour was documented for 2020, up from 1.91, and well above the median rate of 1.57 documented in *TCRP Synthesis 135, Paratransit Service Models (2018).* Ensuring that vehicles are efficiently dispatched is critical for demand response services which have overall low productivities in contrast with fixed route services.

High Proportion of Long Trips

About 40% of RIDES trips are between 5 and 10 miles, while a quarter are between 10 and 15 miles and another quarter and greater than 15 miles. Reflecting Monterey County's size, these long trips make it difficult to provide highly productive service and represent substantial deadhead, as vehicles travel empty for significant distances.

On-Time Performance Lags Behind 90% Standard

On-time performance analyzed for a three-month pre-COVID period shows that 79% of trips were provided within the on-time window of 15-minutes before to 15-minutes after the promised time. The demand for trips over the course of the day, trip distances to be covered and congestion on the roadways all impact on-time performance.

Figure 58: This chart presents MST RIDES boardings by month for three years, including supplemental taxi.

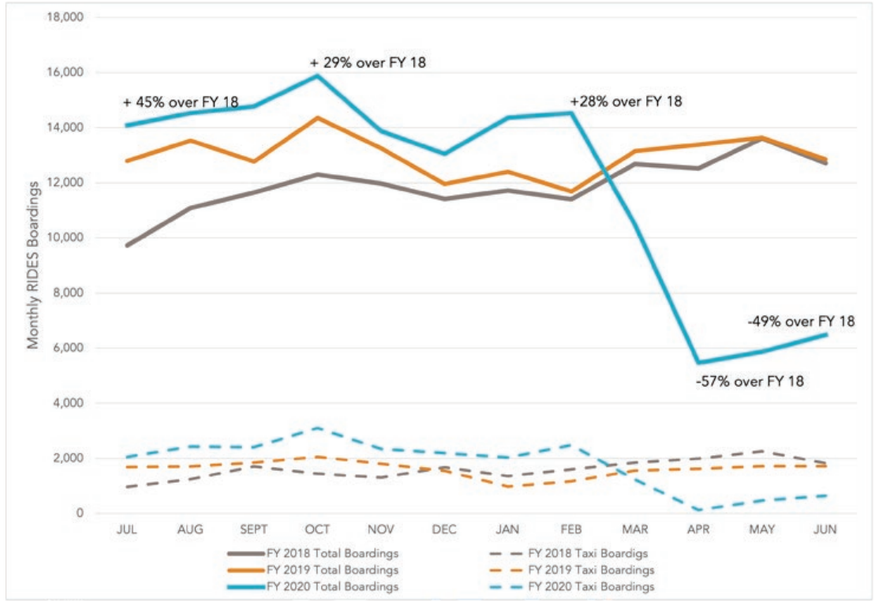
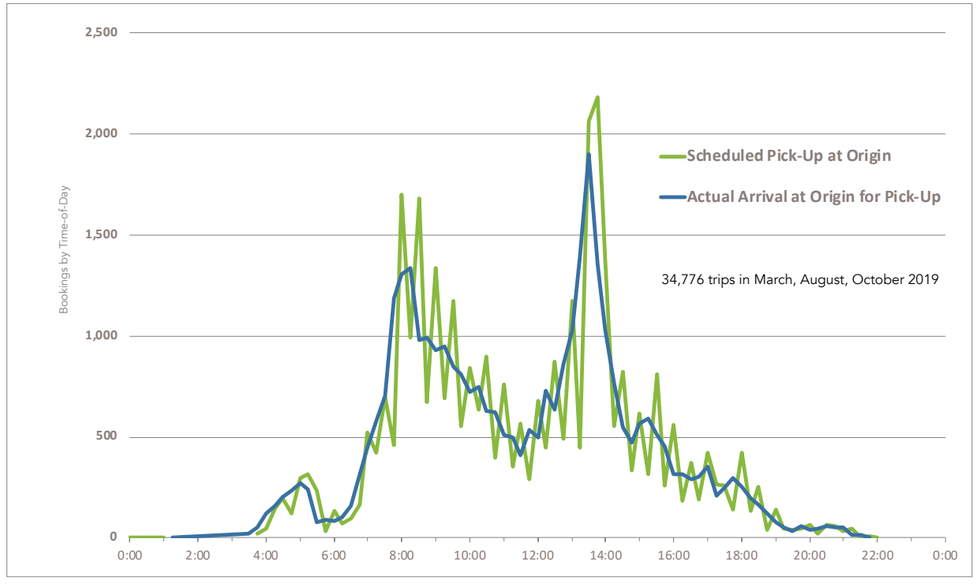


Figure 59: This chart shows MST RIDES trips are highest in the morning and afternoon, peaking at 8am and 2pm.



1 As reported in the National Transit Database.

RIDES users report very positive experiences.

Customer Experiences

MST riders are certified by MST's Mobility Services Center as unable to use fixed route public transit some or all of the time. By the end of FY 2020, over 5,000 unique persons had taken 77% of RIDES trips. Among the trips provided, 22% were provided to personal care attendants (PCAs) who can measurably shorten vehicle dwell times at the curb. Just 1% of persons riding during FY 2020 were fare-paying companions.

In the course of preparing this report, the project team interviewed focus group participants representing a range of persons who were substantially disabled by diabetes, liver disease and chronic illness, as well as very frail elderly persons. RIDES users also include persons with cognitive impairments of varying severity or persons with behavioral disabilities, a wide range of disabilities.

Speaking with eight persons about their RIDES experience (including three in Spanish), each of these users expressed appreciation for the service. Six persons lived alone and reported that RIDES was their primary means of mobility; for some without family in the area, it was their only means of transport. Almost all riders spoke of the helpfulness of drivers with one reporting that his driver called 9-1-1 for transport to the hospital when he'd fallen into a diabetic coma while on the MST vehicle.

Rider Suggestions

Riders offered just a few areas of concerns:

- Communication difficulties with dispatch were described by one rider who noted that she calls frequently to determine when her vehicle is arriving for a regular, recurring trip.
- Two riders described missed trips that occurred when waiting for a vehicle in one location while the driver went to a different location to pick them up. Both were living in larger residential communities with multiple buildings.
- Two riders described negative experiences with taxi drivers,contrasting these with very favorable experiences with MST van drivers.

Low Level of Complaints

Customer service reports (CSRs) are received by the contractor (MV Transportation), whose managers document, address and report these to MST. The rate of customer complaints received was at 0.04 per 1,000 trips for FY 2020 for van trips, and higher at 0.24 for taxi trips.

Call Center Performing Above Standards

Customers interact with MST's Call Center to book RIDES trips or ask follow-up questions. The call center received 30,000 to 34,000 calls monthly pre-pandemic. Despite this, call wait times were favorably low: highest on Mondays, averaging 1-minute 48 seconds, less than one minute on other days, and well below MST's 2-minute wait-time standard. Abandoned calls, where individuals do not connect with a dispatcher, are around 9% of calls, rising to 10% of calls on Saturdays and Sundays.

"I feel well taken care of by the RIDES program."

- Anna Maria

"I am really thankful for the MST RIDES service that is provided and is key to my life. I am glad MST took the time to hear my input and experiences using MST RIDES."

-Charles

"MST is fantastic."

- Bridgette

"Drivers are wonderful."

- Patricia

Figure 60: FY 2020 customer service reports received by MST

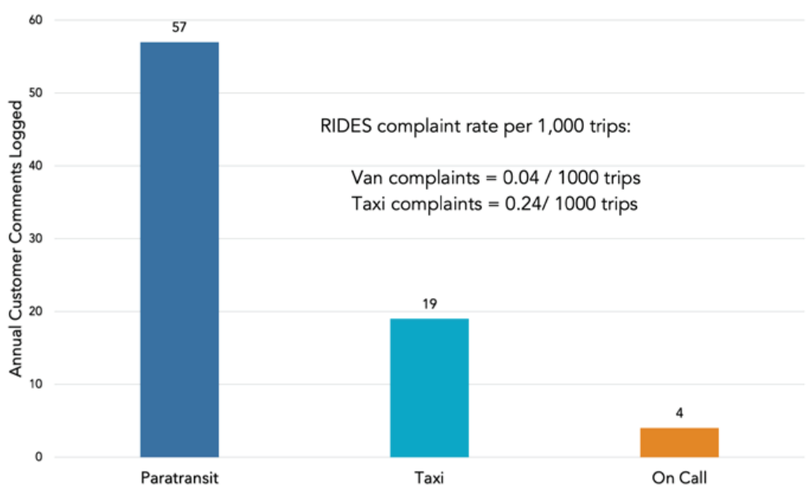


Figure 61: MST's state-of-the-art Mobility Services Center

Opportunities for Improvement

Providing ADA complementary paratransit is a complicated and expensive effort, but it is critical to those who need it. This analysis identified seven areas to address, to improve the RIDES' program cost-efficiency or its service effectiveness.

