Introduction

During the pilot program for the new Transportation Network Companies (TNC), Lyft and Uber, data records for rides originating or ending within the City of Portland were submitted and analyzed in order to better understand their transportation services and ensure compliance with every aspect of the pilot program. In addition to the TNC data, the City also requested that the six permitted taxicab companies submit similar data.

In order to accurately evaluate both industries, the City collected data for the month of May for all Lyft and Uber trips, but only taxicab trips requested through dispatch for immediate pickup (meaning that curbside hails and pre-ordered/reserved rides were excluded).

Although data collected from Lyft and Uber was provided in a format that was easy to analyze, the nature of the taxicab industry and its record keeping methods did not allow for as clear of a report. There were numerous issues related to the data collected that are important to understand for this analysis.

First, each taxi company has a different dispatch and reporting system to track their rides, each with its own format and capabilities. The data was reconciled as best as possible to provide an analysis of the entire taxi industry, but some taxi companies did not provide some data points due to their reporting systems. Second, taxi companies did not universally record ride destinations; therefore, this report omits analysis related to travel patterns for taxicab companies. Third, due to the inconsistency of data records, not all records could be analyzed. The data presented in this report represents extrapolated estimates for the entire industry based on the sample set available. The data for both industries is combined and outlined below, with graphs, charts and maps in the subsequent exhibits.

Fig. A1 – Map of ZIP Codes

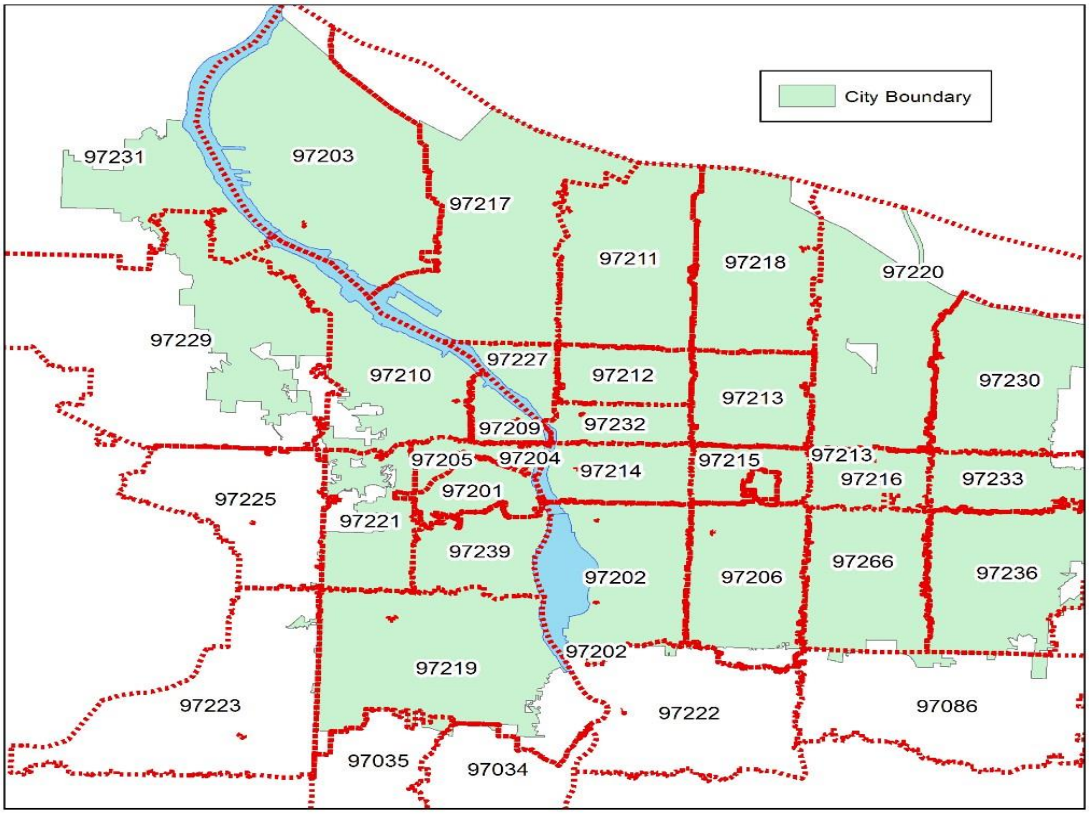


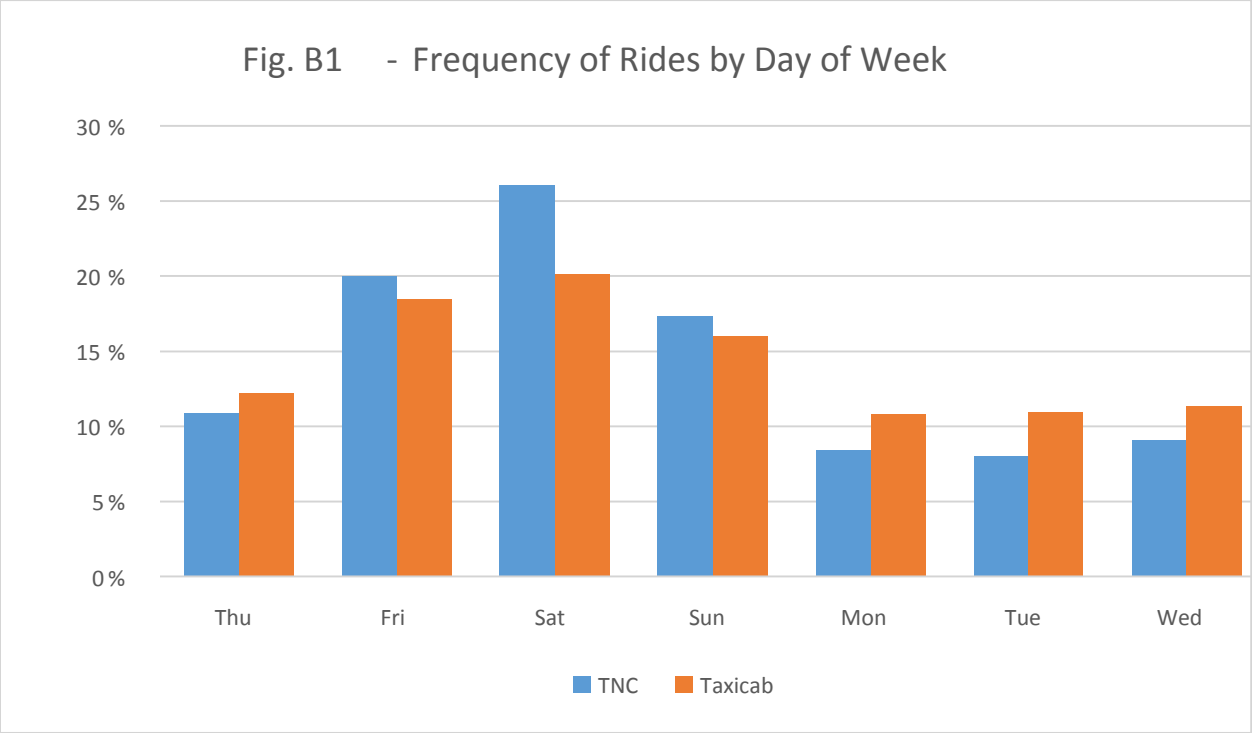
Fig. A2 – Neighborhood by ZIP Code

ZIP Code	Neighborhood
97201	Downtown|PSU|South Waterfront|Southwest Hills
97202	Sellwood|Eastmoreland
97203	St. Johns|University Park
97204	Downtown Core
97205	Goose Hollow|Downtwon Core
97206	Brentwood|Woodstock|Mt.Scott|Foster-Powell
97209	Pearl|Old Town
97210	Northwest|Hillside
97211	Woodlawn|Concordia
97212	Irvington|Alameda
97213	Rose City Park|Roseway
97214	Buckman|HAND|Sunnyside|Richmond
97215	Mt. Tabor
97216	Montavilla|Hazelwood
97217	Overlook|Kenton|Piedmont|Haden Island
97218	Cully|Airport
97219	Burlingame|Tryon-Stevens
97220	Montavilla|Hazelwood|Parkrose
97221	Sylvan
97222	Milwaukie|Southgate
97223	Raleigh Hills|Metzger
97225	West Slope
97227	Overlook|Boise|Eliot
97229	Forest Park|NW Heights
97230	Hazelwood|Russell|Wilkes
97231	Forest Park|Linnton
97232	Kerns|Lloyd
97233	Hazelwood|Centennial
97236	Pleasant Valley|Powellhurst|Centennial
97239	Hillsdale|South Portland|Homestead
97266	Lents|Powellhurst

DATE & TIME TRIP PATTERNS

For the month of May, there were approximately 43% of private for hire rides provided by TNCs (approximately 100,000) and approximately 57%[1] provided by taxicabs (approximately 130,000). As a percentage of total rides, both industries see peak ridership occur on the weekends, with lower ridership during the weekdays. The TNC industry gives a higher proportion of their rides on Friday and Saturdays when compared to the taxicab industry, while the taxicab industry sees a higher comparative proportion during the weekdays.

