# Montgomery County Taxi Customer Service Regulation Project Proposal

Sponsoring Agency:
Montgomery County Government, Division of Transit Services

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# Abstract

This project focused on the issue of taxi customer service in Montgomery County, MD. Through background research, regulator and company interviews, and analyzation of data, we identified a set of issues with a proposed customer service regulation. We developed a set of recommendations for the County that included suggested modifications to the customer service regulation, alternative methods for the collection of regulation data, a County-sponsored driver-training program, and funding options.

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## Executive Summary

Taxis present a unique challenge to transportation regulation, since many drivers work independently from a company and do not follow a scheduled route, making them hard to track. In Montgomery County, Maryland, there are 715 different taxis to regulate (J. Ryan, personal communication, September 11, 2009). It is important that taxis provide fast and convenient service since the consequences of bad taxi service, such as being late for an important appointment, getting into an accident, or paying for an overcharged ride, can reflect badly on the County. In Montgomery County, the County government is working with the local taxi companies to establish effective taxi performance standards to improve customer service. One proposed regulation, "Montgomery County Executive Regulation 13-06" (Regulation 13-06) (see Appendix D), seeks to improve customer service by requiring the reporting of on time performance and other data by geographic area. This regulation requires companies to guarantee faster taxi response times and provide the County with new customer service data broken down by geographic area. However, it poses challenges for three of the four Montgomery County taxicab companies due to financial and/or technological limitations (J. Ryan, personal communication, September 11, 2009). These taxicab companies argue that in order to obtain customer service data by geographic area as required in Regulation 13-06, they would need to make significant investments in hardware, software, and/or personnel. They also argue that the Regulation is unfair because it would give an unfair advantage to Barwood Taxicabs, the largest cab company in Montgomery County, since Barwood already owns a computer dispatching system and would not have to invest in one. The taxi companies also suggest that parts of Regulation 13-06 are not relevant to improving customer service.

In this project, we investigated several issues surrounding Montgomery County's proposed taxi customer service regulation, Executive Regulation 13-06. Specifically, we investigated what data items the taxi companies in Montgomery County were capable of collecting, what systems they needed to collect the required data, what parts of the regulation related to customer service, how

useful the required data was to the County, and how accurate it would be. We also looked at a listing of customer service complaints on file with the County to identify in what areas the taxi customer service could most improve. We spoke with taxi company representatives from all four Montgomery County companies as well as a taxi company representative in Northern Virginia, taxi regulators in Montgomery County, Fairfax County, Virginia, San Diego, California, and Toronto, Canada, taxi drivers from all four Montgomery County companies, and receptionists at two Montgomery County hospitals.

We compared how much it would cost each company to meet the proposed regulation with how much it would cost each company to meet a modified version of the regulation (with our recommended changes). Based on our research and investigation, we identified what we believed to be the most relevant solution to the taxi customer service issue in Montgomery County.

Our project seeks to produce a modified regulation that is fair to all taxi companies, cost-effective to implement, and responsible in meeting customer service needs. This will ultimately benefit all parties, including Montgomery County taxicab customers, by improving customer service standards.

# 1. Introduction

There are many different types of public transportation including taxis, busses, airplanes, trains, and subways. Each form of public transportation is regulated by national, provincial, or local governments to meet certain safety and performance requirements. In US cities, taxis present a unique challenge for regulation, since taxis are operated by licensed individuals who work largely independently from a taxicab company. This makes tracking taxis and enforcing taxi regulations more difficult than for other forms of public transportation, such as busses, whose drivers are public employees and follow predetermined schedules and driving patterns.

Taxis are essential for individuals who do not have access to a vehicle, since they can provide door-to-door service, unlike other types of public transportation, which only operate between fixed locations. Taxis complement other forms of public transportation by providing a means to reach bus or train stops, which may not be within convenient walking distance. It is important that taxis provide fast and convenient service, since they are the only means of transportation available to many of their customers. The potential consequences of bad taxi service include arriving late for work, missing a plane flight, or even (in isolated cases) losing personal belongings due to theft. In Montgomery County, Maryland, the County government is working with the local taxi companies to establish effective taxi performance standards. In 2008, Montgomery County Government proposed a Regulation (Executive Regulation 13-06, see Appendix D), requiring taxi companies to provide faster customer response times and report additional customer service data by geographic areas. However, this Regulation posed challenges for the taxi companies to implement due to technological and financial limitations.

Some Montgomery County taxicab companies say Regulation 13-06 customer service data can only be compiled with the aid of an expensive computer system, which they cannot afford (J.

Ryan, personal communication, September 11, 2009). However, these companies are at odds with Montgomery County Government, who believes the taxi companies are capable of making the required investment or fulfilling the regulations through alternative means. In addition, Montgomery County taxicab companies question whether the new customer service regulations are necessary, since they believe they are supplying adequate customer service (J. Ryan, personal communication, September 12, 2009; See Appendix D) and that the reporting of customer service data will not actually improve customer service. While Montgomery County Government acknowledges these concerns, it believes there is still room for improvement in taxi customer service, which the proposed regulations would address.

In 2006, "A Customer's Point of View, Inc." conducted a Mystery Rider study on Montgomery County taxis to provide customer service information to the County Government (See Appendix J). In this program, individuals rode taxicabs and collected customer service data without the knowledge of the taxicab driver. The Mystery Rider Report provided useful information about customer service offered by the taxi companies in Montgomery County as well as which parts of customer service each company struggled with; however, it did not suggest ways to improve customer service. Through our project, we will seek to improve taxi customer service by identifying less expensive ways for taxicab companies to meet the proposed regulation. We will also investigate whether Montgomery County Government needs to reword Regulation 13-06 to make it easier for taxi companies to adopt while ensuring it still improves customer service standards.

The first objective of our project is to identify a set of modified regulations that will satisfy County customer service requirements and be fair to all the Montgomery County taxi companies. We will accomplish this by working closely with the Montgomery County Government Taxicab Operations Manager, James Ryan, by visiting Montgomery County taxicab companies, and by attending transportation committee meetings. Secondly, we will propose an improved data

exchange process for the transfer of customer service data from local taxi companies to the County Government. We will accomplish this by first analyzing the current data reporting system, to determine its capabilities and shortcomings. We will then research alternative systems, and perform a cost analysis of the available options that can satisfy the County's proposed reporting requirements. Finally, we will propose an affordable system for taxi companies to use to meet the requirements of Regulation 13-06. We may also suggest a revision of Regulation 13-06, if necessary, to meet financial and available data system capabilities. By proposing a means to align Montgomery County taxi company needs with County Government customer service requirements, we seek to benefit both taxi companies and County government by improving customer service standards.

# 2. Background

Taxi companies want to maximize profits and minimize costs. By contrast, local government officials want to ensure taxicab companies will meet proper customer service standards, usually through regulations. However, since increased regulation may result in decreased taxi profits, taxi companies tend to be at odds with local officials on regulation increases. In this chapter, we will discuss the history and background of the Montgomery County taxi system to provide the context needed to understand our project.

## 2.1 Public Transit in Montgomery County

Montgomery County is located in the heart of Maryland, between the District of Columbia (DC) and Fredrick County, Maryland. Because of its close proximity to DC and its comparatively cheap real estate, Montgomery County supports a large commuter population of residents who travel to DC for work each weekday. In 2000, 12.6% of these residents utilized some form of public transportation (including taxis) to get to work (U.S. Census Bureau, 2009b). Among the available forms of public transit, taxis are a popular choice. Seventeen percent of respondents from a Montgomery County Ride-On survey indicated taxis to be their next most favored form of transit after buses (Linderman, Dunn, & Bravman, 2006). As a result, the taxi system is very important to the residents of Montgomery County.

Montgomery County supports a population of about 950,680 (U.S. Census Bureau, 2009a). With an average single-family household income of $93,000, Montgomery County is the second richest county in Maryland and the eighth richest county in the US ("America's Richest Counties," 2008). Despite the overall affluence of the county, there are also some poor areas in Montgomery County. Just over five percent of Montgomery County residents live below the poverty line (U.S.

Census Bureau, 2009a). While this number is below the national average of 13.0%, it demonstrates the existence of disparate economic circumstances among the population of the county.

Montgomery County has an ethnically and culturally diverse population. According to the US Census (2009), 15.4% of residents are Hispanic or Latino, 12.8% of residents are black, and 4.5% of residents are Asian. In addition, 11.1% of all residents are foreign-born. Approximately 1 in 10 Montgomery County residents indicated in the last census that they had a disability (107,808 out of 950,680). The large number of ethnic minorities, physically challenged persons, and impoverished residents creates challenges for taxi customer service in Montgomery County due to potential discrimination against poor customers, as well as cultural or language barriers between customers and taxi drivers.

### 2.1.1 Use and Need for Taxis

Montgomery County's almost one million residents span an area of 495.52 square miles (U.S. Census Bureau, 2009a). Although most residents drive to work (79.8% drive alone or carpool), a large portion of residents (12.6%) rely on public transportation, including taxis. Taxis make an impact within Montgomery County by the large number of customers they serve. Barwood Taxi (Barwood), the largest taxi company in Montgomery County, serves over 5,000 customers daily ("Blue Star Group, Inc.," 2009). Taxis serve a wide range of customers, including visitors to Montgomery County, seniors, physically challenged residents, intoxicated revelers, and corporate clients.

### 2.1.2 Licensing System

Montgomery County uses a licensing system to regulate taxis, somewhat similar to the "medallion" license system of New York City. In Montgomery County, all taxi owners must hold a Private Vehicle License (PVL) for their vehicle (Montgomery County Government, 2006, p. 8). Taxi owners (and drivers) must display the PVL, which contains a license number, vehicle model type

and serial number, and owner contact information, prominently in their taxicab (p. 9). Unlike a New York medallion, which belongs to an individual or company, the PVL is the property of the County, and cannot be sold, only transferred between individuals or companies (J. Ryan, personal communication, October 2009; Montgomery County Government, 2006, p. 9; City of New York, n.d., Code 19-514f; City of New York, n.d., Rules 5-05b).

In order to obtain a PVL, a licensee must receive an issuance from the County or "purchase" one through an approved transfer from an existing PVL holder. Montgomery County Government currently issues PVLs at most once every two years (Montgomery County Government, 2006, p. 11). The County awards PVLs to companies after reviewing the PVL application and considering such factors as the customer service and record of service for each company. The County awards individual PVLs to all qualified applicants, or to qualified applicants selected by lottery, if the number of applicants is greater than the number of PVLs. Current County Code requires the percent ratio of individual to corporate licenses to be at 20% to 80% (p. 11).

