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Via2G Microtransit Pilot Evaluation

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ABSTRACT

Google partnered with Via to launch an on-demand microtransit called Via2G between January and March 2020. The pilot provided employees with free travel to/from two of its offices in suburban, congested Silicon Valley. While the pilot was cut short due to COVID-19, rider participation grew steadily during operation. Of trip requests, 8,636 (87.8%) resulted in a ride offer. Unfulfilled requests were primarily outside of pilot operating times or when rider demand exceeded driver supply. Most users (72%) completed at least two trips, although recurring users were less likely to complete errands on the commute and fewer had a car available for commuting compared to all surveyed Google employees. Prior to Via2G, two-thirds (66%) of survey respondents drove to work at least one day per week, while a plurality (42%) drove five days per week. Compared to non-participants, pilot users were more likely to take ride-hail (14 vs 22 percent) or the Google Bus (24 vs 30 percent) at least once a week prior to the pilot. Recommendations suggest iterations for Google or other centralized employers to consider in future microtransit programs.

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I. Introduction

Driving alone to work has benefits, but also incurs costs for the individual, their employer, and society as a whole. Solo driving increases the number of vehicles on the road, adding to congestion, air, and noise pollution. Employees who drive to work also require parking, which can be expensive for employers to provide. Past research finds that employer-subsidized parking bolsters solo driving (Willson 1992), and removing parking subsidies can reduce solo driving and increase travel by other modes (Shoup 1997, Willson and Shoup 1990, Su and Zhou 2012). In addition, parking represents large opportunity costs through a minimally productive land use.

Shared and/or pooled rides confer benefits opposite to the many costs imposed by solo driving. Pooled rides can, for example, help reduce congestion, improve air quality, and reduce parking demand. They may also relieve commuters of vehicle operating costs, and in some cases could eliminate the need for car ownership. Pooling can also kindle interactions and communication between employees and offer employees the opportunity to conduct other tasks while commuting (Shaw et al. 2019).

For these reasons, among others, employers often seek alternatives to solo driving for their employees. Google's campuses in Silicon Valley provide various employee commute programs. In October 2019, the company contracted the company Via Transportation Inc. (Via) to offer a new on-demand microtransit commute option, called Via2G. The program is open to employees who commute to the Sunnyvale and Mountain View campuses and live in nearby communities. This report provides background on the Via2G program, overviews the research methods, and discusses preliminary outcomes of Via2G service from January 1 to March 5, 2020. The program enjoyed increasing popularity over its three-month operations, providing more than 7,500 rides to nearly 900 Google employees. The service proved particularly popular for employees without cars. Most trips were relatively short (3.4 miles on average) and users hailed one trip per week on average suggesting that, in the first three months of operation, the Via2G program complemented rather than substituted peoples' existing commute modes.

II. Background

Google has long-offered company-sponsored travel options for employees, and the company's commute mode share diverges greatly from the surrounding region. In 2019, 42.2 and 46.1 percent of Google Mountain View and Sunnyvale employees drove alone to work, respectively, compared to 76.4 percent of commuters driving alone in the surrounding Santa Clara County (Google 2019, U.S. Census Bureau 2018). Prior to the Via2G pilot, Google provided commuters with a suite of travel modes, amenities, and benefits including: the GBus commuter shuttle (the most popular alternative to solo driving among commuters); fully-subsidized Valley Transportation Authority transit passes; bike-supportive facilities including bike parking, lockers, changing room, showers, on-site bike repair, and subsidies to purchase an e-bike; app-based carpool services including Waze Carpool; a multi-company sponsored connector shuttle, MVgo; more than 3,400 EV charging ports; and free parking for employees opting to drive (Google 2019). Google also operates a bikeshare system, GBikes, for employees to traverse Google campuses (Google 2019).