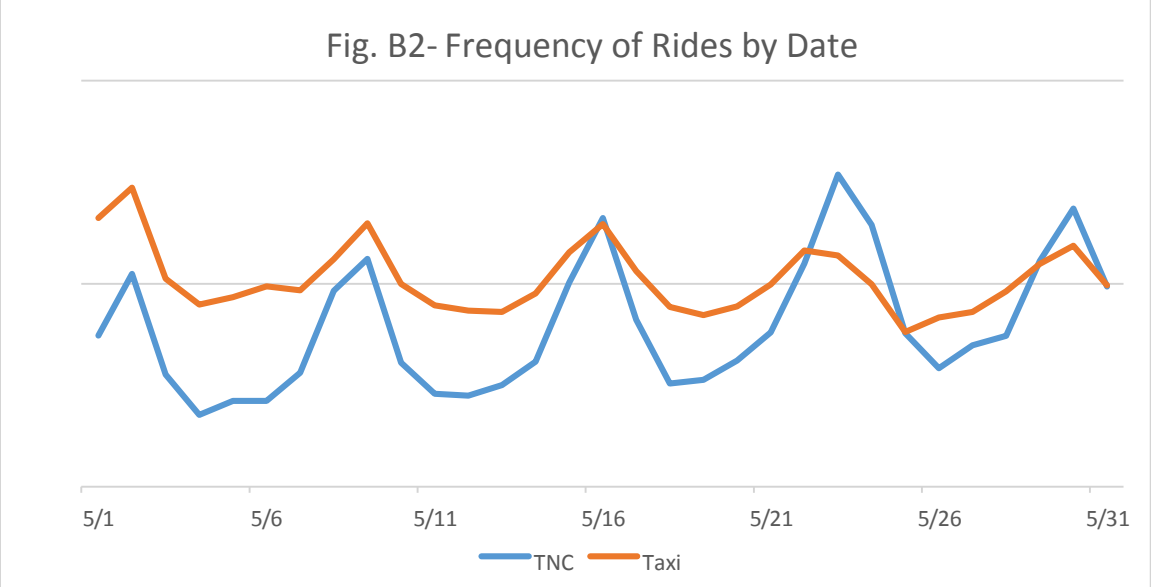
Fig. B1 - Frequency of Rides by Day of Week



Across the entire month, again, both industries saw similar trend patterns for ridership, with peaks during weekends and troughs during weekdays. At the beginning of the month, taxicabs saw greater ridership than TNCs during peaks in demand on weekends, while TNCs saw greater ridership than the taxicab industry toward the end of the month.

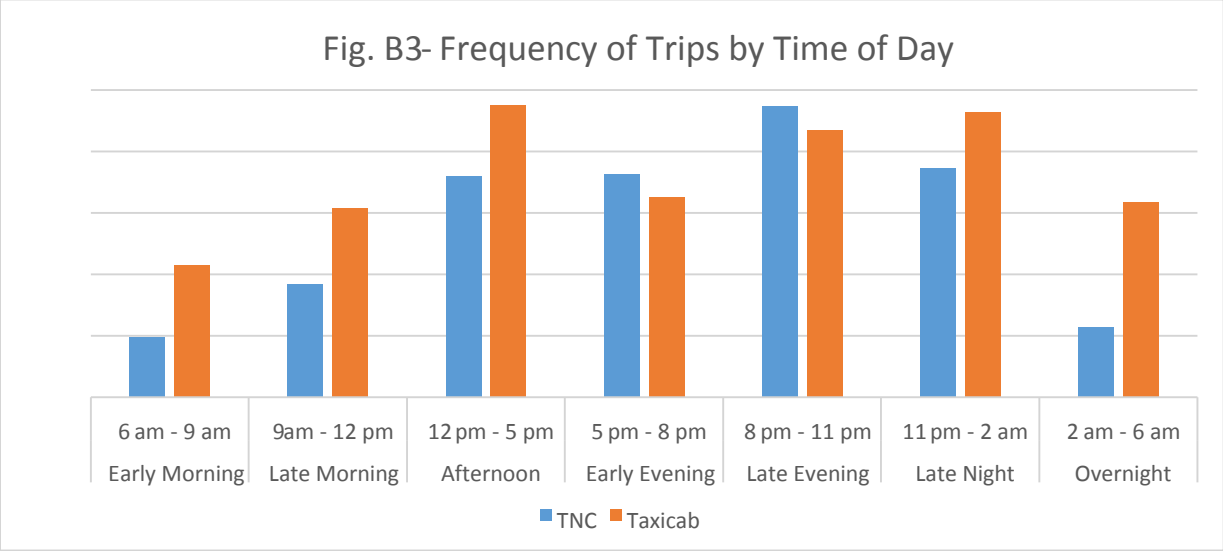
[1] Extrapolated from data set

Fig. B2

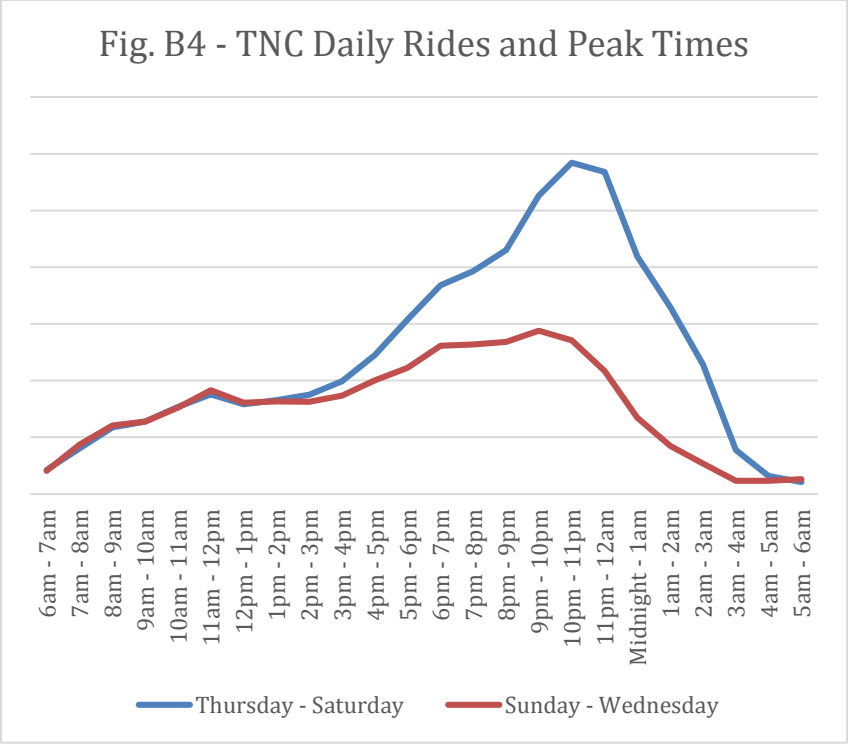


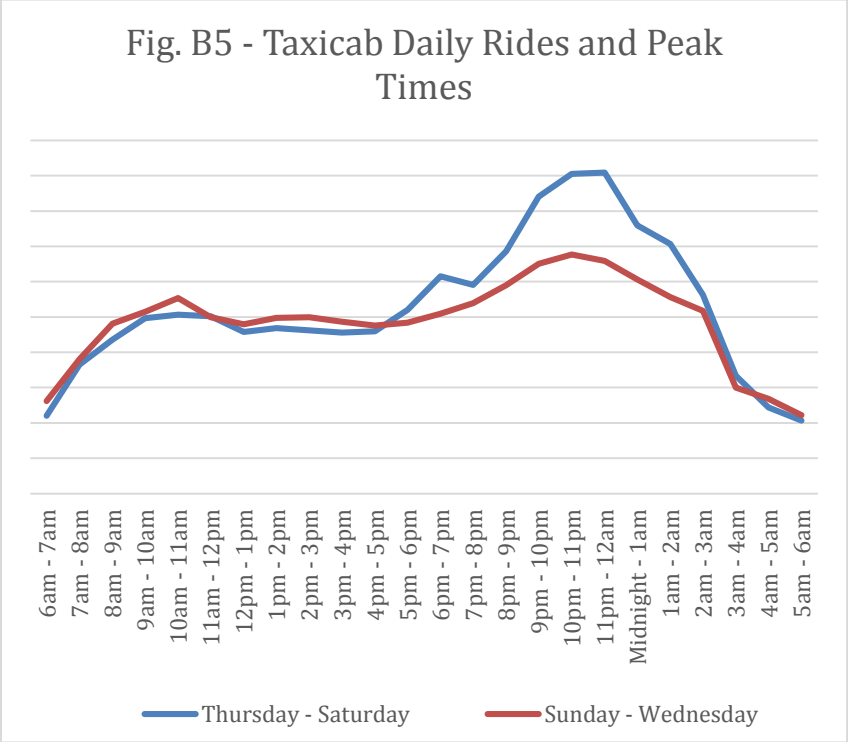
Based on time of day, both industries have a similar pattern of ridership. However, taxicab ridership tends to stay stable during the daytime hours, and increases until its peak at around midnight. The TNC industry sees much lower and variable ridership during the daytime hours, which slowly increases throughout the day until its peak at around late evening.

