APPENDIX A

To	Geoff Abma	**Memo**	
Cc			
From	Steer		
Date	9 September 2020		
Project	Strategy for Urban Mobility and Transportation Planning	Project No.	23703601

Assessment of COVID-19 Impacts

Introduction

The Town of Oakville is creating a Strategy for Urban Mobility and Transportation Planning. During the development of this strategy, the COVID-19 pandemic took hold. This pandemic has already had a major effect on how people travel, as well on the economy and society more widely.

Currently, there are many unknowns relating to COVID-19:

- **Will/when there be a medical resolution?** We do not know whether or when there will be a medical resolution to COVID-19. There is no guarantee of an effective treatment or vaccine in the short-medium term.
- **Will herd immunity be established?** We do not know whether surviving COVID-19 creates immunity. Even if it does, we do not know for how long and hence whether herd immunity will build in populations
- **Will future waves be seasonal?** We do not know whether COVID-19 will be seasonal with potentially stronger waves in winter months, similar to flu.

Given these uncertainties, the scope of work for the Strategy was extended to examine and assess the short-term and long-term effects of COVID-19 on Oakville's transportation system. This includes both how it will be used (demand) and the effects on the services and infrastructure the Town provides (supply).

This memo presents the results of that analysis, covering what the future might look like, the potential effects, and resulting considerations for the development of the Strategy.

What could the future look like?

This section summarises the "Business as usual" (BAU) baseline – what was expected (before COVID) to happen to Oakville's transportation system. It then presents a set of scenarios for the management of COVID and medical advances.

"Business as usual" baseline (without COVID)

The 2013 Transportation Master Plan (TMP) and 2018 Review described the expected path for Oakville's transportation system. This section summarises their description of the current and expected future state, with full details available in those documents.

Changes to transportation demand

Land use is fundamental driver of demand for the transportation system. Future changes to land use will have a significant effect on future changes to overall travel demand. Once north Oakville is built out, future growth in Oakville will come through intensification at various nodes and corridors. The 2018 Update summarises Oakville's planned land use changes as follows:

> "The Livable Oakville Plan (the town's Official Plan) … identifies nodes and corridors, or Growth Areas, as key areas of the town at the focus for transit-oriented mixed-use development and areas for intensification. These locations include Midtown Oakville (also the provincially designated Urban Growth Centre in Oakville), Uptown Core, Palermo Village, Ker Village, Bronte Village, Downtown Oakville, Trafalgar Road Corridor (QEW to Dundas Street) and the corridors along Dundas Street and Speers Road. Additionally, Nodes and Corridors are identified from the North Oakville East Plan to include the Trafalgar, Dundas, and Neyagawa Urban Core Areas."
>
> Source: 2018 TMP Update, §3.1 Projected Land use

The population and employment forecasts used in the 2018 Update are shown in Table 1. They show significant growth, with employment growing faster than population. This implies that the transportation system will have to accommodate more travel and could also have a greater proportion of internal trips.

Table 1: 2018 Update Best Planning Estimates Population and Employment Forecast for Oakville

	2017	2027	2031	% growth 2017 to 2031
Population	197,684	240,044	246,400	25%
Employment	97,233	120,987	123,360	32%

Source: 2018 TMP Update "Derived by Watson & Associates Economist Ltd/ from Halton Region Best Planning Estimates, 2011"

While the 2013 TMP did not assess trip purposes, the analysis did find a high degree of self-containment with the majority of peak period trips originating in Oakville being internal trips. It also reported a short average trip length, with more than 60 percent of trips less than 10km. The growth in Oakville's population and employment to 2031 is broadly similar to the GTHA as a whole. This suggests that the proportion of internal trips and short trips would be likely to remain roughly the same.

Mode split trends

Figure 1 shows the existing mode share reported in the 2018 Review for trips in the AM and PM Peak Periods going from and to Oakville in 2011.

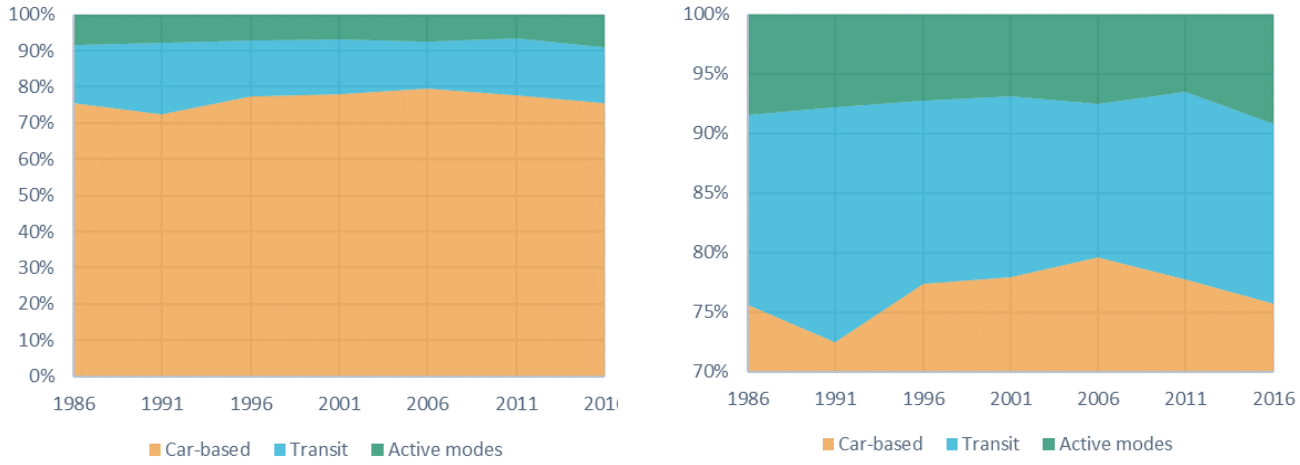
Figure 1: TMP Review Modal Share Summary