Current population growth forecasts and Santa Clara Valley geographical and transportation network constraints have amplified discussions about solo-driving commute alternatives. In 2019, the number of Google employees grew at both their Mountain View and Sunnyvale campuses (Google 2019). Google also projects substantial growth in the coming years, adding millions of square feet of corporate development and housing in campus-adjacent neighborhoods. In addition, geographical and built environment constraints, including the San Francisco Bay to the north of the campuses, and limited access roads to each campus present challenges for designing commute alternatives and keeping travel times down. These same constraints, however, also yield opportunities as most commuters arrive to work along a limited number of corridors.

2.1 Pre-Pilot Google Commuting Patterns

Prior to the introduction of Via2G in October 2019, Google employees at its Sunnyvale and Mountain View, CA campuses commuted largely in single occupancy vehicles. Sunnyvale and Mountain Views' locations in fairly-suburban Silicon Valley, where land uses, infrastructure, and services are less conducive to walking, biking, and transit, and where driving often proves an appealing option for Google employees. Figure 1 shows the morning commute mode split at both campuses in September 2019, just before the introduction of Via2G. In this report, we separate results for the Sunnyvale and Mountain View campuses for three primary reasons: (1) the campuses are located approximately four miles apart in distinct built environments; (2) the modal split prior to the pilot were, while not dissimilar, unique to each campus; and (3) the Via2G pilot rolled out to the campuses at different time points.

SUNNYVALE



Figure 1a. 2019 Pre-Pilot Modal Split at Sunnyvale Campus



MOUNTAIN VIEW

Figure 1b. 2019 Pre-Pilot Modal Split at Mountain View Campus Source: Google Commuter Survey deployed to all Google employees. Morning commute mode choice splits at the two campuses are similar, with about 42% of employees driving to the Mountain View campus and about 46% driving to work at the Sunnyvale campus. Employees traveling to the two campuses exhibit similar shares for other modes; the most notable differences between the campuses include a slightly higher bicycle commute share to Mountain View, and slightly higher transit mode share at Sunnyvale.

Very few employees at either campus used a vanpool, taxi, or ride-hail (e.g. Uber or Lyft) in 2019. These modes are similar in certain ways to the Via2G service, which introduces an app-based ondemand microtransit service. Limited use of on-demand and pooled modes prior to the pilot presents three potential implications for the Via2G service. First, it suggests that if few people are currently using shared and/or on-demand modes, substantial room for growth in these commute modes exists. Second, limited use of taxis, vanpools, and ride-hail could represent little interest in these modes; if true, the Via2G program may not be of great interest to employees and would see few trips or users. And finally, the small share of employees taking a taxi, vanpool, or Uber/Lyft to work in 2019 may reflect barriers to on-demand modes; in particular, previous research finds that cost deters people from selecting ride-hail over other modes (Dong, 2020). A Via2G program would remove all cost barriers by providing free on-demand travel to/from the Mountain View and Sunnyvale campuses. If cost barriers represent a primary deterrent to using taxis, ride-hail, and/or vanpool, we would expect demand for Via2G to be relatively high.

Shifting commute share from driving to other modes would benefit Google, individual commuters, and the community at large. Owning and operating a personal vehicle incurs cost on the user, and driving does not allow travelers to maximize commute time for other activities such as working or reading. Google provides parking facilities for employees who choose to drive to work, which incurs direct construction and maintenance costs for the employer, as well as lost opportunities in the land occupied by parking. Lastly, driving to work adds vehicles to public roadways, which incur societal costs of congestion as well as air and noise pollution. Active and collective transportation options such as walking, bicycling, public transit, shuttles, and vanpooling can help mitigate some of these individual, company, and societal costs.

III. Via2g Microtransit Pilot

The Via2G pilot aimed to reduce solo driving trips to and from Google's Mountain View and Sunnyvale campuses. The program aligns with local jurisdictions' requirements that Google reduce employee solo drive trips prior to the approval of Google's planned real estate expansion. Since land uses where many current and future Google employees live is less conducive to walking, bicycling, or taking transit to work, Google hopes that a shared, on-demand, curb-to-curb, microtransit service could help reduce the number of employees choosing to drive to work, and mitigate the negative externalities of driving including congestion, air, and noise pollution. Via2G presents employees with an alternative shared on-demand transportation option.