1. Reduce deadhead miles with a South County garaging location.

Reducing demand response deadhead miles is strongly advised, and may become potentially feasible if MST can allow MV Transportation to garage some demand response vehicles at the new South County facility in King City. About 20% of RIDES trips start or end in the Highway 101 corridor south of Salinas, and about 25% of RIDES trips are 15 miles or longer.

Although MST may not pay for deadhead time directly in its contract, the costs associated with deadhead end up being paid indirectly through higher overhead rates. Deadhead miles add to the wear and tear on MST-owned vehicles and can errode on-time performance.

2. Improve on-time performance with trip scheduling and trip negotiation modifications.

MST's contractor uses a sophisticated scheduling program, Trapeze. This tool must be carefully calibrated to local conditions to achieve maximum effectiveness, and improve on-time performance.

On-time performance can be improved by greater use of Trip Negotiation in the reservations process. Analysis revealed high proportions of trips scheduled on the hour and half-hour. Moving some of those trips even fifteen minutes can contribute to improved operational efficiencies by spreading demand peaks and softening their impacts.

Recommendations include:

- Adjust Trapeze parameters to reflect congested travel times and ensure that Trapeze provides call takers optimal pick-up times that push for greater efficiency, requiring call takers to formally negotiate with riders.
- Employ trip optimization functions, to adjust schedules in real-time to accommodate cancellations.
- *Require on-going scheduling software training for contractor staff, and include MST staff*, to ensure effective use of most recent software functions and modifications.

3. Reduce call volumes through use of scheduling software.

Implementing an automatic call-back on the day before scheduled trips and while the vehicle is on the way has been shown to significantly reduce call volumes into dispatch. These time-consuming calls are common among an anxious and dependent ridership population.

The PASS Web module "Where's My Ride" was successfully implemented in 2019 by LA Access, OCTA and Omnitrans in Southern California to provide arrival times to riders. LA Access documented a 30% reduction in calls to dispatch. Automated call-backs help by:

- Reminding passengers to cancel in advance, if needed;
- Reassuring riders that their trip is on the manifest for the next day;
- Advising riders, in real-time, of imminent vehicle arrival;
- Reducing vehicle dwell time at the beginning of the trip. Passengers are more likely to begin moving toward the curb, a process that takes time for many RIDES users.

4. Actively develop Demand Management opportunities.

Focusing increased attention on demand management would help manage RIDES' trip growth rates, which were very high pre-pandemic. An active demand management program would include expanded travel training opportunities, to introduce existing and potential ADA riders to fixed-route travel opportunities and to build confidence in using the bus[1].

Program components of an enhanced Travel Training program could incorporate those sucessfully implemented by Riverside Transit Agency that focused on selected, existing riders, as well as young persons leaving the public school systems.

5. Revisit supplemental programs to improve effectiveness or terminate.

The data indicate extremely low utilization of the Special Medical Trips program. Such out-of-county non-emergency medical transportation services are important and can be well utilized. But they need to be understandable to consumers, predictable and promoted. It is not clear that the program provides enough value to continue in its current form.

The Taxi Voucher program, in contrast, has considerably higher use levels. However, there was some confusion among focus group participants as to when they were taking a taxi under the voucher program and when a supplemental taxi was dispatched as a RIDES trip. Clarifying rider expectations and improving communications around this, particularly on the website, will be useful.

1 See *Transportation Research Record* #2419 "Americans with Disabilities Act Cost Savings and Increased Fixed-Route Ridership through Transit Agency Travel Training", H. Menninger, V. Werly. Washington, DC, 2014, pp. 88-89.

6. Develop performance-based reporting structures for the RIDES program and beyond.

The RIDES contractor provides a considerable amount of reporting on a monthly basis. However, this reporting is not readily helpful in tracking service delivery trends. MST should consider using performance reporting software, such as TransTrack, for two purposes:

- To compile operations and performance data at the program level or route level; and to also compile it at the mode level and at the system level, allowing MST to track both aggregated and disaggregated experiences;
- To present operations and performance information in relation to standards for performance. As one example, "Late Trips" currently detailed by trip, can be categorized, as groups, by minutes past appointment time.

Strategic Goal: Provide Quality Transit and Mobility Management Services

The data suggest MST is largely meeting this goal, with certain avenues of improvement possible.

6 MST's Financial Outlook

Operating costs are growing

MST's systemwide operating expenses have been increasing over the past four years, with a slight decline experienced in FY 19/20 during the COVID-19 pandemic (see Figure 62)**.** The main drivers for increase in operating expense are attributed to:

- A 13% rise in salaries and benefits between FY 2017 and FY 2018
- A 35% increase in purchased transportation between FY 2017 and FY 2019.
- Insurance expense more than doubled in FY 19, from $700,000 to over $1,500,000 (see Figure 63).

At the same time, operating expenses in total only declined by 2% in FY 2020, while many services were suspended or experienced low utilization. This may be due to increased unit operating costs during the pandemic (e.g. cleaning and disinfecting), combined with a higher rate of excused driver absences for sickness, or to take care of loved ones.

In the short term, coming out of the pandemic, MST must find a way to bring unit operating costs back to their pre-pandemic levels.

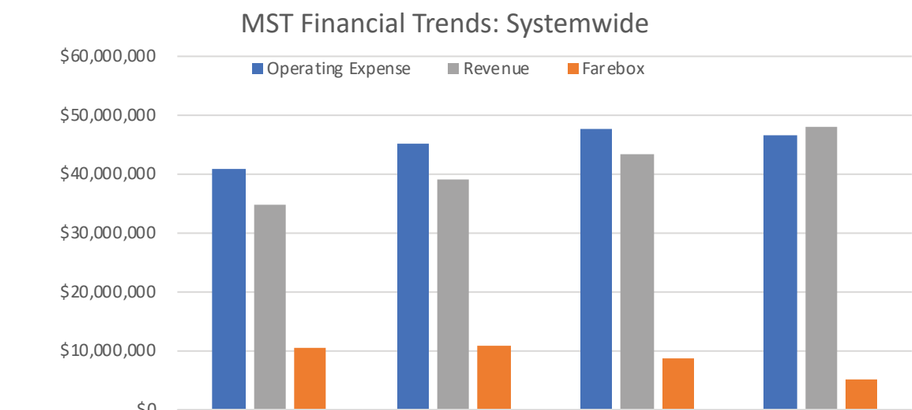
What major expense categories can be controlled?

In FY 2018, MST hired four new staff members, made a significant contribution to the Public Employees Retirement System (PERS) account and had an increase in Workers Compensation expense. This resulted in a $3 million increase in salaries and benefits.

At the same time, the cost of contracted operations is increasing at rates that are not sustainable, growing from $8 million in FY 18 to almost $10. 7 million in FY 19.

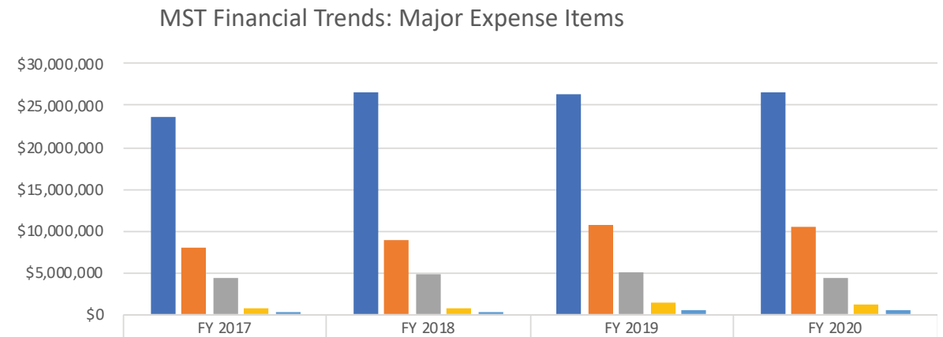
- Purchased transportation, including MST RIDES and Measure Q service costs are the main drivers for the increase in contractor costs.
- Paratransit service hours increased by 12.1% in FY 2018 and continued to grow in FY 2019. **MST's financial health in the medium-term depends on finding ways to reduce the rate of growth of these trips**.

Figure 62: Chart showing systemwide financial trends, FY 2017 to FY 2020.



	FY 2017	FY 2018	FY 2019	FY 2020
Operating Expense	$40,871,848	$45,144,871	$47,633,526	$46,751,492
Revenue	$34,740,369	$39,033,971	$43,287,692	$48,168,916
Farebox	$10,370,500	$10,817,163	$8,715,328	$5,316,913

Figure 63: Chart showing major MST expense items, FY 2017 to FY 2020



	FY 2017	FY 2018	FY 2019	FY 2020
Salaries and benefits	$23,564,649	$26,572,590	$26,286,386	$26,587,419
Purchased transportation	$8,042,897	$8,935,084	$10,661,634	$10,425,043
Materials and supplies	$4,447,433	$4,909,665	$5,104,905	$4,403,552
Insurance	$710,712	$704,306	$1,526,270	$1,139,673
Utilities	$435,719	$426,940	$588,380	$633,207

Revenue Trends

The trends so far have been positive.

