Imagining Transit Tomorrow
Evaluating the Impacts of the COVID-19 Pandemic on Southern Maine's Transit Future
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Executive Summary

The COVID-19 pandemic of 2020 has resulted in a disruption to the healthcare systems, the economy, and social norms around the world, with sweeping implications on how we live our daily lives. This paper focuses on how these global impacts have been felt in southern Maine, with a focus on the public transportation system serving the region.

This paper does a close examination of the uncertainties introduced by the pandemic, and has the goal of understanding how those issues could impact the ability of the region to realize its vision in Transit Tomorrow, the regional Long-Range Public Transportation Plan.

In order to better understand the uncertainties facing the region, this paper goes through a multi-step process.

1. Interviews with national experts and local leaders

The project team interviewed 15 national experts and local leaders working in the fields of municipal government, transit agencies, academia, transportation policy, private sector transportation providers, local and national nonprofits, human service transportation, economic development, and real estate. These interviews helped to identify those trends and factors which are most likely to impact public transportation in the coming months and years.

2. Stakeholder Survey

A survey was open in June 2020, gathering input from stakeholders in southern Maine. This survey confirmed many of the findings from the interviews and added new wider perspective on the uncertainties facing the region.

3. Research

The interviews and survey informed the research element of this project, and included reviews of news articles, government reports, webinars and podcasts, publicly available data sets, and journal articles. The research helped to forge a common understanding among the project team of the facts and uncertainties that could impact the future.

4. Scenario development

Taking the input from the prior three steps, a focus group was convened to prioritize the uncertainties. From that effort, four scenarios (Figure 1) were developed based on the two key uncertainties most likely to have a high degree of impact on the public transportation system in greater Portland.
5. Recommendations

Based on the results of the interviews, survey, research, focus group, and narrative scenarios, a series of low-risk recommendations were developed that are likely to work in most or all of the futures envisioned through this process. These recommendations are:

1. Adapt service to better serve transit-dependent populations
   It is likely that “choice riders” (those who have other mobility options but choose to ride transit) will use public transportation infrequently or not at all in the near future. The region should focus service to best provide access and mobility for transit-dependent riders.

2. Plan to deliver lower levels of service to stretch dollars further
   Even in the scenarios with significant federal funding, local budgets are expected to be dramatically lower than pre-pandemic years. Transit agencies should plan for lower levels of service to match depressed travel demand, which also helps to prepare for austerity.

3. Diversify and expand local funding to anticipate reduced public funds
   The region should investigate opportunities to expand its local funding capacity, reducing dependence on uncertain future levels of federal funding.

4. Invest in no-touch mobile technology to protect public health
   Mobile ticketing and other mobile technologies should be pursued for both customer convenience and the anticipated customer aversion to physical interaction at the farebox and elsewhere on the system.

5. Expand digital communications and marketing to rebuild ridership
   Communicating changes in rider protocols in a dynamic and shifting environment is important as operating conditions and safety guidance change. A robust communications strategy will also help to reassure passengers that the service is safe and reliable.

6. Invest in data collection to make nimble decisions
   Agencies should invest in automated data collection technology and data analysis capacity in order to keep up with changes in customer demand.

7. Support street spaces for bike lanes, walking, and outdoor retail and dining in order to keep transit relevant
   The region should aggressively pursue an agenda which expands public spaces. This approach will complement built environment needs of transit as ridership rebounds.

8. Redouble efforts to locate housing in walkable villages and downtowns to reduce longer term ridership losses
   As some people leave large urban areas like Boston or New York City, the region can attract new residents to Maine through investing in walkable villages and converting underutilized commercial and retail space to housing. This will be especially important as vacancies rise due to business closures resulting from the pandemic.

9. Implement more efficient rural demand response options to cost-effectively maintain access
   Given the level of funding uncertainty, the region should be creative in meeting the need for transportation in its rural areas traditionally served by demand response. This could include expanded tele-medicine, grocery delivery, or programs to facilitate the transition from rural housing to centrally located senior living communities.

Conclusion

The pandemic has revealed the irreplaceable role that public institutions serve in times of crisis. Frontline staff like the region’s public transportation staff have rightly been hailed as heroes, putting themselves in harm’s way to connect people to their essential destinations. It is incumbent upon the region’s public transportation decision makers to think critically about the uncertainties they are facing to reduce risk to the system’s operators, customers, and stakeholders.

These actions should help the region’s public transportation decision makers navigate through the unusual and unprecedented times they are facing. In addition to the recommendations, the process has highlighted the key considerations for making progress on the Transit Tomorrow vision of a more accessible, equitable, and environmentally friendly transportation system that strengthens the region’s mobility and enhances its great places.
Introduction

On March 31st, 2020, Maine Governor Janet Mills issued a “Stay Healthy at Home” order that required people living in Maine to stay at home at all times except for essential purposes. At the time of issuing the order, Governor Mills said:

“We are in the midst of one of the greatest public health crises this world has seen in more than a century. This virus will continue to sicken people across our state; our cases will only grow, and more people will die.”

Thus began Maine’s statewide response to the unprecedented health crisis that strained healthcare systems, economic resources, and public institutions – the COVID-19 pandemic. The pandemic, also known as the coronavirus pandemic, originated in Wuhan, China in December 2019; the virus is a respiratory illness that leads to serious illness, even death, in a significant number of patients. The virus has no known vaccine or treatment and is spread via means that are still not fully understood.

Things that many took for granted up until March 2020 suddenly seemed uncertain. Historically low unemployment, rising real estate values in downtown Portland and other urban centers, a strong tourist economy, increasing ridership on the region’s public transit systems – all of these trends have been disrupted or turned upside-down as a result of the pandemic.

The impacts from the pandemic have been sweeping, profound, and swift, touching every corner of the state and the world. By July 10th, Maine had recorded nearly 3,500 cases of the disease (256 cases per 100,000 residents) and 111 deaths, while its neighbor to the south, Massachusetts, had recorded over 111,000 cases (1,622 cases per 100,000 residents) and over 8,200 deaths.

In an effort to slow the outbreak, stay-at-home orders like the one issued by Governor Mills have reshaped how people live, work, and recreate. Transit agencies around the country began taking the unusual step of actually discouraging people from using the service unless absolutely necessary, reducing potential exposure of the public and transit employees to the virus. Ridership plunged by up to 90% on some systems, while some smaller agencies shut down entirely. Months later, the orders are being phased out and life is returning to some new sort of normal.
The pandemic has revealed the irreplaceable role that public institutions serve in times of crisis. Frontline staff like the region’s public transportation workers have rightly been hailed as heroes, putting themselves in harm’s way to connect people to their essential destinations. As life returns to this “new normal,” public transportation decision makers must continue meeting the immediate safety requirements of the system’s users and operators while not losing sight of long-term needs in the coming months and years.

In the context of this watershed event, the Greater Portland Council of Governments (GPCOG) continues to plan for the future of public transportation in the region. The focus of this White Paper is to explore the uncertainties, assumptions, and potential impacts of this disruption on the transit system in southern Maine. In so doing, the region can better develop strategies that recognize and help manage high-impact, high-uncertainty forces that the public transportation system is facing.

The Pandemic and Transit Tomorrow

The start of the pandemic fell in the middle of an in-depth transit planning process the region was undertaking. In March 2019 GPCOG launched Transit Tomorrow, its 30-year Long Range Public Transportation Plan—an important roadmap for the future of transportation in the region. However, the outbreak of COVID-19 barely a year later occurred at a key interval in this process, posing a difficult dilemma—how to factor in its impacts.

Transit Tomorrow forms the foundation of this planning process. The plan’s Vision Statement is as follows:

Using our region’s public transportation is faster and more affordable than driving a car. Our system is funded sustainably and provides reliable and seamless transportation for our community, including commuters, mainland and island residents, and those with limited mobility options. Our communities support the long-term viability of public transportation by focusing new homes and jobs where people already live and work.

This vision provided the starting place for deeper investigation into key topic areas, including:

- Economic development
- Land use
- Climate change
- Mobility and travel behavior
- New technology

Public transportation is in a particularly unique position as this pandemic unfolds. Transit vehicles, intermodal centers, and transit stops are all places where people come together, which runs counter to social distancing guidelines. At the same time, public transportation provides a lifeline service for many.

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Transit Tomorrow
guidelines. At the same time, public transportation provides a lifeline service for many who cannot use other forms of transportation but still need to get to an essential job, the pharmacy, or other life-critical trips.

For transportation professionals and administrators, most attention in the early months of the pandemic has been paid to the near-term crisis—keeping employees safe, keeping buses clean, and keeping the public informed. However, this White Paper is an opportunity for local leaders to begin thinking about what the world might look like in a year, two years, five years, or even ten years from now, and the lasting impacts on the communities and transportation systems in southern Maine. In so doing, they can take actions now that better prepare them for continued disruption.

GPCOG, as the regional planning agency, is already leading this thought process for the area’s seven public transportation providers through the development of Transit Tomorrow. Right now, there is a need for clear and deliberate considerations of the long-term uncertainties and, just as important, the things that will probably remain unchanged. This White Paper is an effort to better inform that larger planning effort.