PVL "ownership" sets the independent taxi-owners apart from the leasing company drivers. PVL holders must pay about 245 dollars each week to a taxi company, while most non-PVL holders must pay about 105 dollars each day (about 630 dollars each week) to a taxi company (J. Ryan, personal communication, November 2009). PVL holders have more freedom to choose when they want to work, since they have to come up with their lot payment on a weekly, rather than daily basis. In addition, because PVL holders have a personal interest in their business (they invested in a vehicle and PVL), they may tend to be more responsible drivers than do their leasing counterparts (J. Ryan, D. Mohebbi, R. Raoofi, personal communication, November 2009).

### 2.1.3 Challenges Associated with Taxi Regulation

Current, County Code requires a 1 to 4 ratio of individual to corporate PVL licenses (Montgomery County Government, 2006, p. 11). Before 2007, the County guaranteed this ratio

through their distribution of new licenses and through the limitation of two corporate-to-individual PVL transfers per company each year. In 2007, a bankruptcy judge approved the transfer of all of Barwood's company PVLs to individual PVLs in order to help Barwood avoid insolvency (Tunison, 2007, p. GZ03). In order to be fair to the other taxicab companies, the bankruptcy judge also allowed the other Montgomery County taxi companies to transfer their corporate licenses to individual licenses at the same rate as Barwood, adjusted for company size (J. Ryan, personal communication, November 2009). For example, for every five PVLs that Barwood transferred, Sun Cab could transfer one, since Sun Cab is about one-fifth the size of Barwood. Since 2007, Barwood has only found six eligible drivers willing to "purchase" an individual PVL.

Some in the County were concerned with this ruling because they believed that independent taxi drivers would offer lower qualities of customer service than would leaser-drivers, since owner-drivers do not depend as much on a company, and therefore would be less likely to follow standards that the company required (J. Ryan, personal communication, October 2009). As a result, Montgomery County Government filed an appeal of the bankruptcy judge ruling, which, at the time of this writing, is still in court.

Another challenge with taxi services in Montgomery County is the existence of unlicensed, illegal taxis, known as bandit cabs. Because bandit cabs do not pay the County taxicab licensing fee, they operate at an unfair competitive advantage to their legal counterparts. In addition, because bandit cabs avoid the County taxi licensing process, there is no guarantee that they operate safe equipment, have properly trained drivers, carry insurance, or charge appropriate taxi fares.

Bandit cabs come in several different forms. One common form of bandit cab is a sedan from a livery or limousine company that operates illegally by stealing taxi business. Although the limousine or livery company is legal, its use of sedans as taxis is illegal. Limousines and livery cars may only pick up prescheduled customers, not immediate-hail customers. Another type of bandit cab is an out-of-jurisdiction taxi licensed in another county, but not in Montgomery County. This

type of bandit cab may bring a passenger to Montgomery County from their county, and then illegally pick up a customer in Montgomery County. A third type of gypsy cab is an independent taxi driver or organization which avoids county regulations and licensing. This type of bandit cab is illegal in all respects, since it operates completely outside the legal taxi system.

### 2.1.4 Challenges in Taxi Customer Service

The purpose of taxi regulations is to promote good customer service. In 2004, Montgomery County established a taxicab hotline to "assess the performance of taxicab companies and individual taxicab drivers" ("Montgomery county taxicab hotline," 2009). Montgomery County uses the hotline to gather information on customer service, investigate complaints, and help with taxi regulation enforcement. Montgomery County established the hotline after critics noted a rise in taxi service complaints: from around 20 annual complaints in the 1990s to 189 complaints by 2000 (Craig, 2004, p. B08). An independent report on taxi demand concluded that "demand (for taxis in Montgomery County) has been depressed due to unreliability of pickups and excessively long response times" (Schaller, 2005, pg. 64-65). Some residents of Montgomery County linked poor customer service to a lack of competition among taxi companies, as Barwood controlled 74% of the taxi market in 2004 ("Weighing in on proposed cab service reforms," 2004, p. T04). Since 2004, the County issued 137 new taxi licenses and allowed a new taxi company to form (Sun Cab, in 2007). While Barwood is still a dominant player in the taxi market (holding about 66% of taxis at the time of this report), residents can no longer blame poor customer service on any one company. Instead, the County's approach must address the differences in service levels and abilities among the four taxi companies in operation.

## 2.2 Taxi Companies

The history of taxi companies in Montgomery County can be traced back to 1955, when the County began to regulate taxis (J. Ryan, personal communication, November, 2009). In 1964, the

first of four present-day companies, Barwood Taxi (Barwood), emerged, with a fleet of 46 vehicles ("Blue Star Group, Inc," 2009). By 2009, Barwood controlled 471 taxis. Action Taxi was established in 1989, and by 2009, operated 62 taxis (Action Taxi, Inc., 2009; Internal Montgomery County (MC) Statistics, 2009). Regency Cab established itself in 1994 and by 2009, had a fleet of 139 taxicabs (Delca, 2007; Internal MC Statistics, 2009). Sun Cab, was established in 2007, and operated 43 taxicabs in 2009 (J. Ryan, personal communication, 2009; Internal MC Statistics, 2009).

Montgomery County requires that 5% or more of all its taxicabs be handicap accessible (Montgomery County Government, 2006, p. 46) . According to company websites, Barwood, Regency, and Action Taxi all maintain enough handicap accessible vehicles. These companies participate in a program called "Metro access," which links qualified residents with accessible transportation through the District and Virginia. Another program that Montgomery County Government sponsors is "Call 'n Ride." This subsidized program provides reduced taxi fares to low-income seniors and persons with disabilities ("Services for Seniors & Persons with Disabilities," 2009). Under this program, qualified residents may purchase coupon books to use with a taxi service.

Although its fleet size has varied over the past few decades, Barwood taxi has always been the dominant taxi company in Montgomery County. By 1988, Barwood had purchased five other firms and about forty individual licenses, giving it 300 of the County's 384 taxis (a 78% market share) (Pressley, 1988, p. B3). Some independent cab drivers complained that Barwood had a monopoly on Montgomery County's taxi business. Some people suggested that problems with taxi customer service were the result of this monopoly. An independent report on taxi regulations and service, commissioned by the County, recommended that Montgomery County "loosen Barwood's grip on the industry," saying that "Greater competition could rectify problems such as long customer waiting times and cab no-shows…" (Mosk, 2003, p. A01). In 1988, 2004, and 2009, Montgomery County added new taxi licenses to help reduce Barwood's hold on the taxi market. By

2009, Barwood operated only about 66% of Montgomery County's taxis (Internal MC Statistics, 2009).

Another, more serious complaint against Barwood was that the company was receiving preferential treatment from the County, based on political ties with the County Executive. Various news articles pointed out that Barwood owner Lee Barnes was a campaign contributor to Montgomery County Executive Douglas Duncan. Under Duncan, Barnes served on the Taxicab Services Advisory Committee (TSAC) for 15 years (Craig, 2005, p. T02), 9 years longer than allowed by County policy. One Washington Post editorial claimed that as a result of serving on this committee, Mr. Barnes had "gained insider influence in shaping regulations governing his industry -- including some shaped to strengthen Barwood's grip on cab service" ("Barwood Taxis," 2003, p. A20). Another article states, "meeting minutes show that Barnes has used the post to gain a direct hand in shaping the working draft of the code, writing a provision that will toughen restrictions on his chief competitors, airport shuttles and limousines" (Mosk, 2003, p. A01). Advisory committee members and passenger advocates blamed Barnes's influence for a lack of progress in dealing with customer service issues. In 2005, Duncan appointed the owner of Action Taxi, Reza Raoofi, to replace Lee Barnes (Craig, 2005, p. T02).

## 2.3 Relevant Example: Los Angeles

By examining the taxi regulation system of Los Angeles, we can gain an appreciation for the challenges facing the Montgomery County Government.

Los Angeles (LA) is the second largest city in the US with a population close to four million residents (Craig & Writer, 2005). Of the working residents in Los Angeles over the age of sixteen, 8% (about 132,979) do not have access to a vehicle and 1.7% (about 28,258) use a "taxicab, motorcycle, or other means" to reach their place of work. Nine city-recognized taxi companies operate a fleet of over 2,300 taxicabs that serve Los Angeles (Los Angeles Department of

Transportation, 2009). The City is divided into five geographic zones, and each company has a certain number of taxis they can operate in each zone. Between one and seven different companies cover each zone, with no company having coverage of all five zones.

Eight of the nine taxi companies operate under a cooperative structure, where individual taxi drivers or investors own the taxicabs, rather than a taxi company (City of Los Angeles, 2009). The ninth company, City Cab, "is owned by a single operator who leases all taxicabs to drivers." About 40% of active drivers in Los Angeles own their own vehicle, while 60% of drivers lease their vehicle from another driver or company.

#### 2.3.1.1 Monopolies

From 1935 until 1973, one taxi company, the Yellow Cab Company (Yellow Cab), had a legal monopoly on the most lucrative taxi business in Los Angeles: the central area of the city and service to the airport (Blasi & Leavitt, 2006). By 1970, Yellow Cab controlled about 75% of the taxi business in Los Angeles. In 1976, Yellow Cab shut down because of "insurance problems" after Federal investigators probed the company's president, C. Arnholt Smith, for connections to the Mafia (Blasi & Leavitt, 2006). Six months later, in 1977, "the City Council broke the Yellow Cab monopoly, granting franchises to operate across Los Angeles to two new associations of drivers" (Walsh, 1973). Today, Yellow Cab is no longer a monopoly, however, another company, "L.A. Taxi Co-Operative controls the most taxicabs, more than two and a half times as many as any other company and more than ten times as many as the smallest company" (Blasi & Leavitt, 2006).

#### 2.3.1.2 Dispatch and Reporting Systems

All taxi companies in Los Angeles utilize digital dispatch reporting systems (Blasi & Leavitt, 2006). This greatly simplifies the problem of reporting customer service data for companies because these systems produce "data files that can be delivered to [Los Angeles Department of Transportation] for analysis".

#### 2.3.1.3 Requirements for Data Submission

According to a UCLA report on LA taxi conditions, "Each company is also required to deliver to LADOT on a monthly basis very detailed data regarding the delivery of taxi services, including 100% of service order and response data and summaries of data regarding response times" (Blasi & Leavitt, 2006). In addition, taxi companies must submit an annual "Management/Business Plan for how the company plans to carry out its obligations." The Taxi Commission is responsible for monitoring the performance of each taxi company. They do this with a grading scale, the "Taxicab Service Index" (TSI), which ranks taxi companies from 0-115 on the following criteria:

- Taxicab Service On-Time Response in Primary Service Area
- Telephonic Phone Service Response Time
- Telephonic Phone Service - Hold Time
- Number of Complaints Received Through the City
- Number of Driver and Operator Violations Assessed
- Magnitude of Driver and Operator Violations Assessed
- Vehicle Inspection - Inspections Failed on First Attempt
- Payment (to City) Timeliness - Number of Late Payment Incidents.