Revenue from federal, state and local sources increased year-over-year from FY 2017 through FY 2020, growing by a total of 39%.

Local and state funding account for approximately half of non-fare revenue[1].

Federal assistance grew modestly until FY 2020 where the addition of CARES Act funding related to COVID-19 recovery was introduced. This funding has been bolstered by subsequent stimulus packages.

Sales tax revenue increased by 15% in FY 19 then declined in FY 20.

Can revenue streams continue to keep pace with rising operating costs?

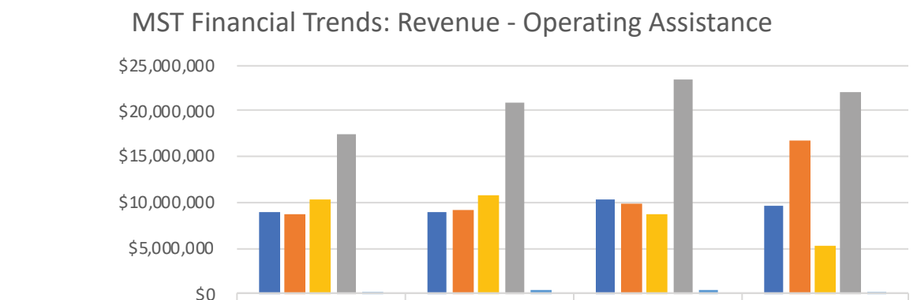
The events of 2020 presented challenges and opportunities for both sides of the ledger. Low ridership generated less fare revenue and state funding declined after its peak in FY 19. At the same time, funding from the CARES Act and subsequent stimulus packages has helped to make up the difference.

But can MST maintain current service levels when all recovery funding has been expended and if sales tax generated revenues decrease?

MST also lost its military contracts and other contract services were suspended in early 2020. Can lost partner funding agreements be reinstated?

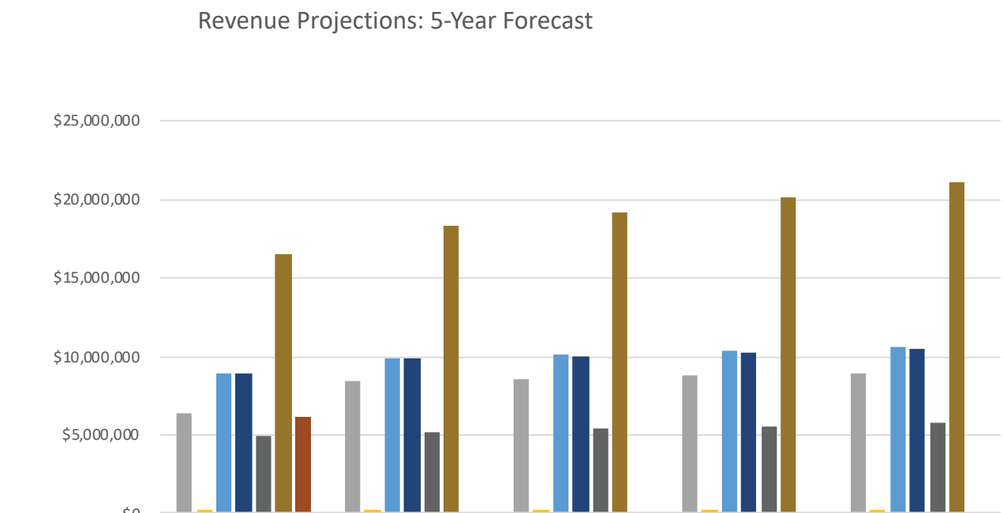
1 Note: MST's classification of fare revenues includes not only fares and passes but also revenues associated with service contracts, e.g. with the military, CSUMB, Amtrak etc.

Figure 64: Chart showing operating assistance received by MST, FY 2017 to FY 2020



	FY 2017	FY 2018	FY 2019	FY 2020
Sales tax revenues	$8,922,912	$8,990,950	$10,365,729	$9,542,722
Federal grants	$8,758,334	$9,272,663	$9,842,643	$16,722,997
Fares	$10,370,500	$10,817,163	$8,715,328	$5,316,913
Local and state (LTF/STA)	$17,442,001	$20,809,630	$23,513,295	$21,998,905
Other	$296,186	$335,906	$431,302	$308,190

Figure 65: Chart showing MST's five-year revenue forecast, FY 2022 to FY 2026



	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026
Fixed-Route bus fares	$6,367,094	$8,437,793	$8,606,549	$8,778,680	$8,954,253
RIDES paratransit fares	$277,626	$277,535	$283,086	$288,747	$294,522
Sales tax (Measure Q) revenues (net) (2)	$8,952,912	$9,947,519	$10,146,470	$10,349,399	$10,556,387
Federal grants	$8,890,778	$9,842,643	$10,039,496	$10,240,286	$10,445,091
State operating funds (4)	$4,909,973	$5,229,322	$5,412,349	$5,601,781	$5,797,843
Local transporation funds	$16,551,692	$18,283,973	$19,198,172	$20,158,080	$21,165,984
Federal - CARES Act funding	$6,187,588	$0	$0	$0	$0

Please note: MST anticipates an additional $22.4 million in recovery funds from the Coronavirus Response and Relief Supplemental Appropriations Act (CRRSAA) and the American Rescue Plan (ARP), beginning in FY 2022. As of the publication of this report, it is not yet clear how this amount will be distributed from one year to another, so those funds are not included in the chart above.

MST has budgeted conservatively.

MST has planned balanced budgets. Revenues have consistently exceeded expectations while expenses have come in lower.

Annual Budget and Actual Performance

In FY 2018 and FY 2019, the variance between budgeted expenses and actual expenses was in the range of -2% to -2.6%, where actual expenses were lower than what was expected.

The budget variance grew to -10.6% in FY 2020 due to the COVID-19 pandemic, where actual expenses were much lower than expected.

The variance between budgeted and actual revenue was greater than the variance in expense, ranging between +6.9% and +10.6% over a 3-year period.

- MST has brought in more revenue than expected. This reflects a conservative approach, where **MST has been careful not to overestimate the amount of forthcoming state and federal operating assistance.**
- Expense estimates have been fairly accurate and MST has managed actual costs effectively. To the extent expense have been lower than planned for, this is largely because **MST has made cautious assumptions about payroll and material costs, particularly fuel costs.**
- Budgeting during the pandemic is challenging due to difficulty estimating the wide variety of unknowns in the future. It remains unclear how FY 2021 and FY 2022 budgets will compare to actual performance.

Figure 66: Chart comparing expected budget and actual expenses, FY 2018 to FY 2020.

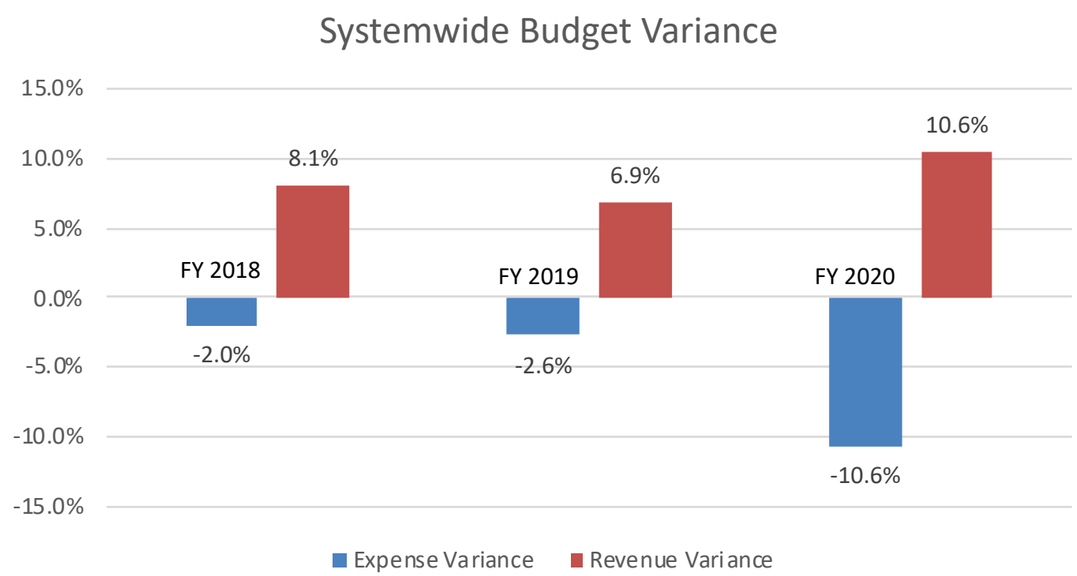


Figure 67: Table comparing expected budget to actual expenses, FY 2018 to FY 2020.