Process

This analysis is structured as a qualitative look at how the future might unfold over the coming months and years. Designed to take place on an abbreviated timeline, this process examines key uncertainties and assumptions to play out the implications of the COVID-19 pandemic on transit and apply those findings to Transit Tomorrow.

The findings are the direct result of hours of research, interviews, and workshops on the topic areas listed above. Interviewees represented experts and local leaders in municipal government, transit agencies, academia, transportation policy, private sector transportation providers, local and national nonprofits, human service transportation, economic development, and real estate.

The interviews directly informed the research outlined below. Issues and questions that were raised guided new research directions, which in turn informed the next interview. The findings from the research element of this project were then summarized, along with the content of the interviews, for deeper consideration by the interviewees who convened for a focus group near the end of the project.

This focus group examined the uncertainties and assumptions identified by the interviewees to determine those that are most important to the future of public transportation in southern Maine. Those two key uncertainties then formed the axes of a matrix, from which four future scenarios were developed. These scenarios, narrative in nature, offer a glimpse of the future for public transportation in the region.

Interviews with National Experts and Local Leaders

As a part of this planning process, 15 national experts and local leaders were interviewed for their views on the pandemic and the key uncertainties facing the greater Portland transit system. In general, the discussions examined how the pandemic has disrupted some trends or activities, and accelerated others.

Interviewees represented experts and local leaders in municipal government, transit agencies, academia, transportation policy, private sector transportation providers, local and national nonprofits, human service transportation, economic development, and real estate.

As described below, the conversations covered a broad range of topics. Ridership declines, telework, budget deficits, housing preferences, and the role of technology were among the many topics discussed. There was consensus about the economic fallout that the region is facing and the hard road ahead. At the same time, there was considerable optimism about the position that Portland is in relative to other areas of the country, especially cities with greater population density.

There was less clarity about how quickly things will go back to “normal,” if they ever will at all. Many were hopeful that the recovery will be quick, while others were expecting a multi-year recession and some permanently changed habits.

In addition to the identification of key uncertainties, there were several assumptions held by interviewees that were noted during the interviews. These are relevant because, if these assumptions prove to be incorrect, that could have a major unanticipated impact on the transit system in southern Maine.

One of the most important outcomes of these interviews were “Aha” moments, discussion points or topics which have a significant impact on
how the future may unfold. “Aha” moments happen when multiple threads of discourse come together to illustrate a key insight.

The uncertainties, “Aha” moments, and assumptions from the interviews are reviewed below.

**Uncertainties**

Key uncertainties are the central focus of this process. These uncertainties provide the foundation on which recommendations designed to minimize risk to the regional public transportation system are based. Several uncertainties emerged from the one-on-one interviews.

**Plummeting Ridership**

A primary theme in the interviews was the uncertainty about whether or how quickly ridership would return. One interviewee noted that ridership in southern Maine is down 70% - 80%, though many essential workers are still able to report to work. This interviewee inferred that many people have switched to driving, and worried that this switch may be long-lasting.

Another interviewee observed that the development of a vaccine is essential to recouping lost ridership, but did not know when that might be. Estimates have ranged anywhere from a few months to a few years away, and the budgetary and service impacts will vary considerably depending on that timeline.

There seemed to be a consensus that transit agencies are going to have to work hard to win riders back. Customers must feel safe and see the enhanced safety measures firsthand (“The proof is in the pudding,” one interviewee said.) Another interviewee noted that messaging will be essential, and the difference between a failing transit system and a thriving one over the next few years could very well be the strength of the message that transit is reliable, convenient, clean, and – above all – safe.

**Telework**

As one interviewee put it, “The five-day work week is dead.” There was wide consensus that this pandemic has finally cemented telework as a feature of jobs where physical presence is not critical to performing the job functions. The impacts of this expansion of telework, however, were less clear.

One interviewee who works in a leadership capacity at their organization noted that remote work is a good thing – it allows people to reduce their environmental impact by removing car-based commuting from their lives. When asked what one positive thing to come out of this pandemic might be, many interviewees noted the flexibility of working from home. It allowed them to not only have more flexible hours, but also to spend more time with family and see neighbors when they are walking their dog or otherwise outdoors.

On the other hand, another interviewee cautioned that telecommuting in the longer term can result in greater sprawl and an increase in environmental impact. This is particularly true if people who are newly able to work remotely move from New York, Boston, or other big cities and view Maine as an attractive option (they may be moving away from relatively energy efficient urban centers to less sustainable, auto-oriented suburban areas).

**Shifting Housing Preferences**

Related to new flexibility that may emerge with telework, there was much discussion about how housing preferences might change. These tended to break down along the following lines:

- **Intra-regional changes:** There was much optimism for the continued attractiveness of village centers and downtown Portland as a place to live, work, and play. The consensus seemed to be that Portland was not in the same category as other hard-hit urban centers such as New York City, Boston, or Detroit. Any changes in housing preference from those who already live in the region will be modest.

- **National changes:** Several interviewees noted that Portland and the surrounding area may be newly attractive to those who live in...
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Diminished Financial Capacity

There was a great deal of concern about the diminished financial capacity resulting from and/or exacerbated by the economic consequences of the pandemic. One interviewee noted that we “can’t afford the infrastructure we already have,” while another said, “We have already overbuilt things to an inconceivable degree.” As these interviewees noted, the potential for a collapse in public infrastructure funding will only exacerbate the pre-existing problem of auto-oriented development that does not generate enough tax revenue to maintain it.

Another interviewee discussed the impact of the “retail-pocalypse” on the region. Brick-and-mortar retail stores were already struggling, and it is likely that many will not survive the recession. This could have a profound impact on municipal budgets, which depend on commercial buildings to fund schools and other municipal services. What is worse, at the same time that municipalities are anticipating shattered budgets, there is a demand for expanded cleaning services and protective barriers, which are both expensive.

The Role of Public Spaces

One interviewee said, “Right now the street is where people experience road rage. The street could be a source of joy that brings people together.” Multiple interviewees saw the dramatic decline in driving and commensurate increase in people walking or biking around their neighborhoods as an opportunity to underscore the value that public spaces bring to a community. That same interviewee noted that the communities that thrive in a post-pandemic world may well be the ones that seize this opportunity to activate public spaces for people by expanding sidewalks and outdoor dining areas, opening streets to pedestrians in certain areas, and calming traffic.

At the same time, those who spoke to issues of public space also indicated that this moment was fleeting and that many communities will probably fail to capitalize on the temporary decline in driving. There was also uncertainty about whether transit in particular would be able to benefit from the renewed focus on people-oriented public spaces. One interviewee saw the development of rapid transit infrastructure as a longer-term project. Another interviewee noted that transit is in “survival mode” right now, and that it probably has the hardest path forward.

“We have already overbuilt things to an inconceivable degree...we can’t afford the infrastructure we already have”
One interviewee referred to the need for public subsidy in public transportation and the tremendous impact that the decline in revenues could have, particularly on the demand response system. This interviewee referred to reliance on single streams of public funding (such as 5307 funding) as “like drinking sea water” – it may quench an immediate thirst, but it cannot sustain you in the long-term. Multiple interviewees noted that public transportation agencies are going to have to get extremely creative with partnerships, revenue sources, and service levels to navigate the next several years.

Communications and Public Engagement

As mentioned above, the pandemic has exposed the fundamental need for effective communications with the public. Interviewees agreed that this need is here to stay. In the immediate aftermath of the stay-at-home orders and states of emergency, transit agencies had to rapidly scale up communications in order to inform the public about service changes and new rider etiquette. Moving forward, communications and marketing professionals will have to continue communicating rider protocols, but also reassure potential riders that using the service is safe.

New communications technology, like screens in buses and at bus stops, app- and text-based messaging services, or even expanded use of social media are likely to be employed for paper-free and touchless communications. As one interviewee put it, “The pandemic is the biggest pilot project of digital transformation ever.”

New Technological Developments

Many of the interviewees discussed transportation technology. There were two themes running through the comments on technology. The first was diminished financial capacity. The consensus, as described above, is that there is going to be a severely constrained fiscal environment over the next several years as public revenues recover from the post-pandemic recession. Several interviewees noted that this reality is going to limit any new investments from transit agencies.

The second theme was the need for new technology. Many agreed that there will be a new need for expanded technology investment to make public transportation more attractive to the public or to lower costs. These two themes are at tension with one another, and there was no agreement on what the balance point between the two might be.

Specific new investments in technology included the following:

1. **Autonomous vehicles**: Multiple interviewees brought up the new motivation for developing, testing, and wide-scale implementation of autonomous buses. One interviewee remarked, “Driving a bus is a dying job,” one that would no longer exist at some agencies in 20 or 30 years. Another saw autonomous vehicles as a necessity for providing affordable mobility to those who age in place in rural areas. There was agreement that financial necessity would demand continued development of the technology.

2. **No-touch ticketing**: Ticketing via mobile devices or other “no touch” methods was discussed by multiple interviewees as a method to keep drivers safe and reassure the riding public that they can use transit without exposing themselves to pathogens.