Fig. B3



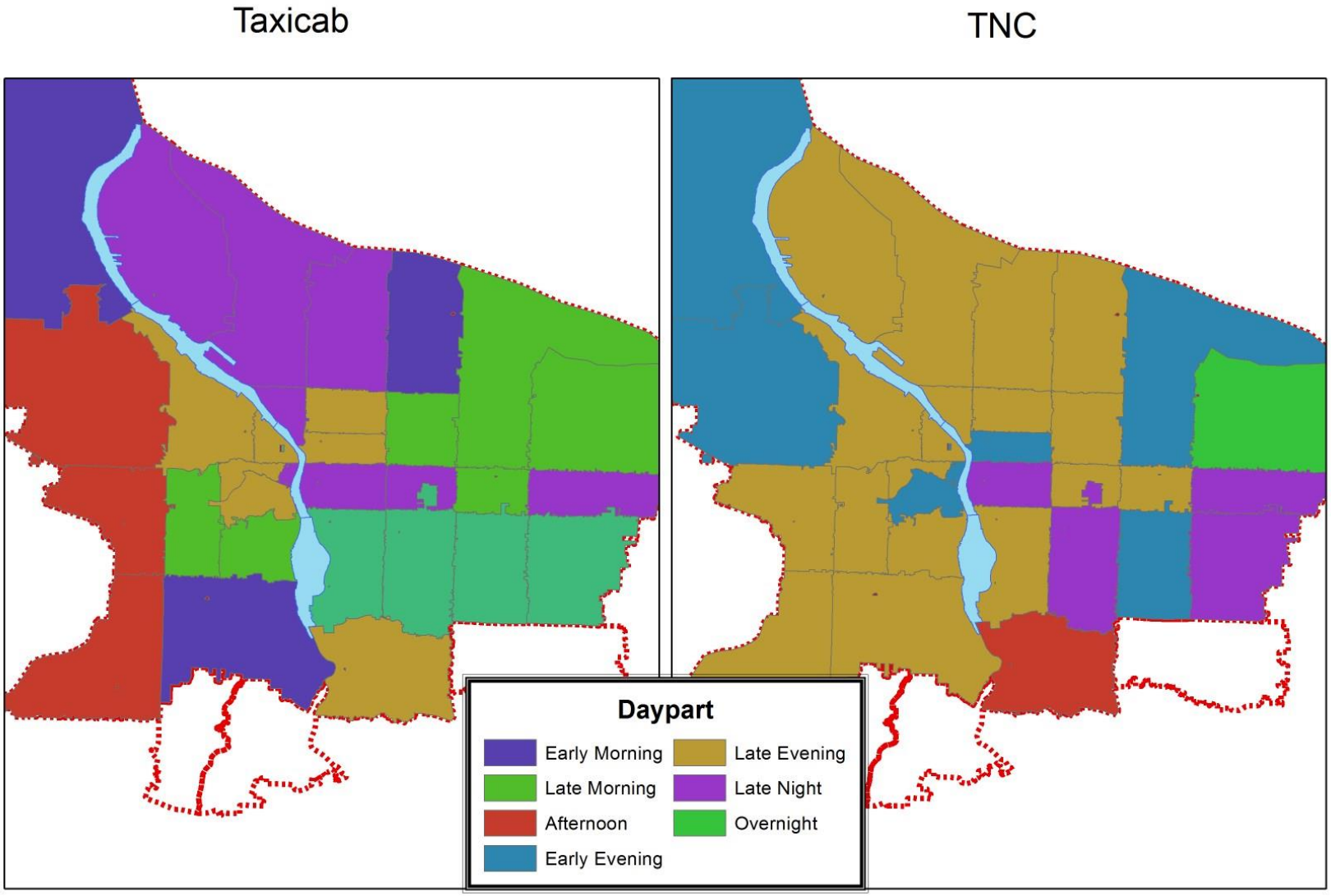
Based on time of day and day of the week, the taxicab industry sees higher and more stable ridership during the weekdays and daytime hours, with a smaller peak during the weekend and evening hours. The TNC industry, on the other hand, sees a much sharper increase in rides on the weekends and evening/late night hours.





For the most part, the peak request time for TNCs across all of the ZIP codes was during the late evening hours. Taxicabs, on the other hand, have a wide variety of peak request times.

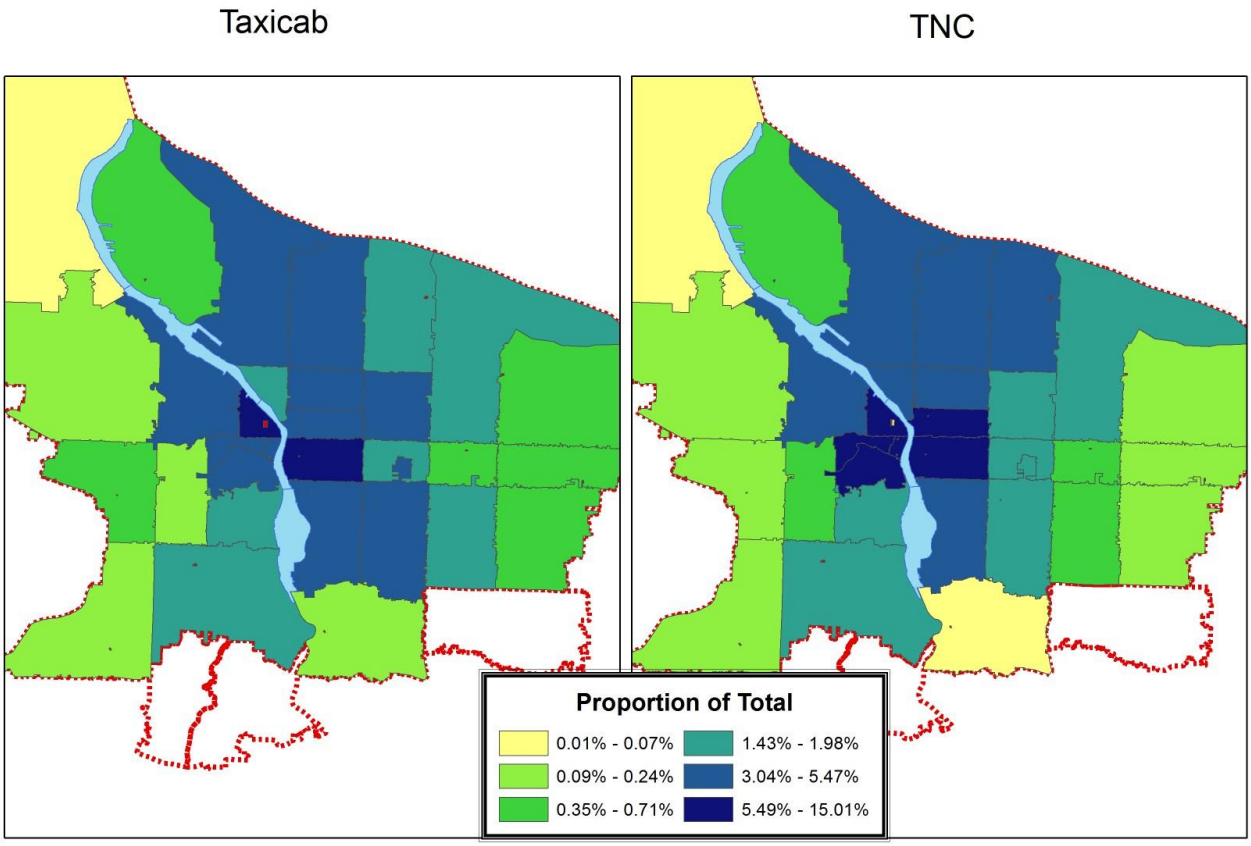
Fig. B6 - Peak Request Time by Originating ZIP Code



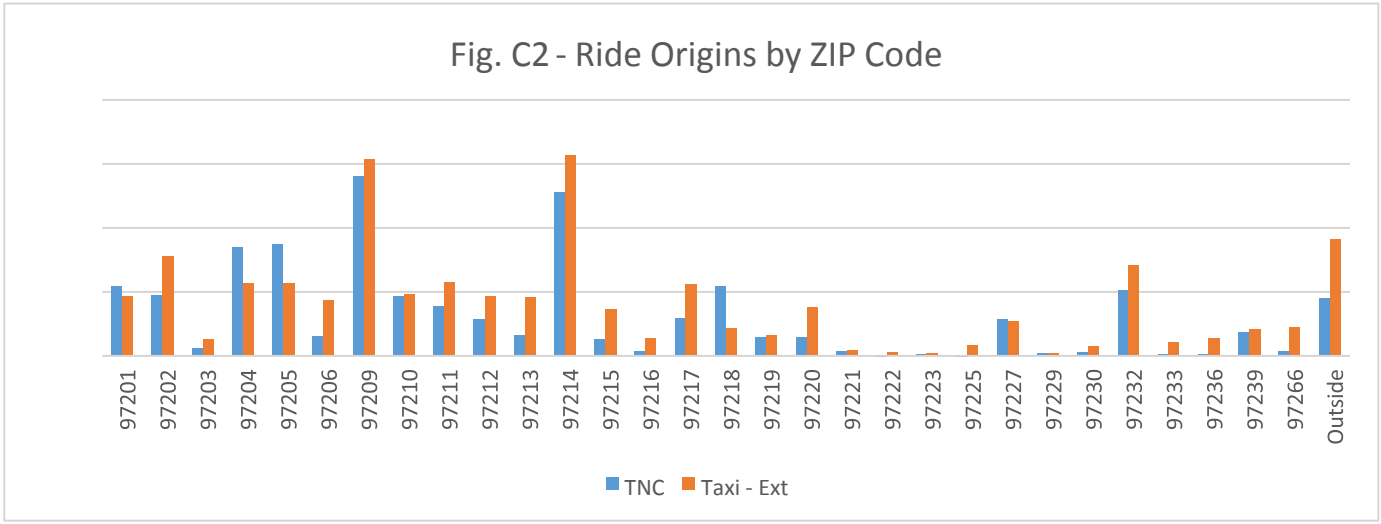
LOCATION TRENDS

With both the TNC and Taxicab industry, the largest proportion of rides originate near the city center, with a lesser proportion originating the further out.

Fig. C1 - Percentage of Rides by Originating ZIP Code



Although the actual number of rides varies from ZIP code to ZIP code, both industries see similar trip origin patterns.