#### 2.3.1.4 Bandit Taxis

Licensed taxi drivers in Los Angeles face stiff competition from "bandit cabs," or illegal taxis (Blasi & Leavitt, 2006). These bandit cabs could be vehicles painted to look like a taxi or could be (legal) limousines (illegally) picking up instant-hail customers. Estimates from industry and City regulators suggest that there are about the same number of bandit cabs as legal taxicabs. Bandit Cabs pose a problem to taxi drivers, because they undercut legal cab drivers' ability to make a living, and they pose a problem to the City, because they provide unregulated (and potentially unsafe) services to customers, which could reflect badly on the City. Taxi drivers believed that the

City was not doing enough (or much of anything) to combat the rampant bandit taxi problem. A UCLA report on taxi conditions, for example, reported finding 338 entries for "Los Angeles" and "taxi" in an online yellow pages search. This is disconcerting, considering there are only nine taxi companies authorized to do business in Los Angeles.

Another issue faced by legal taxis is the County prohibition on paying hotel door attendants to solicit customers. No such prohibition exists for Limousine drivers, who may legally pay for such service (despite the fact that it is illegal for a limousine to offer immediate service).

#### 2.3.1.5 Enforcement

Los Angeles has a force of six LADOT investigators and one supervisor in charge of "policing both bandit cabs and illegal limousines across the [469] square miles of the City" (Blasi & Leavitt, 2006). In 2007, the City was working on implementing a program involving 130 additional police shifts, to help with bandit cabs and illegal limousines.

# 3. Methodology

In early 2006, Montgomery County proposed a taxi customer service regulation (Regulation 13-06). However, some Montgomery County taxicab companies believed that parts of the Regulation were impossible to implement due to cost and technology limitations. In addition, taxi companies held that some of the proposed Regulation would not improve customer service and thus would be an unnecessary burden. Because taxi service complaints have risen over the past decade, Montgomery County Government issued Regulation 13-06 in an attempt to improve taxi customer service. The goal of our project is to help improve taxi customer service in Montgomery County by finding a way for Montgomery County taxicab companies to meet Regulation 13-06. We will use the following methods to achieve this goal.

## 3.1 Identification of Taxi Companies' Ability to meet Current Regulation

We identified the capability of Montgomery County Taxi Companies to meet the existing version of Regulation 13-06. We did this by looking at each company's dispatch and reporting systems to determine how it could meet the proposed regulation. We then looked at the investment each company would have to make in order to meet the regulation requirements.

### 3.1.1 Identification of Taxicab Companies' Current Data Recording and Reporting Systems

We reviewed past annual reports sent to Montgomery County Government from County taxicab companies to see what required data was included. We used this information to help determine which data the taxicab companies already recorded and which data they needed to collect.

We interviewed representatives from Barwood, Regency, Action Taxi, and Sun Cab to learn what capacity each company had to meet the current Regulation. We used these interviews to develop a

more complete understanding of each company's current recording and reporting systems, and their capacity to upgrade those systems. We used the questions in Appendix E (1) for our interviews. We used the responses from these interviews to fill out a spreadsheet detailing the capabilities of each company in meeting the regulation requirements.

### 3.1.2 Cost of Meeting Regulation/ Ability of Companies to Meet 13-06

Next, we looked into the investment each company would need to make in order to meet the requirements of the proposed regulation. We interviewed representatives of Barwood, Regency, Action Taxi, and Sun Cab to obtain estimates of how much they would need to invest to meet Regulation 13-06.

#### *3.1.2.1 Dispatch System Research (Estimates)*

We researched different methods of data exchange to determine what systems were available to taxi companies. We did this by interviewing a taxi representative from Fairfax and Arlington, VA, as well as taxi regulators from Fairfax, VA, and San Diego, CA to learn what type of dispatching or reporting system they used and how it met their regulations. We used the questions in Appendix E (3,4) for these interviews.

We contacted five dispatch companies (Mobile Knowledge, TranWare, Teltronic, DDS, and Cordic) to hear how their dispatch solutions could meet the proposed regulation. (We obtained these company names from our interviews with the taxi regulators and representative.) We also identified data requirements in the regulation that their systems could not collect. We obtained price range estimates on how much a system would cost that could meet the proposed regulation or a modified regulation.

## 3.2 Identify Issues with Regulation 13-06

Next, we looked at Regulation 13-06 to identify any requirements that were not possible for taxi companies to meet, were not relevant to improving customer service, were unclear or ambiguous, or could be met using alternate methods.

### 3.2.1 Identify Unnecessary Sections of Regulation

We analyzed the regulation to find requirements that did not directly improve taxi customer service. We reviewed industry comments on the proposed regulation and interviewed Montgomery County taxi companies to see what areas they believed did not relate to customer service. We interviewed County officials to understand the history and intention of these requirements. We interviewed a taxi representative from Northern Virginia (Arlington and Fairfax Counties), and taxi regulators in Fairfax, VA, San Diego, CA, and Toronto, ON, Canada to obtain outside perspectives on the proposed regulation requirements. In addition, we spoke with receptionists at two Montgomery County hospitals to obtain their perspective on one requirement dealing with medical call prioritization. We also reviewed County's Taxi Hotline complaint list to see what customers were most concerned about. We used this list of complaints to identify those areas of customer service that did not need improvement (by process of elimination), based on customer feedback.

### 3.2.2 Identify Ambiguous Sections of Regulation

We looked for ambiguous or unclear requirements in the regulation, using written comments and interviews with the Montgomery County taxi companies as a starting point. We interviewed County officials to understand the intent for ambiguous sections of the regulation.

### 3.2.3 Identify Parts of Regulation that Could be Satisfied by other Means

Currently, Regulation 13-06 requires taxi companies to record and collect a number of different data items for County use. We looked at different ways to collect these data, using the taxi companies or a third party.

## 3.3 Identify Possible Customer Service Solutions

Using the methods in 4.1 and 4.2, we were able to identify a set of possible solutions to help improve County taxi customer service.

### 3.3.1 Modify Regulation

Throughout our project, we looked at the possibility of making changes to Regulation 13-06. We considered the usefulness of requirements in improving customer service, the cost of meeting the regulation for the County and the taxi companies, and the accuracy of the data to be collected.

### 3.3.2 Other Suggestions (explored through the following methods)

We also looked at other possible solutions to improve taxi customer service. We analyzed complaints from the County Taxi Hotline to identify any outstanding areas of customer service that could be improved. By looking at the complaints, we could see if the current regulation addressed all outstanding customer service issues, or whether we could recommend any other solutions to the County. We looked at taxi regulation systems outside Montgomery County for ideas on how to approach customer service. We also observed the first portion of a taxi test in Montgomery County, and spoke with taxi drivers from each company to get their input on some possible customer service solutions.

Through a careful examination of Regulation 13-06, interviews with Montgomery County officials, County taxi company representatives, outside taxi companies and regulators, and discussions

with taxi drivers and health facility employees, we were able to obtain an extensive view of the issues related to taxi customer service in Montgomery County. We evaluated the customer service benefits of the proposed regulation, looked at other customer service needs, and considered the cost of implementing the regulation to come up with several possible methods to improve taxi customer service.

# 4. Results and Analysis

In the Results and Analysis chapter, we describe the results we obtained from applying methods from Chapter 3. The headings below will match closely with headings from Chapter 3 so that methods from section 3.1.1 have results and analysis in section 4.1.1.

Before starting our project, we planned to focus on the ability of taxi companies to meet the proposed customer service Regulation, believing (based on initial phone conversations with Montgomery County Transit officials) that the taxi companies were trying to evade new regulations that they had the ability to meet. However, once we started our project and interviewed the taxi companies and Montgomery County Transit members in person, we realized that a portion of the proposed regulation did not directly improve taxi customer service and was difficult and expensive to implement.

## 4.1 Financial Requirements for Meeting Current Proposed Regulations

This section involves research into different systems, cost-analysis of various options available for companies to use through research of available dispatch systems, interviews with taxicab companies to see which specific parts of the Regulation their current system could not meet, and what systems they would need to invest in to meet the Regulation.

### 4.1.1 Identification of Taxicab Companies' Current Data Recording and Reporting Systems

We reviewed past annual reports sent to Montgomery County Government from the taxicab companies to see what required data the companies already provide to the County. We found that the companies currently report six of the required data items: paid miles driven, number of trips, total revenue, extra revenue, total number of calls received (per month/year), and average number of taxis in service daily. However, Regulation 13-06 requires the taxi companies to report these items by geographic area, not for the entire county, as they currently report.

We used data gathered from interviews with Barwood, Regency, Action Taxi, and Sun Cab to determine how each company could meet the proposed regulation.

According to our taxi company interviews, Barwood, Regency, and Sun Cab can meet all of the current proposed requirements, but only after a significant investment in new dispatch software and/or hardware. Action Taxi stated that they could not meet the proposed regulation with any existing dispatch system.

The following table lists the current dispatch systems of each company:

**Table 1 -*Current Company Dispatch Systems***

| | Action Taxi | Barwood | Regency | Sun Cab |
|---|---|---|---|---|
| Radio dispatch | Yes | Yes | Yes | Yes |
| MDT in cab | No | Yes | No | Yes |
| GPS dispatch/ GPS integrated in cab | No | Yes | No | No |

## Barwood Taxi

Barwood Taxi uses digital dispatch system. Each Barwood taxicab contains a Mobile Data Terminal (MDT). These MDTs are equipped with GPS technology and have the ability to wirelessly transmit and receive location and trip information from the company dispatch center. This gives Barwood the ability to instantly dispatch call information to a cab anywhere in the county. The MDTs also contain map navigation software so the drivers do not have to rely on maps or prior knowledge of an area. This decreases the possibility that a driver will be late for a call due to poor navigation. The integration of GPS into the taxicab gives Barwood the ability to keep track of the location of each of their cabs and dispatch every job to the closest available driver. Each MDT is connected to the taximeter, allowing meter information to be wirelessly sent to the dispatch center on a near real-time basis.

Regency uses an internal zone system to categorize dispatched calls by location. Because Barwood's zone system is different from the County's geographic zone map, Barwood would have to modify their dispatch system to meet the proposed regulation. Barwood can currently collect a number of operating statistics, but would have to make investments to meet any of the geographic requirements of the proposed regulation.

### Regency Taxi

Regency Taxi has a radio-based dispatching system. The company's dispatch recording software was developed in-house, and is maintained through their IT staff members. Regency is currently working on integrating their dispatch software to work effectively with GPS capable MDTs for their taxicabs. Regency records a number of different operating statistics, which they collect from their taximeters (manually) and from their dispatch software (through automatically generated reports). Regency uses an internal zone system to categorize dispatched calls by location. Because this zone system is different from the County's defined geographic zones, Regency would have to rewrite their existing software to provide any geographic data for the County.