3.1 Program Development and Flow

For the microtransit pilot, Google partnered with Via. Google provides drivers and vehicles, and Via provides the mobile phone app used by both drivers and riders for routing, trip planning, booking, and payment (when applicable). The service, Via2G, is free for all Google employees, but may be expanded to other users such as contractors for a small fee in the future. The program planning and implementation process is shown in Figure 2.



Figure 2. Via2G Program Planning and Implementation Flow ¹Full scale implementation was put on hold in March 2020 due to statewide shutdowns mandated during the COVID-19 pandemic.

1

Via2G services were available from 7am to 10am and from 4pm to 7pm Monday through Friday. During pilot hours, users could request a ride between either campus or anywhere in the pilot zone. All rides could be shared with other travelers and, in some cases, riders were required to walk short distances to be picked up. These short walks increased routing efficiency and reduced overall trip times for shared rides. Users could cancel a ride, drivers were required to accept all ride requests, and pick-up and drop-offs were optimized by Via's routing program.

Via2G service rolled out in phases to gradually add campuses and service zones. Figure 3 shows the seven pilot zones serving the Sunnyvale and Mountain View campuses and Figure 4 shows the roll out schedule by zone.



Figure 3. Via2G Service Map



Figure 4. Via2G Rollout Schedule

The pilot began with a soft launch on October 28, 2019 with plans to run for one year; however, Via2G shuttered temporarily on March 18, 2020 in response to the COVID-19 pandemic. The pilot rolled out gradually in three phases, with multiple zones in each phase. Phase 1 opened Via2G to the Sunnyvale campus and provided service to Google employees working at Sunnyvale in zones 4 (Sunnyvale West), 5 (Sunnyvale Central), and 6 (Sunnyvale East). Via2G increased its number of operating vans over the Phase 1 rollout and had 10 vans in service at both morning and evening peak periods by February 2020.

Phase 2 of Via2G began on February 20, 2020. Phase 2 expanded the service to include commutes to and from the Mountain View campus. Employees in zone 1 (Mountain View West) could then use Via2G to get to and from the Mountain View campus. Phase 2 planned to also open up the service to Google employees in zones 2 (Mountain View Central), 3 (Mountain View East), and 7 (Santa Clara West) to commute to and from the Sunnyvale campus, but the pilot did not reach that stage before the temporary pause due to COVID-19.

Phase 3 of the program is slated to begin following Phase 2 and will allow employees to access either the Sunnyvale or Mountain View campus from any of the seven zones. Phase 1 and 2, in contrast, only allowed employees to travel within zones assigned to their campus.

3.2 Employee Recruitment

Google directly contacted employees to inform them of the Via2G pilot and survey them about existing commute behaviors as well as their interest in Via2G. Employees were sent two emails: one email with a short survey in advance of program launch in their zone, and a second email on the day of launch announcing the availability of the program for the newly eligible (i.e., new service areas) employees. The first email that employees received varied slightly. As Via2G launched, Google was simultaneously examining different marketing techniques and sent three different messages to a randomly assigned third of contacted employees. Some employees received an email noting that avoiding driving in traffic and parking at work could reduce stress, others received an email on the potential sustainability benefits of shared transportation options, and the remaining employees received a control email that did not note either of these factors. This analysis takes into account the responses by email communication received.

IV. Objectives

4.1 Employer Objectives

Via2G aims to give employees additional commute options without having to drive and park. Google set specific key performance indicators to measure progress towards this goal. Employer-side objectives include:

- Reduce single-occupancy commuting to/from the Mountain View and Sunnyvale campuses for commuters living within a 10-mile radius
- Mitigate congestion and environmental externalities (e.g. air and noise pollution) associated with solo vehicle miles traveled to/from the Mountain View and Sunnyvale campuses
- Reduce parking demand in anticipation of future reductions in parking supply

4.2 Research Objectives

In addition to employer objectives, the Via2G pilot evaluation laid out four research objectives:

- Monitor new and repeat riders of Via2G
- Examine temporal ridership patterns on Via2G
- Document mode shift among Google employees
- Evaluate service performance including cancellations, walk distances, and wait times

These objectives are measured through quantitative assessment detailed in the following sections of this report.