3. **Mobility as a Service**: In order to remain relevant, one interviewee thought that further integration of multiple modes with transit is essential. As society emerges from the pandemic, it is going to be much harder to convince people to ride transit as compared to single occupancy or even lower-capacity public transportation, like transportation network companies (TNCs). Integration of transit with other modes (e.g., bikeshare) will be important to keeping it a competitive part of an individual’s suite of transportation options.

In general, many of the interviewees noted that lower-capacity modes like demand response, Uber/Lyft, and micro-transit were probably going to be more competitive to the public moving forward. However, two interviewees specifically thought high-capacity transit was still going to be important to the region, with one saying that, “Communities that thrive will have transportation diversity.”
There was no consensus on the impact of the expected diminished financial capacity on investments in carbon-neutral technology. One interviewee was optimistic in the long-term that investments in electric bus technology will continue, but the shorter term was less certain. Another interviewee noted that all transportation organizations will need to get more creative in how they fund new investments and should not rely on the federal government as a primary source of funding.

**Assumptions**

The purpose of the interviews was not only to identify key uncertainties facing the region, but also to uncover assumptions that experts and leaders were making about how the future might unfold. Multiple assumptions were implied throughout the interviews, described below.

**Energy Prices Will Remain Cheap**

One topic that came up in passing during only one interview was the cost of energy. One interviewee noted, when talking about the lingering effects of the pandemic, that this will be just like the gas price spikes of 2008 – we got over that, we will get over this, too (“This too shall pass”). The relative silence on the cost of oil and energy more generally implies a consensus that there are unlikely to be any price spikes that could impact that transportation sector.

**Politics Will Remain Basically the Same**

There was relatively little discussion of the state or national political landscape, even as issues of state and federal funding were common subjects of conversation. Only one interviewee explicitly talked about the political landscape of Maine, noting that the state tended to be less partisan than the federal government and that allowed for more unity in decision making.

Two interviewees did note that transit is always a hard sell at the federal level, and this is unlikely to change in the future. One interviewee noted that sustained depressed ridership may make the political argument for transit that much harder, though it has never been especially easy.

**Demographics Will Remain Unchanged**

The demographic landscape of southern Maine was discussed by some local leaders in interviews. There were no viewpoints that demographic trends (an aging, declining population in rural Maine) were going to be altered significantly by this pandemic. As one interviewee put it, “There are three big global forces: globalization of the economy, climate change, and the aging population.”

Another interviewee noted that while there had been active refugee resettlement in southern Maine, that had all but halted as a result of changed federal policy reinforced by the pandemic. In the context of fewer immigrants in the region, this interviewee found it unlikely that demographics were going to change from domestic population shifts.

There was also relatively little discussion of equity in the interviews. One interviewee brought up equity toward the end of the interview, and noted, “I’m surprised I didn’t mention it earlier, it really should be foundational to all of this.” When asked about racial equity, one interviewee noted that the City of Portland passed an anti-racism proclamation shortly after the death of George Floyd and the ensuing outcry and protests. At the same time, however, that interviewee noted that politics surrounding race in Maine might be different than elsewhere in the country because the state as a whole is overwhelmingly white. This lack of discussion around race and equity could be related to the assumption that the demographics of Maine are not going to change much into the future.

“[An effective vaccine] is necessary for leisure travel and tourism.”
The Vaccine Is a Long Way Off

Surprisingly few interviewees discussed the importance of a vaccine. Only one interviewee discussed the development of a vaccine and its impact on transportation, noting that an effective vaccine is “necessary for leisure travel and tourism.” The implication in the interviews seemed to be that a vaccine, aside from being totally outside the control of anyone being interviewed, was not something that could be counted on anytime soon. Plans should be made assuming that there will be no vaccine in the foreseeable future.

Climate Change Remains a Threat

The risk of climate change was mentioned by multiple interviewees. When asked, “What keeps you up at night worrying about the future?”, one interviewee responded simply, “Climate change.”

Many interviewees noted that in the short term, greenhouse gas emissions have plunged as people have begun working from home, avoiding non-essential trips, and production lines have slowed. In the longer term, though, many interviewees worried that climate change was going to rebound worse than before – more people driving instead of using transit and more desire to live in auto-oriented rural or suburban areas. According to many, the pandemic has changed nothing about the risks of climate change, except perhaps diminished the capacity to change the systems that worsen the problem.

“Aha” Moments

During the conversations, there were a few discussion points that connected multiple threads or themes into a single key idea. These are critical to the scenario planning process. Two of those moments are described here.

The Importance of the Public Sector

During one discussion, an interviewee noted that several micromobility providers had totally closed during the pandemic, underscoring the importance of public transportation, saying, “This crisis, this time of need has highlighted the role of public transportation serving the public.” The conversation continued to note the elevated news media coverage of bus drivers as front line workers keeping people connected to their essential jobs or allowing them to take life-critical trips like grocery shopping. It was observed that after decades of disinvestment from the public sector, the rise of public-private partnerships with services like Uber or Via, and the increased use of contracted-out services, this moment underscored the critical importance of having a resilient public workforce that can effectively respond during times of crisis.

“This crisis, this time of need has highlighted the role of public transportation serving the public.”
This point was further reinforced by two other interviewees who noted that many smaller rural providers ceased all service, and the detrimental impact that had on customers depending on the service. One interviewee noted that the smaller demand response providers in southern Maine were among those that ceased service, and remarked that it was a “failure of the transit system in the region” that so many were left without service. A second interviewee observed that this was a national problem, noting that small rural transportation providers across the country shut down service during the pandemic. This has left many transit-dependent rural customers stranded, leaving them with unreliable or unaffordable transportation for essential trips. Many public services will never be filled by the private sector, and this crisis underscores the importance of public sector resilience in the face of crisis.

Multiple Trends Accelerating to Hurt Retail, Induce Sprawl, Damage Budgets

During one conversation, the demise of brick-and-mortar retail was connected to the rise of online retail, and then connected to increases in telework and deepening sprawl. The discussion started with talking about the municipal dependence on property taxes and how public schools really rely on commercial developments to support their cost, as residential property taxes rarely cover the cost of municipal services; the interviewee noted, “Property taxes to fund municipal services aren’t a great model to begin with, and remote work challenges that funding model even more.”

However, it was noted that multiple trends were working together to destroy retail stores, increase sprawl, and further compromise municipal budgets:

1. **Online Retail:** The pandemic has accelerated the use of online shopping, pushing customers into new kinds of online purchases that previously were not a significant market share, such as grocery shopping. This trend could put even more pressure on brick-and-mortar businesses.

2. **Telework:** As more companies allow employees to work from home, there may be smaller firms that give up rented office space entirely. This would result in less demand for commercial office space, which could cause a closure of some office buildings. Further, this could motivate some people to move to larger homes in order to have a dedicated home office, which would increase suburban sprawl.

3. **Tax Revenue:** If retail businesses and commercial office buildings close, that would be a devastating blow to municipal tax revenue. This is particularly true if there is an acceleration of auto-oriented single-family homes, which typically require high levels of municipal funding to maintain services such as road maintenance, utilities, garbage collection, etc.

Taken together, for many communities the trends paint a troubling picture of fewer businesses, fewer services and increased environmental degradation.

"Property taxes to fund municipal services aren’t a great model to begin with, and remote work challenges that funding model even more."
Online Survey Results

The project team conducted an online survey of regional stakeholders regarding the key uncertainties facing southern Maine in June 2020. There were 74 respondents to the survey, representing a wide diversity of perspectives on how the future might unfold (Figure 3).

Impact on Public Transit

Survey respondents overwhelmingly believed that rider behavior was going to have the greatest impact on public transit moving forward, at 73% of respondents choosing this uncertainty (Figure 4). Population migration and technology ranked the lowest on this question, at just 8% and 4% of respondents choosing these options, respectively. The other options clustered between 28% and 38% of respondents selecting them.

Transforming Communities

Stakeholders were asked an open-ended question on how the pandemic would impact our communities in years to come, which were coded into categories. The plurality of respondents indicated that teleworking and social distancing were going to be the biggest features (Figure 5). This was followed by the economic recession and more biking and walking, with technology and impact on vulnerable populations ranking the least common.

Respondents commented on the expansion of online interactions and transformation of how people move through public spaces. One respondent noted, “Teleworking and e-tail may reduce overall travel to brick and mortar employment and shopping locations.” Another commented, “COVID-19 will change the way we exist and interact with each other in public spaces.”
New Opportunities

Respondents also provided feedback on new opportunities that have emerged as a result of the pandemic (Figure 6). The top categories were “More teleworking,” at 32% of responses, followed by “Enhanced use of technology” at 17%. The least common comments were categorized into “Less reliance on cars” and “More social awareness”, both at 6%.

Responses to this question around new opportunities included comments such as, “Using streets for things other than just driving or parking, such as recreation, dining, and community hang-outs,” and “Bike-ped traffic is spiking!” One respondent also noted that video calling could reduce unneeded travel to meetings.