Mode	AM Peak Period		PM Peak Period	
	Outbound	Inbound	Outbound	Inbound
2011 TTS				
Automobile	77.6%	86.0%	92.2%	85.8%
Transit	2.3%	2.5%	1.9%	1.6%
Walk/Cycle	6.5%	6.9%	3.1%	2.9%
GO Rail only	7.0%	0.2%	0.4%	5.5%
Joint GO and Public Transit	3.2%	0.3%	0.4%	2.4%
Other	3.4%	4.1%	2.1%	1.7%
Total	100%	100%	100%	100%

Source: Oakville TMP Review, Table 1: Modal Share Summary

To set these figures in context, Figure 2 shows the trends for mode share from 1986 to 2016 for AM peak trip originating in Oakville. They show a consistent pattern of high car use. Recently, car-based modes have declined from 80% in 2006 to 76% in 2016.

Figure 2: Mode share trends (trips originating in Oakville, AM Peak)



Source: Transportation Tomorrow Survey. ("AM peak" is trips starting 0600-0859)

The 2018 Review examined six scenarios for future mode split[1], summarised in Table 2. These scenarios were intended as policy-driven targets to guide the planning of Oakville's transportation system, rather than predictions for mode split would result from the plans for Oakville's transportation system. The "TDM" figure refers to the reduction in trip rates compared with existing conditions.

Table 2: Mode Split Target Scenarios

Scenario	Baseline	A	B	C	D	E
Active Transport	3%	6%	6%	6%	6%	6%
TDM (demand reduction)	3%	6%	6%	6%	6%	6%
Local transit	1%	1%	3%	1%	3%	6%
Regional transit	3%	3%	4%	7%	9%	10%
Auto	90%	84%	81%	80%	76%	72%

Source: 2018 TMP update, Appendix B

As part of the mode split scenario analysis, the 2018 Review extensive road modelling of each scenario for the 2031 horizon year. The outputs included link-level and screenline performance, screenline lane deficiencies, and PM peak hour volumes and volume/capacity ratios by road segment.

[1] The transit mode shares in each scenario varied by origin and destination; the summary given in the 2018 Update for local and regional transit is presented here.

The 2018 Update recommended the adoption of Scenario E (highlighted in bold in Table 2), which has the highest transit mode share and lowest auto mode share of any of the scenarios.

Changes to transportation supply

A key output from the 2013 TMP and 2018 Review was the planned changes to the Town's transportation supply through to 2031, including its roads, transit, cycling and walking networks.

The road network serving Oakville is the responsibility of three levels of government, each with their own plans:

- **Province (MTO)**: addition of HOV lane on QEW; additional general-purpose lanes on Hwy 403; new north-to-east and east-to-north ramps on Hwy 403/QEW interchange; rehabilitation and replacement of various structures.
- **Region**: widening of various roads within Oakville, including Ninth Line, Winston Churchill Blvd, Burloak Dr, Tremaine Rd, William Halton Parkway; new bridge and road segments for William Halton Parkway; new road segment for North Service Rd.
- **Town**: various arterial road widenings; grade separations at various rail crossings; reconstruction of various roads from rural to urban standards.

Transit in Oakville is provided by the Province (through GO Transit) and the Town:

- **Province (GO Transit/Metrolinx)**: The Regional Transportation Plan includes frequency improvements to the GO Rail service; LRT/BRT on Trafalgar Rd; Priority bus on Dundas, Speers/Cornwall and Bronte; and frequent regional express bus on QEW, Hwy 403 and Hwy 407
- **Town**: Improving GO Train connectivity with increased frequencies in peak periods; transitioning "Home-to-Hub" service in north Oakville to conventional service; and improving services to Sheridan College.

Active transportation facilities are the responsibility of the Town, with the exception of cycling facilities on Regional roads. The Town's 2017 Active Transportation Master Plan (ATMP) update includes expanding the network for cycling facilities to more neighbourhoods and linking disconnected sections of the network. The new facilities will be mostly signed routes, with some bike lanes and trails. The Town's ATMP incorporates the recommendations of Halton Region's 2015 Active Transportation Master Plan on Regional roads.