V. Data & Methods

5.1 Pre-Pilot Survey

In October 2019, all Google workers living in the Via2G pilot zones were sent a pre-pilot survey to understand employees' pre-pilot commute modes (the full survey is included in Appendix A). In total, 2,339 people, including 2,306 Google employees, completed the survey (see Table 1). The remainder of this report focuses only on Google employees. Of the 2,306 employees who responded to the survey, 890 (38.6%) have taken at least one Via2G trip.

	Number of respondents
Employees	2,306
Interns	4
Temps	7
Vendors	17
N/A	5

Table 1. Number and	d Position of	Survey Res	pondents
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5.2 Via Data

In addition to survey data, we utilize trip request data from Via to examine the Via2G pilot to date. This report analyzes trip requests made between January 1 and March 5, 2020. Each trip request included data on 23 variables, listed in Table 2. Data varied by whether or not a trip request resulted in a completed booking. We successfully linked the Via trip request data to the Google employee survey data using anonymous Rider IDs in each survey. Linking the datasets enables analysis of how Via2G use varies by employee characteristics such as prior commute mode, which program marketing email was received, and car ownership.

Data for All Requests	Data for Completed Trips
Rider ID	Van ID
Origin latitude/longitude	Vehicle make
Destination latitude/longitude	Walk distance to pick up (feet)
Request date/time	Pick up date/time
ETA at trip proposal	Drop-off date/time
Number of passengers requesting trip	Actual wait time (minutes)
WAV ¹ request (yes/no)	Ride distance (miles)
Ride status	Ride speed (mph)
Cancelled date/time	Ride rating
No show date/time	
Request never accepted (yes/no)	
Shared with another ride (yes/no)	
Driver reassignment	
Zone	

Table 2. Via Trip Request Data Variables

¹WAV= wheelchair accessible vehicle

This report utilizes the employee survey and Via trip request and trip completion data to provide a first look at how the pilot performed. We organize the following findings sections thematically around key performance indicators.

VI. Findings

6.1 Survey Respondent Characteristics

Few employees knew of the Via2G program prior to receiving the survey invitation email (11.7%, n=270). Employees who did not own a car were slightly more interested in the pilot compared to employees who owned a car (26 vs. 23%, respectively); Table 3 also shows that, among drivers, interest in the Via2G pilot was higher among those who drove more frequently to work.

Table 3. Interest in Via2G Pilot by the Number of Days Employees Commute by Car

Days commute car per week	by	No	Yes
0 days		39%	33%
1-2 days		13%	12%
3-4 days		10%	12%
5 days		39%	42%
Total		100%	100%

Interest in pilot

All employees received one of three randomly-assigned emails as part of a separate but parallel communications evaluation. Travelers in the randomly generated groups varied slightly from one another (see Table 4) in their pre-pilot mode use. A higher share of employees who received the *Reduce Stress* email had a car available for commuting compared to the *Control* group (79% vs. 73%, respectively). A higher share of employees who received the *Reduce Stress* email also drove to work at least once per week (29%) compared to either the control (20%) or *Sustainability* (23%) email group.

able 4. Respondent Characteristics by Email Message Received
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	Billuit IC	een eu		
	Control	Stress	Sustainability	Sig.
% interested in pilot	92%	92%	89%	NS
% with car for commute	73%	79%	77%	Stress sig diff than control (**)
% who make errands on commute	28%	26%	26%	NS
% Drive to work, sometimes (at least once per week)	20%	29%	23%	Stress sig diff than other two groups (control***/sustain*)
% Drive to work, always	44%	42%	46%	NS

Email Received

Tests for statistical significance between groups: NS not significant, *p<0.1 **p<0.05 ***p<0.01.