Summary

In general, the survey results were reflective of the interview findings. Teleworking and changed rider behavior were identified as primary key uncertainties, both of which speak to the new imperatives to maintain social distance. Respondents also commented on the new uses of public space, such as repurposing sidewalk or parking areas for outdoor dining or other uses.

Furthermore, respondents seemed to agree that the demographic makeup of the region was unlikely to be greatly impacted by the pandemic. The lack of demographic change squares with the interview results, which did not suggest any meaningful change in the demographic makeup of greater Portland’s residents.
**Critical Factors and Driving Trends**

Prior to the pandemic, there were multiple trends impacting public transportation: stagnant funding, adoption of digital communications, the spread of online shopping, aging rural populations, and many others. As noted in the interviews, the pandemic has accelerated some of those trends, and disrupted others. This section is a deep dive into the driving trends and critical factors that could impact the region’s ability to realize the vision articulated in the Transit Tomorrow plan.

A 2019 [Eno Foundation study](https://www.transitcenter.org/2019/09/station-to-destination/) provides some insight on themes that most concern transit agencies that could be amplified or disrupted by the pandemic. This study surveyed transit agencies across the country on what some of their major concerns were over the next 3 years; subsequent analysis of survey responses, including a word cloud (an analysis tool which displays key phrases in sizes proportional to their popularity in surveys or other documents), indicated that “funding”, “ridership”, “service”, and “TNCs” are at the forefront of agencies’ minds (Figure 7). It is also worth noting that some things may not change at all. As a July Op-Ed in the [New York Times](https://www.nytimes.com/) noted:

“Many things will not change. That’s one of history’s lessons... The financial crisis of 2007-09 didn’t cause Americans to sour on stocks, and it didn’t lead to an overhaul of Wall Street. The election of the first Black president didn’t usher in an era of racial reconciliation. The 9/11 attacks didn’t make Americans unwilling to fly. The Vietnam War didn’t bring an end to extended foreign wars without a clear mission.”

The research described below explores the factors and trends described in the interviews more closely, with a consideration of how they might impact public transportation in southern Maine.

**Development of a Vaccine**

One of the major uncertainties of this crisis is when things will return to “normal.” This return to normal is highly dependent on the availability of a vaccine or some alternative therapy that can effectively combat the virus to a degree where people can feel safe from infection.

Some of the most optimistic projections indicate that a vaccine could be available sometime between summer 2020 and early 2021, while more conservative projections anticipate several years to over a decade before a vaccine is developed – if there is ever one developed at all. Figure 8 demonstrates why vaccines for novel viruses typically take years to develop, with production aspects of development, such as building factories and manufacturing, taking almost a decade.

Fortunately, given the global severity of this moment, many of the usual phases of development are being streamlined (Figure 9). According to a June 2020 [CNN](https://www.cnn.com/) article, Dr. Anthony Fauci, Director of the National Institute of Allergy and Infectious Diseases, is confident one of the many vaccine candidates being tested will be proven safe and effective by the first quarter of 2021. He said, “By the beginning of 2021, we hope to have a couple of hundred million doses.”

On the other hand, Dr. Larry Corey, an expert in virology, immunology, and vaccine development is quoted in that same [CNN](https://www.cnn.com/) article, “Everything will have to go incredibly perfectly if that’s going to happen.” The importance of a vaccine development or other treatment is considerable in getting people to feel comfortable again in large crowds, such as on public
transportation. An April 2020 poll showed that 72% of Americans would not feel safe attending sporting events without a vaccine, including 61% of sports fans. A CNBC article from May 6 wrote, “Only a vaccine, ubiquitous testing or vastly improved treatment will accelerate the pace of large gatherings without strict social distancing.”

It is worth noting that mass testing and surveillance technology have also proven successful in controlling the disease in countries such as Singapore and South Korea; however, according to an article in The Conversation, this solution requires infrastructure as well as a culture that tolerates a certain level of surveillance, neither of which can be created overnight. Therefore, most western countries continue to push social distancing while focusing efforts on the development of a vaccine.

Figure 8 Typical vaccine development timeline

Source: New York Times

Figure 9 Compressed vaccine development timeline

Source: New York Times
Economy and Public Funding

Economic activity in the United States plummeted in the wake of the pandemic as unemployment has soared and a global recession officially began. According to The Washington Post, the unemployment rate reached 14.7% in the United States in April, with more than 40 million people having applied for unemployment, and around 21.5% receiving unemployment since the pandemic began (Figure 5).

As reported by the local Maine TV station WGME, Maine paid out over $1 billion to nearly 170,000 unemployment claims between March 15 and July 4, 2020. A May Bangor Daily News article noted the leisure and hospitality sector in Maine has seen the largest share of job losses between February and April at 61%. This sector represents 40% of all jobs in Maine, and is an indicator of Maine’s economic reliance on the tourism industry.

One analysis put Maine as the number 1 most vulnerable state to the impacts of the pandemic (Figure 5). As reported in an April 26, 2020 article in the Press Herald, an economist at the University of Maine in Orono said:

“Bottom line, I think that Maine’s economy is a little more dependent on social interaction than the rest of the country.”
As states grapple with the short-term economic impacts of the virus, the question remains how this pandemic will impact the economy in the long-term, and what the “shape” of recovery might look like.

As described by the Brookings Institution, a Z-shaped recovery would be the most optimistic scenario (Figure 11), where the economy suffers a downturn during the pandemic, but then bounces back above the pre-pandemic baseline as pent-up demand creates a temporary boom.

An L-shaped recovery is the most challenging scenario, because it would mean that the pandemic has a long-lasting effect on GDP (Figure 12). Lost investment during the crisis, a rethinking of global value chains, a permanent change to fiscal policy, and a slowdown in productivity growth all have the potential to cause the trajectory of GDP to be lower than it otherwise would. The Great Recession of 2009 had an L-Shaped recovery.

Economic recessions have the potential to greatly impact public transportation as funding for the industry is largely dependent on revenue sources that rely on public spending. A primary concern is the effect of the recession on public sector budgets and the capacity of government to support transit operations.
Transit Committee agreed that funding requests would proceed in phases. The first phase, $13.7 million, addressed immediate concerns within the transit system and covers the period from February 1 to June 30, 2020. Funds for future phases ($39.3 million) will address long-term recovery issues related to COVID-19 and the resiliency of the region’s transit network.

Local assessments, which are derived from municipal funding sources such as property tax, parking, and fees, make up 10% of funding. These sources have also been impacted as the governor has issued a flexible “disaster period” on the payment of property taxes, delaying that source of revenue. Additionally, local business closures have already had a negative impact on local budgets, according to the National Maine Street Center.

Taken together, this sudden decline in economic activity is likely to have a substantial impact on the local financial capacity to support public transportation. The decline in fare revenue and other user-generated funding, in addition to compromised municipal budget capacity, mean a greater reliance on federal funding in the near-term.

**Political Climate**

As the transit agencies operating in greater Portland increase their reliance on the funding that has flowed from the federal government through the CARES Act, future rounds of federal funding remain uncertain. The federal government issued funding to state and local governments via the CARES Act in April. A second wave of CARES funding left out state and local government, instead focusing on small businesses.

After three rounds of CARES funding, it is uncertain whether there will be a fourth or what will be included in it. As reported by Business Insider, in April of 2020 Senate Majority Leader Mitch McConnell said, “There is not going to be any desire on the Republican side to bail out state pensions by borrowing money from future generations.” A press release from Senator McConnell’s office later dubbed such funding “a blue state bailout.”

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**Figure 13** Funding for Portland-area transit agencies

![Figure 13](image)

Source: National Transit Database
As of July 2020, there were ongoing talks about a fourth round of CARES Act funding, which would potentially include additional relief payments to low-income households. However, as reported by The Washington Post, Senator McConnell said, “I can’t comfortably predict we’re going to come together and pass it unanimously like we did a few months ago – the atmosphere is becoming a bit more political than it was in March.” The Washington Post article goes on to note that the Senate is divided over issues such as employer liability, enhanced unemployment benefits, state and local aid, and relief payments. Adding to partisan divides are issues of policing reform, public protests, and disputes over removing Confederate memorials, all related to systemic racism that has been highlighted by the death of George Floyd, Breonna Taylor, and other Black victims of police force.

Survey results from the Pew Research Center underscored this divide. While a majority of all respondents indicated the need for additional aid (Figure 9), Republicans – and in particular conservative Republicans – are more skeptical of such aid packages. This skepticism is reflected in Senator McConnell’s remarks.

It is uncertain whether the continued upticks in COVID cases and fatalities will provide the impetus for lawmakers to overcome partisan divides, or if the approaching election and sharpening disagreements between the right and the left will preclude another round of federal relief funding. Given southern Maine’s dependence on the federal government for funding, how this unfolds could be consequential for the near-term future of public transportation.

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**Figure 14 Support for additional aid by party**

Democrats overwhelmingly see need for more economic aid, GOP is split

% who say it ____ for the president and Congress to pass an additional economic assistance package

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PEW RESEARCH CENTER

Source: Pew Research Center
Workforce and Organizational Capacity

The pandemic has revealed the importance of frontline workers to the continued functioning of society, and transit workers have in particular been noted as essential workers putting themselves in harm’s way to connect people to their essential destinations.