Currently, Regency can report several operating statistics, but not by the County's defined geographic areas. Regency can currently report accident information by location, but would need to upgrade their dispatch system to provide any other geographic data.

### Sun Cab

Sun Cab currently uses MDTs to dispatch calls to their drivers. Drivers can manually enter their location into the MDTs, which transmit this information to the call center. Sun Cab uses the locations entered by their drivers to dispatch calls to the appropriate cab. The dispatcher can then send the details of a call to the MDT of a specific driver. Sun Cab's call center is currently located in a Baltimore facility, owned by its parent company, Veolia Transportation. Sun Cab has a contract with DDS to

wireless service and support for their MDTs. Sun's MDTs are not connected to the taximeters, so Sun must manually collect operating data directly from the taximeters.

Currently, Sun Cab can collect the total number of miles, paid miles, and number of trips, but not by geographic area. Sun Cab can currently report accident information by location, but would need to upgrade their dispatch system to provide any other geographic data.

#### Action Taxi

Action Taxi uses a radio-based dispatch system. Their dispatch center software was custom-made for them in 1989 (personal communication, R. Arens, November 5, 2009), and was based on dBASE. Action has the ability to (but does not currently) manually collect some trip data from their taximeters. Action can currently report accident information by geographic area, but would need to upgrade their dispatch system to provide any other required data. Action is planning to upgrade their current dispatch system, but is waiting to see the final version of the customer service regulation before making an investment.

### 4.1.2 Required Investments to Report Required Data

We research several different dispatch systems to see what options existed for taxi companies to meet the proposed regulation. Based on interviews with taxi regulators and keyword searches on the World Wide Web, we identified five dispatch system companies would could potentially meet the demands of the proposed regulation. We contacted each company to identify how their system could meet the proposed regulation and how much it would cost. We compared the cost of each available system (which met County requirements) to determine the least expensive solution.

*Taxicab Dispatching System Distributers*

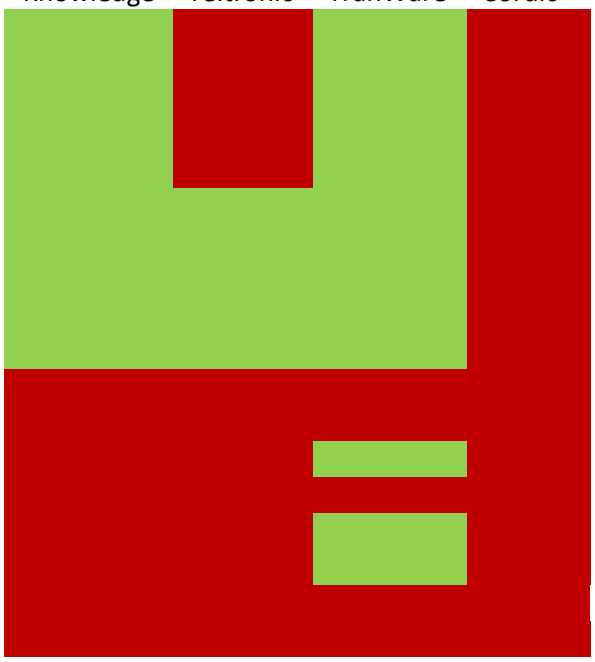
We contacted each of the five dispatch companies we identified: Mobile Knowledge, TranWare, Teltronic, Cordic, and D.D.S. We were able to obtain dispatch capability information and cost estimates from four of these companies. (D.D.S was not willing to provide a cost estimate for their system.)

Table 2 provides an overview of the data recording capabilities of the following dispatch companies: Mobile Knowledge, TranWare, Teltronic, and Cordic. None of the companies we spoke with could provide all of the required data with their existing "off-the-shelf" system; each required modifications to be able to report all the data required by Regulation 13-06. Cordic has a contract with an organization that can readily make changes to their system, while Mobile Knowledge, Teltronic, and Tranware would require the purchaser to contract another organization to make these changes.

In Table 2, regulation data that can be collected by the company's existing system are marked in green, while data that requires some type of system modification are marked in red.

Table 2 - *Dispatch Company Data Capabilities*

| Geographic Area Regulation Criteria | Mobile Knowledge | Teltronic | TranWare | Cordic |
|---|---|---|---|---|
| Reporting % Prearranged Service served within 10 min | | | | |
| Reporting % Immediate Service served within 25 min | | | | |
| Reporting if it was a Medical call | | | | |
| Reporting if the Medical call got priority | | | | |
| Reporting % Medical Service served within 10 min | | | | |
| # of calls | | | | |
| # of trips dispatched | | | | |
| # of prearranged service calls | | | | |
| # of immediate service calls | | | | |
| # of medical service calls | | | | |
| Total miles driven | | | | |
| Total paid miles driven | | | | |
| Total number of trips served | | | | |
| Total meter revenue and extra revenue | | | | |
| Taxicab vehicles in service | | | | |
| Taxicab vehicles not in service | | | | |
| # of unserved trips for immediate and pre-arranged trips | | | | |



Based on an estimate from two companies, it will cost $500 to $2500 to add each red-marked criterion to a company dispatch system. This averages to $1,500 per red-marked criterion. There are 40 red-marked criteria, which gives an average upgrade cost per company of $15,000. We do not link company names to specific price estimates at the request of two of the companies.

Table 3 provides some "best case" estimates on the total cost to the taxi industry of meeting Regulation 13-06. (For the sake of anonymity, we did not list the dispatch system companies in any particular order.)

Table 3 –*Low Range Price Estimates*

| | Company 1 | Company 2 | Company 3 | Company 4 | Average |
|---|---|---|---|---|---|
| $ to Install 715 Cabs + Software | $461,175 | $600,000 | $1,315,000 | $692,750 | $737,261 |
| Wireless Service $ per year | $214,500 | $244,600 | $171,600 | $214,500 | $211,300 |

Table 4 shows the average investment cost for each taxicab company to meet Regulation 13-06 based on dispatch system company estimates. Because these estimates are based on the average price for 715 taxicabs (see Table 3), the actual price may be greater.

**Table 4 –*Estimated Investment Costs for Taxi Companies***

| | Action | Barwood | Regency | Sun Cab |
|---|---|---|---|---|
| Estimated Cost from Averaged Total | $81,529 | $520,407 | $164,154 | $61,141 |
| Estimated Wireless Service per year | $18,322 | $139,192 | $41,077 | $12,707 |

Barwood estimates they could upgrade their existing dispatch system to collect all required criteria in Regulation 13-06 for $125,000 (personal communication, L. Barnes, November 13, 2009). They also estimate that they would need to purchase a new $30,000 server dedicated to collecting and processing the additional data required by Regulation 13-06.

We added the cost estimates for Action, Regency, and Sun Cab (from Table 4), as well as the price estimate from Barwood of $155,000 to obtain a low-end price estimate of $606,036 (see Table 5). This is a low-end estimate, since it uses Barwood's price estimate (which is less than a dispatch company estimate for Barwood).

**Table 5 -*Low End Price Estimate***

| **Item** | **Cost** |
|---|---|
| Barwood cost | $155,000 |
| Action cost | $81,529 |
| Wireless for 62 cabs | $18,322 |
| Regency Cost | $164,154 |
| Wireless for 139 cabs | $41,077 |
| Sun Cab Cost | $61,141 |
| Wireless for 43 cabs | $12,707 |
| Total Company Cost | $533,930 |
| Total Wireless Cost (1 yr) | $72,106 |
| **Total Cost** | **$606,036** |

We can get a "high-end" estimate by considering a situation where Barwood could not meet the regulation requirements, and had to invest in a new dispatch system. We will use the estimate from Cordic (which did not request anonymity), since they are the only company which could immediately guarantee the ability to meet the regulation reporting requirements (because they can make required system modifications themselves).

It will cost the industry a total of $692,750 to install software and hardware. It will cost the industry an additional (4 cab companies)*(17 red boxes*$1,500 per red box) $102,000 to upgrade their system and Barwood an additional $30,000 server. This equates to a best case (715 cab hardware deal) high end estimate of $824,750 plus a one year wireless fee of $214,500.

### Action Taxi

According to a price quote in Action Taxi's most recent PVL application, it would cost $84,500 (including the first year of service fee) to obtain GPS capabilities from Teltronic. This system would allow Action to monitor vehicle speed, meter on/off, and print daily activity reports. This system alone would not allow Action Taxi to meet Regulation 13-06, and would require an additional estimated upgrade cost of $18,000 ($1,500 for 12 red-marked requirements in Table 2). If Action Taxi used Teltronic, it would cost them $112,500 for the base system and projected upgrades.

### Barwood

Barwood would have to invest $125,000 in software and/or hardware in order to collect and report the required data items (personal communication, L. Barnes, December 2, 2009). In addition, Barwood would need to purchase an additional server to process and store the additional data collected through the regulation. (This, to prevent their main server from overloading due to the dramatic increase in data processing required.) Of the $125,000 system investment required, Barwood estimates $75,000 of this is related to modifying their system to allow for the County's geographic areas.

According to company estimates, this geographic area cost would be decreased to $25,000 if they only had to report the geographic data by zip codes (instead of the seven County geographic zones from Regulation 14-06).

### Regency

Regency is currently in the process of upgrading their dispatch system to include MDTs with GPS capabilities. To date, Regency has spent $300,000 on obtaining and integrating the MDTs into their system, with a projected cost of $100,000 to complete the process. This system alone could not meet all the requirements of Regulation 13-06 and would require an additional estimated investment of $25,500 ($1,500 each for 17 red-marked criteria from Table 2). The cost for Regency to meet the regulation comes to $125,000, based on estimates of MDT integration and upgrades (assuming Regency's in house programmers can update their software for the same price as our average.

### Sun Cab

According to estimates from DDS, Sun Cab would have to invest $5,000 to $10,000 to meet each reporting requirement in Regulation 13-06 (personal communication, D. Kines, December 16, 2009). The geographic area section of Regulation 13-06 has 21 different data requirements. About six of these requirements would not be collected from a dispatch system (such as accident information), or could overlap with other requirements (such as vehicles in service and out of service). This would leave 15 data requirements, which would cost an estimated $112,500 (assuming an average $7,500 reporting cost). However, Sun Cab stated that they could not collect at least two data requirements (total/paid miles driven and total/extra meter revenue), regardless of the investment they made.