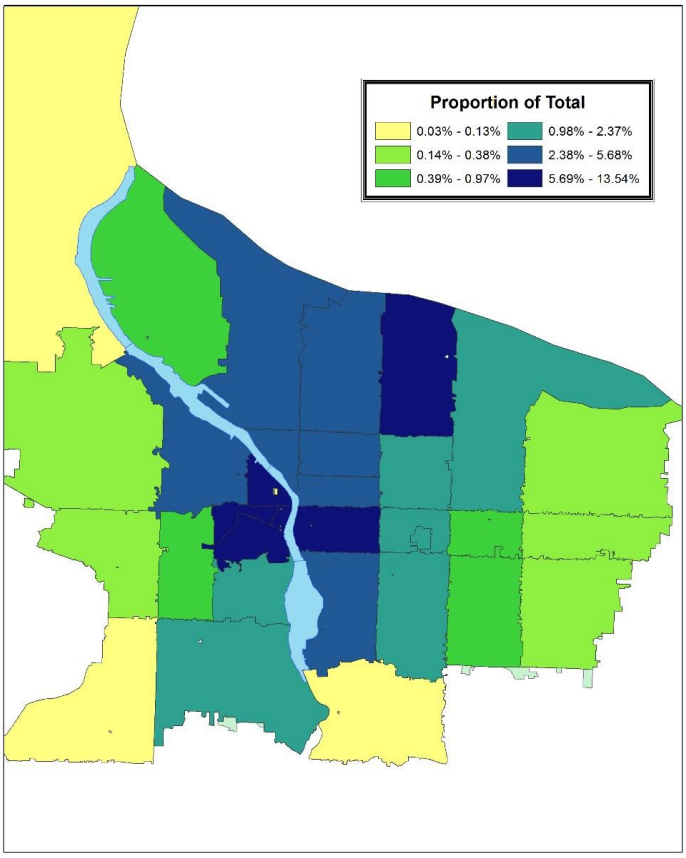


The top 10 origins for TNC and Taxi were similar, with different areas taking different slots in the top 10.

	TNC		Taxicab	
Top 10	**ZIP**	**% of Total**	**ZIP**	**% of Total**
1	Pearl/Old Town	14.3%	Buckman/Richmond	12.4%
2	Buckman/Richmond	13.0%	Pearl/Old Town	12.1%
3	Goose Hollow/Downtown	8.9%	Outside	7.2%
4	Downtown	8.7%	Sellwood	6.1%
5	PSU/South Waterfront	5.5%	Kerns/Lloyd	5.6%
6	Cully/Airport	5.5%	Sunderland/Woodlawn	4.5%
7	Kerns/Lloyd	5.2%	Downtown	4.5%
8	Sellwood	4.8%	Goose Hollow/Downtown	4.4%
9	NW Portland	4.7%	Overlook	4.4%
10	Outside	4.6%	NW Portland	3.8%

Although data for trip destinations the taxicab industry was not available, the map below shows the data for the TNC industry, which is similar to the trends for trip origins. The greatest proportion of trips ended near the city center.

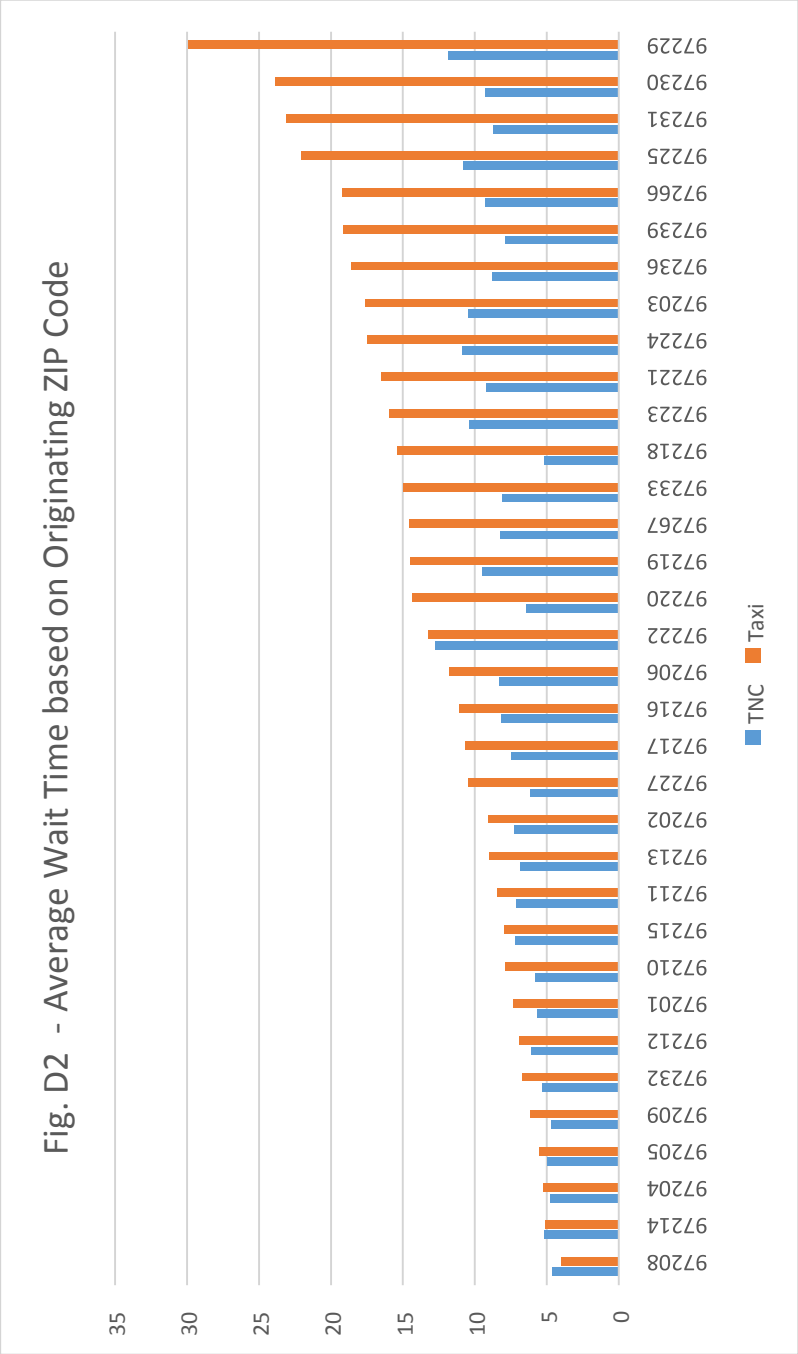
Fig. C3 - ProportionTNC Rides by Destination ZIP Code



WAIT TIMES

Both TNC and Taxicab trips have a similar wait times, but taxicab trips see a higher percentage of riders waiting more than 12 minutes (19.4% compared to 6.5%), along with a significantly higher percentage of riders waiting more than 20 minutes (7.7% compared to 0.8%).

For both TNC and Taxicabs, wait time for rides increases the further from the city central the trip originates. The outer areas of the city see significantly higher wait times for taxicabs than for TNC vehicles, but for both industries see higher wait times than areas near the city center.