Jason Hargrove, a bus driver in Detroit, posted a Facebook video just days before dying of COVID-19. As reported by the New York Times, he said in that video:

“We’re out here as public workers, doing our job, trying to make an honest living to take care of our families. But for you to get on the bus, and stand on the bus, and cough several times without covering up your mouth, and you know that we’re in the middle of a pandemic, that lets me know that some folks don’t care.”

The New York Times followed up with an article about the reliance that many Detroiters have on public transportation—and buses in particular—to get to their essential jobs (Figure 15).

As the full weight of the pandemic has been felt and public fears around safety and disease have grown, awareness around the value of public institutions and civil servants has increased. To that point, the Pew Research Center published polling results showing marked increases in the favorability rating, particularly among Republicans, for the CDC and the Department of Health and Human Services (HHS) (Figure 16).
At the same time that the value placed on public institutions that serve public interests such as healthcare or transportation is rising, the stagnation of these institutions, especially at the federal level, is striking. Between 1950 and today, the number of federal employees has remained essentially unchanged (Figure 17). At the state and local level, the number of employees has remained essentially the same since the recession of 2009.

The pandemic has exposed an essential and irreplaceable role that public institutions serve during times of crisis, and the harm that is done through disinvestments in these institutions. In the context of Maine, which is preparing for a 24% drop in transportation revenues over the next 18 months, Maine DOT spokesman Paul Merrill said in a May 2020 *Portland Press Herald* article, “We were already in dire straits with funding. Things were not good and COVID is making things worse.”

### Public Space

As people have had to stay indoors, many aspects of the transportation system have changed, particularly traffic congestion. With fewer vehicles on the road, cities have begun to rethink land use and the amount of space that has been dedicated to cars for roads and parking. Portland has closed streets in the downtown area, mainly in the Old Port, to vehicular traffic, opening them to non-motorized traffic (Figure 18). This follows the lead of numerous cities nationally which have done Open Streets events (Figure 19) in order to better accommodate pedestrians trying to maintain social distancing guidelines, as well as businesses which have been setting up shop outdoors as Maine’s economy reopens.
It is unclear whether this new value placed on public spaces will continue as states reopen their economies, classes resume, and social distancing measures are relaxed. According to *Business Insider*, vehicle traffic in the United States had already rebounded to 90% of pre-pandemic levels by mid-June, up from its nadir of 52% in mid-April. As the article notes, "A recent survey from research firm Elucd found that 44% of New Yorkers will avoid public transit after quarantine ends. The poll found that, nationwide, 46% of people will ‘avoid transit entirely.’"

Under new and potentially worse traffic pressures, the future of Open Streets, converted parking lots to open-air dining areas, and lanes dedicated to non-single occupancy vehicle traffic is uncertain.

**Land Use and Housing**

At the same time that public space is being repurposed in urban areas, the overall viability of dense urban areas is being questioned. Headlines like those in the *Wall Street Journal* “The New Urban Flight: Riots and the pandemic are driving another exodus from big cities” or the Maine ABC affiliate WMTW’s “Evidence Growing of Urban Flight to Maine Due to Coronavirus” would suggest that places like New York City or Boston are entering another phase of decline, and places like Maine could receive many of these urban transplants.
On the other hand, city boosters like Richard Florida have written counterpoint articles ("This Is Not the End of Cities"), noting the tenacious staying power of cities as desirable places to live. Writing in CityLab, Florida observed:

“Urbanization has always proven the greater force – stronger than the devastating Black Plagues that began the fourteenth century, the deadly cholera outbreaks in nineteenth century London, and the horrific tragedy of the Spanish Flu, which killed as many as 50 million people worldwide between 1918 and 1920.”

In the near-term, anecdotal evidence suggests that the residential real estate market is the tightest it’s been in years, making any significant migration challenging. According to Forbes, sellers have either removed their homes from the market or did not put their homes on the market, leaving inventory extremely low relative to demand. This is reflected in a noticeably lower rate of sellers reducing the asking price of their homes in 2020 relative to the two prior years, according to Zillow (Figure 20).

Fundamentally connected to housing preference is the rise of telework. As more people work from home and Zoom calls are at an all-time high, a move towards mixed use development might speed up because fewer people will be traveling to work and may want to be able to shop near where they live instead of the commercial centers where they previously commuted, according to a Webinar by the Eno Center for Transportation. Other experts argue that planners and developers need to rethink transit-oriented development as a solution to severe housing shortages, as the pandemic may leave a legacy of preference for lower density as well as a preference for cars over mass transit, according to a New York Times article.

Alternatively, the rise of telework has been predicted for years. As noted in a May 2020 article in Governing Magazine, "Pundits have been predicting an internet-fueled explosion of at-home workers and a decline of downtown offices ever since Frances Cairncross’s book, The Death of Distance, forecast it in 1997. That book became a best-seller, but there was no death of distance."

Should there be a renewed suburban boom in the longer-term, that could prove challenging to public transportation because population density is one of the essential factors to a successful public transportation system. The relationship between density and transit is mutually reinforcing – transit runs more efficiently in places where people are clustered together, and dense places depend on transit in order to move people efficiently. Much remains uncertain and the debate is ongoing about the impact the pandemic might have on housing preferences, but the implications of shifting housing demand could be substantial on the ability of the region to realize the Transit Tomorrow vision.

**Figure 20 Sellers reducing the asking price of their homes**

![Figure 20](Source: Zillow)
Climate Change

The transportation sector produced 28% of all greenhouse gas emissions in the United States in 2018, though in Maine transportation is responsible for nearly double that at 54%. The transportation sector in Maine consumed 7% more energy in 2017 than in 1990 mostly due to an increase in vehicle miles traveled, with total CO$_2$ emissions decreasing by 2.5%.

The pandemic has caused greenhouse gas emissions in the United States to drop substantially, 18% from March 15 to June 15, 2020, according to a Politico article. This is due to production lines shutting down, travel plummeting, and other economic activity grinding to a halt. However, the New York Times reported that greenhouse gas emissions have started to surge again as countries begin to reopen. Globally, emissions by June were back to just 5% below 2019 levels.

Environmental quality is a key aspect of the vision for Transit Tomorrow, and National Geographic points out that even the huge economic dislocation causing the current decline in greenhouse gas emissions is nowhere close to estimates on the level of action needed to avoid the worst impacts of climate change. On May 20, 2020, Alejandra Borunda of National Geographic wrote:

“Even with all this economic upheaval and the emotional toll of isolating, our emissions have dropped only 17 percent in the short term and will likely drop by less than 10 percent for the year . . . Framed another way: We’re still spitting out more than 80 percent as much CO$_2$ as normal, even when life feels devastatingly different.”

The author goes on to note that this pandemic does provide insight into the level of change needed in order to achieve meaningful climate change goals recommended by the International Panel on Climate Change. As the State of Maine continues to reopen and economic activity resumes, this “natural experiment” in greenhouse gas emissions reduction sheds important insights on the climate and environmental goals pursued through the transportation system.

![Figure 21 Change in global emissions](source: New York Times)
Ridership

Ridership on public transportation has plummeted as a result of the pandemic and the social distancing measures aimed at reducing infection spreads. As the *New York Times* reported in April 2020:

“The immediate future is upside down. On beautiful spring days, agencies are operating with snowstorm levels of ridership and service. They’re running Sunday schedules on Tuesdays. In college towns, they started summer service in late March . . . They are spending their communications budgets begging riders to stay away. They are deliberately running larger vehicles to leave more empty seats so that riders can be at a safe distance.”

Bliss quoted a professor of urban planning who opined that the role of public transportation in the near-term might primarily be to serve those without any other transportation options. “My educated guess is that we will see the rise of transit as a social service,” he said.

The greater Portland area has seen this decline in ridership as well. Portland Metro saw ridership drop year-over-year to less than a quarter of what it was in 2019 (Figure 22).

A poll conducted by MassINC Polling Group in May 2020 showed public opinions regarding transportation held by Massachusetts residents. The poll indicated that sanitized vehicles and stations as well as limited passengers on vehicles and platforms were top concerns, as well as availability of hands-free sanitizer dispensers (Figure 23).

Although there is mounting evidence that transit use is not actually a correlate of coronavirus hot spots, there continues to be a perception that only individual

The Eno Foundation published an article in April 2020 looking at transit ridership after various crises, disasters, or disruptions. The article noted that air travel after the September 11th attacks took nearly three years to rebound to pre-9/11 levels. On the other hand, transit ridership in Taiwan rebounded quickly after the SARS epidemic of March 2003, taking only three months to regain lost ridership. The article notes, however, that the COVID-19 pandemic is unlike either of those two examples in the global reach, economic impact, and long duration of the crisis.