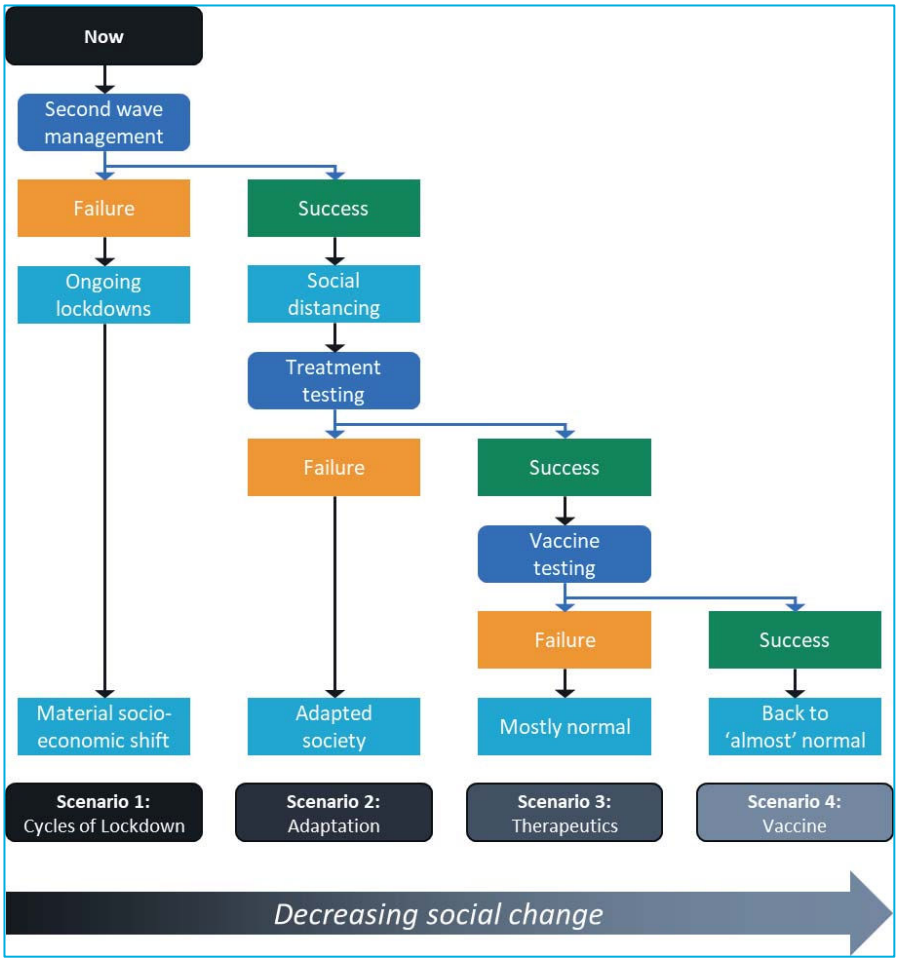
The ATMP update's planned pedestrian network includes sidewalks on both sides of almost all streets (which are in place on most existing streets).

Overall, the planned changes to transportation supply in Oakville all involve steady evolution that builds on the existing network and services. Those changes are line with the wider aims to accommodate growth in travel and also encourage mode shift away from car use.

Develop alternative scenarios

The flow-chart in Figure 3 illustrates four scenarios under consideration, which vary based on the progress made in treatments and vaccines.

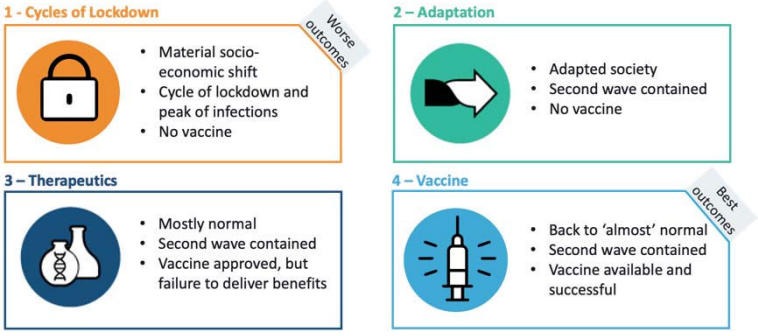
Figure 3: Potential COVID Scenarios



Source: Steer analysis, adapted from UK Government Office for Science "Futures Toolkit"

The four scenarios are as follows:

- **Scenario 1: Cycles of Lockdown**. This scenario would have no vaccine, with a cycle of lockdowns and peaks of infections. This would create a significant socio-economic shift.
- **Scenario 2: Adaptation**. This scenario would have no vaccine, but second wave(s) would be contained. The mitigation measures currently in place become permanent, leading to an adapted society
- **Scenario 3: Therapeutics.** This scenario would have no vaccine but would have effective treatment available for disease. Any second wave(s) would be contained, allowing a life to mostly return to pre-COVID normal.
- **Scenario 4: Vaccine.** This scenario requires a successful vaccine to be available. The vaccine would prevent or moderate second wave(s), allowing everyday life to return to 'almost' normal.



What effects would each scenario have?

Scenario influences and effects

In assessing the potential effects, Steer examined the following factors that could both cause and be affected by changes to the transportation system and its use as a result of COVID-19.