6.2 Travel Behavior

As of October 2019, prior to the Via2G pilot, two-thirds (66%) of respondents drove to work at least one day per week, while a plurality (42%) drove five days per week. Very few ever took transit (5%). Shared modes—including the Google Shuttle, carpooling, taxis/ride-hail, and shared ride-hail services—were more common commute modes compared to transit, but most were utilized 1-2 times per week rather than used as routine commute modes (see Table 5).

	Drive alone	Google shuttle	Bike/ Walk '	Transit	Carpool	Taxi/ Ride-hail	Shared/ Pooled Ride-hail	Work from home	Other
0	33.8%	76.8%	72.5%	95.3%	88.2%	90.1%	86.6%	94.5%	98.6%
days	(41.2%)	(70.1%)	(70.6%)	(92.5%)	(87.1%)	(85.1%)	(78.8%)	(94.8%)	(98.3%)
1-2	12.2%	9.1%	8.9%	2.9%	5.2%	7.1%	9.4%	5.5%	0.7%
days	(12.1%)	(11.6%)	(10.9%)	(5.4%)	(7.4%)	(11.3%)	(16.0%)	(5.2%)	(1.1%)
3-4	12.1%	8.3%	9.4%	0.9%	3.3%	1.6%	2.7%	0.0%	0.3%
days	14.2%)	(12.3%)	(10.4%)	(1.4%)	(2.7%)	(2.2%)	(3.6%)	(0.0%)	(0.3%)
5	41.9%	5.9%	9.2%	0.9%	3.3%	1.2%	1.3%	0.0%	0.5%
days	(32.6%)	(6.0%)	(8.2%)	(0.8%)	(2.8%)	(1.4%)	(1.6%)	(0.0%)	(0.3%)
Total	100%	100%	100%	100%	100%	100%	100%	100%	100%

Table 5. Travel Mode to Work Prior to Pilot, All Survey Respondents and (Via2G Users)

Due to rounding, columns may not sum to 100%.

Of surveyed Google employees, 895 requested at least one Via2G trip between January 1 and March 5, 2020, and all but 5 of these employees requested a trip and completed the pre-pilot survey. Of employees who requested at least one trip, more than half (59%) always or sometimes drove to work. Employees who requested at least one Via2G trip exhibited different pre-pilot commute patterns compared to those who never requested a ride: before the pilot, Via2G users drove alone less, carpooled less, and hailed a ride-hail vehicle more frequently compared to all surveyed employees. Internal Google surveys show that during the pilot period, drive alone rates for employees living in Via2G service areas fell from 53 to 46% in the Sunnyvale office and from 42% to 39% in the Mountain View campus.

On average, Google employees requested 1.18 Via2G trips per week, including weeks when employees requested zero trips. Of 895 Via2G users, about half (54%, n=481) requested a round trip on at least one day; the average percentage of round trip requests is 30.4%. Excluding zerotrip weeks, employees requested 2.83 trips per week on average. Not all employees who requested a Via2G completed a trip; 595 of the 895 users (66%) who requested a trip actually completed a trip. Employees who completed at least one trip have taken 12 trips (or about 2.5 trips per week enrolled in the pilot) on average. The majority of commuters were recurring users: 72% (n=646/895) of users requested at least two Via2G trips, and 53% (n=481/895) completed two or more rides. Among users who completed at least one trip, 81% took subsequent trips. Primary differences between requesters—those who requested at least one trip but did not complete any and those who completed trips appear to be based more on personal characteristics than traits of their requested rides, which were relatively uniform across groups (see Table 6). Requesters who never actually completed a Via2G trip were more likely to run errands on their commute, have a car available, and always drive to work compared to employees who completed one or multiple trips.