How quickly ridership will rebound is unknown and will depend on numerous factors. Laura Bliss of CityLab broke down some of the factors in a May 2020 article “A Post-Pandemic Reality Check for Transit Boosters”:

- Some portion of would-be passengers are going to work remotely, while others may shift to driving or biking.
- Transit agencies may need to keep service cuts after lockdowns lift, which themselves could depress transit ridership; a 10% reduction in transit service tends to result in a 3-6% ridership decline.
- Transit ridership nationwide has been in decline since 2014, and the pandemic may exacerbate that overall trend.

Source: National Transit Database
forms of transportation are safe. For example, Staten Island, the most suburban part of New York City with the least transit use, had one of the highest rates of confirmed cases, as well as high infection rates on Long Island and rural Ulster County, according to an article in Governing Magazine. Transit-dependent Asian cities such as Hong Kong saw relatively few cases of COVID-19. Nonetheless, there remains a perception that transit is dangerous to use in the time of the pandemic.

Janette Sadik-Khan and Seth Solomonow wrote in an article in The Atlantic titled “Fear of Public Transit Got Ahead of the Evidence”:

“Far from scaling back on public transit, cities across the country need a massive transit expansion that will enable them to avert the mobility meltdown that threatens to swallow them if even a fraction of former transit commuters take to cars . . . What’s becoming clear is that, with appropriate precautions, transit riders can feel comfortable swiping their MetroCards again and agencies can start building the post-pandemic transit systems that cities and their residents want to see.”

As noted above, it is not clear if transit ridership will bounce back in the absence of an effective vaccine or treatment. As discussed, transit could serve as more of a social safety net in the near-term, transporting those who are not able to work from home, do not own a car, or are otherwise dependent on public transportation for mobility.
Scenarios

The methodology for this process guides participants through a scenario development exercise wherein four narrative scenarios are developed. A focus group held on June 26, 2020, followed by internal workshopping, prioritized the factors that were both highly uncertain and could have a large impact on the organization.

The project team focused on the factors in the top-right quadrant, and selected two key uncertainties from that group (Figure 24).

The two themes selected were:

1. How quickly a vaccine will be developed.
2. How federal funding for transit in southern Maine will be impacted.

Four scenarios based on these two uncertainties were developed.

These scenarios paint a picture of what the future could look like based on the two key uncertainties identified through the process described above. In brief, the scenarios imagine the following futures:
1. **Ticket to Ride**: This future is one in which a vaccine is developed relatively quickly. Federal funding continues flowing to transit agencies in southern Maine to fill any budget gaps left by either lingering aversion to using transit or economic damage from the pandemic.

2. **Can’t Buy Me Love**: This future envisions a scenario where the vaccine proves difficult to develop and the public remains skeptical of public transportation, fueled by periodic advisories about social distancing. However, the federal government continues to fill any funding gaps experienced by transit agencies in the region.

3. **Money (That’s What I Want)**: This future is one in which the race to find a vaccine is relatively successful, but the federal consensus surrounding lingering economic damage falls apart. Transit agencies struggle to meet developing demand from the public.

4. **Help!**: This future is one in which the vaccine is slow to be developed. Austerity measures are taken by the federal government in the wake of the extraordinary debt resulting from CARES Act relief funding. Transit agencies face service reductions matched by depressed ridership demand.

These scenarios follow four transit customers through their lives in the mid-2020s as they attempt to meet their transportation needs in each future. The scenarios tell the story of these customers and show the on-the-ground reality shaped by the two key uncertainties.
Imagining Transit Tomorrow: Evaluating the Impacts of the COVID-19 Pandemic on Southern Maine’s Transit Future

All the while, Jamille’s own mom suited up and went into work at the hospital, so close to the disease that was taking so many lives.

As the summer of 2020 turned into fall, Jamille and her brothers would go on walks to the nearby park, visit with friends outdoors, and let their dad recharge his mental energy before the full crew of kids would crowd back into the apartment. She was scrolling through her Twitter feed again while sitting on a swing at the park one cool fall afternoon when she saw the news that she had been waiting for:

“Breaking: Phase 3 Trials Successful, First COVID Vaccine Heads to Market”

The end of the pandemic seemed to come about as fast as the start. Her unemployment benefits had been extended into 2021, but she still wanted to find a job, as much for the money as to get out of that cramped apartment. So many of the restaurants around town had closed, including the one she had worked at.

By winter 2021, she ended up taking a job at a Subway sandwich shop in Scarborough, and was glad to find that. She had to prove that she had been vaccinated to even get an interview, and her hours were short once she was hired. Even though it was just a 15-minute drive from her house, she couldn’t afford a car, and didn’t have a driver’s license even if she could. She noticed that the bus system had not only returned to a normal schedule, but was actually running more often. She had read that congress had passed even more rounds of funding to help out with unemployment, SNAP benefits, bus service, and all sorts of other things while the economy continued to recover.

As the months ticked on things slowly got better. By 2022, most of the restaurants had opened, and the net result was only a small percentage that had disappeared. Jamille noticed that the businesses on the peninsula were the first to come back, high-end restaurants and expensive shops in tourist areas. Cruise ships were docking again, festivals and large gatherings that had been canceled in 2020 and scaled back in 2021 were full-throttle.

Scenario 1: Ticket to Ride

More Federal Funding, Faster Vaccine Development and Distribution

Jamille flipped through her Twitter feed and sighed at the flood of people commemorating the third anniversary of the pandemic. She remembers being at work three years prior, on March 11th, 2020, when the World Health Organization declared COVID-19 a global pandemic – on break scrolling through that same Twitter feed. She was around back from the restaurant where she worked, taking in the cool Portland air, and she had a bad feeling in her gut. Sure enough, Jamille remembers the stingy inevitability of being laid off just a few weeks later, among the thousands of Mainers and millions of Americans in the same situation. Her parents would understand, she was already on the phone with her mother as she sat on the bus heading back home.

“My boss told me that once everything settles down she’s going to rehire all the staff, and really it’s for the best – now I can collect unemployment, so that’s something, right?” she said over the phone, through the facemask it seemed like she could never take off.

The next months were hard, more trying than she would have imagined. Even in regular times, the apartment was cramped, just three bedrooms shared between her parents, three brothers, and her. Even though her Mom had diabetes, she still got on the bus every day to get to her nursing assistant job at Maine Medical. They all knew that the unemployment would eventually dry up, and she had to keep her job.

Those months of lockdown were tedious and stressful. As the oldest, she had to help her dad manage her brothers, which he had never really done before. Every morning her mom would put on her mask, face shield, and gloves, and head out the door to wait for the bus. One morning, shortly after she left, Jamille got a text from a friend at the restaurant – his mother had gotten COVID, and it was bad.

As the days dragged on, Jamille got increasingly dire texts from her friend. Five days after that first text, she got the news that his mom had died.

Figure 26 Ticket to Ride timeline

- Spring 2020
  - Shelter in-place ordered
- Early Summer 2020
  - Partial reopening
- Late Summer 2020
  - CARES Act
  - Unemployment Extended for 6 months
- Early Fall 2020
  - Vaccine rollout
- Winter 2021
  - Additional federal aid packages passed
- Fall 2022
  - Maine achieves herd immunity
Scenario 2: Can’t Buy Me Love

More Federal Funding, Slower Vaccine Development and Distribution

Alex opened his sock drawer to find his green face mask celebrating St. Patrick’s Day. After five years of living with COVID-19, he had built up an impressive collection of colors and patterns. Mask over his nose, scrubs on, lanyard around his neck, he was ready to start his shift at Maine Medical Center. Except he had to make that same decision that stressed him out every morning – should he take the bus to get there or sit in traffic?

Before the pandemic, Alex had been a die-hard bus rider. He took advantage of the employee transit benefit offered by his work, taking the bus when he could and sometimes mixing a bus trip one way with a carpool or biking the way back. He loved being able to read a book or sometimes doze while the bus drove him right to his work, a great way to start the day before his grueling 12-hour nursing shift.

Once the pandemic hit, everything changed. The bus reduced service so much that he couldn’t use it to get to work anymore and, besides, he was scared of being around so many people while he saw the dangers of COVID firsthand at his work. He hated to do it for a lot of reasons, but he leased a car in spring of 2020 and started driving to work for the first time in his life.

Not too long after getting the car, he wasn’t sure how it had happened, but he came down with COVID-19. He had his temperature taken at work and it came back high, and the test later showed that he was positive for the virus. He hadn’t been that sick in a long time, with a high fever, dry hacking cough, digestive problems – basically the worst flu that he could remember. He was at home sick for two weeks and quarantined for another two, the longest time he’d been off work since graduation.
Once he was better and out of quarantine, he started experimenting with taking the bus again. Service was starting to resume in the summer of 2020 and the bus finally fit his schedule again. He felt a bit more confident since he’d had the virus and didn’t worry as much about getting it a second time. He would still wear his face mask and wash hands obsessively, but he wasn’t too worried.

By winter of 2021, the talk around the hospital was about how researchers were learning more about the virus. The vaccine development wasn’t going well, with several failed starts that didn’t pass clinical trials. And then they saw the same person come in with COVID-19 for a second time, confirming before their eyes what they had been reading about – the virus acts like influenza, with different strains going around year to year.