Systemwide			
	FY 2018	FY 2019	FY 2020
Budgeted Expenses	46,541,112.00	49,560,852.00	52,961,712.00
Actual Expenses	45,625,367.44	48,259,200.20	47,334,849.08
Budgeted Revenue	46,541,112.00	49,560,852.00	43,823,496.00
Actual Revenue	50,300,147.85	52,988,768.64	48,460,682.58
Expense Variance	-2.0%	-2.6%	-10.6%
Revenue Variance	8.1%	6.9%	10.6%

7 Insights from Preliminary Community Outreach

MST's strategic focus on customer satisfaction is evident.

Strategic Goal: Provide Quality Transit and Mobility Management Services

Both rider focus group participants and community stakeholders were highly complimentary of MST's customer service and community engagement.

In interviews with well over a hundred stakeholders and riders, we heard virtually no "complaints" about MST service quality.

While stakeholders recognized the limitations of MST's services, they described the agency as proactive, responsive to community needs and willing to partner with other organizations to serve their constituents.

While they described a network that is confusing and takes a long time to get places, riders had high praise for the quality of service. Multiple riders described drivers as "awesome," in that they are courteous, helpful and look out for the safety of riders. They were also very appreciative of the cleaning and safety efforts put into place to combat the spread of Covid 19.

Comments about late or early buses arose, but most riders said that's only the case about 10% of the time. They can generally count on MST to operate as scheduled.

Effective Communications Have Enhanced Customer Satisfaction

Gatekeepers for key target populations repeatedly mentioned MST's outreach staff and how helpful they were in educating constituents about the services. Several stakeholders mentioned the effectiveness of working through trusted messengers to reach "hard-to-reach" populations such as Indigenous Groups.

Strategic Goal: Educate the Public on MST Services

MST's outreach and marketing efforts appear to be highly effective.

Riders have embraced the Transit App and Google Maps to help navigate a network of lines that is otherwise confusing. In Salinas, the apps allow riders to see which of multiple low-frequency lines is available at the time they need a ride.

The website and text for schedule functions are also used, though less frequently. Spanish speaking riders noted that they previously used the bilingual printed guide, but now rely on the website or signage at the bus stop. Due to the language barrier, they are often unable to use drivers as a source of information, something that is important to other riders.

Spanish Language Communications are Critically Important

Stakeholders stressed the importance of providing all passenger information and conducting promotional efforts in Spanish.

This need was also reflected in the focus groups where 17 out of 40 participants spoke Spanish, though only eight were fully monolingual.

In the county wide telephone survey, nearly 4 out of 10 respondents completed the interview in Spanish and 59% indicated they were of Hispanic origin.

"MST is responsive to community needs. They authentically want to serve."

We heard from Stakeholders

Small group interviews were conducted with over 80 community stakeholders to secure their input regarding transit needs and priories. Participants included representatives of:

- Jurisdictions served by MST
- Social Service Agencies
- Medical Facilities
- Seniors and Persons with Disabilities
- Employers
- Hospitality Industry
- Schools, Colleges and CSUMB
- Military Programs
- Non-English-Speaking Populations

We talked to MST Riders

Nine focus groups were conducted with English and Spanish speaking MST riders to explore their experiences with and priorities for the MST service network.

We surveyed the Community

A random survey of 500 households throughout Monterey County was conducted via telephone. The survey provided input as to how the general population believes MST should prioritize its various roles and allocate its resources within the County.

Intercity service is key to jobs access. Local transit is a priority in Salinas.

Generally, stakeholders and riders perceived service between communities as most critical because of the disparity between where potential transit users live and work.

For example, most hospitality and service sector jobs are located on the Monterey Peninsula, while these workers reside in Seaside, Marina and Salinas. Similarly, CSUMB, Monterey Peninsula College and Hartnell College attract students from throughout the County.

Inter-community transit is also important because many services are only available in Salinas, such as social services, courts, community health services and methadone clinics.

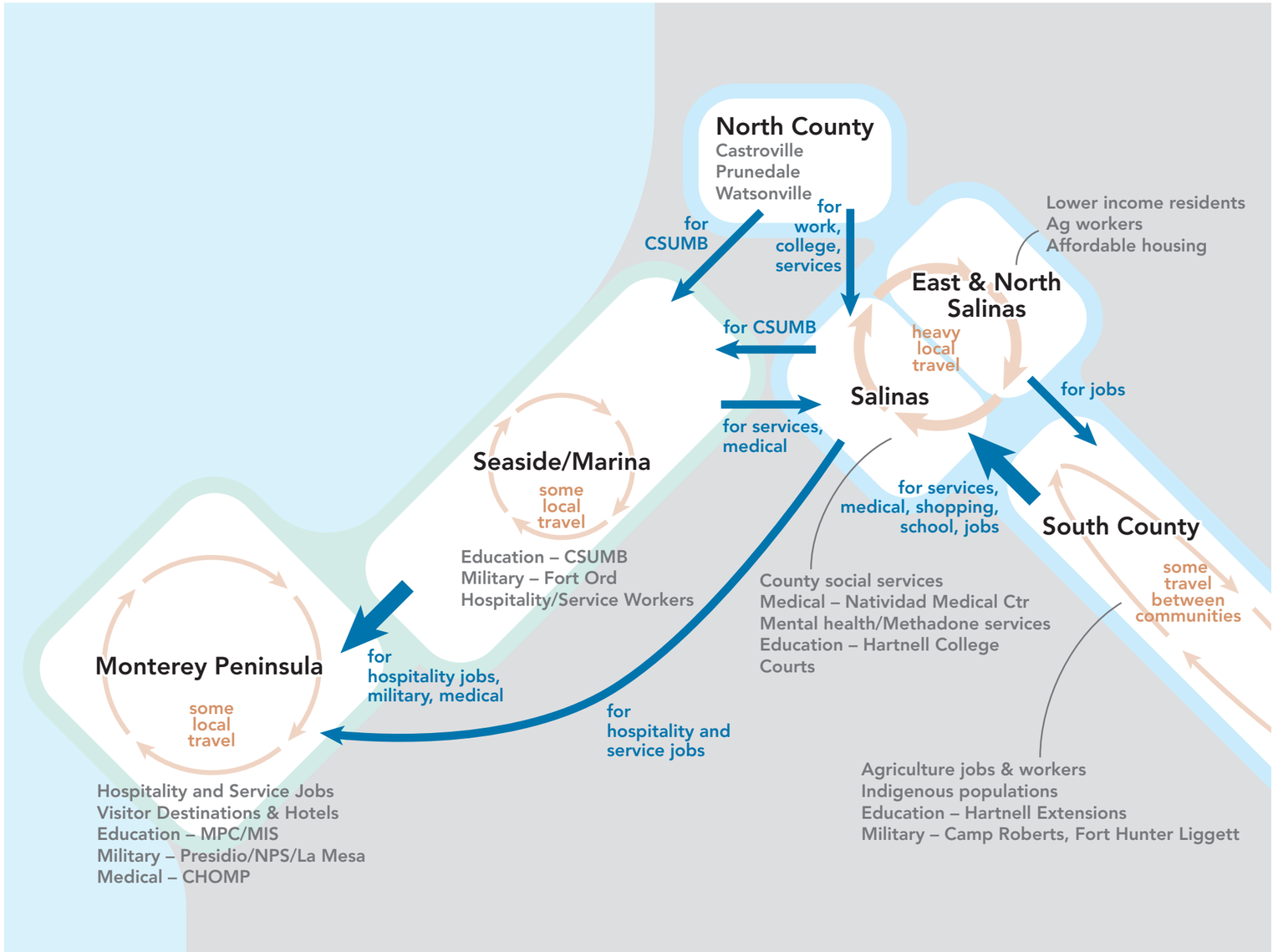
Several riders noted that within their community they have travel options – walking, biking or calling a rideshare service - but these alternatives are not practical for longer intra-community trips to work or school.

The one community where local transit is as important as inter-community service is within Salinas. The larger size of the city and the fact that more residents rely on transit as their primary travel mode make local transit critical. Several riders in the focus group used the bus almost exclusively within Salinas, for work, college, shopping, medical appointments, and recreation.

Local circulation within Salinas is also important for South County residents and others who come to Salinas for work, college, or services.

Smaller markets for local travel exist within the Monterey area and around the CSUMB campus.

Figure 68: Within Monterey County, there are a wide variety of travel patterns, both local and inter-community. This graphic illustrates some of the key transit trip needs voiced by stakeholders and riders.



MST fares are high and often do not reflect the relative value of the trip.

During outreach, the most frequent "complaint" heard from both riders and stakeholders related to fares and fare payment.