	Requestor: Requested 1+ trip, but Zero completed trips	Single Rider: Completed 1 trip	Recurring Rider: Completed 2+ trips
Avg. ETA (min)	10.63	10.95	11.18
Avg. Difference between Actual Wait Time and ETA (min)	-1.24	0.52	0.22
Avg. Walk Distance (miles)	0.03	0.03	0.03
Avg. Trip Distance (miles)	3.14	3.01	3.28
% Complete errands on commute	28.2%	22.2%	19.8%
% Car available for commute	79.7%	76.4%	53.8%
% Drive sometimes	26.2%	27.8%	25.8%
% Drive always	47.0%	36.1%	24.2%
Number of Employees	300	114	481

Table 6. Via2G Rider Attributes by Request and Ride Numbers

6.3 Via2G Trip Request Trends

Google employees made a total of 9,831 Via2G trip requests between January 1 and March 5, 2020. The number of trips per weekday increased over time as the pilot expanded to new zones and additional employees joined the pilot (see Table 7). Nearly all (98.8%) of trip requests were completed by the first driver assigned to the request; just 119 (1.2%) of trip requests switched drivers due to real-time changes in the overall system.

	Number of Trips per Weekday ¹	Additional Weekday Trips Compared to Previous Month		
January	143	-		
February	261	+118		
March	325	+64		
Overall ^p	209			

Table 7. Via2G Trip Requests by Month

¹Per weekday that the pilot operated during the given month: January had 23 weekdays of pilot operation, February had 20 days, and March had 4 days. ²Overall indicates the number of trips per weekday across the entire study period.

Of trip requests, 8,636 (87.8%) resulted in a ride offer. About two-thirds of requests (n=831/1,195) that did not result in a ride offer were outside of pilot operating times. Figure 5 shows the distribution of trip requests made inside and outside of pilot hours. Four percent (n=371) of trip requests made during operating hours were not offered a trip by Via. This result is most likely because demand exceeded supply when the requests were made, meaning there were no drivers with available capacity that could pick up the rider under the wait time limit (up to 20 minutes pre-December 4, 2020, and 25 minutes on and after that date) and walk distance (250 meters, increased to 400 meters on February 19, 2020).



Grey bars indicate trip requests outside of pilot hours; black bars indicate trip requests inside of pilot hours.

Hundreds of requests outside of service hours suggest that employees may not be reading full information about the program, and/or that there may be latent demand for additional service, especially between 10am and 4pm as well as from 7pm to 8pm.

Figure 6 shows that, when examined by day of the week, the number of requests is higher in the middle of the week (Tuesday through Thursday) than on either Monday or Friday.



Figure 6a. Number of Requests by Day of the Week



Figure 6b. Number of Requests by Hour by Day of the Week

Of total trip requests, 76.6% (n=7,537) resulted in a completed trip. Table 8 shows the ride status, average ETA, and average walk distance of all requested trips, including WAV trips. Average wait times were higher for trips that riders cancelled (15.53 minutes) compared to the average trip request (11.43 minutes). Trip proposals not accepted by riders also had higher average ETAs (13.38 vs. 11.43 minutes) and walk distances (0.031 vs 0.028 miles) compared to the average trip. Just seven wheelchair accessible vehicle (WAV) requests were made between January 1 and March 5, 2020. Of these requests, three were completed, three were not offered a trip, and one trip proposal was not accepted by the rider.

Ride Status	Number of Rides	Percentage of Total Rides	Mean ETA (minutes)	Mean Walk Distance (miles)	Number of WAV Requests
Completed	7,537	76.67%	11.09	0.027	3
Admin cancelled	6	0.06%	11.13	0.009	0
No show	15	0.15%	14.13	0.035	0
Rider cancelled	189	1.92%	15.53	0.034	0
Trip proposal not available to rider ¹	1,195	12.16%			3
Rider did not accept trip proposal	889	9.4%	13.38	0.031	1
Total Requests	9,831	100%	11.43	0.028	7

Table 8. Ride Status for all Via2G Trip Requests

¹Includes 299 trips requested outside of pilot hours

6.4 Via2G Completed Trip Trends

Between January 1 and March 5, 2020, Google employees completed 7,537 trips. Table 9 shows the number of completed trips by zone over time; the number of completed trips over time largely reflects the rollout of the pilot across zones over time. Daily ridership over time rose as access to the service increased, but also increased over time in existing zones.