Alex talked with the two-time COVID patient while she was in the ICU and noticed that she sounded like she was from New York City. While he was making conversation, he asked where she was from.

“Brooklyn!” she responded proudly. “But I had to get out of there after the city went on lockdown and I was holed up in my apartment for six months. I thought Portland would be a great place to escape to.”

As the health crisis ebbed and flowed, the federal government stepped in to help fill funding gaps, coordinate the state and local response, and provide relief funding to those who were unemployed for an extended amount of time. Contact tracing, fever screening, and mandatory protective equipment became more common, and slowly life returned to a sort of new normal. Alex noted with both satisfaction and trepidation that the cruise ships that had disappeared during the lockdown started coming back, though only at half capacity (which even then they didn’t meet that passenger cap).

New routines had become common by 2023, with handshakes long since gone, outdoor Beer Gardens and barbecues becoming the standard for group dining, and video meetings and chats taking over, not just in business, but even among friends in the same city hanging out. For Alex, one of the biggest changes was his commute into the hospital. He ended up purchasing the car he was leasing, and started driving to work. He’d had coronavirus once and didn’t want to get it again. But the traffic was awful and getting worse, even in a small city like Portland.

He would sometimes see the bus rolling by, still mostly empty, supported by the continuing flow of federal relief funding, and wondered if he should chance it again. Even though people who get COVID-19 a second time tended to fare better, he still didn’t want to risk it. The transit agencies were airing ads on the radio and social media about the lengths to which they were going to keep their vehicles clean, which made Alex think hard about his commute options.

By the fall of 2024, Alex and his partner were starting to look at buying one of those houses that were being built out by Standish and Limington. They were getting close to retirement, and rent prices were creeping up as more people were leaving Boston and New York for Portland, able to work from anywhere and looking for the quality of life that southern Maine had to offer. He wasn’t thrilled about having to drive everywhere if they moved to Standish, but there were worse things.

So that morning five years after the pandemic was declared, as Alex put on his green mask, he still wasn’t sure if he would take the bus. He had heard on the news that the cities and towns were tired of paying for buses that ran empty, and so they might pull back their funding and see if the feds picked up the tab. If they did move out of the city, he would miss a lot about Portland, but maybe it was the right move to make.

Impact on Transit

In this scenario, a vaccine never arrives, but federal funding continues to fill budget gaps. Greater Portland uses some of the budget on communication strategies to get the word out on measures being taken to keep COVID cases at bay, such as sanitizing public facilities and enforcing social distancing and use of masks. This strategy has mixed results, as fear of the virus lingers and mostly transit-dependent riders use the service regularly. At the same time, there is a growing, non-transit-dependent population cropping up in Greater Portland which drives sprawl. As fewer people use the transit system, there is mounting pressure to devote less state and local funding to transit and direct it toward roadways, bike/ped facilities, and other transportation infrastructure that is increasingly congested.
Scenario 3: Money (That’s What I Want)

Less Federal Funding, Faster Vaccine Development and Distribution

Jaime was freezing, hurriedly clearing his driveway. He didn’t have to be at Journeys in the Maine Mall, where he was an Assistant Manager, for an hour and a half but traffic was terrible these days—what used to be a 15 minute drive from his house in Portland now took at least 45 minutes; plus, he had to drop his two roommates off at their restaurant jobs in downtown Portland, which would add at least 25 minutes to his commute.

He thought back to the time before the pandemic, when he could catch a bus a couple of blocks from his house and be at work in 45 minutes. He used to complain about his commute all the time—the route wasn’t super direct and there were a ton of stops but at least he could relax and play games on his phone. It was crazy to think of how much his life had changed in just a couple of months and how it was still affected by the pandemic, even though the vaccine had already been around for three years.

The service cuts that began in the first month of the pandemic were really disruptive. Everything else was up in the air then, too. He had been laid off from the Gap at the Mall, stuck at home for months with his roommates, driving each other crazy, panicking about rent and groceries; luckily, they were able to collect unemployment.

When the vaccine was rolled out in early 2021, it was surprisingly easy to get vaccinated: he was able to go to the urgent care clinic in downtown Portland and get it for free. Things started to look up for the first time in over a year. He got his job at Journeys that spring, people were out at the Mall again. There was still a lingering fear of being in crowds – in fact, he knew people who swore they would never get on the bus again.

Bus service didn’t come back like it was before the pandemic. There were half as many trips to the mall as there’d been before, and the buses were really crowded (even if some people swore off transit entirely). There were places he couldn’t get on the bus anymore because so much service had been canceled. He couldn’t understand why they couldn’t just add more bus routes when the system seemed so full all the time.

He’d heard on the news that the agencies lost a ton of local funding in that first year because of all the businesses shutting down. He also knew from a cousin who worked at one of the transit agencies that the agencies got a lot of federal money in the beginning, but that had stopped coming. His cousin said it just seemed like everyone got sick of thinking about the virus and moved on and now the vaccine really pushed it out of peoples’ heads. “Austerity” was the word he kept reading when political posts flew through his news feed. Those first couple months when he was unemployed, he and his roommates were happy to not have to pay fares, but he guessed all those free trips finally took their toll.

Jaime gave up on using transit to get to the Mall in those first few months of Journeys. At first he used Lyft a lot—it cost a lot more than the bus but the bus was so unreliable. There was a lot more traffic on the roads so it took him almost as long to get to work as it would have on the bus.

His roommates finally got their jobs back at restaurants downtown once the vaccine was rolled out (those that reopened anyway). The restaurants were busy, like before the pandemic. They were also fed up with the reduced bus service—once the weather got better they biked to work until it got too cold for them. Jaime suggested they buy a car together. They commuted together when their schedules lined up, used it to go grocery shopping, and sometimes took short road trips with it. Gas wasn’t expensive—the insurance and monthly payments were a pain but Jaime couldn’t see how he could get to work otherwise. On snowy mornings like this, he missed the bus a lot though.

Figure 28 Money (That’s What I Want) timeline

- **Fall 2020**: Congress abandons efforts at further rounds of relief funding
- **Winter 2021**: Successful trials of the COVID vaccine go to production
- **Spring 2021**: Three states declare bankruptcy, unable to agree on 2022 budget
- **Summer 2022**: Transit agencies nationwide cut service by 30% even as ridership rebounds
- **Summer 2023**: Urban traffic congestion hits new highs as employment rebounds
Impact on Transit

Transit demand has increased since March 2020 but still below what it was in 2019. Much of the population has been vaccinated and some jobs have returned but some businesses remain shuttered, and local budgets have been decimated from a year of suppressed spending and lost tax revenue. After several rounds of stimulus and the rollout of the vaccine, the federal government has pivoted to austerity—delivering cuts to the FTA and other agencies. Transit agencies have been forced to make dramatic cuts for three straight years. Service cuts have forced choice riders to abandon the system, resulting in lost fare revenue—a “transit death spiral”.

Scenario 4: Help!

Less Federal Funding, Slower Vaccine Development and Distribution

Marie sat at her desk, shaking her head at the ledger that sat before her. The inn she ran for a decade would have to close, ending years of work that she and her family had put into growing her small business. She had managed to limp along for two years after the pandemic first struck, but she was out of options.

At first, when the pandemic hit, reservations were canceled but she thought things would be back to normal for the summer season – surely it would just take a month or two to get the infection sorted out, a vaccine delivered, or some other solution in place. As the lockdown dragged on, she watched the local news in dismay as more and more summer events were canceled, and the phones stayed silent.

Marie thought back to February 2020, she'd been interviewing seasonal workers for the summer season and the center had been bustling with construction workers, making repairs before guests started pouring in. Conferences and hotel guests generally booked months in advance and Marie was anticipating another busy year. She was so sure that this pandemic on the other side of the world would be like other international virus outbreaks in years past and not really affect the United States very much—let alone Maine.

Marie followed the news obsessively once the outbreak spread, particularly the progress on the development of a vaccine and the federal aid packages released. She had applied for the initial package and secured funding which helped her pay the employees she'd kept on and the contractors who'd made repairs in the early part of the year.

She did get to spend more time with her mother who lived nearby, which she thought was a good thing. At nearly 90 years old, her mom needed more and more help, and the van service she used to go shopping and to the doctor had shut down due to safety concerns from the pandemic.

Summer 2020 was a dark time for Marie, her beach community felt like a ghost town. The seasonal trolley that she, along with other hotel owners, had paid to transport guests to the beaches and boardwalks wasn’t even running. Some of the employees that she was able to keep on were having a very difficult time getting to work because the bus service that they typically used was running only a third of its trips. She ended up reimbursing them for Lyft and Uber trips because she knew they had no other way of getting to work.

The next year saw the return of some visitors, though the hotel was only at 25% capacity—it made social distancing in the common areas much easier at least. Marie chalked up the lack of business not just to fear over the virus but also the dismal state of the national economy. She could only afford to hire 10% of the seasonal workers she usually had.

Transit service had not improved in the past year. In fact, service had been cut even further: employees that had to travel between multiple providers had said between the different levels of service reductions, it was impossible to coordinate transfers. The restaurant manager ended up setting up a vanpool to make sure workers could get to work reliably.