- **Economy**: Duration and intensity of a recession, currency depreciations (between country impacts)
- S**ocial Distancing**: Continuation or otherwise of social distancing, either regulated or through changed behaviours/track & trace.
- **Transport pricing/cost**: Price of oil, cost of travel.
- **Transport supply/capacity**: Availability and capacity of transport modes because of economics or social distancing.
- **Mode preference**: Public perception/fear, medical evidence, changed costs/benefits of each mode
- **Transport policy**: Transport policy measures (e.g. subsidies, regulation, capital investment).
- **Migration/land**-use: Change in migration patterns, change in locations of residence/employment
- **Teleworking**: Willingness for flexible working/working from home
- **Commuting travel**: Willingness to travel to work or move for a new job.
- **Business travel**: Changed requirements from business to attend meetings, conferences and such.

For each of the factors, the variation between scenarios was examined to identify short-term and long-term commonalities and differences. The short-term effects (first two to three years) under all four scenarios is expected to be similar:

- **Recession**: continued fall-out from places of business closing, leading to higher unemployment and lower consumer spending; lower tax revenue for Provincial and Federal government may also limit their discretionary spending.
- **Dispersed activities**: people will avoid activities that exposes them to large groups, preferring activities they can do with household members only.
- **Social division**: people with higher-income jobs are more likely to be able to work at home, lessening their personal risk of catching COVID. Those jobs are less likely to be affected by people's desire to avoid going out (and spending money).
- **Private not public transport**: a mix of public perception and actual risk will deter people from using public transit, with people preferring "private" modes (cars and active transportation).
- **Fewer trips/person**: Reduced commuting and discretionary travel will decrease the number of daily trips per person.

The longer-term effects are expected to show more variation between scenarios. This is because the variation in the longevity and effectiveness of social distancing and the scale and duration of economic downturn. These factors in turn will influence both transportation supply and demand, which in turn will result in changes to land use patterns and people's activities.

Table 3 shows the key differences between the effects of Scenarios 1 and 4; the effects of Scenarios 2 and 3 would fall between these two extremes.

Table 3: Key differences between scenarios

Area	Scenario 1: Cycles of Lockdown	Scenario 4: Vaccine
Lifestyle	• Social distancing becomes embedded • Localisation • Dispersal	• Drift back to pre-COVID norms
Economy	• Long deep recession • Slow recovery • Structural change • Increased societal division	• Short recession • Economy returns to trend • "Lost years"
Demand	• Growth in car use (tempered by economic performance) • Large drop in public transit • Large growth in active transport • Large growth in online and associated local goods movement	• Modest growth in car • Drop in public transit use followed by slow recovery at best • Modest growth in active transport • Modest growth in online and associated local goods movement
Supply	• Road capacity increases more urgent • Significant reduction in bus/rail services • Pressure for better pedestrian and cycling connectivity and unfractured	• Manageable pressures on road network • Modest reduction in bus/rail services • Pressure for better pedestrian and cycling connectivity and unfractured
Land Use	• Big drop in city centre retail, offices, leisure • Increased interest in edge of town	• Less city centre retail, offices, leisure • Increased interest in edge of town

Source: Steer analysis, adapted from UK Government Office for Science "Futures Toolkit"

The following sections provide additional information on each of these areas. In all cases, the magnitude and duration of these effects is highest under Scenario 1 and lowest under Scenario 4.

Lifestyle

The longer that travel restrictions and social distancing and social distancing effects are in place, the more significant the behavioural changes will be. Lifestyles would become more oriented towards activities with household members, and more focused on the local area.

Working at home is a viable option for some job types, and completely infeasible for others. (The proportion of Oakville residents unable to work at home is discussed in the 'Transportation demand' section, below.) Jobs that must be done in-person are more likely to have lower pay. Similarly, groups of people who are more vulnerable to COVID would be more affected by restrictions than those without.

The 2016 Census showed that 8.9 percent of adults and 12.4 percent children in Oakville live in low-income households[2], compared with 13.4 percent and 18.4 percent for Ontario. Oakville is often regarded as a prosperous community but this only increases the risk that the needs of low-income groups are not properly considered.

[2] Using Statistics Canada's "Low income measure"

The emerging evidence suggests that older people are vulnerable for COVID and its effects. Young people would increasingly accept (or possibly ignore) the risk of catching the virus; older and more vulnerable people travel less and only for essential purposes. Oakville's population skews a little younger than Ontario: 27 percent are aged under 0-19 and 15 percent are aged 65 or older, compared with 22 percent and 17 percent respectively for Ontario.

Overall, there would be a growing divide between people who are vulnerable to the virus (or the economic effects) and those who are not.

Economy

Under all scenarios, there would be a major economic shock and a significant rise in unemployment. Any business where control measures reduce the number of customers that can be served will have a reduction in revenue. Hospitality, food and beverage, in-person retail and the supply chains for these sectors will be most affected. This would lead to an increase in business failure. The resulting unemployment will then have wider supply-side effects on all businesses. Further, the provincial, territorial and Federal governments would see a reduction in tax revenue. This would potentially reduce their spending and associated employment.