If Sun Cab used another dispatch system, such as one discussed in Table 3, they could meet all of the regulation requirements. Based on our average estimate from the dispatch system companies (see

Table 3), it would cost Sun Cab $54,375 for hardware and software and $12,707 for the annual wireless contract. This comes to $77,082 for Sun Cab to meet Regulation 13-06 (as a low end estimate

### Other Means for Meeting Regulation 13-06

From our interviews and data collection spreadsheets, each of the four companies reported that they require a GPS integrated system to be able to collect data for Regulation 13-06. Another method for potentially collecting Regulation 13-06 criteria would be to manually record data. Criteria such as number of calls received, dispatched calls, prearranged service calls, immediate service calls, unserved trips due to unavailability of taxicabs, and medical calls per geographic area could be hand typed into a spreadsheet and tallied. This method of data collection would require a large number of person-hours, and could require taxi companies to hire additional staff. However, this data could also be collected using sampling. Sampling would provide trends in call density (for each of the criteria above) over time. Because sampling could provide trends in data, taxi companies could use it collect this data less expensively. The use of sampling could greatly reduce stresses on taxicab dispatchers and call takers, because they would only have to collect data intermittently through the year.

Another way to collect required operating data without the use of an expensive GPS dispatch system is to require each taxi driver to record the necessary data for each taxi call on their manifest. The County would have to adjust the manifests so that the driver recorded paid and unpaid miles for each geographic area. This would require each driver to know in which of the County's geographic areas he or she was at any time. Paul Grauman, a DOT taxicab inspector, estimates that 10% of drivers have problems completing their manifests and receive related citations (December 7, 2009). Citations for incomplete driver manifests account for 35% (140/398) of the total citations the DOT issued in FY09 and FY10 (to date). Adding another section to the driver manifest document would require the taxi drivers to put additional effort into maintaining their manifests, and would likely increase the number of taxicab

drivers who fail to complete their manifests. Data collected by taxicab drivers will most likely not be accurate because it requires exact measurements of time and distance traveled in their current geographic location as well as a distinct knowledge of where geographic areas begin and end. When a driver crosses over a geographic area line, the driver would record some data, like their miles and time, while driving or having to pull over (driving a customer and recording a mileage whenever a geographic zone is crossed could be considered dangerous, certainly not improving customer service). We interviewed regulators in Fairfax County, San Diego, and Toronto and they found that obtaining credible data from driver manifests would be difficult. Requiring a thousand taxicab drivers to provide their manifests to taxicab companies for the collection of each driver's trip and non-trip mileage would require the hiring of additional staff and be cumbersome. Last year alone, Montgomery County taxi companies serviced 1.8 million calls dispatched calls (not including cab hails or customers who called a cabbie directly). A driver recording the distance traveled from their starting point to the customer, the customer to their final location, and the final location to a new customer or location would produce at least 3 data entries (if geographic area was not changed). If an average cabbie averages 3 data entries per call that would produce at least 5.4 million data points a year (1.8 million calls/year * 3 data points/call), which is an unreasonable amount of data to collect and input by hand (this would be for only one of the required criteria).

## Conclusion

Currently, each Montgomery County taxi company must invest up to several hundred thousand dollars to meet requirements of Regulation 13-06. Of the dispatch system companies we contacted, none could provide all of the required data without modifications to their "off-the-shelf" system. Because of the expense and difficulties involved in meeting Regulation 13-06, we will need to evaluate the Regulation to determine how well it improves customer service and whether there are any unnecessary sections in it.

## 4.2 Analyzation of Regulation 13-06

We initially found issues with Regulation 13-06 through comments that taxicab companies made to its criteria. When analyzing criteria from Regulation 13-06, we found criteria that would be a conflict of interest if taxicab companies reported them (4.2.1), criteria that are not necessary (4.2.2), and criteria that are ambiguous (4.2.3). Similarities in responses from Montgomery County taxicab companies (Action Taxi, Barwood, Regency, and Sun Cab) to our interview questions in Appendix E (1,2) also helped establish what criteria from Regulation 13-06 are problematic for taxi companies to report.

### 4.2.1 Conflicts of Interest

We found sections of Regulation 13-06 that are conflicts of interest for Montgomery County taxicab companies to report.

#### *Reporting Prearranged and Immediate Service Percentages*

Regulation 13-06 Section II. D. (4), and (6) requires taxicab companies to report the number of prearranged (4) and immediate (6) service trip requests served at 90% or better, 85% or better, 84%-75%, 74%-65% and 64% or lower.

Regulation 13-06 Section II C (1) (d) states, “Failure to meet customer service requirements may result in the revocation of 10% of the licensee’s Passenger Vehicle Licenses“.

The County defines minimum customer service requirements as 90% of prearranged service calls are served within 15 minutes and 90% of immediate service calls are served within 25 minutes (Appendix D, Regulation 13-06 Section II. A. (1) and (2))

The company’s income directly relates to the number of Passenger Vehicle Licenses a taxicab company owns. There is no feasible way to verify a taxicab company’s accuracy for reporting on time percentage performance for prearranged and immediate service calls because companies record their

own percentages. Companies could report a percentage that is above the minimum customer service requirement to insure they will not have licenses revoked. Therefore, the self-reporting of these percentages places taxicab companies at a conflict of interest.

One way this conflict of interest could be resolved is if the County utilizes a third party sampling company, such as Mystery Rider, to gather information because Mystery Rider does not have an interest in the data they are reporting.

### *Reporting of Complaints*

Regulation 13-06 Section II. D. (2) (c) 18., "Number of complaints filed regarding taxicabs in the following categories for each geographic area:

(a) No Shows
(b) Late arrivals
(c) Trip refusals
(d) Not available
(e) Delayed answering service
(f) Over-charge
(g) Unsafe driving and incorrect route
(h) Service animal refusal
(i) Other, specify
(j) Types of driver complaints including, late service, no shows, service refusal, and over-charges "

The number of complaints the taxicab companies supply to the County could affect the company's status during a Passenger Vehicle License issuance. The DOT currently reviews the complaints registered on the County complaint hotline during PVL issuance (personal communication, J. Ryan, October 29, 2009) and it would be unreasonable to disallow DOT members to review this information, because any reported data becomes public record according to Chapter 53 of Montgomery County Code Section 110 (c). The DOT would place a company with a higher percentage of complaints compared to the size of their fleet below other companies during that PVL issuance. Because an increase in the number of PVLs owed by a company directly increases that company's income, this is a conflict of

interest for taxicab companies in self-reporting the number of complaints received because they could report a lower number of complaints than the actual complaints received.

If a third party sampling company like Mystery Rider collected additional complaints during the mystery ride, than the County would observe more complaints and have them readily classified by geographic area. Using third party sampling as a collection method instead of having companies self report would eliminate the conflict of interest.

### 4.2.2 Unnecessary Sections of Regulation

We examined each section of the proposed regulation to determine how it related to customer service and how practical it was for the taxi companies to collect.

#### *Non-emergency Medical Call Priority*

Regulation 13-06 Section II. A. (3), and (4) requires that calls to or from medical facilities be given a higher priority than regular taxi calls.

Currently, all taxi companies in Montgomery County have the ability to give priority to certain dispatched calls.

We asked representatives of taxi companies in Montgomery County and Northern Virginia and taxi regulators in San Diego, Fairafax, and Toronto for their opinion of this requirement. None of these persons felt that there was a need for this requirement, since it deals with non-emergencies. We also took the initiative to talk to hotel receptionists at two Montgomery County hospitals, who would call taxis for outgoing patients. In both cases, the receptionists did not see a need for priority to be given to these calls. (This example is included as a point of interest, and is not intended to be a statistical representation of all Montgomery County hospitals or of the medical community.)

We did not identify any individuals who supported the need for this requirement.

### *Plan for Fleet Service Improvements*

Regulation 13-06 Section II. D. (2) (b) requires taxi companies to submit an annual "plan for service improvements."

Companies that fail to meet customer service requirements are required to produce a "plan to improve service," with a timeline to meet needed changes (Section II. C. (1) (a)). Section II. D. (2) (b) is unnecessary, because companies in need of service improvements are already required to produce a similar report (Section II. C. (1) (a)), and companies not in need of service improvements should not be required to produce one. Thus, the county will be rewarding companies who provide good customer service by reducing their paperwork.

### *Geographic Area Requirements*

Regulation 13-06 Section II. D. (2) (c) requires taxi companies to report twenty-one data items divvied into seven different geographic areas in the County.

In our interviews with the Montgomery County taxi companies, all of the taxi companies listed this section as the most difficult part of Regulation 13-06 to meet. While one company stated that they could never meet certain parts of this section, the other three taxi companies said they would need to invest considerable amounts of money to be able to meet the demands of this section. All of the taxi companies and our project team questioned the usefulness of the geographic area section to improving customer service, given lack of enforcing method (other than it being required) and how it relates to customer service. A breakdown of some of the problematic requirements follows.

- Total Miles Driven

  Regulation 13-06 Regulation 13-06 Section II. D. (2) (c) 10., and 11. requires taxi companies to report the total number of miles driven.

The collecting of these data is expensive to gather because it requires an upgraded GPS integrated dispatching system and these data do not readily improve customer service. Howard Benn of the DOT said that the reason the County wished to collect these data was so it could build an online report accessible to the public. The conclusion that these data present is which geographic areas taxicabs from a specific company drive in most frequently. The more miles driven in a specific area does not mean it will receive better service. A more accurate way to measure how well taxicab companies serve an area is through on time performance percentages.

These data would only be slightly useful toward determining the probability of hailing a cab when in a geographic area, because cabbies will drive long distances to service a customer, instead of being available for hails. If taxicab companies reported which taxicab stands their drivers frequently used, it would be inexpensive for taxicab companies and give the County a better idea of hailing probability per geographic area per company.

- Measurement of Paid and Unpaid Miles

  Regulation 13-06 Section II. D. (2) (c) 10., and 11. requires taxi companies to report the total number of paid and unpaid miles driven.

  Taxicab companies already report this data but not by geographic area. Implementing this would be expensive to gather because it would require an upgraded GPS integrated dispatch system. These data do not pertain to improving customer service, but does give the County an idea of which areas taxicab companies' taxis drive customers through most often. With the combination of the calls received per geographic area and the paid and unpaid miles per geographic area, the County could estimate the primary flow of customers in Montgomery County. The County could more easily measure this data if cab companies were required to

report the end location of the serviced customer per geographic location (if the end location is in Montgomery County).

The more paid or unpaid miles driven in a specific area does not mean the area will receive better service. A more accurate way to measure how well taxicab companies serve an area is to use on time performance percentages.

The County could find the efficiency of a taxicab company by taking a cab company's paid miles and dividing it by the total miles driven. These data are not accurate per geographic area because some cross into multiple geographic areas. With some of the data the County currently requires (total miles driven and paid miles per year, not by geographic area), they could find an efficiency per taxicab company. Studies comparing company efficiency to on time performance could be done to learn more about how company efficiency is related to management style and dispatching technologies.