Fares are high relative to the incomes of many riders. A one-way ride within Salinas can cost $5.00 while inter-community rides can be more. Dissatisfaction with fares was expressed in several ways.

- **Monthly passes, priced at $95.00 to $190.00 are not affordable for many riders.** For working riders it takes "a big chunk of your earnings."
- **The lack of free transfers means that trips requiring two or three buses cost much more.** "Not only do you have to wait, you have to pay again."
- The **fact that fares are based on the line used, rather than the distance traveled,** means that riders making short trips often pay high fares relative to the length of their trip. One example given was that a trip between King City and Greenfield costs the same amount as a trip all the way to Salinas.

GoCard Reloads

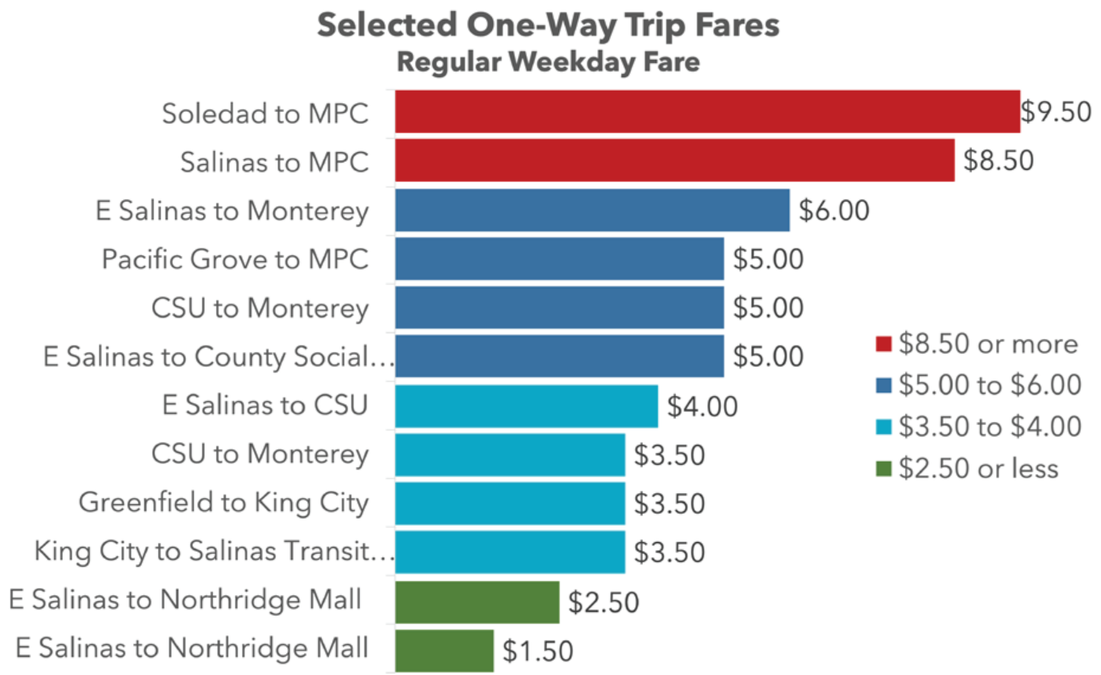
Riders appreciate the discount given when they load cash on their GoCard, however we heard repeated requests for a way to add value on-line or on their phone. Having to go to the transit center often means making an extra trip or stop which adds time and cost[1].

1 Note: MST has now launched a 6-month demonstration project for a contactless fare payment system that allows riders to pay by distance traveled and pay with certain credit cards and mobile wallets. More information at https://mst.org/fares/contactless-payment/.

Figure 69: Fares for common trips calculated using the Google Trip Planner.

One-Way Trip	Route(s) Used	Miles	Wkday Fare
E Salinas to Northridge Mall	95	6	$1.50
E Salinas to Northridge Mall	41	6	$2.50
King City to Salinas Transit Center	23	48	$3.50
Greenfield to King City	23	13	$3.50
CSU to Monterey	20	8	$3.50
E Salinas to CSU	41-61	11	$4.00
E Salinas to County Social Services	41-48	3	$5.00
CSU to Monterey	16-18	8	$5.00
Pacific Grove to MPC	1-Jazz	3	$5.00
E Salinas to Monterey	41-20	21	$6.00
Salinas to MPC	45-20-Jazz	22	$8.50
Soledad to MPC	23-20-Jazz	43	$9.50

Figure 70: Fares for common trips calculated using the Google Trip Planner.



8 Key Choice and Next Steps

Key Choice: Ridership vs. Coverage

Should MST focus more on the services likely to generate the highest ridership, or continue to focus on covering as many places as possible?

The MST COA is a unique opportunity to rethink the purpose of Monterey County's transit system. The most basic choice is the degree to which the transit system should be pursuing ridership or coverage.

What is planning for High Ridership?

Designing a network for **high ridership** serves several popular goals, including:

- Enabling people to use transit to easily get to many jobs and services.
- Minimizing pollution and climate impact by replacing car trips with transit trips.
- Limiting the growth of congestion.
- Supporting dense and walkable development.

Prioritizing ridership means buses come more often and are convenient for more trips (higher frequency, longer hours) **but are available only in places where many people, jobs and destinations are located.**

What is planning for High Coverage?

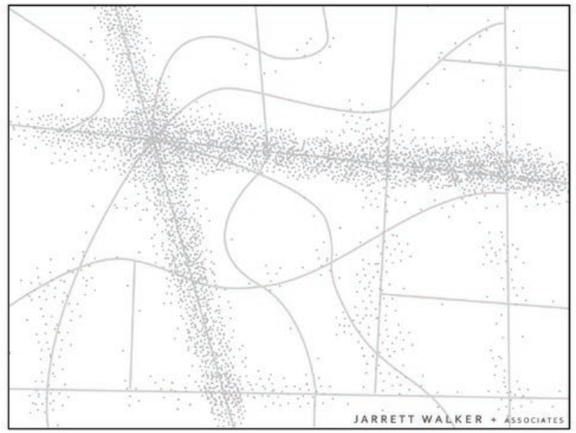
Designing a transit system for **high coverage** serves different popular goals:

- Ensuring that as many people as possible have insurance against isolation through access to some transit service, no matter where they live.
- Ensuring that every community in the county has some service, even if relatively few people live and work there.

Prioritizing coverage means buses serve as many places as possible, but because they are spread out they don't come often (once an hour or less) **and aren't convenient for many trips.**

Why can't MST do both?

MST can pursue high ridership and extensive coverage at the same time, but the more it pursues one, the less it can provide of the other. Every dollar that is spent providing high frequency along a dense corridor is a dollar that cannot be spent bringing transit closer to each person's home.

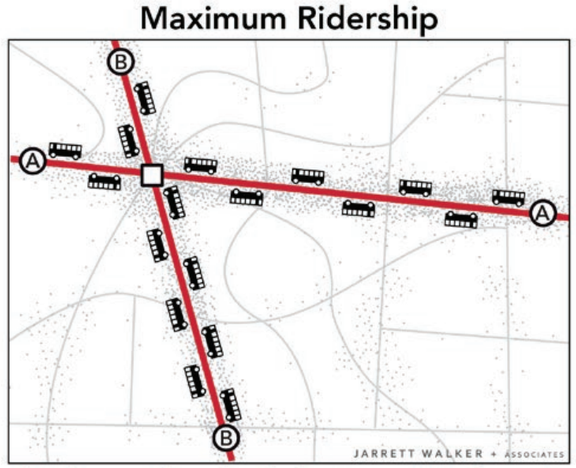


Imagine you are the transit planner working in this fictional neighborhood.

The dots scattered around the map are people and jobs.

The 18 buses are the resources the town has to run transit.

Before you can plan transit routes, you must first decide: What is the purpose of your transit system?



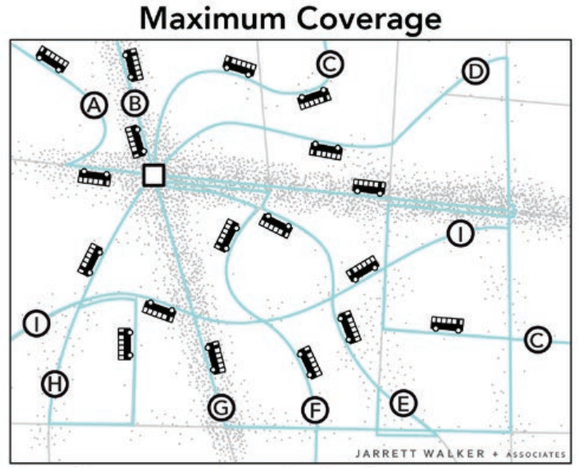


Figure 71: Comparing an imaginary town where transit is run with the goal of maximizing frequency and ridership (left) vs. the same town where transit is run with the goal of providing a little service near everyone (right). The maximum ridership (left) network has very frequent service, but only on the roads where the most people live and work. The maximum coverage network has service on every road, but it doesn't come very often.