The effects on people would vary considerably. The sectors most affected tend to have a high proportion of low-paying jobs, and also a greater proportion of young people. This means low-income groups would see their income drop significantly more than high-income groups, creating and exacerbating social divisions. Although 'normal' recessions have similar effects, the magnitude would be greater because people's ability to spend money in those sectors would be constrained by both financial and personal health concerns.

The duration and magnitude of the economic downtown will depend heavily on the duration and extent of restrictions that affect the ability of businesses to operate. It will also depend on people's willingness to visit businesses where people congregate. The economic effects would extend beyond the duration of these restrictions, with the economy highly unlikely to bounce back to pre-COVID norms.

The ability of the provincial, territorial and Federal governments to mitigate the economic downturn will depend on the strength of the pre-COVID economy and political will. As of the 2018-19 fiscal year, Ontario had the second-highest debt-to-GDP ratio of Canada provinces[3] and the Province has invested heavily in additional COVID relief program, almost doubling the projected 2020-2021 deficit to close to $40 billion. This may indicate that Ontario's ability to take on additional debt to provide future economic stimulus is limited.

In Ontario, municipalities are legally prohibited from running operating deficits. Their operating income comes from a mix of property tax revenues, user fees, and Provincial funding. Property tax revenue (by design) is relatively immune to economic downturns. User fees play a particularly important role for transit and are discussed in the 'Transport supply' section following. They are less important for other modes. The level of Provincial funding will depend entirely on the Province's political decisions, as

[3] *Canadian Federal and Provincial Fiscal Tables*, page 12. RBC Economics, July 2020. **http://www.rbc.com/economics/economic-reports/pdf/canadian-fiscal/prov_fiscal.pdf**

discussed in the previous section. If it is decreased, municipalities will have to choose between spending cuts and property tax increases (or a combination of the two).

Overall, there would be a major economic shock and unemployment in all scenarios. The negative effects would primarily depend on duration and extent of restrictions and would extend beyond when those restrictions are lifted.

Transport demand

The effects on transportation demand will steadily increase in line with the magnitude and duration of changes to everyday life arising from COVID. Without a quick return to 'normal' (Scenario 4), there will be both a reduction in total travel demand and a change in mode split.

In general, there would be a switch from public (transit) to private (car-based and active) modes of transportation. This is because public transit involves spending time in close proximity to other people, which is likely to be seen as risky behaviour.

Longer journeys would tend to switch from transit to car-based modes; shorter journeys would tend to switch to active transportation, particularly walking. Given the Town's policies to move people away from car-based travel, this implies Oakville should aim to improve walking and cycling in any way.

Oakville has just over half (56 percent) of its trips take place within the town; about a third of trips (32 percent) are a bikeable distance (less than 5km). This means there is strong potential for much greater active transportation use. Ensuring good walking connections around trip attractors and good inter-municipal connections (especially for cycling) would help with this.

Currently, car-based modes are used for a high proportion of Oakville's trips (87 precent drive or auto passenger). This in turn limits how much they could increase and hence limit the extra roadway demand that would be created. The higher mode share may be offset by lower travel demand (discussed below).

School travel would be a travel market with even stronger potential for mode shift. Pre-COVID, around 25 percent of school trips by those aged 11-17 were by school bus. School bus use would have similar issues to public transit. Generally, there will be a small decrease in the total number of students travelling to school as some parents elect to home school or exercise the virtual learning option. Of those that do travel, it is likely that fewer will want to use schools bus transportation. Given more than 95 percent of Oakville's households have a car, this would likely result in a shift from school bus to drive-and-drop-off. However, Oakville also has the highest cycling use for school travel of any GHTA municipality (6.8 percent of school trips by those aged 11-17). This implies that good conditions for cyclists already exist, and that targeted efforts would help mitigate the additional drive-and-drop-off trips.

Commuting travel would be decreased, both as a result of higher unemployment and more people working at home. However, working at home is not an option for all job types. Table 4 shows the percentage of employed people by the National Occupation Classification (NOC) code[4] of their job in

[4] The NOC framework can be explored at **https://noc.esdc.gc.ca/Structure/Hierarchy/d13e35cc7011427da6f4d64baf60ee1e**

Oakville in Ontario. The figures in brackets exclude management occupations (NOC #0). The figures in brackets are the percentage of non-management occupations.

Table 4: Employment National Occupation Classification (NOC) code in Oakville and Ontario

NOC #	Description	Oakville	Ontario
0	Management occupations	18% (--)	11% (--)
1	Business; finance and administration	19% (23%)	16% (18%)
2	Natural and applied sciences and related	10% (12%)	7% (8%)
3	Health	6% (7%)	6% (7%)
4	Education; law and social; community and government services	12% (14%)	12% (13%)
5	Art; culture; recreation and sport	4% (5%)	3% (4%)
6	Sales and service	22% (26%)	23% (26%)
7	Trades; transport and equipment operators and related	7% (8%)	13% (15%)
8	Natural resources; agriculture and related production	1% (1%)	2% (2%)
9	Manufacturing and utilities	3% (3%)	5% (6%)

Source: Statistics Canada. Census Profile. 2016 Census. Statistics Canada Catalogue no. 98-316-X2016001.
http://www12.statcan.gc.ca/census-recensement/2016/dp-pd/prof/index.cfm?Lang=E

Examining the detailed classification suggests that most people in NOC #0 (Management occupations), #1 (Business; finance and administration) and #2 (Natural and applied sciences and related) would be able to work at home. Close to half (46 percent) of Oakville's workers are in these three groups, compared with a third (35 percent) of Ontario's workers.