Marie and other people in the hospitality industry had been meeting regularly over the last two years to talk about the challenges they were facing. They also

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Marie and other people in the hospitality industry had been meeting regularly over the last two years to talk about the challenges they were facing. They also
talked about how loss of business on their end was affecting the state and towns they lived in. Marie wondered what public services would be left whenever a vaccine was developed—the local governments had slashed services in the previous years as federal aid and tax revenue had dried up. She worried about the local transit provider she and other owners paid to provide shuttle service as she knew this service made up a significant piece of their annual budget.

As efforts to develop an effective vaccine had failed over the last two years, it felt like there was no end in sight. Marie had lost faith in the federal government’s ability to manage the virus early on, with the lack of Personal Protective Equipment and capacity for testing, so she worried that even if a vaccine was developed, the rollout would be so messy that it would basically be ineffective.

Marie hoped she could sell the property, but she knew in the current climate, it would be difficult to sell given the state of the industry. The inn was finished, but she wasn’t sure what to do next.

“Well,” she thought, “at least I’ll be able to help my mom out more – Lord knows she needs the help getting around.”

**Impact on Transit**

Transit demand is still much lower than it was in early 2020. Despite efforts made by transit agencies to minimize risk through social distancing mandates and increased cleaning, all but transit-dependent riders are avoiding transit for fear of catching the virus. Additionally, a large number of transit dependent riders have lost their jobs—as many work in the service industry, which has been decimated by the pandemic. Besides the economic impact of the loss of thousands of jobs, municipalities have lost millions of dollars in tax revenue from the many businesses that have been shuttered due to the virus. The federal government has not stepped up adequately to fill the void, shifting to austerity after several rounds of aid distribution in the beginning of the pandemic. The loss of local and federal funding coupled with a sustained massive drop in fare revenue have created a very dire situation from transit agencies—forcing them to seek out funding wherever possible in order to stay solvent.
**Recommendations**

The four scenarios presented above paint pictures of how the future could unfold depending on two key uncertainties: The development of an effective vaccine, and the level of federal transit funding. These two key uncertainties interact with other driving forces and factors to generate the four distinct scenarios, each of which follows a resident of the region who depends on the public transportation system – Jamille, Alex, Marie, and Jaime.

Based on the findings of the interviews, research, focus group, and scenario development, the project team identified the following low-risk recommendations:

1. **Adapt service to better serve transit-dependent populations**
   
   The four scenarios envisioned futures in which ridership levels are lower than pre-pandemic levels, at least in the next five years. The riders who remain using the system are those who have no other options (i.e. transit-dependent riders). Focusing service to best provide access and mobility for those transit-dependent riders will be more effective than attempting to lure reluctant choice riders to the system.

2. **Plan to deliver lower levels of service to stretch dollars further**
   
   Even in the scenarios with significant federal funding, local budgets are expected to be dramatically lower than in years before the pandemic. This diminished financial capacity will be partially offset by reduced demand for public transportation. Transit agencies should plan for lower levels of service to match depressed travel demand, which also preserves funding for future operations. Public transportation services for transit-dependent populations should be prioritized to maintain lifeline-levels of access for essential trips.

3. **Diversify and expand local funding to anticipate reduced public funds**
   
   Two of the scenarios envisioned a future with limited federal funding ("Help!" and "Money (That's What I Want)"). A third scenario, "Can't Buy Me Love", envisioned a future with lower ridership supported by a continued flow of federal funding to fill budget gaps. That scenario predicted that local governments would begin to question the local assessments they pay to the region’s transit agencies, which continue running buses viewed as “empty.” Any reduction of local funding would result in that much more dependence on federal funding. Diversifying funding will help to buttress the region against changes in any single source of funding and make for a more resilient transportation system.

4. **Invest in no-touch mobile technology to protect public health**
   
   Even those scenarios that envisioned a vaccine developed relatively quickly (by summer 2021) predict a lingering “germaphobia.” No-touch mobile technology, such as smart phone schedule apps or touch-free fare payment, was an industry trend pre-pandemic that will succeed in all four futures described in this document.

5. **Expand digital communications and marketing to rebuild ridership**
   
   In the two scenarios with vaccines that come late or never come at all, communications is essential to keeping the public informed about how agencies are keeping riders safe. Even in those scenarios with vaccines developed in the near future, communicating changes in rider protocols in a dynamic and shifting environment is important as operating conditions and safety guidance change with new medical developments. Expanded communications and marketing is an effective strategy in all four scenarios to serve the public and reassure customers about the safety of the system.

6. **Invest in data collection to make nimbler decisions**
   
   Each scenario envisions a future where, at least in the near-term, there is rapid change. Those technologies which assist transit agencies with decision making, such as automated passenger counters, automatic vehicle locators, traffic counters, and online surveying tools are essential to adjusting service or other investments based on new on-the-ground realities.
7. Support street spaces for bike lanes, walking, and outdoor retail and dining to keep transit relevant

Each of the four scenarios envision a future in which the public has a deeper appreciation for open space. From restaurants doing more open-air dining, to former transit riders choosing to bike instead, to the thousands of residents who have spent more time in their neighborhoods during lockdown than perhaps ever before, this is an opportunity to aggressively pursue an agenda which expands these public spaces. If done in a strategic way, these investments can still complement transit improvements when demand for public transit returns.

8. Redouble efforts to locate housing in walkable villages and downtowns to reduce longer term ridership losses

The futures laid out above envision varying degrees of people from dense urban areas like New York City and Boston migrating to Portland. While there may be a desire for “small town” living, compact walkable urban design is an essential aspect to the Transit Tomorrow vision. Promoting mixed-use housing development of underutilized commercial and retail space, while not necessarily using the term “density,” will attract new residents to the walkable villages of southern Maine. At the same time, it will work toward achieving the kinds of transit-oriented, climate-friendly development embodied in the Transit Tomorrow vision.

9. Implement more efficient rural demand response options to cost-effectively maintain access

None of the scenarios envision a future in which the aging rural population in Southern Maine changes significantly. However, two of the scenarios envision significant funding shortfalls that may jeopardize the ability of the region to serve the expensive demand response trips some of these residents depend on. Maintaining access and mobility for these residents will be challenging and demand creative approaches, including non-transportation solutions such as enhanced tele-medicine, grocery deliveries, and perhaps incentive programs to facilitate the transition from rural housing to more centrally located communities designed for older adults. The relatively small agencies serving these rural areas should deliberate on how to prepare for a future of austerity or continued waves of infection.

Other Considerations

Importantly, these recommendations do not consider “black swan events” in which another mass disruption hits the region. These black swan events could include:

- Outbreak of a global military conflict
- Widespread disruption to global energy markets
- Massive climate refugee crisis
- Fast implementation of autonomous vehicle technology

Each of these events have implications that impact the regional transportation system. For example, in the event of a war where major global powers have access to nuclear arms and biological weapons, all major cities could see a population exodus seeking lower-density areas. This would parallel some of the logic for urban flight in the Cold War era, which was partially motivated by reducing population density in the event of nuclear war. Perhaps in this scenario, a focus on emergency preparedness would be a priority for the transportation system.

These scenarios only deal with a limited number of variables that will shape the future. The potential actions listed above speak to some of these uncertainties and assumptions, though do not prepare for every possible future. However, they should provide options which position the region for better movement toward realization of the Transit Tomorrow vision no matter how the future unfolds.
Conclusion

The Greater Portland Council of Governments is navigating through unusual and unprecedented times. Things that were taken for granted only months before are now being called into question, such as the viability of urban areas and the public’s willingness to be confined in close quarters with others on a bus, train, or ferry. This paper is an effort to take a close look at the key uncertainties that could impact how the future unfolds in order to better prepare for it.

This paper has been prepared to inform the Transit Tomorrow plan and in accordance with the vision laid out in it. The interviews, research elements, and scenario development have all had the goal of understanding what actions GPCOG and regional transit operators can take to pursue the vision of an environmentally friendly, equitable, and accessible public transportation system that strengthens the region’s great places. The recommendations included in this paper were prepared with the objective of realizing this vision.

In the end, the four scenarios developed provide a glimpse of what could come as told from the perspective of the region’s public transportation customers. These scenarios provide insight to transportation decision makers about how the strategies they pursue could have real-world impacts on those people who depend on the system to get to work, to the grocery, and other essential trips. The decisions being made every day by GPCOG and the region’s operators shape the lived experiences of the region’s residents in a direct and tangible way.

This paper not only provides recommendations, but sheds light on the key questions that regional decision makers should be asking themselves as they make capital purchases, develop service plans, and implement new programs to meet regional mobility needs. As new information is reported through the media, government reports, or scholarly work, assumptions should be updated and the shared understanding of what the future may look like should change.

Eamonn Kelly wrote in his book Powerful Times,

“Our times demand that we adopt a powerful orientation toward learning, experimentation, and discovery that will require us to acknowledge uncertainty and embrace ambiguity.”

This paper has been an effort to expand that orientation, better preparing regional leaders for the uncertainties we see ahead of us – and those that we don’t.
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