Local vs. Regional Service

Because MST is the transit agency for all of Monterey County, there will always be a tension in deciding how much transit service should be provided for:

- Local trips, mostly in the greater Monterey and Salinas areas.
- Regional trips connecting all parts of the county to Salinas, Monterey, Watsonville and points beyond.

This tension is inevitably bound up in the ridership vs. coverage trade-off, because:

- Longer lines cost more to operate at the same frequency than shorter lines.
- Longer lines cross large areas where no one gets on the bus, so they serve fewer riders for every hour the bus runs.

This means that regional bus service tends to be more expensive to operate, while serving fewer passengers, than local lines.

This is especially true for MST's longest lines, like Line 23 (Salinas to King City); Line 84 (King City to Paso Robles); or the pre-pandemic lines to San Jose and Santa Cruz.

The more MST spends on regional service, the fewer resources are available to provide lower-cost, higher-ridership lines in urbanized areas. But if MST did not provide regional lines to the small towns in southern and northern Monterey County, it is unlikely anyone else would step in.

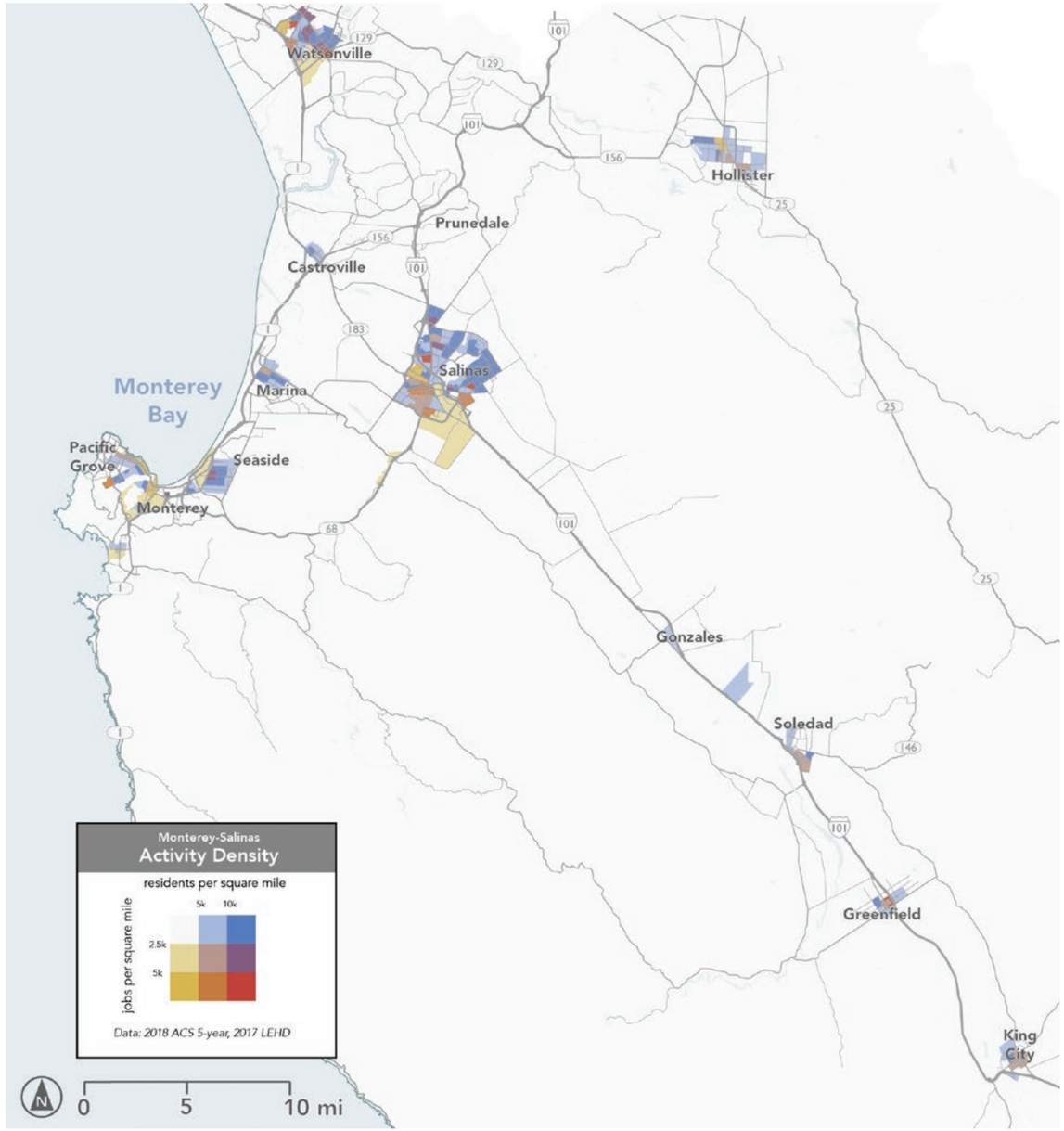


Figure 72: Regional map of combined population and job density.

Key Choice: Needs-Based vs. Population-Based

Should MST focus mostly on the travel needs of disadvantaged communities, or consider all travel demand equally regardless of people's circumstances?

Almost everybody needs to go to various places on a regular basis. But some people have more choices than others about how to get around.

- **People who don't own cars** can't drive their car to get around. But this does not necessarily mean they strongly need transit. Many people without cars choose to live in a location where they can walk or bike to the places they need to go. They may use transit only occasionally, and even then they may have other options like a taxi or ridehailing service like Uber and Lyft.
- Some **seniors and people with disabilities** can't drive, and so they are more likely to need to use transit to get around. Many of the people who fit this description will also have difficulty using transit and may require ADA complementary paratransit.
- **People with low incomes** generally have fewer choices about where to live, and whether or not that place is near the places they need to go. They are less likely to own a reliable car, and more likely to live in a household with fewer cars than drivers. These factors make it more likely that a low-income person might need to use transit. But if transit isn't available or convenient enough, they are more likely to rely on friends and family to give them rides, or to walk or bike very long distances.

In 2014, Monterey County voters decided to explicitly support the transit needs of seniors, veterans and people with disabilities. Measure Q collects an 1/8 cent sales tax that goes to funding 6 fixed bus lines and most of the county's paratransit trips.

But **there has been no explicit funding commitment** (by county voters or otherwise) **to prioritize needs of people with low incomes**, who tend to have the fewest choices about where they need to go and how to get there.

MST does not currently have the funding tools to make a commitment comparable to Measure Q. But MST could decide to prioritize low-income communities in planning its general-public services.

Would that be the right decision? It depends on your values.

If you are most interested in universal coverage with basic transit service, you might not want to see service to some communities prioritized over others. If you are most interested in a system that maximizes ridership, you might not want to prioritize service to far-flung and isolated low-income areas.

But the initial outreach suggests that such "purist" views about the ridership vs. coverage trade-off are rare. Local opinion somewhat favors a stronger focus on ridership, but overwhelmingly favors prioritizing the needs of disadvantaged people and communities in designing transit service.