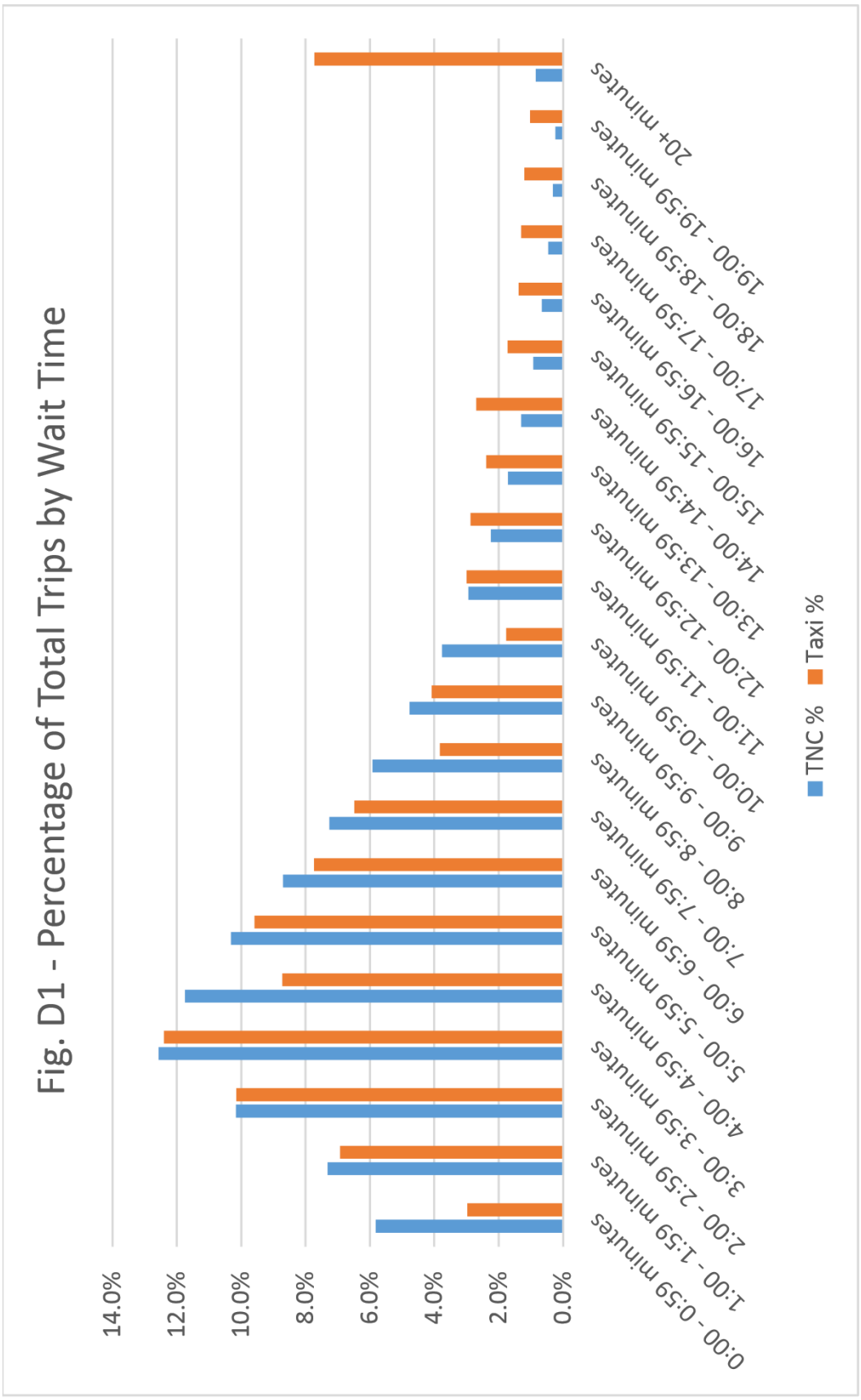
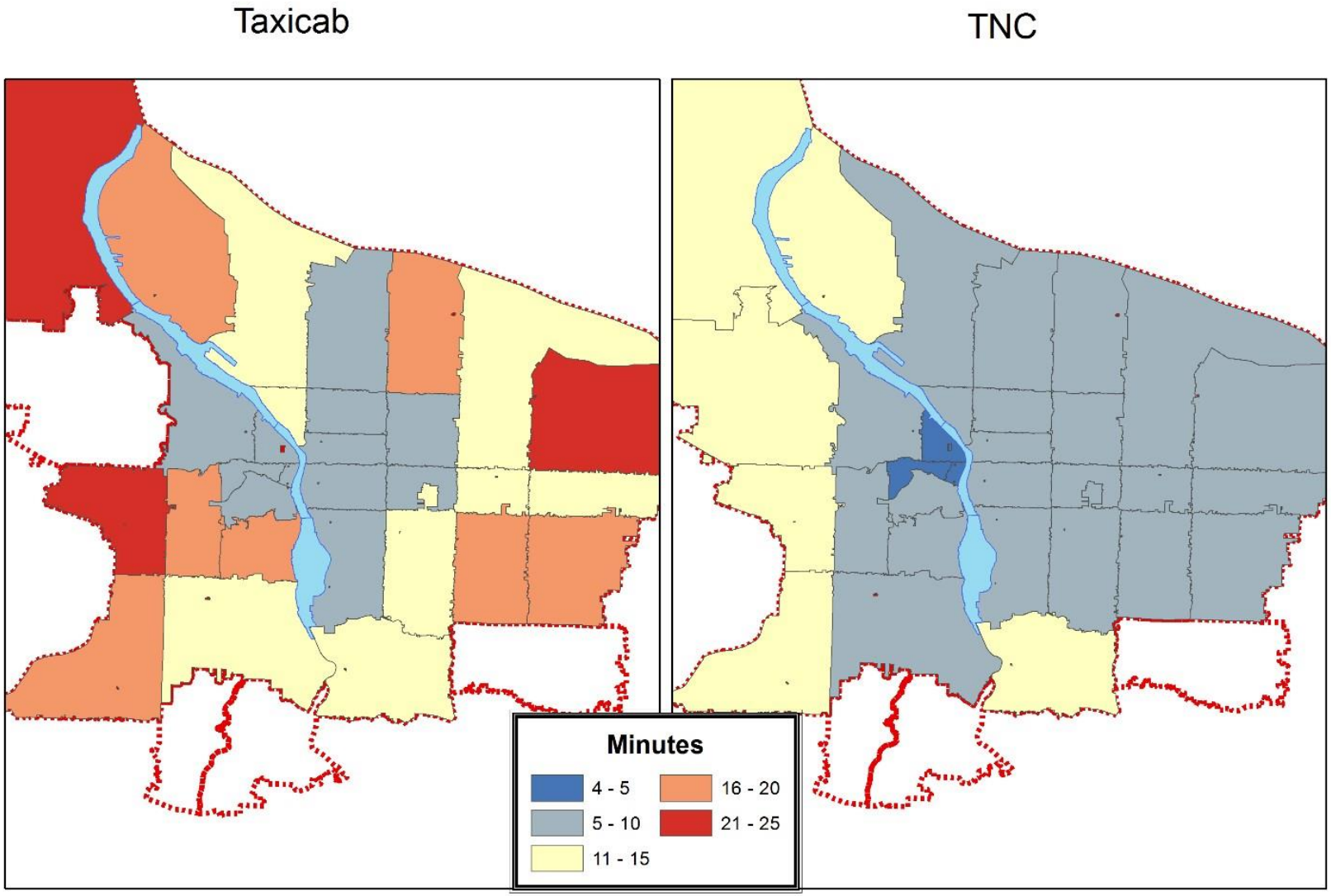
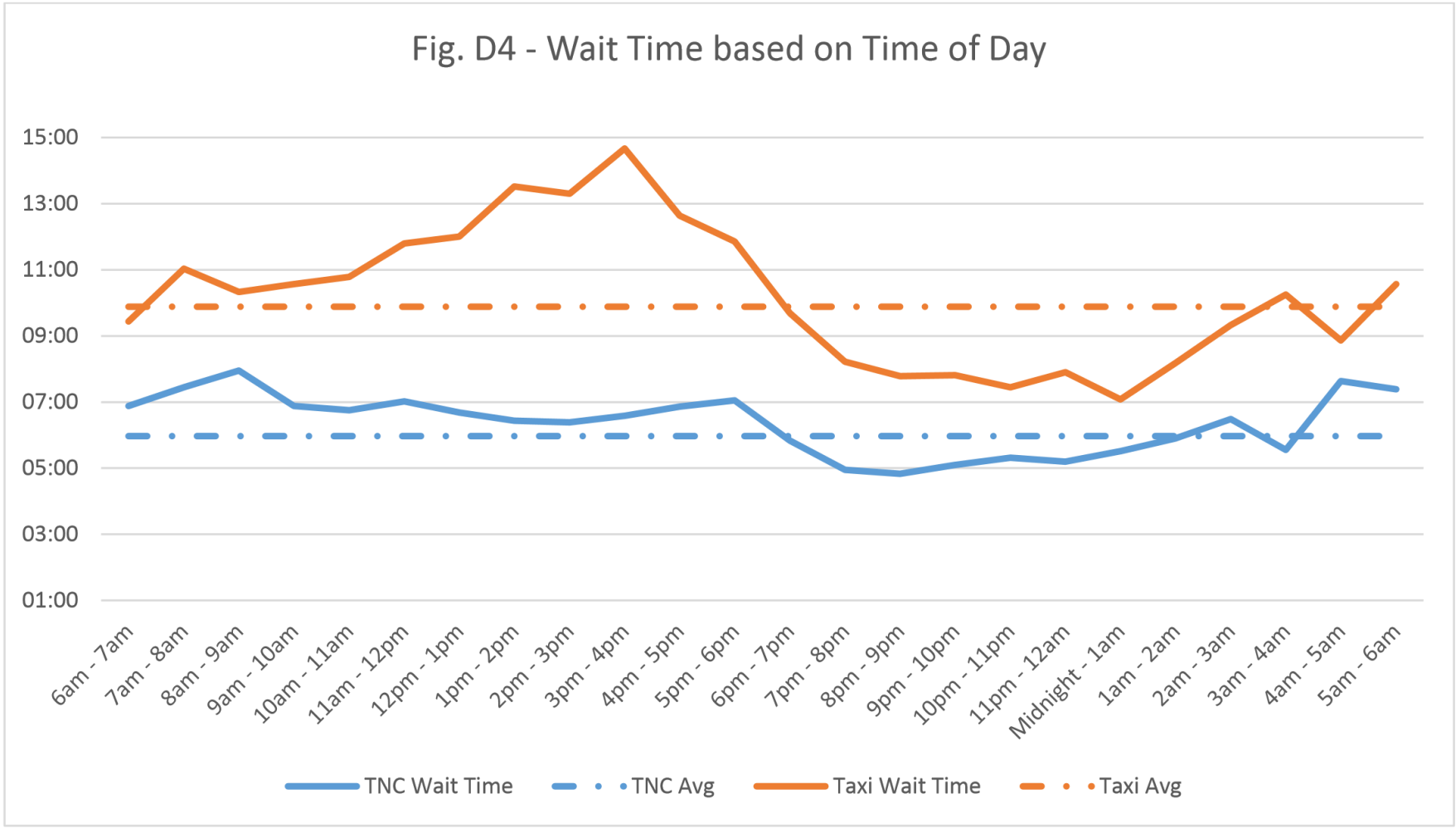


Fig. D1 - Percentage of Total Trips by Wait Time
14.0%
12.0%
10.0%
8.0%
6.0%
4.0%
2.0%
0.0%
0:00 - 0:59 minutes
1:00 - 1:59 minutes
2:00 - 2:59 minutes
3:00 - 3:59 minutes
4:00 - 4:59 minutes
5:00 - 5:59 minutes
6:00 - 6:59 minutes
7:00 - 7:59 minutes
8:00 - 8:59 minutes
9:00 - 9:59 minutes
10:00 - 10:59 minutes
11:00 - 11:59 minutes
12:00 - 12:59 minutes
13:00 - 13:59 minutes
14:00 - 14:59 minutes
15:00 - 15:59 minutes
16:00 - 16:59 minutes
17:00 - 17:59 minutes
18:00 - 18:59 minutes
19:00 - 19:59 minutes
20+ minutes
TNC %
Taxi %