Alternatively, workers in management occupations may be able to work at home only if the people they manage also can work at home. Assuming managers are distributed between NOC areas in the same proportion as non-managers, then the figures in brackets can be used. This implies that just over a third (35 percent) of Oakville's workers #1 (Business; finance and administration) and #2 (Natural and applied sciences and related), compared to a quarter (26 percent) of Ontario's workers.

Oakville residents who work in office jobs in PD1 would have a strong likelihood of working at home. This would reduce GO Train use from Oakville. Since trips to GO stations are a key market for Oakville Transit, transit would carry fewer people to the GO stations, from a combination of lower GO Train use, decreased desire to transit generally, and lower parking demand at the stations making park-and-ride more attractive. The latter factor would also create a shift from auto passenger to auto driver as the access mode for GO Train.

The number of **discretionary and leisure trips** would decrease and would also be more likely to be to local destinations. This is a result of both social distancing and the economic downturn. Demand at Town-operated leisure facilities (if open) would need to be monitored to ensure appropriate provision is in place. The same factors in combination with government-imposed restrictions would also decrease long-distance and international travel. However, this would have only minor effects on the Town's transportation system.

Overall, the trend would be for lower travel demand (fewer trips per person). Transit usage in Oakville would be lower from a combination from decreases in key travel markets and mode shift towards active transportation and car-based modes.

For **goods movement**, the ongoing trend for greater online shopping and associated home delivery would accelerate. Oakville does not currently have any of the large-scale distribution warehouses and current land use policies and development patterns suggest this would remain the case. Increased local goods delivery would result in additional goods vehicle traffic from adjacent municipalities (particularly Oakville). These would be vehicles suitable for deliveries on local residential roads.

Conversely, the economic downtown and move away from bricks-and-mortar shops would reduce deliveries to those businesses in Oakville. The delivery vehicles used for those deliveries are typically much larger. Consequently, Oakville is likely to see more but smaller goods vehicles on its roads.

Transport supply

The Town's 2018 TMP Review examined a number of options for future mode split, choosing "Scenario E", which included growth in active transportation, TDM measures to reduce total travel demand, and high growth in both local and inter-regional transit. The car-based mode share was used to inform the requirements for future the road network.

For **car-based** travel, the Town's current plans for transportation assume a shift away from car-based travel to other modes. However, overall road demand was still expected to increase as result of higher total travel demand. Consequently, the Town has plans in place for additional road capacity, as detailed in the 2013 TMP and 2018 Review. If the expected mode shift away from car-based travel is not as strong as planned and no mitigating measures are in place, then those road capacity increases would be needed sooner. On the other hand, greater working at home may reduce traffic volumes in peak periods, delaying the need for road capacity increases. The Town will need to monitor traffic volumes (through existing data collection programs) to inform the changes in timing.

Road network modelling was carried out for all the various mode split options in the TMP Review. Under those options, the split between non-car modes did not affect the modelling process. Consequently, the TMP Review mode split option with the expected *car* mode share will already have suitable information about the future state of the road network.

Under all four COVID Scenarios, **public transit** usage (and hence revenue) would decrease, particularly in Scenarios 1 and 2. This would mean either higher municipal spending on local transit, higher fares, or lower service levels (or some combination thereof). The Town of Oakville's 2020 budget[5] for Oakville Transit had an operating expenditure of $9.3m, and other revenues of $2.0m. This meant the required municipal subsidy was $24.1m. If farebox revenue decreased 50 percent and service levels (and hence expenditure) remained the same, then the required municipal subsidy would be $28.7m, equivalent to an extra $22 per resident.

Rather than simply increasing subsidies, sustained lower ridership would likely result in a reduction in service levels – both by Oakville Transit, and by other transit agencies in the GTHA. This would involve longer headways or switching fixed-route service to some form of on-demand service or both. For

[5] **https://www.oakville.ca/assets/general%20-%20town%20hall/2020-Approved-Operating-Capital-Budgets.pdf** page 201.

example, DRT in Durham has switched its network to a mixed of fixed-route services (operating at close to pre-COVID headways) and demand-responsive service in areas not served by these services. The intention is to re-introduce fixed-route service if and when demand and other considerations justify it.

As discussed in the previous section, the Town would have the opportunity to support greater **active transportation** use. Investing in active transportation infrastructure (particularly crossing points and bikeways) would be a key component of this.