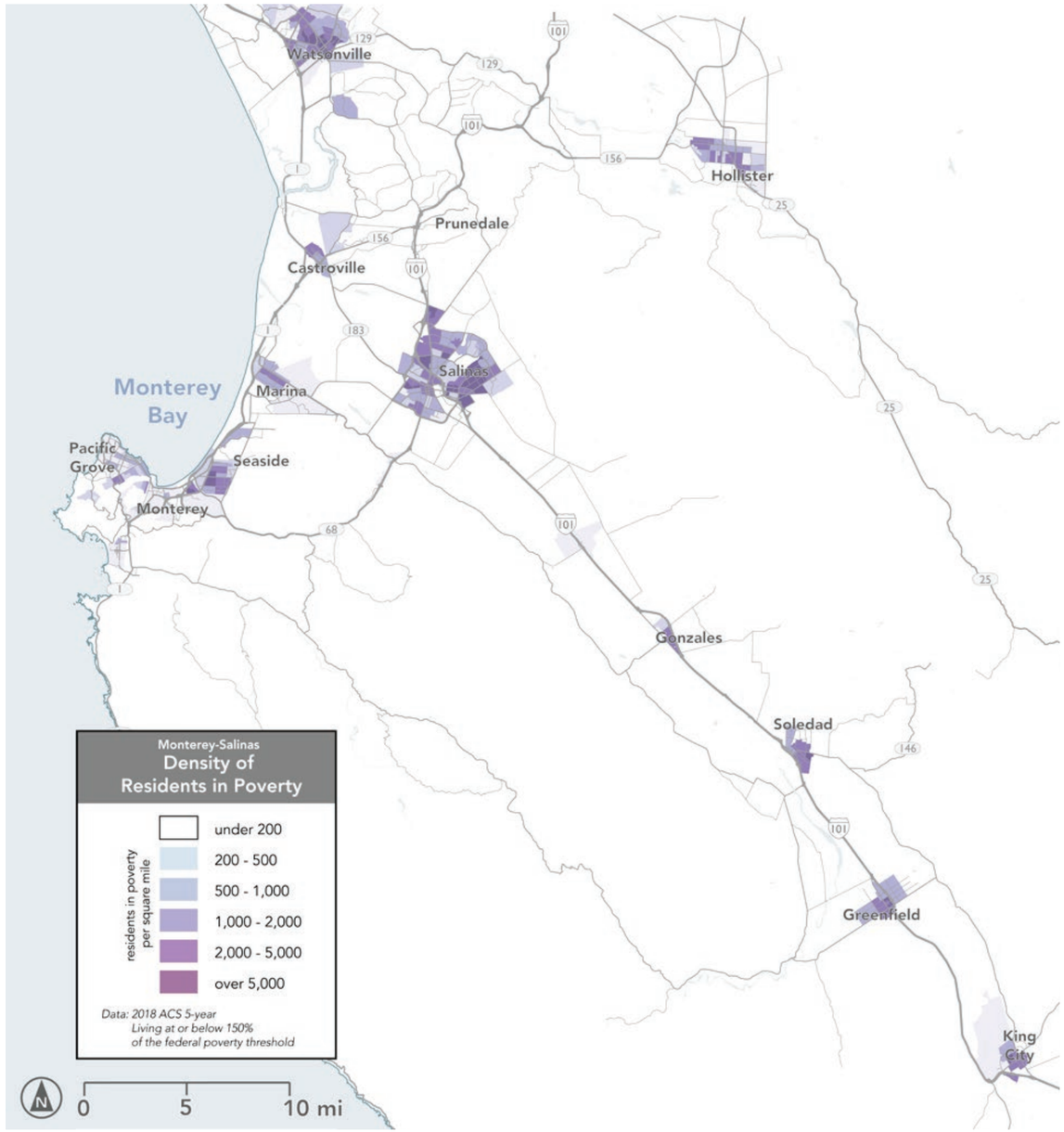


Figure 73: Regional map of the density of people living in households below 150% of the federal poverty line.

What we've heard from the public.

Outreach Process

In preparing this report, MST and the consultant team conducted outreach to hear the community's opinion on the key choices for the transit network.

We heard from stakeholder groups. Small group interviews were conducted with over 80 community stakeholders to secure their input regarding transit needs and priories. Participants included representatives of:

- Jurisdictions served by MST
- Social Service Agencies
- Medical Facilities
- Seniors and Persons with Disabilities
- Employers
- Hospitality Industry
- Schools, Colleges and CSUMB
- Military Programs
- Non-English-Speaking Populations

We talked to regular MST riders. Nine focus groups were conducted with English and Spanish speaking MST riders to explore their experiences with and priorities for the transit network.

We surveyed the general public. A representative survey of 500 households throughout Monterey County was conducted via telephone. The survey provided input on how the general population believes MST should prioritize services and allocate resources. *For further details on the survey, please refer to Appendix A to this report, "A Survey of the General Adult Public in Monterey County, California, 2021, for MST".*

The community values transit for ethical and practical purposes.

When asked to rate how important it would be for MST to focus on any of twelve aspects of service design, the great majority of survey respondents considered all of them to be either "extremely" or "very" important. Very few consider any of them unimportant.

Simply put: People value public transit. Also, they are decisive about this: almost everyone expressed an opinion. Very few answered "Not sure."

Differences of opinion regarding the importance of transit priorities are matters of degree. The service design aspects with the greatest percentages rating them as "extremely important" are of two types:

- Empathetic: Ethically, **people feel it is important to serve those in need because of age, disability, or lack of a personal vehicle.** These factors were rated as extremely important by the largest numbers of respondents.
- Instrumental: As a practical matter, **service is important as a means to an end.** Specifically, this includes **getting people to jobs, to school, to shopping, and reducing pollution/greenhouse gases.** Thus, for example, only 15% consider it extremely important to increase the overall amount of MST service (i.e. service increase with no specific objective), but 26% feel as strongly that MST should help reduce pollution and greenhouse gases, and get workers to places where most jobs are located. In other words, transit is important not so much as an end in itself, but as a means to valued ends.

Factors least highly valued are special services for tourists and service to all corners of Monterey County even in places where few people would use it.

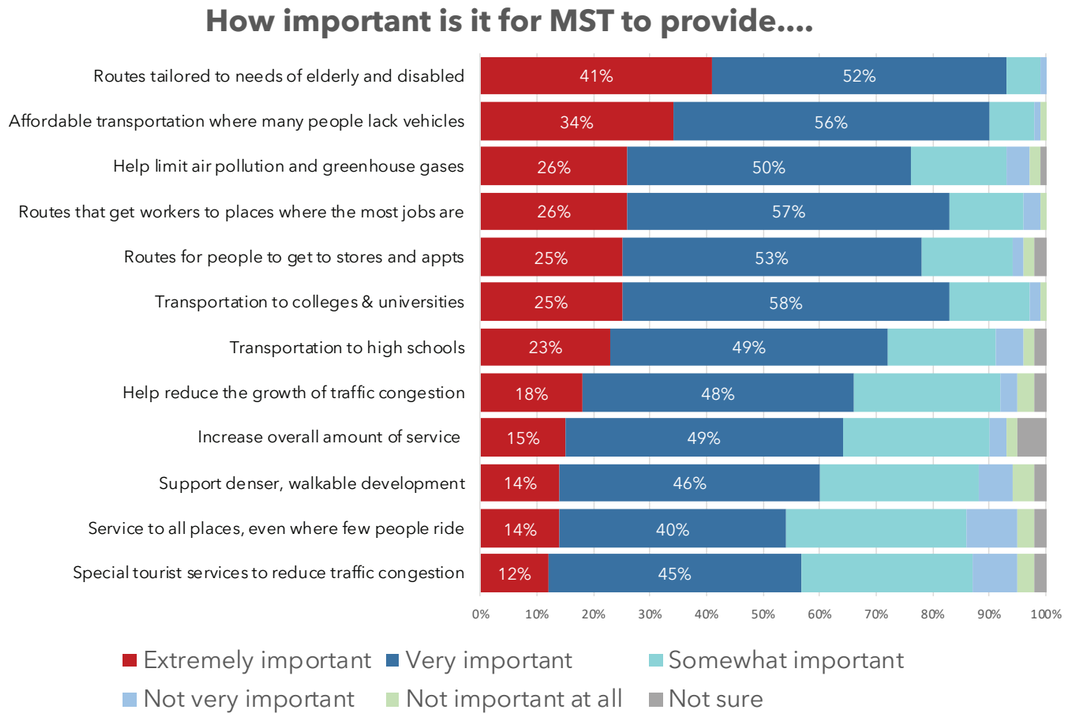


Figure 74: How Monterey County residents rated the importance of different possible priorities for MST transit service in a phone survey.

Frequency is more valued than coverage. Serving those who need it matters most.

In discussing the choice between ridership and coverage with the public, the project team specifically referred to the most tangible elements of the trade-off:

- Whether they were most interested in high frequency or service to many places
- Whether they valued high frequency so much that they would be willing to sacrifice coverage in return.

Broadly speaking, **people in Monterey County appear willing to invest more in high-frequency services, but only if the remaining coverage resources are invested on meeting the needs of high-need groups.**

Stakeholder Interviews

Most interviewed stakeholders expressed a desire for more frequent transit, for reasons such as:

- "Service workers often have multiple jobs and need more frequency to make transit a viable option."
- "Lack of frequency is a barrier to use. People would rather get a ride because transit takes too long."
- "Frequent transit would open up opportunities for affordable housing grants."

However, other stakeholders noted that enhanced convenience for some should not outweigh access for those who lack transportation options.

Rider Focus Groups

Among riders, there was broad belief that if lines ran more often, more people would ride and that current riders would ride more often: "People want to ride the bus, if it's good enough."

When asked if they would trade reduced coverage for increased frequency, many riders had difficulty choosing frequency unconditionally and offered "hybrid" solutions to avoid the choice.

- "Frequency on a few well-planned routes would be better, but please focus on people who really need the service."
- "Increase frequency but offer special services for seniors and persons with disabilities."
- "Frequency, but not if it is inequitable."

These views are mirrored in what we heard from the general public. When asked directly about the key trade-offs, phone survey respondents:

- **Favored frequent, high-ridership service (64%) over extensive coverage (35%).**
- Favored focusing first on disadvantaged communities (69%) over treating all communities equally (30%).

The strength of feeling in favor of service for those who need it most was even more evident in questions about which types of service MST should prioritize.

Over 90% of respondents thought that "routes tailored to the need of the elderly and disabled" and "affordable transportation where many people lack vehicles" were either "extremely" or "very" important.