	Sunnyvale Central	Sunnyvale East	Sunnyvale West	Mountain View West	Total
January	1,760	599	138	N/A	2,497
February	2,462	855	572	104*	3,993
March	537	183	106	172	998
Total	4,759	1,637	816	276	7,488

Table 9. Completed Trips over Time by Zone

Note: 49 completed trips were not associated with a zone in the Via data; March trips are only for March 1-5. Mountain View pilot rolled out February 20.

Table 10 shows the average trip characteristics of all Via2G trips completed between January 1 and March 5, 2020. The average trip required riders to walk 0.03 miles. The average trip lasted about 18 minutes and was 3.4 miles long. Riders were, on average, quoted an 11.09-minute estimated time of arrival; actual wait time was just slightly longer than the quoted ETA at 11.26 minutes. Of completed rides, about 6% (n=463/7,537) had actual wait times five or more minutes longer than quoted ETA. There is no statistically significant correlation between the difference in quoted versus actual wait time and the number of trips employees have taken. Of total completed rides, 72% of bookings were shared with another rider.

Table 10. Completed Trip Characteristics

	Mean	St Er
Avg Walk Dist (miles)	0.03	0.00
Avg Trip duration (min)	18.09	0.10
Avg trip distance (miles)	3.40	0.01
Avg trip speed	13.11	0.25
Avg ETA (min)	11.09	0.07
Avg actual wait time	11.26	0.08
Avg difference between estimated and actual wait times	0.17	0.03

Bolded variables are pilot KPIs

Table 11 and Figure 7 show that the average, minimum, and maximum number of Via2G riders per day grew between January and March. The average number of riders per day grew from 79 riders in January to 123 and 121 riders per day in February and March, respectively.

	Avg	Min	Max
January	79	0	169
February	123	1	248
March	121	4	225
Overall	104	0	248

Table 11. Average, Minimum, and Maximum Number of Riders per Day over Time

All statistics in this table reflect pilot KPIs.





Figure 7. Average, Minimum, and Maximum Number of Riders per Day over Time

VII. Recommendations

The following recommendations relate to both the employer objectives and research objectives of the Via2G pilot.

• Objective: Mitigate congestion and environmental externalities of driving alone to work.

Recommendation: Via2G should look into ways to minimize deadheading, which adds VMT and air and noise pollution without the utility of a completed trip.

Trip assignment and reassignment may also have an impact on deadheading. In rare instances (119 rides, 1.12% of total requests), riders were assigned to one driver, and were then manually switched by Via2G dispatchers based on real time information of driver delay among other reasons. Given the infrequent rates of reassignment, reassignment is unlikely a significant source of deadheading or excess VMT.

• Objective: Monitor new and repeat Via2G riders, document mode shift, and equip Google to reduce single-occupancy commuting to/from the Mountain View and Sunnyvale campuses for commuters living within a 10-mile radius.

Recommendation: Future programming and/or evaluations should focus on employees who always drive, as well as those who complete errands to/from work.

Challenges with the Via2G service include those observed prior to, as well as related to, the COVID-19 pandemic. Challenges prior to the pandemic include attracting first time and repeat riders to the Via2G service, particularly among employees who have a car available for their commute, always drive, and complete errands to/from work. Employees with those characteristics were more likely to request trips but not actually take them, suggesting that they are interested in the program, but that it does not quite meet their needs. Future surveys may examine perceptions of the Via2G service and rider demographic information to provide greater insights into attracting and maintaining Via2G ridership. Better understanding travelers' transportation constraints, characteristics, and needs may further reduce single-occupancy commuting to Google campuses and its associated parking, congestion, and environmental externalities.