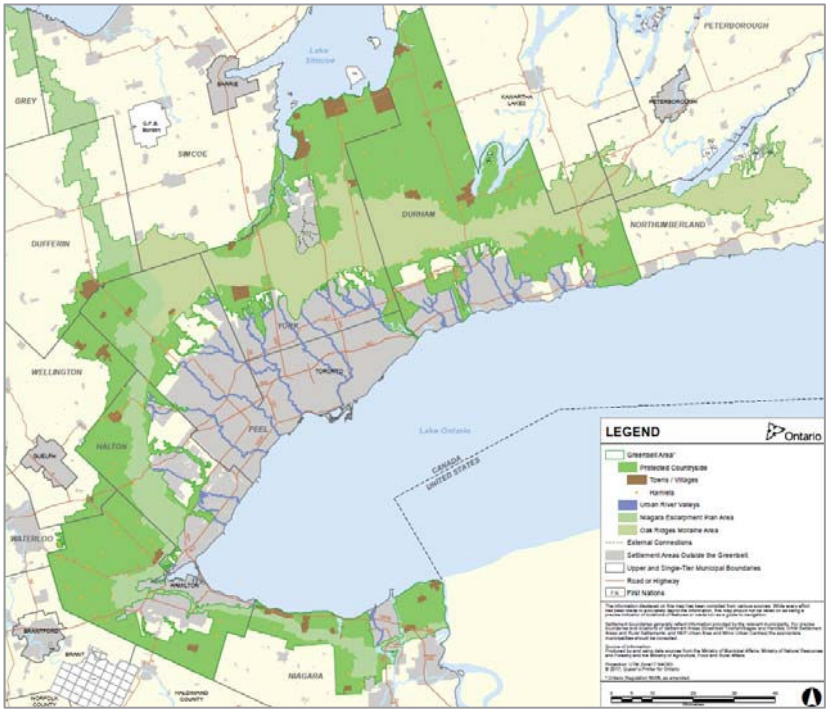
Overall, the effects would be accelerated timelines for road infrastructure investment, reduced public transit supply, and potentially improved active transportation infrastructure.

Land use

If the effects of COVID are sufficiently prolonged (particularly under Scenarios 1 or 2), then the principal effect will be a less city-centric society. Teleworking means people would be able to live further away from jobs that were based in city centres. Those businesses would place increased weight on the cost of office space rather than employee access. Similarly, the rise in e-commerce means people would place less value in living close to bricks-and-mortar stores. This will tend to create a more sprawled urban area.

This trend would have implications across the Greater Golden Horseshoe area, requiring coordination and planning above the local municipal level. The Province already has the ability to do this through the *Places to Grow Act*; the actions taken would be driven primarily by political considerations. Absent any action, the current rules regarding land use in the GGH under that Act would still apply and help curb sprawl within the GGH, but development could 'leapfrog' the greenbelt to areas such as (southern) Niagara Region, Brant County/Brantford, Waterloo Region, Wellington County/Guelph and (southern) Northumberland County. The existing greenbelt area is shown in Figure 4 for reference.

Figure 4: GGH Greenbelt



Source: Ontario Regulation 59/05, Schedule 1: Greenbelt Area

There are two potential directions at both the local and wider level: either significant massive reinforcement of car-based sprawl, or a trend towards urban areas being made up of multiple liveable neighbourhoods focused on amenities within walking or cycling distance. Oakville's travel patterns are currently heavily car-based, and it could end up trapped in that pattern. Alternatively, Oakville could push heavily for shift towards active transportation for neighbourhood-level trips, coupled with land use strategies that maximize the number of people with walk access to amenities. The latter would have been a key strategy for the Town in a non-COVID world.

Around two-thirds (66 percent) of Oakville's employed residents work outside the town. Stakeholder feedback indicate that Oakville is regarded as good place to live in and commute from. Its desirability as place to commute from is driven in part by the proximity (and travel time) to jobs. Greater levels of working at home would make that a less important factor in people's consideration of where to live. Conversely, Oakville local amenities and other features will play a greater part in Oakville's desirability.

As the 905-area became a greater proportion of the GTHA, there was a rise in suburban office parks. Recent years have seen this growth stall, with new office space primarily being created in downtown Toronto. Any reduction in demand for office space in the GTHA will only decrease the change of large-scale office development in Oakville. The future of existing suburban office parks is less certain. However, Oakville does not significant amounts of this land use, and hence wouldn't be significantly affected by these changes.

Overall, the location of activities and associated land-uses would tend to become more dispersed without policy intervention to support local travel.

What do we need to consider for the development of the strategy?

Summary of scenario effects

For lifestyle and economy, there will be a stark contrast between those affected and those with minimal disruption. This will widen existing social divisions, especially if public policy does not adequately consider the needs to vulnerable populations. The effects on lifestyle and the economy will continuing past the removal of restrictions in Scenario 1 (and potentially Scenario 2). In the other scenarios, restrictions will remain in place indefinitely, creating a fundamental shift in the way society and the economy operates.

Under all scenarios, travel demand will be lower as a result of economic effects, changes in working habits, increased online shopping, and people's desire to limit time in public spaces. Census results imply Oakville has a higher proportion of people able working at home, accentuating the effects. There will be a shift from transit to active transportation for short trips, and to car-based modes for long trips. Oakville Transit will be affected by the reduction in commutes to PD1 (and hence trips to GO stations). The short-term trend will be fewer auto trips in the peak period, but higher auto mode share. The long-term effects depend actions taken by government and wider lifestyle and economic effects. Scenario 1 would see the closest return to pre-COVID travel patterns, but some effects will remain permanent. Scenarios 2-4 would see progressively larger-scale and longer-term changes.