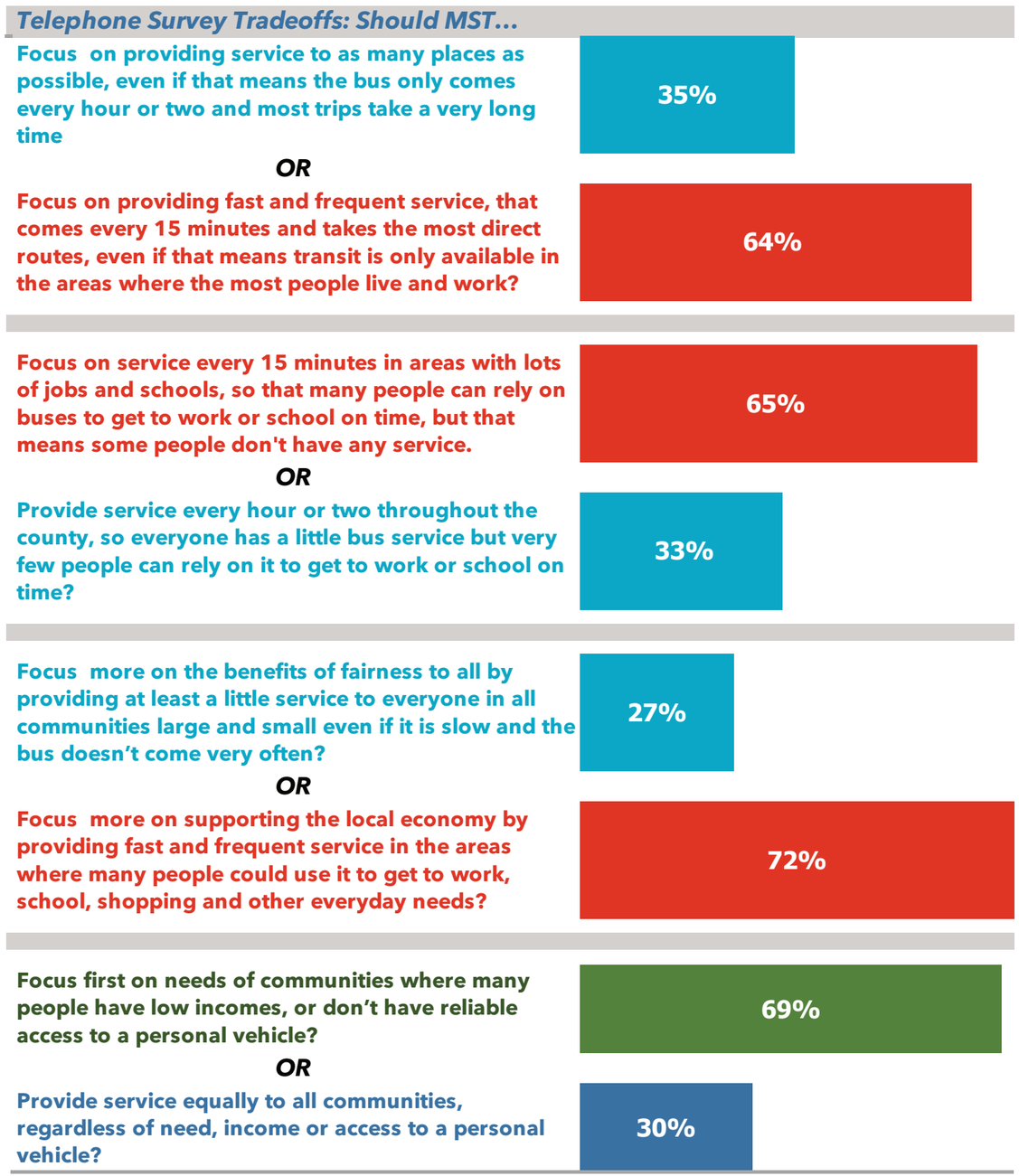


Figure 75: How Monterey County residents responded to key trade-offs in a phone survey.

Next Steps

Project Timeline

The Monterey-Salinas Transit COA is combining technical analysis and broad-based community input to develop a post-pandemic transit network. This will include the following steps:

- **May 2021: Choices Report.** This report provides facts about the existing network, and describes the key choices for future service. It has been developed through a combination of technical and broad-based community input.
- **May 2021: Committee Direction**. The MST Board of Directors' Operations Committee will provide the project team with direction on the key trade-offs, based on input from the public and policymakers.
- **June-August 2021: Develop a Draft Network Plan.** The project team will develop a draft of a redesigned bus network, and any recommendations for changes to paratransit and specialized services.
- **September-October 2021: Public Review of Draft Plan.** The Draft Plan will be presented to the public. There will be multiple venues for input, including an online survey.
- **December 2021: Final Plan.** The project team will make changes to the Draft Plan, taking into account public input.
- MST is targeting **implementation in the second half of 2022.**

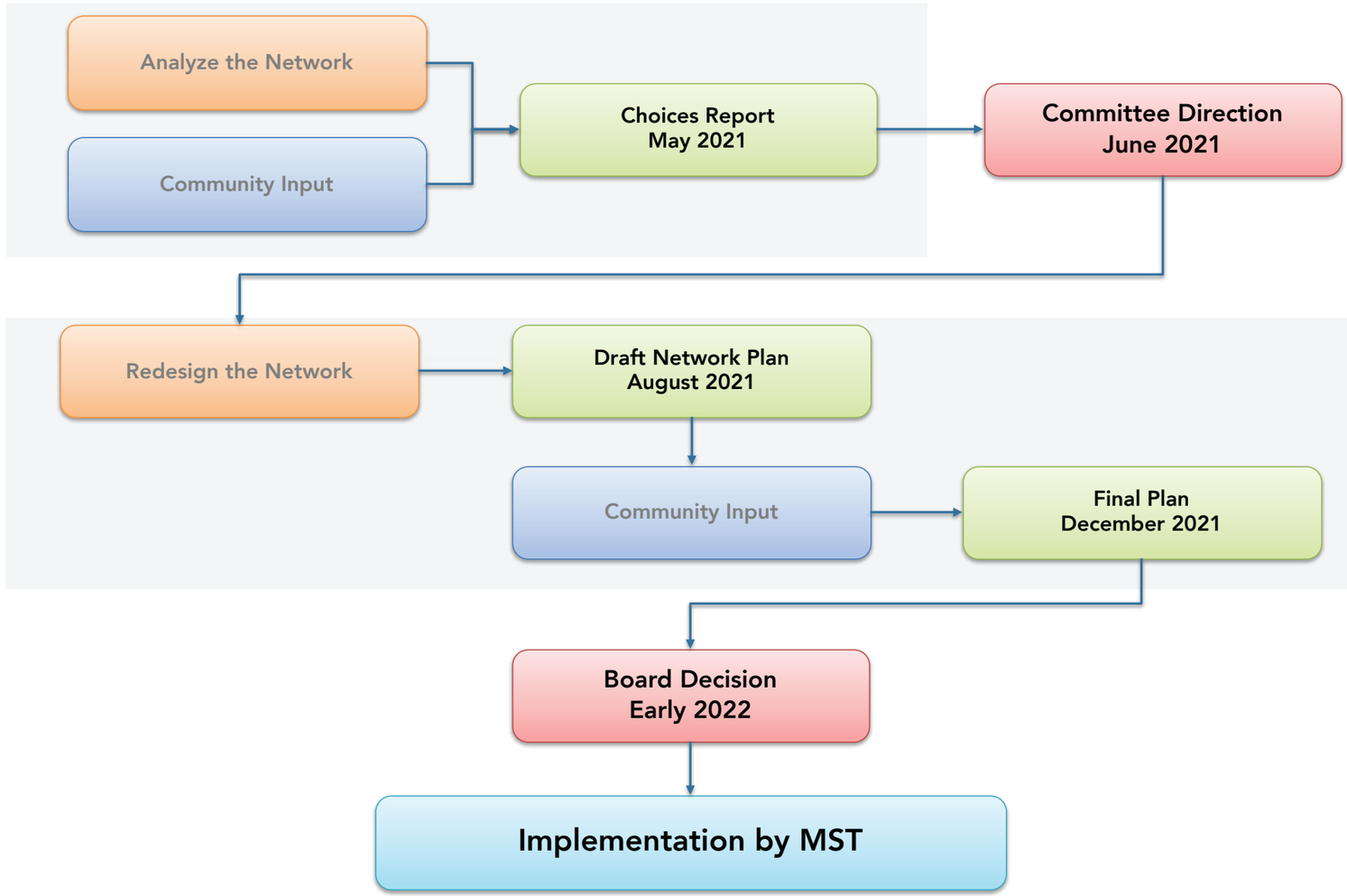


Figure 76: Project timeline.