• Objective: To reduce single-occupancy commuting, mitigate congestion and environmental externalities associated with it, and reduce parking demand. Recommendation: In conjunction with further examining temporal ridership patterns, Google should consider expanding service hours to examine latent demand between 10am and 4pm as well as later in the evenings, Monday through Thursday. It is possible that some employees drive to work if their preferred or required arrival or

It is possible that some employees drive to work if their preferred or required arrival or departure time is not within the Via2G pilot service hours. Program adjustment,

monitoring, and/or additional employee surveys are needed to evaluate the potential effects of shifted or expanded program hours.

 Objective: To continue to reach all research and employer objectives in a changed environment with COVID-19.
 Recommendation: Via2G should continue the pilot and associated research.
 Google and Via should resume the Via2G pilot, when possible, to continue monitoring progress towards the employer objectives.

VIII. Next Steps

The Via2G pilot is currently on hiatus due to the COVID-19 pandemic. The pilot is slated to roll out to additional zones and employees once Google employees return to work at the Sunnyvale and Mountain View campuses.

While short- and long-term impacts of the pandemic are still unknown, challenges may include increased hesitation to use shared transportation modes. Changes in work from home policies may also alter how often and when people commute.

Future work will update the above analyses to track program performance metrics and pilot service over time, including tracking performance of individual zones once the pilot is fully implemented. In addition, future analysis will evaluate additional performance indicators not examined in this report such as travel time savings for employees using Via2G compared to alternative commute modes. Future work may also incorporate demographic survey data from Google employees to understand how pilot adoption and use varies by characteristics established within transportation literature to be strongly associated with travel behavior, such as age and gender. Distinguishing between frequent and infrequent Via2G users in future analyses could also yield insights into how employees use the microtransit service and how it integrates with their commute patterns and overall travel needs. Future research may also examine driver scheduling challenges and the mix of split and continuous shifts.

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Appendix a: October 2019 Employee Survey

Thank you for your willingness to help us improve commute options for Google employees! Google and Via Mobility are partnering to provide a new on-demand commute option to and from the Google MTV and SVL campus through the Via2G pilot that will be launched in phases. Google has also partnered with outside researchers to evaluate the pilot performance. In order to continue to improve future transportation options, we would like to know a little more about your commute patterns even if you are not interested in the new Via2G program.

Please take a few moments to help us understand your commute by completing this survey. Your responses are important to providing better transportation services and options to Google employees. The survey should take you less than 5 minutes to complete.

You will be notified when the pilot launches in your area and you can find more information at go/Via2G

- Do you have a car available to commute to work?
 - Yes
 - o No
- How do you typically get to work on most weeks? Note: Your answer will not affect your eligibility for the pilot.

Mode	5 days/week	2-4 days/week	0-1 days
 a. Drive alone b. Google shuttle c. Self-powered commute (e.g. bike or walk) d. Public transit e. Carpool f. Drop off (Taxi / Uber / Lyft) g. Shared ride (e.g. UberPool, Lyft Shared, Waze, Scoop) h. Do not commute (work from home or remotely) i. Other 			

• Which pilot zone do you live in?

You can use the search function to find your home address the map.

Note: Please be sure to update your home address on go/Workday

- 1. Mountain View West
- 2. Mountain View Central
- 3. Mountain View East
- 4. Sunnyvale West
- 5. Sunnyvale Central
- 6. Sunnyvale East

7. Santa Clara West

Other, your zip code _____

- Do you typically run errands on your commute to/from work? (e.g. pick up groceries, gym, family members, gym)
 - a. Yes
 - b. No
- Prior to receiving this email, had you heard of the Via2G program?
 - a. Yes
 - b. No

[If YES]

- Based on your previous knowledge about the Via2G program, are you more, less, or about as likely to try it?
 - More likely
 - About the same
 - Less likely
- [Check box] I would like to join this pilot and agree to completing no more than 2 additional surveys throughout the year to help assess the pilot.
- [check box] I'd like to receive more emails about other Transportation programs.

End survey text:

Thank you for completing the survey. We'll give you a heads up when Via2G is available in your area so you can start riding!

MTI FOUNDER

Hon. Norman Y. Mineta

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