Changes to transport supply are primarily under the control of the Town. There will be a need for adjusted service levels and delivery methods for public transit on an ongoing basis in response to rapidly changing world developments. The Town will need to balance providing a basic level of service, financial

constraints, and the desire for long-term growth. There is a risk the latter is not given proper weight. The Town should place higher priority on active transportation investment (either temporary or permanent measures) to mitigate lower transit use. Longer-term, monitoring of peak traffic levels will reveal how the timelines for road investment should be revised.

The effects on **land use** take place over the long-term, and hence would be more significant in Scenarios 3 and 4 than in Scenarios 1 and 2. There would be tendency at the regional (Greater Golden Horseshoe) level towards greater sprawl as a significant portion of people are able to live further from their jobs. By contrast, the municipal level will see a trend towards localism, with people choosing to focus on local amenities. This means the region will become more poly-nodal (with a large number of small focal points rather than a small number of large focal points). Oakville's desirability as a place to live will depend more on its local amenities (and ease of access to them) than a place to commute from (and access to far-away job centres).

Common opportunities and challenges

There are number of opportunities and challenges that are common to all scenarios, and these are summarized in Table 5.

Table 5 – Summary of Opportunities and Challenges

Area	Opportunities	Challenges
Roads and traffic	Reduced auto demand makes re-allocating road space less controversial, for: • traffic calming and safety improvements • transit signal priority and HOV lanes • bike lanes • streetscape improvements	• Demand shifting from transit to car-based modes are result of health fears • Avoiding car use becoming further embedded on Oakville's travel patterns • Predicting long-term traffic volume trends is difficult at this stage, particularly in peaks (higher car-based mode share vs. economic effects and working at home).
Transit	• UofT survey shows 80% of 'lost' riders happy to return to transit in future • Under-used P&R can be converted to other uses (including development) • Potential for local transit changes	• Increased required public funding in short-term to maintain basic service • Balancing long-term demand and supply levels/methods to maintain acceptable financial performance
Active transportation	• Reduced auto demand makes re-allocating road space less controversial	• Making active transportation a more attractive option for short trips • Expanding perception of "short trips"
Public space	• Creating neighbourhoods where people can access all of most basic, day-to-day needs within a short walk of their home	• Accommodating public desire for outdoor rather than indoor activities, particularly for Town-operated facilities and during winter periods
Goods movement	• Less auto demand reduces potential delays for deliveries	• If delivery trips increase, congestion, pollution and accidents can worsen

Most significant risks

Managing the unique situation for society brings with it some significant risks:

- Embedding Oakville's car-orientated travel patterns, contrary to Oakville's policies and strategic aims (and Halton and Province); allowing lower-density/sprawling development in and beyond GGH
- Assuming that "working at home" is a viable option for the majority of residents; more generally, failing to take the needs to vulnerable groups into consideration when crafting public policies.
- Failing to correctly determine which temporary changes should to the transportation system and urban environment should be made permanent. Transit is especially vulnerable, as short-term network changes could have long-term ridership effects
- Changing long-term plans based on short-term trends and then producing outcomes that are contrary to the Town's strategic aims for its transportation system.

Conclusions

1. **This is a time of large-scale and rapid change in society.** Within a few weeks, the COVID-19 pandemic produced changes in public life and travel patterns of a scale that normally takes decades. Under all scenarios, those changes will continue in whole or in part for an extended period. No-one responsible for creating public policy (in transportation or other fields) has had to deal with anything like this before.

2. **Preventing and mitigating the negative effects of those changes requires rapid actions.** The changes from CVOID-19 are already in place and will continue to evolve if no actions are taken. The negative effects could include embedding car-dependent travel habits and land use patterns, contrary to Oakville's wider strategic aims. This memo has also described some of the other potential negative effects. Quick and decisive action is needed to deliver the changes Oakville wants.

3. **Town has opportunity to benefit from increased localism at municipal level**. Within municipalities, this memo has described how people will rely more on local amenities for everyday life. Oakville has multiple places in the town that can serve as focal points (such as downtown Oakville and Bronte). Further, the nodes and corridors in the Town's OPA 15 will help support this trend.

4. **Continuous investments into good quality public transit infrastructure and services,** in addition to cycling and walking infrastructure, are needed if Oakville wants to make sustainable modes of transportation attractive and safer especially in the wake of this crisis.

5. **Local environmental benefits are at risk.** Without decisive action, the recent drop in pollution will be a short digression from past historical trend, soon replaced by a return to growth in automobile traffic. This risk is a concern, given the mounting evidence that pollution probably makes us more vulnerable to crises.

6. **Social and urban patterns are important.** It is increasingly clear that the geography of inequality – the social divide – is a key determinant of COVID-19 incidence and prevalence. Promoting de-densification could be damaging socially, financially, and from a climate perspective

7. **Inaction would affect resilience** – strong resilience of the offering in the context of possible rapid fluctuations in demand in the future is required, since future crises are foreseeable