- Total Meter Revenue and Extra Revenue

  Regulation 13-06 Section II. D. (2) (c) 13. requires taxi companies to report the total meter revenue and extra revenue (i.e. revenue from additional services charges) for each geographic area.

  Taxicab companies already report these data, but not by geographic area. These data do not pertain to improving customer service but could be used to show the County or taxicab company owner which area they make the most money in (could also be compared to the number of rides in that area to show what has the best cost to ride ratio). These data are expensive to collect and requires an upgraded GPS integrated dispatching system. There is no enforcement or observation method to ensure the accuracy of extra revenue per geographic area.

- Taxicab Vehicles in Service and not in Service

Regulation 13-06 Section II. D. (2) (c) 14., 15. requires taxi companies to report the number of taxi vehicles in and not in service for each geographic area.

The only way we could figure to calculate taxicab vehicles in service and not in service was if an average time spent per geographic area per cab was recorded and framed into a percent time each cab spent in each geographic location (then average all cab percentages per geographic area together). A GPS system would have to be programmed to exclude time that a cab is servicing a customer, because during that period, the cab is not open for hailing or dispatching. After that computation is completed, and an average time of available service would broken down percentage-wise into geographic area, then only could taxicabs not in service (broken and off the road, not delivering a customer) by geographic area be calculated. A taxicab not in service does not belong to any specific area, so the average percentages calculated for taxicab's in service would be used for a taxicab not in service (because on average, that is where the taxicab would be servicing if it were in service). This fact would make reporting taxicabs not in service by geographic area, unnecessary. Chapter 53 of Montgomery County Code requires that taxicab companies show a willingness to provide service to the whole County. By having on time performance standards, the County requires companies to service all areas of the County to the best of their ability.

Because independent driver owners/ vehicle leasers compete with each other to service the public, taxicab drivers have the right to place themselves strategically throughout the County, therefore taxicab companies cannot strictly organize their cab locations throughout the County.

- Number of Accidents

  Regulation 13-06 Section II. D. (2) (c) 17. requires taxi companies to report the number of accidents involving taxicabs for each geographic area.

  Taxicab accidents are already reported to the County by location because Montgomery County Code Chapter 53 Section 320 (b) states "[Accident reports] must include the driver's name; driver's identification card number; date, location…" . If the County wants to organize accident locations by geographic area, they could organize it themselves with a spreadsheet that organizes zip codes by geographic area.

- Types of Complaints by Certain Categories

Regulation 13-06 Section II. D. (2) (c) 18., "Number of complaints filed regarding taxicabs in the following categories for each geographic area:

a) No Shows
b) Late arrivals
c) Trip refusals
d) Not available
e) Delayed answering service
f) Over-charge
g) Unsafe driving and incorrect route
h) Service animal refusal
i) Other, specify
j) Types of driver complaints including, late service, no shows, service refusal, and over-charges "

Sections (e), (f), and (h) do not appear to be related to geographic area, and (j) is a restatement of (a), (b), (c), and (f). Taxicab regulators can force taxicab companies to report customer service complaints by threatening to take away their licenses if they do not comply. This is a strategy for getting taxicab companies to report their complaints but David Reidenbach, another regulator from Fairfax County, does not require Fairfax taxicab companies to report customer service complaints. He feels that

if the complaint is settled in house, and never reaches the County level, than that shows good management toward solving a complaint.

Jeremy Philips, manager of Sun Cab, says that complaints can only be organized by geographic area if the complaint is reported with a location. It may be difficult to decide which area a complaint falls into if the complaint is regarding an incident that occurs on a trip spanning multiple geographic areas.

We find this section of the regulation unnecessary because of the conflict of interest it creates (reference section 4.2.1 for more details), because the County already receives some complaints through the County complaint hotline, because the County could utilize the Mystery Rider program to obtain more complaints.

- The Number of Customer Complaints

Regulation 13-06 Section II. D. (2) (c) 20. requires taxi companies to report the number of consumer complaints during the past 12 months by type and geographic area.

Regulation 13-06 Section II. D. (2) (c) 18. covers this requirement making this item redundant.

### *Current Promotional and Marketing Programs*

Regulation 13-06 Section II. D. (2) (d) 9. requires taxi companies to describe their promotional and marketing programs.

In our interviews, the taxi companies stated that their promotional and marketing programs were confidential company information, and the County should not require it. In order to comply with this section of the regulation, taxi companies would have to divulge business information that could damage that company's competitive advantage, since any information the taxi companies provide in their customer service report to the County becomes a public record according to Chapter 53 of Montgomery County Code Section 110 (c). The reporting of this data does not improve customer service.

### *Planned Innovative Marketing Programs*

Regulation 13-06 Section II. D. (2) (e) 4. requires taxi companies to describe "innovative marketing programs planned."

As mentioned in Current Promotional and Marketing Programs above, this section does not relate to customer service, and could negatively impact a company's competitiveness.

### 4.2.3 Ambiguous sections of Regulation 13-06

Some sections of Regulation 13-06 are difficult to understand and the County could restructure it to be easier to follow.

### *Prearranged and Immediate Service Percentages*

Regulation 13-06 Section II. D. (2) (c) 4. and 5., "[Cab companies must report] The number of prearranged (immediate in (c) 6) trip requests served at 90% or better, 85% or better, 75%-84%, 65%-74%, and 64% or lower (per geographic area)".

Regulation 13-06 Section II. A. (1) and (2) also states, "[Minimum service requirements are 90% of [prearranged] calls must be served within 15 minutes and 90% of all [immediate] calls must be served within 25 minutes."

Regulation 13-06 Section II. C. (1) (d) states, "Failure to meet customer service requirements [after 1 year of knowing you are not meeting the standard] may result in the revocation of 10% of the licensee's Passenger Vehicle Licenses.".

Regulation 13-06 Section II. D. (2) (c) 4. and 5 requires each trip to be rated as a percentage of on time performance. This is not the correct way to record these data because if a cabbie serves 90% of all immediate service calls within 15 minutes, than any call longer than 15 minutes would become part

of the 10% of calls not served within 15 minutes. The way the data is currently is recorded would have companies with (for example) nine 100% services and one service at 89% (which is also unclear what a 89% trip is because there are no sliding scale to compare it against, and the first nine 100% services are double counted because the regulation requires the reporting of 85% and up). A DOT member would not take the average of these percentages to see if the company met the minimum service requirements, but instead would observe nine trips have passed and one did not so that company is servicing 90% of all their prearranged calls within 15 minutes. When the DOT has to quantify these data, they will notice that any call serviced below 100% is counted fully against the company as it not being served within 15 minutes. We suggest changing the criteria of reporting the number of customer service data served at 90% or better, 85% or better, 75%-84%, 65%-74%, and 64% or lower (per geographic area) to report the percentage of rides served within 15 minutes for prearranged service (or 25 minutes for immediate service).

The DOT can average the percentage from each geographic area to calculate if the company in question meets the minimum service requirements for the entire County. The DOT could also use a weighted average as described in 4.3.3.

## 4.3 Criteria from Regulation 13-06 that can be met by Sampling

In the following sections, we explore sampling as a less expensive method of collecting some of the data required by Regulation 13-06. Taxicab companies and the County Mystery Rider program can collect a number of required data items by geographic area.

We obtained all sample sizes in this section using a sample size calculator from Raosoft (2009).

Because Regulation 13-06 Section II B. (2) requires taxi company service levels to be met on an annual basis, we intend to use a sample size valid for the whole year, and divide it by 12 to obtain the number of samples to be provided each month.

### 4.3.1 Taxicab Company Sampling

We identified a number of geographic data items that taxi companies could easily record (see Table 6). This list omits geographic area criteria we defined as having a conflict of interest (in section 4.2.1), as unnecessary (in section 4.2.2) or which we identified as impractical to collect on a sampling basis (such as taxicab vehicles in service and out of service).

**Table 6 -*Data Sampled by Company***

| By Geographic Area: | |
|---|---|
| # of calls received | Company |
| # of trips dispatched | Company |
| # of prearranged service calls | Company |
| # of immediate service calls | Company |

(in Appendix G)

Taxi companies could collect this data using an electronic or paper spreadsheet for all calls received during a certain sample period. The companies could record the zip code for each call and use a spreadsheet to organize this data by geographic area. This would require the call taker to record the location of each call (during the sample period), but would not require the use of a GPS system. The data that the taxi companies provide (see Table 3) would be used to determine the number of "Mystery Rides" to be conducted in each geographic County region for each company. While it is possible that a taxicab company could fabricate the sample data, this would not provide a significant advantage to the company since the Mystery Rider program requires a minimum level of sampling for each region of the county (see Section 4.3.3).

Action Taxi had an estimated 72,000 calls last year (personal communication, J. Ryan, October 28, 2009). Using 72,000 as a yearly population, with a 95% confidence interval and 5% margin of error we get a sample size of 383 calls per year (according to Raosoft). This means they would have to provide $383\frac{calls}{year} \Big/ 12\frac{mont\ h}{year} = 32\frac{calls}{mont\ h}$ for each sample criterion. This means that 128 samples (32 samples * 4 criteria) must be recorded by geographic area per month or 1,536 per year. Three hundred eighty-three calls per year is 0.5% of the estimated annual call volume for Action Taxi.

Barwood had approximately of 1,000,000 calls last year (personal communication, J. Ryan, October 28, 2009). Using 1,004,636 as a yearly population, with a 95% confidence interval and 5% margin of error gives a sample size of 384 calls (according to Raosoft). Barwood would have to provide $384\frac{calls}{year} \Big/ 12\frac{mont\ h}{year} = 32\frac{calls}{mont\ h}$ for each sample criterion. This means that 128 samples (32 samples * 4 criteria) must be recorded by geographic area per month or 1,536 per year. Three hundred eighty-four calls per year is 0.25% of Barwood's total calls per year

Regency received an estimated 236,000 calls last year (personal communication, J. Ryan, October 28, 2009). Using 236,000 as a yearly population, with a 95% confidence interval and 5% margin of error gives a sample size of 384 calls (according to Raosoft). Regency would have to provide $384\frac{calls}{year} \Big/ 12\frac{mont\ h}{year} = 32\frac{calls}{mont\ h}$ for each sample criterion. This means that 128 samples (32 samples * 4 criteria) must be recorded by geographic area per month or 1,536 per year. Three hundred eighty-four calls per year is 0.16% of Regency's total calls per year.