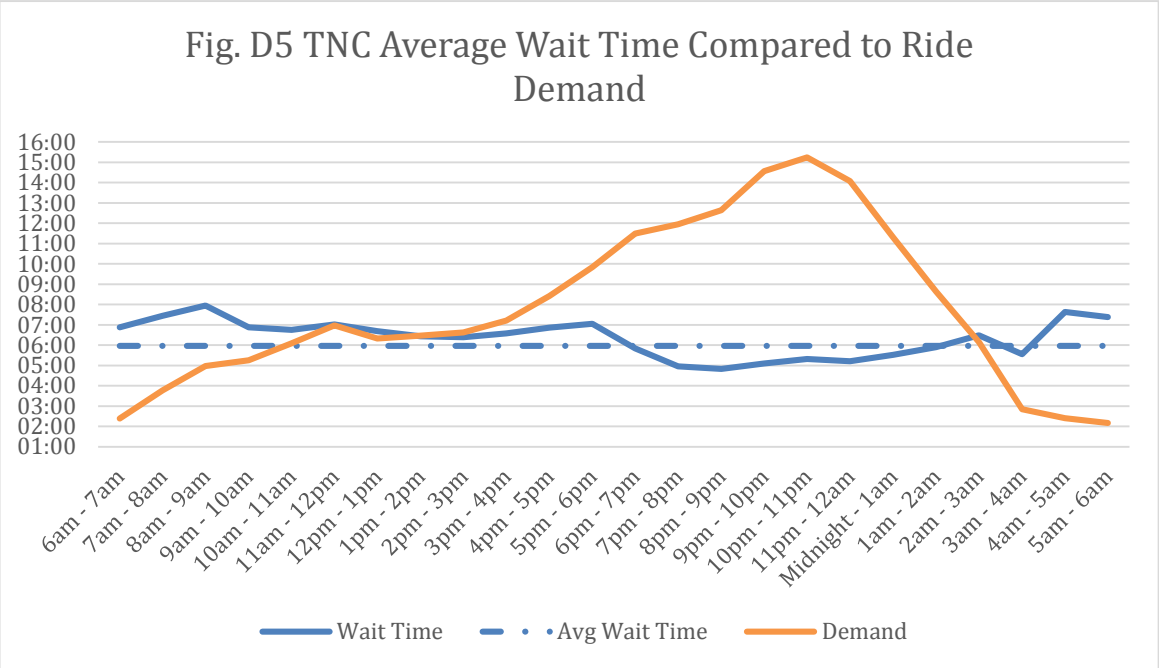
Fig. D3 - Average Wait Time by Originating ZIP Code

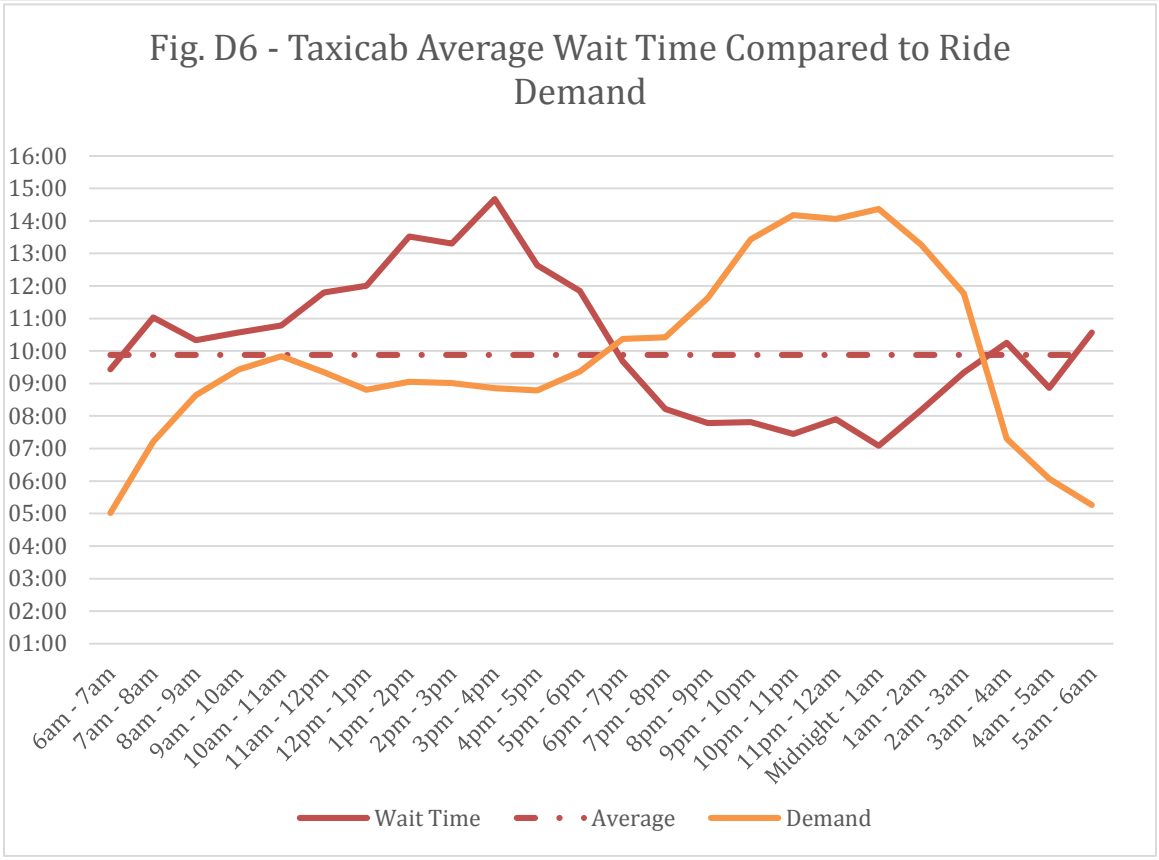




The average wait time for TNC trips is roughly 6 minutes, while for taxicabs it is 10 minutes. When comparing wait time to the time of day, wait time for TNC rides remains much more stable during the day than taxicab wait times. Both industries see greater wait times during the day, and shorter wait times during the evening and late night hours.

When ride demand is added in, both industries seem to have a negative correlation between wait times and demand, with higher periods of demand being met with shorter wait times. The taxicab industry, however, also sees lower demand being met with higher wait times.





DURATION

The breakdown of ride duration from the TNC and Taxicab industries are almost identical, with an average TNC ride duration of 13 minutes and an average Taxicab duration of 12 minutes. Ride duration based on time of day is also similar between the two industries, both seeing long ride durations during the daytime hours, and shorter ride durations during the evening and late night hours.