Sun Cab received an estimated 2,500 calls last year (personal communication, J. Ryan, October 28, 2009). Using 2,500 as a yearly population, with a 95% confidence interval and 5% margin of error gives a sample size of 334 calls (according to Raosoft). Regency would have to provide $334\frac{calls}{year} \Big/ 12\frac{mont\ h}{year} = 28\frac{calls}{mont\ h}$ for each sample criterion. This means that 128 samples (32 samples * 4 criteria) must be recorded by geographic area per month or 1,344 per year. Three hundred thirty-four calls per year equals 13.3% of Sun Cab's total calls per year.

The collected by taxicab companies data could be used to better guide Mystery Rider sampling.

### 4.3.2 Mystery Rider Sampling

We identified a number of criteria that the Mystery Rider program could collect (see Table 4). We attended a meeting with the current Mystery Rider organization and confirmed that they could collect each of our desired criteria (see Table 4).

Table 7 -*Sampling Data by Mystery Rider*

| | |
|---|---|
| By Geographic Area: | |
| Reporting % Prearranged Service serviced within 10 min | Mystery Rider |
| Reporting % Immediate Service serviced within 25 min | Mystery Rider |
| # of complaints by Geographic area: | |
| No shows | Mystery Rider |
| Late arrivals | Mystery Rider |
| Trip refusals | Mystery Rider |
| Not available | Mystery Rider |
| Delayed Answering service | Mystery Rider |
| Over-Charge | Mystery Rider |
| Unsafe driving and incorrect route | Mystery Rider |
| Service animal refusal | Mystery Rider |
| Other, specify | Mystery Rider |

(Appendix G)

Because the reporting of percent prearranged and immediate service is used in Regulation 13-06 as the main tool to manage taxicab customer service (and if not met results in the revocation of 10% of

the fleet's licenses), it is a conflict of interest for taxicab companies to self-report this data (see Section 4.2.1). Montgomery County taxicab companies would not need to invest in a GPS dispatch system if Mystery Rider sampled for the criteria above and a modified version of Regulation 13-06 based on our results was implemented (see Appendix B for our modified version of Regulation 13-06).

The current Mystery Rider program includes 100 taxi samples per month. This equates to 1200 mystery rides per year. According to sample calculations (Raosoft), 300 mystery rides per taxi company would provide a 91.6% confidence interval with a 5% margin of error for that company. Because of the flexible Mystery Rider contract, the County could redistribute sample rides throughout the geographic areas if they noticed a performance trend in a certain area.

Ideally, a survey should provide a 95% confidence interval and a 5% margin of (personal communication, Professor Joseph Petruccelli- WPI statistics professor, September 10, 2009). In order to reach this confidence level, an additional 1,880 mystery rides would be needed (3,080 total a year)(according to Raosoft). The cost of one mystery rider is $63.67 (personal communication, J. Ryan, December 14, 2009). The total cost for the additional 1,880 rides is 1,880*$63.67= $ 119,699.60.

One possible source of additional funding for the Mystery Rider Program is the fingerprint test for new taxi drivers. Currently the DOT pays $30,000 a month ($360,000 a year) for taxi driver applicants to obtain fingerprint records. A large proportion of these applicants never follow through with their application, costing the County as much as $15,000 each month (personal communication, M. Pollard, December 14, 2009). If the County required new cab drivers to pay for their fingerprint test and reimbursed them after they took the taxi test (assuming no change in the number of drivers taking the test), then the County would gain $15,000 (from the cost of fingerprint tests for applicants who do not currently follow through). This extra $15,000 over 12 months would provide an additional $180,000,

which is more than enough to cover the additional Mystery Rides. If the County did not reimburse any drivers for the fingerprint test, then the County would save $30,000 per month, or $360,000 each year.

The County could also have new driver applicants pay a third of the fingerprinting fee, providing the County would with $120,000 (33% of $360,000).

## 4.4 Considered Customer Service Solutions

We developed a list of suggestions for ways to improve taxi customer service based on observations we made at a County taxi driver test session and conversations with Glenn Steeves (a Toronto taxi regulator with a successful taxi driver-training program) and taxi drivers.

### *Modified Regulation*

If Regulation 13-06 is modified so it is less expensive among the taxicab companies then it will be easier to implement, and begin to improve customer service. In modifying the regulation, we removed sections that we found unnecessary toward improving customer service and rewrote sections that were unclear. The modified version of Regulation 13-06 (see Appendix B) utilizes the County's current Mystery Rider program to collect data that is useful for evaluating Montgomery County taxicab companies. By doing this, as well as allowing companies to sample for data they need to collect, we greatly reduced the cost of implementation from an estimated price range of $606,036 to $1,039,250 for the taxicab industry to effectively $0 if they use sampling methods.

### *Customer Service Section on Taxi Driver ID Test*

A customer service section on the taxi driver ID test would be useful for evaluating the customer service understanding and preparation of applicants. This would reinforce any customer service material which the county had taught the driver applicants prior to taking the test. It would also provide feedback to the County on areas of customer service in which new drivers need more training (based on

first-time test taker section results). When attempting to formulate questions, we found many questions could have multiple correct answers, and believe customer service could be better addressed through other methods.

### *Customer Service Brochure*

One idea we have toward improving customer service is for Montgomery County to hand out a customer service brochure after the taxi ID test for potential new drivers. This brochure would include tips for providing good customer service and for making more income by providing good customer service. Since an average taxi class has 15 applicants (personal communication, M. Pollard, December 16, 2009), a brochure would be inexpensive for the County to produce. An example brochure is included in Appendix I.

### *Mandated Driver Customer Service Training Program*

A County wide training program would enable all Montgomery County drivers to provide a common level of service. It would equip drivers with proper customer service expectations, provide them with ways to build their list of personals (which requires good service), offer training on map reading, and show that providing good customer service increases income through higher tips and driver recommendations. The individual teaching the class could introduce problem-solving strategies by interacting with the trainees in a way that makes them act out how they would deal with certain situations, and provide positive feedback to the driver trainees. According to Taxicab Operations Manager James Ryan, the County could provide this course with existing personal from the Taxi Operations Unit.

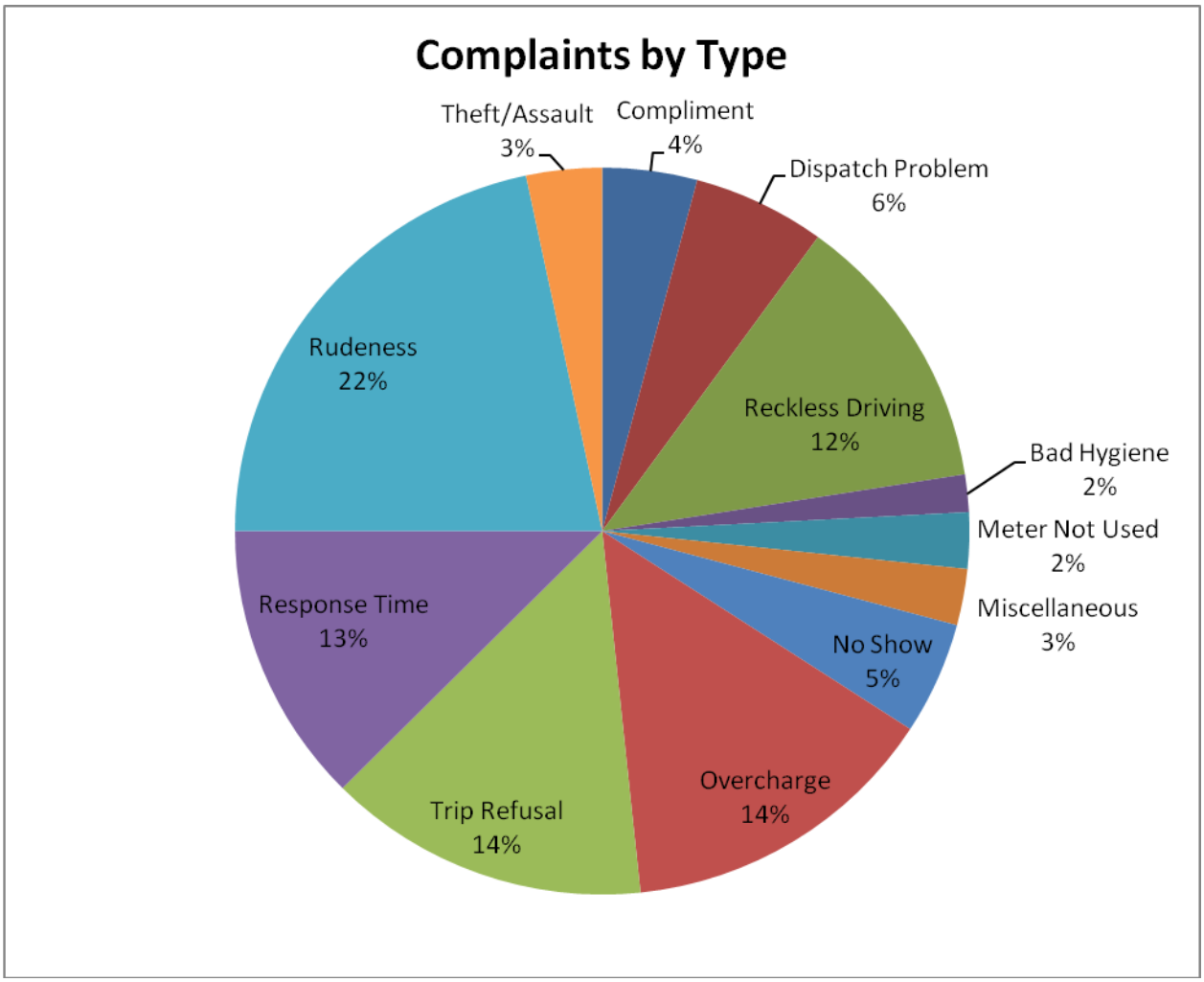



*Figure 1* -County Hotline Complaints for Fiscal Year 2009

Table 8 -*FY09 County Hotline Complaint Details*

| Complaint | # | Suggested preventative method for addressing complaint type |
|---|---|---|
| Rudeness | 26 | Driver training program –driver etiquette |
| Overcharge | 17 | Driver training program, better informed customers (This is a difficult issue to address) |
| Trip Refusal | 17 | Company incentives/programs, driver training program |
| Reckless Driving | 15 | Driver training program – vehicle driving skills |
| Response | 15 | CS Regulation, instruction of customer about expectations, driver training |

| | | |
|---|---|---|
| Time | | program |
| Dispatch Problem | 7 | Dispatcher training with customer service element |
| No Show | 6 | Company incentives/programs, driver training program, customer taxi expectation instruction |
| Compliment | 5 | DOT could write a letter to the cabbie acknowledging the compliment |
| Theft/Assault | 4 | |
| Meter Not Used | 3 | Driver training program |
| Miscellaneous | 3 | |
| Bad Hygiene | 2 | |

### *Practical Driving Test to Obtain Taxicab ID*

According to County Taxi Hotline complaints, (see Table 2), reckless driving is the fourth most common customer complaint. Currently, some Montgomery County taxi companies offer driver training, although the level of training varies greatly between companies. Last year approximately 700 drivers obtained licenses (personal communication, J. Ryan, December 16, 2009). If a practical driving test was conducted it would have reduce the number of drivers who obtained licenses, but would most likely require over 700 driving tests to be conducted because some drivers would retake the test after failing (personal communication, M. Pollard, December 16, 2009). A practical driving test could introduce liability issues for the County.