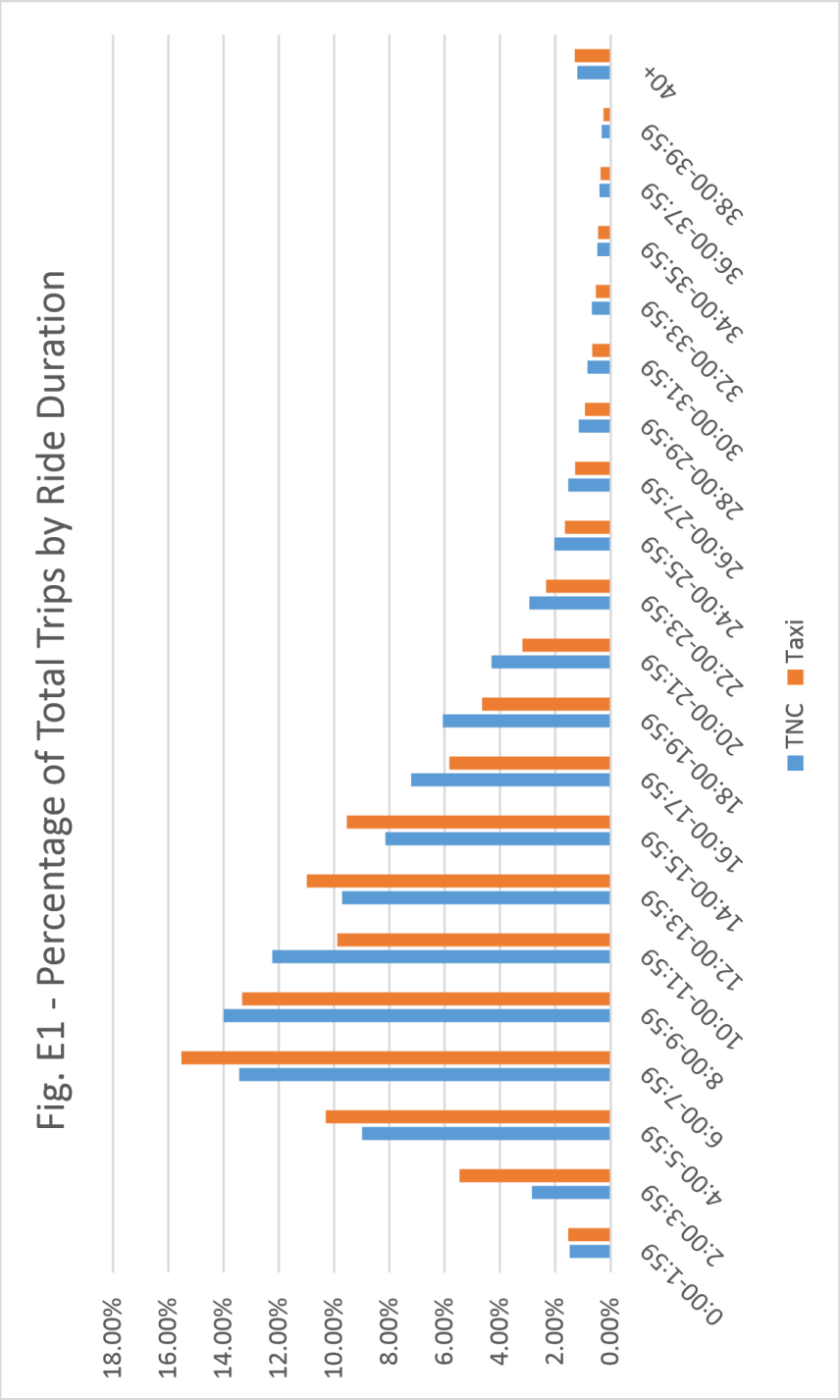
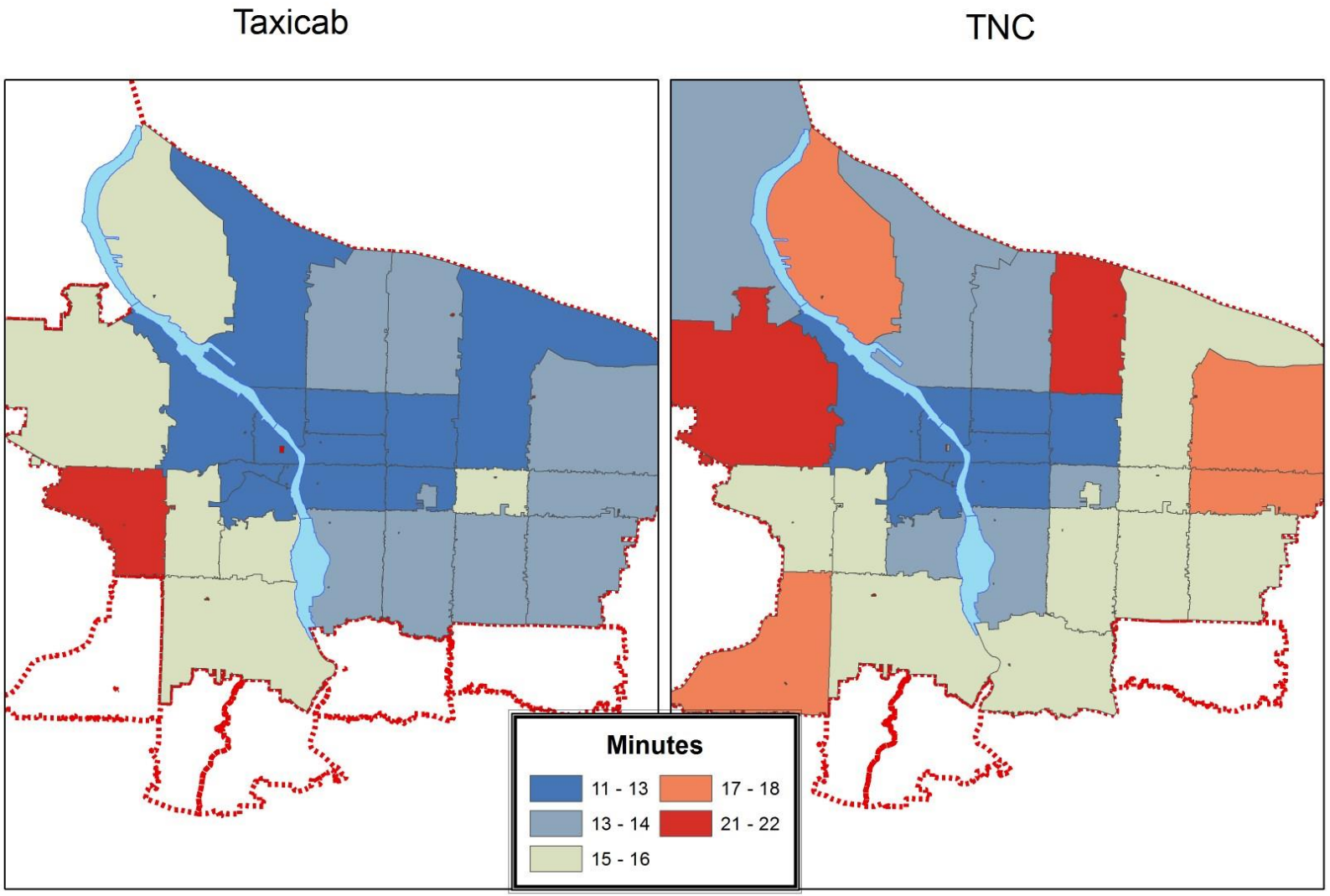


Fig. E3 - Average Ride Duration by Originating ZIP Code



UNFULFILLED AND CANCELLED/NO-SHOW RIDES

In the TNC industry, a portion of requested trips are classified as "unfulfilled." These unfulfilled trips occur in a variety of scenarios, including the following examples: a rider cancels a ride after an initial request, a driver cancels after accepting a trip, a rider is a no-show, no vehicles are available in a rider's area, and no vehicles accept a trip. Roughly 5% of total requested rides with TNCs were unfulfilled in May 2015. A greater number of rides originating in ZIP codes further from the city center were unfulfilled as a proportion of total requested rides, and the greatest number of unfulfilled rides occurred in the Pearl/Old Town and Buckman/Richmond. However, this is likely due to the high overall number of rides requested in those areas, relative to overall demand.

In the taxicab industry, a "cancelled/no-show" ride occurs when a taxi is dispatched to a location and the rider cancels the trip or the rider is not there when the taxi arrives. Analysis of the taxicab data indicate that between 15%-18% of all trips resulted in a cancellation or a no-show. For the month of May, the taxicab industry spent roughly 30 hours driving to locations that either cancelled or became a no-show, with no way to recoup their costs.

SUMMARY

The data analyzed for the TNC and taxicab industries for the month of May show many similarities between the two, but also many differences. In general, taxicab companies provided more rides than TNC companies, but TNC companies saw many more trips toward the end of the month, suggesting that they may have greater overall ridership in the coming months. Both industries saw a peak in ridership during the weekends and evening/late night hours, paired with lower ridership during the weekdays and daylight hours. The taxicab industry, though, saw a greater variety in trips taken by time of day, whereas TNC companies saw a vast proportion of their trips during the evening.

In addition, both industries saw a large proportion of their trips originating closer to the city center and travelling short distances. The overall wait time for both industries was relatively low, but wait times for TNC trips were lower than those for taxicab trips. Also, a larger proportion of taxicab riders wait for more than 20 minutes when compared with TNC riders. Although both industries appear to have met their trip demand well, the TNC companies are succeeding at normalizing the wait times low during periods of high demand.

Both industries provided wheelchair accessible vehicles (WAV) trips during this period, but taxi companies provided substantially more rides than TNC companies. As TNC companies grow and more WAV vehicles become available, their share of WAV trips may increase. In addition, limited data was provided by the taxicab industry regarding WAV trips, so a comparison between the two industries is not wise at this time.

In addition to completed trips, the TNC companies provided data about the number of rides that were requested but never given (roughly 5% of total requested rides) and the taxicab industry provided data on the amount of cancelled/no-show trips (15%-18%).

COMPLIANCE PROTOCOL

PBOT's PFHT program has established new protocols to ensure compliance with the Innovation Pilot Program rules and regulations. The objective of the new protocols is both to educate and to enforce compliance. A key element to achieving compliance is ongoing education, particularly when adapting to new regulations. This is true not only for permitted companies and drivers, but for compliance staff, law enforcement and the general public. The program primarily uses three methods to seek compliance: random certification audits, regular field compliance actions and complaint investigations. Consequences of violating pilot rules and regulations range from warnings to civil penalties that escalate with recurring offenses and permit suspension or revocation.

To ensure that all City of Portland requirements are met during the pilot, random audits are routinely conducted and include review of drivers' criminal history and motor vehicle records, vehicle safety and condition certification, insurance coverage and business license registration. The privilege of driving for a permitted taxi company or TNC is immediately suspended if drivers and vehicles fail to comply with pilot rules. Violations identified during an audit are investigated and corrective action—which may include the issuance of penalties or a revocation of permit—is taken to ensure compliance.

Additionally, regular field compliance actions are conducted by regulatory staff to ensure operational compliance by taxi and TNC operators. These actions entail staff ride-along and audits to ensure that vehicles are in good condition and are properly equipped with required signage or trade-dress, a hands-free accessory for mobile devices, a standard first aid kit and fire extinguisher. Staff also document compliance with requirements including vehicle registration, insurance documentation, business license registration, driver conduct and WAV availability. Adherence to hailing and queuing rules, driver conduct and WAV availability are also monitored and audited.

Finally, staff investigate and resolve consumer and other complaints reported to the PFHT Program. Since the beginning of the Pilot, the PFHT program has received 13 complaints. This compares to the nearly 90 complaints that were received in all of 2014. Complaints regarding PFHT operators in the City of Portland may be submitted to the following:

- Through email at pdxrides@portlandoregon.gov
- By calling 503-865-2486
- Online at portlandoregon.gov/pdxrides
- In writing by mail or fax: PO Box 8572 Portland, Oregon 97207 or 503-865-9022 (fax)

Accessible Transportation Options in the City of Portland

Seniors and people with disabilities often require special accommodations and assistance to access and utilize transportation services. The Americans with Disabilities Act (ADA), a landmark civil rights bill enacted by Congress 25 years ago, prohibits discrimination, guarantees that people with disabilities have the same opportunities as those without disabilities and requires that government agencies and public services provide reasonable accommodations to people with disabilities.

As it pertains to transportation services, the National Commission on Disability (2015) explains that, "[Private for hire transportation services] may not charge higher fares for passengers with disabilities;

they may not refuse to serve a passenger with a disability who can use a taxi sedan (including people who use wheelchairs); they may not refuse to stow a wheelchair or other mobility device in the trunk of a sedan or impose a special charge for doing so; and they must accept passengers traveling with service animals."

In the 2015 report, "Transportation Update: Where We've Gone and What We've Learned," the National Commission on Disability (NCD) finds that, "Since the 2005 NCD report, wheelchair-accessible taxis have become more available in larger communities around the country. Cities with accessible taxi services include, Chicago, Boston, San Francisco, Miami, Las Vegas, and Portland."

Portland is one of the first U.S. cities to adopt wheelchair accessible vehicle requirements for taxi companies, some of which may be accredited to TriMet's efforts to become compliant with ADA requirements established in the mid-1990s. TriMet began partnering with taxi companies to provide stop-gap transportation services to people with disabilities, and TriMet maintains contracts with several taxi companies and other transportation operators to this day to supplement ADA transit service.

There are, in fact, several transportation options currently available to Portlanders with disabilities: privately-owned and operated vehicles, transportation services provided by TriMet and the TriMet LIFT paratransit program, Medicaid-funded, non-emergency medical transportation services (under the local authority of Coordinated Care Organizations) and private for-hire transportation services. Additionally, many medical and supportive living facilities provide specialized transportation services to consumers. However, the availability and accessibility of these options varies greatly depending on the specific needs and resources of individual consumers and the overall demand for these services at any given time.

People who need wheelchair accessible vehicles (WAVs) often experience substantially greater challenges in accessing those vehicles. Privately-owned, consumer-operated WAVs can be cost restrictive, particularly given that Americans with disabilities experience poverty at twice the rate as those without disabilities. On average, American households with an adult member with a disability earn nearly 40% less than households without an adult member with a disability (U.S. Senate Committee on Health, Education, Labor & Pensions, 2014).

TriMet is federally mandated by the ADA to provide accommodations to those who are unable to independently use TriMet Buses and/or trains some or all of the time due to a disability or medical condition. TriMet's LIFT paratransit service is a shared-ride public transportation service and is generally regarded as reliable, but the service requires advance reservation and is only available within the TriMet service district during regular hours of TriMet operations (4:30am-2:30am, seven days a week). TriMet LIFT service is federally and locally subsidized so that the cost to consumers is significantly reduced. Qualifying users are eligible for discounted "LIFT Paratransit" or "Honored Citizen" passes.

Similarly, WAV fares for private for hire transportation are regulated so they are the same as non-WAV fares. However, private for hire transportation operators report that WAV trips take longer and cost up to $30 and $40 more than a non-WAV trip. These additional operating costs have been absorbed by the overall operating costs to taxi companies and most recently TNCs. However, several Portland taxi companies have mitigated those higher operational costs by markedly subsidizing retail WAV service through contracting taxi WAVs to other transportation service providers, including paratransit, mass

transit operators and to non-emergency medical transportation brokers. That has had the unintended consequence of further confining the already limited availability of wheelchair accessible transportation in Portland.

History of Wheelchair Accessible PFHT Regulations

Shortly after Congress passed the Americans with Disability Act in 1990, TriMet began developing and implementing ADA policies and protocols, in many ways setting the national pace for improving transportation options for people with disabilities. At the same time, the City set a goal for taxicab companies to increase the size of their respective wheelchair accessible fleets to a minimum of 20% of each company's total fleet. The WAV fleet requirement was intended to ensure that taxi companies could meet demands for WAV service from consumers requesting retail transportation service and from other transportation operators needing additional WAV capacity, including TriMet.

Maintaining an operational fleet of WAV taxis proved to be challenging for most taxi companies, largely because of the higher initial and ongoing costs of WAV service compared to traditional taxi sedan service. In 2003, the PFHT Board and a coalition of taxi companies developed an agreement to form a central WAV dispatch broker between taxi companies. Pooling WAV resources and utilizing a centralized WAV broker was expected to be a more efficient and cost effective method to provide WAV service to the community.

This centralized WAV brokerage agreement, known as the Portland Accessible Cab Association (PACA), was finalized and began operating in June 2004. Under the PACA agreement, 10% of a participating taxi company's fleet needed to be WAVs, instead of the 20% that was otherwise required. Unfortunately, this shared brokerage model proved challenging to coordinate and was formally disbanded in December 2012. However, not all taxi companies that had participated in the PACA brought their fleets back into compliance with the 20% WAV requirement. The PFHT Board began considering increasing the WAV fleet requirement to 30% to improve WAV service, but this requirement was never instituted. In years since the formal end of PACA, WAV taxi fleets ranged from 10-20%. Today, taxi WAVs constitute 15% of all of Portland's permitted taxi vehicles.

In July 2014, the PFHT program was transferred from the Revenue Bureau to the Portland Bureau of Transportation to better align with the City's overall transportation goals and policies. At the direction of Transportation Commissioner Steve Novick, the PFHT Board was asked to reevaluate all pending permit applications for new and existing taxi companies. After review, the Board voted in February 2015 to approve all 242 requested taxi vehicle permits from the six existing taxi companies in Portland. The Board added a condition to the additional vehicle permits, mandating that taxi companies bring their fleets into the 20% WAV compliance requirement prior to the approval of additional taxi sedan permits.

A special PFHT Innovation Task Force was convened by Commissioner Novick in January 2015 to review existing PFHT regulations and to recommend regulatory changes to ensure public safety, improve service and ensure a fair, competitive market for companies and drivers. The Task Force, independent of the PFHT Board, recommended that service performance standards, not fleet vehicle requirements, would provide a better and more efficient means of ensuring PFHT WAV service to people with disabilities.

The PFHT Innovation Pilot Program, approved by Portland City Council in April, supports this recommendation. In order to transition the PFHT industry from a WAV fleet requirement to service performance standards largely tied to response times and service requests, three provisions are included in the Pilot Program: a lower WAV fleet requirement for taxis (10%), the expanded use of permits for non-emergency transportation vehicles and data-informed performance standards for transportation network providers.

WHEELCHAIR ACCESSIBLE VEHICLE TRIPS

For the TNC industry, just over 200 WAV rides were given during May and the average wait time for a vehicle was 10 minutes. This number may increase in subsequent months as TNC WAV services improves and demand for WAV increases.

In the taxicab industry, data related to WAV trips was only submitted by three companies, and an accurate assessment of the entire taxicab industry cannot be extrapolated from this sample. Only data for WAV trips requested for immediate pickup were analyzed, although a large proportion of WAV trips provided by taxicab companies were pre-ordered trips. Riders requested an estimated 2,000 immediate pickup WAV trips during May, of which 15% were cancelled. The reported average wait time for a WAV taxicab vehicle was 23 minutes.

PFHT Innovation Task Force Update

Subcommittees Established

Given the breadth of issues identified for consideration during the pilot project phase, the Task Force established three subcommittees to develop preliminary recommendations for full Task Force consideration and assigned each a set of topics:

- Subcommittee on Operational Considerations: Signage/Notices; Driver Behavior; Permitting/Fees; Fare Rates and Pricing; Hailing; Mobile Dispatch Services
- Subcommittee on Accessibility Considerations: Accessibility Service Options; Citywide Service
- Subcommittee on Market and Program Considerations; Caps on Numbers of Vehicles; Environmental Footprint; Employment Status of Drivers; Kitties; PFHT Framework; PFHT Board

A separate subcommittee is being established to address Employment of Disabled Persons; this group will meet independently of the Task Force and coordinate closely with vocational rehabilitation agencies and organizations.

Invited Representatives

At the request of the Task Force, representatives of various organizations and entities were invited to participate in subcommittee deliberations. Participants included: Transportation Fairness Alliance (taxi industry); TNC industry; Taxi and TNC drivers; and Travel Portland. The Oregon Limousine Association was also invited to participate but did not respond.

For the Accessibility Subcommittee, the invitation to participate was expanded and participants included: Ride Connection; TriMet; Office of Equity and Human Rights, and a representative of the visually impaired community. Groups that were invited but that did not respond were: First Transit, Veterans Transportation program, Vocational Rehabilitation, and United Cerebral Palsy.

Schedule for Deliberations

As of this date, all three subcommittees have submitted their recommendations to the full Task Force for consideration. The Task Force will deliberate from mid-July through early August and present its recommendations on vehicular forms of PFHT to City Council on August 20. Recommendations will address:

- Topics identified in Phase 1 for further consideration or not considered in Phase 1 (these correspond to the topics assigned to the subcommittees)
- Reconsideration of Pilot Project regulations as needed
- Regulation of LPTs (not addressed in Phase 1)

The Task Force anticipates reconvening in September to develop recommendations on non-vehicular forms of PFHT, including pedicabs and horse-drawn carriages.

Key Themes in Discussions to Date

While not yet endorsed by the full Task Force, a number of recurring themes have emerged from the subcommittee deliberations.

- The PFHT program should shift its focus from the administration of permits to compliance monitoring by moving the permitting burden from the City to the industry itself.
- To the extent feasible, regulations and incentives should establish a level, competitive playing field for companies and drivers.
- Ongoing data collection will be essential and performance measures need to be established and monitored at specific intervals, with adjustments to the PFHT program as needed.
- There should be no competitive advantage in not adhering to regulations; compliance monitoring should be financed by the industry, with escalating penalties based upon levels of non-compliance.
- The issues around accessible transportation transcend the Task Force process; ongoing mechanisms should be established to monitor implementation of Task Force recommendations and to provide for dialogue on accessible transportation issues.

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