### *Required Taxicab Uniform*

We asked taxi driver Mohammad Assefi (a member of the Montgomery County TSAC Committee, a PVL license owner for over 15 years, and is known by County members for the excellent service he provides) of his opinion on this potential requirement. He personally believed that a dress

code was a good idea, but expressed doubt that other taxi drivers would be willing to follow such a code. Requiring a taxicab uniform would decrease competition between taxicab drivers; however it would give Montgomery County's taxicab industry a competitive advantage over other taxicab industries.

Requiring a taxicab uniform would need additional regulation and would need to include a fine or suspension as an enforcement method. A taxicab driver currently has a choice in his or her dress so they can decide if wearing a uniform would increase their income and competitiveness. A taxicab company could require their drivers to wear a uniform, but if push back occurred, the taxicab company could lose drivers to other companies. Taxicab uniforms do not necessarily increase customer service because presentation is subjective to the viewer.

### *Customer Survey forms Available in Taxicabs*

We explored the idea that having pre-stamped customer service surveys available in the backseat of each cab would be a good way to monitor customer service, and the performance of each taxicab driver. However, one potential concern with this idea is that drivers could fill out false surveys to look better.

### *Yearly Customer Service Award*

If a yearly customer service award was discussed and agreed upon by all four taxicab companies, this could be an effective tool that gives extra incentive toward providing good customer service. This would give the winning company bragging rights about their customer service that could persuade more customers to choose their taxicab company. The award should not be the issuance of new PVLs because Barwood's license number is currently capped unless they show they will service more areas of the County.

The County could award the company for best overall customer service or most improved customer service. The County would need to evaluate complaint and complement percentages compared to that company's fleet size, a measurement of on time performance, and possibly surveys asking customers whose service they preferred. The County would evaluate improved customer service by differentiating between a company's on time performance and number of complaints from the previous year to this year. The County would then select the most positive customer service change to win this award.

### *Excel Spreadsheet to Organize Zip Code entries into Geographic Area*

If a company of the County did this it could ease the process of placing rides into geographic areas. One could formulate a template by following steps in Excel's help section titled "Filter by using advanced criteria".

# 5. Conclusions and Recommendations

In this project, we investigated several issues surrounding Montgomery County's proposed taxi customer service regulation, Executive Regulation 13-06. Specifically, we investigated what data the taxi companies in Montgomery County were capable of collecting, what systems they needed to collect the required data, what parts of the regulation related to customer service, how useful the required data was to the County, and how accurate it would be. We also looked at a listing of customer service complaints on file with the County to identify in what areas the taxi customer service could most improve. We spoke with taxi company representatives from all four Montgomery County companies as well as a taxi company representative in Northern Virginia; taxi regulators in Montgomery County; Fairfax County, Virginia; San Diego, California; and Toronto, Canada; taxi drivers from all four Montgomery County companies; and receptionists at two Montgomery County hospitals. Based on our research and investigation, we identified what we believed to be the most relevant solutions to the taxi customer service issue in Montgomery County.

Before starting our project, we planned to focus on the ability of taxi companies to meet the proposed customer service Regulation, believing (based on initial phone conversations with Montgomery County Transit officials) that the taxi companies were trying to evade new regulations that they had the ability to meet. However, once we started our project and interviewed the taxi companies and Montgomery County Transit members in person, we realized that a portion of the proposed regulation did not directly improve taxi customer service and was difficult and expensive to implement.

## 5.1 County Sponsored Taxi Driver Training Program

Most taxi drivers in Montgomery County do not have a significant training course, if any, when they begin working at a taxi company (according to interviews with taxi drivers). In addition, there are significant differences between length and quality existing company training programs. As a result, we recommend that the County offer a mandatory one or two day training program for new taxi drivers. The course would include a customer service element (how to provide good customer service, customer expectations), and a business element (how to keep your customers and create personals), a driving element (how to drive safely, with a possible driving test). The business element is included because it relates closely to customer service (successful taxi drivers tend to leave happy customers). Besides providing this course to new drivers, the County could also require experienced drivers who receive certain violations to take the course before resuming taxi driving. The advantage of a County-sponsored program is that all drivers will have a standard for operation, regardless of company affiliation.

## 5.2 Changes to Executive Regulation 13-06

Based on our evaluation of Regulation 13-06, we recommend that the County make the following changes:

Delete the following sections:

- Section II. A. (3), and (4)
- Section II. D. (2) (b)
- Section II. D. (2) (c) 10., 11., 13. , 14., 14., 17., 18 (j)., 20.
- Section II. D. (2) (d) 9.
- Section II. D. (2) (e) 4.

Utilization of Mystery Rider program to collect data that is a conflict of interest for taxicab companies to report.

Add a DOT quantification method for evaluating percent prearranged and immediate service on time performance.

A final version of the Customer Service Regulation, with all recommended changes is included in Appendix B.

## 5.3 Third Party Taxi Service Evaluation

We recommend that the County use a third party to collect data for an annual customer service report, rather than rely on company-reported data. A third party solution has several advantages:

(1) A third-party organization could collect data (through sampling) that would be difficult and expensive for a taxi company to collect. It would cost the Montgomery County taxicab industry approximately $606,036 to $1,039,254 (only first year of wireless service included ($72,108)) to be able to meet the current regulation. If the DOT has new applicant drivers pay for 33% (may need to adjusted if more or less people people apply) of the cost for fingerprinting, the County will be able support the additional 1,880 mystery rides needed to gain a 95% confidence interval with a 5% margin of error with a total net investment of $0 (see Section 4.3.3).

(2) A third party organization could collect data more accurately than could four taxi companies with different dispatch systems. A third party organization is also does not have a personal interest in the data results for the taxi company. (Taxi company self-reported data could result in PVL revocation.)

(3) The County wishes to obtain data by geographic area for a report to inform the public about what areas have the best service (personal communication, H. Benn, November 2009). We believe it should be the County's responsibility to obtain the information for

their report instead of forcing taxicab companies to improve their dispatching systems when the County receives a low proportion of complaints about the Montgomery County taxi companies. The DOT receives 122 complaints in FY2009, and taxicab companies dispatched approximately 1,800,000 calls. To receive a 1% complaint to call percentage it would require 18,000 complaints, or 50 complaints a day. Currently the County has a 0.0068% complaint to call percentage averaging one third of a complaint a day.

## 5.4 Conclusion

By creating a Countywide taxi driver training program, implementing a modified Customer Service Regulation, and utilizing third-party data collection, Montgomery County Government can provide a framework for improving taxi customer service. A County sponsored taxi driver training program will provide a needed, standardized level of training for all Montgomery County taxi drivers. The modified customer service regulation will provide data to the County that is relevant to customer service, while preventing unnecessary expense and effort from the taxi companies. A third-party data collection system will provide independent and accurate information for the County to evaluate taxi customer service performance. Together, these recommendations will provide an important framework for improving customer service in Montgomery County.

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# Appendix A: Glossary

Please Note: The following definitions are intended to be informational only, and cannot be considered legal definitions. While the best efforts have been made to ensure their accuracy, there is no guarantee as to their correctness. The reader is advised to consult the original sources to obtain the most up-to-date definitions.

### Department of Transportation (DOT)
The department of the County that deals with all issues related to transportation, including traffic, highway, transportation engineering, and transit services.

### Geographic Areas
One or more of seven defined "zones" in the County. Regulation 14-06 established seven geographic areas for taxicab service in Montgomery County.

### GPS System
Taxi system (MDT or stand-alone unit) which uses the Global Positioning System to track the location of taxicabs.

### Hail
A "hail" is a taxi service request in which a customer solicits the service of a taxi from a street (or taxi stand).

### Immediate Service Requests
Requests for taxi service that are arranged by phone or internet with a taxi company within two hours of the intended service time (Executive Regulation 13-06 II. A. (2) ). Immediate Service Requests do not include hails.

### Medical Calls
Requests for taxi service to or from a medical facility (County Code 53-110 (7) and Executive Regulation 13-06 II. A. (3), (4) ).

### Mobile Data Terminal (MDT)
A data terminal which is installed in a taxicab. Typically, this terminal interfaces with a company's dispatching system, allowing call information to be sent to each driver. Drivers can then provide on-scene notification to the company. Some MDTs include GPS and/or map software

### Passenger Vehicle License (PVL)
The license required for a driver to provide taxicab service (County Code 53-201). This is separate from the Taxi Driver ID that is sometimes referred to as a license.

### Prearranged Service Requests
Requests for taxi service that are arranged with a taxi company at least two hours in advance of the intended service time (Executive Regulation 13-06 II. A. (1) ).

### Taxi Hotline

Montgomery County established a taxi complement and complaint hotline in 2004.

### Taxicab Services Advisory Committee (TSAC)

A committee of County DOT members, taxi industry, and taxi driver representatives, which is responsible for advising the County on issues related to taxi regulation and evaluating the performance of the taxicab industry (County Code 53-103).

### Taxicab Driver Manifests

These are what drivers use to record data about pick up and drop off times and locations (locations can be as simple as “Bethesda Park”) of customers. It also shows what hours that have been working that day because they are only allowed to work 12 hours.

## Appendix B: Modified Regulation 13-06

TAXICAB CUSTOMER SERVICE PLANS AND SERVICE REQUIREMENTS

DEPARTMENT OF PUBLIC WORKS and TRANSPORTATION

Issued by: County Executive

Authority: Code Section 53-110 and Section 53-222

Supersedes: Executive Regulation N/A

Council Review Method (2) under Code Section 2A-15

Comment Date:

Effective Date:

SUMMARY:

The regulation establishes specific taxicab customer service requirements, minimum performance criteria, and the requirements for a customer service plan and consequences.

ADDRESS:

Director, Department of Public Works and Transportation

Executive Office Building, 10th Floor

101 Monroe Street

Rockville, Maryland 20850

Staff Contacts:

James Ryan, Division of Transit Services, 240-777-CABS [2227]

## II. BACKGROUND INFORMATION

Montgomery County Code Section 53-110 requires that a regulation be established for specific customer service requirements and minimum performance criteria. Section 53-222 requires each fleet and association to submit a customer service plan to the Director of the Department of Public Works and Transportation as required by Section 53-110. The initial plan and succeeding plans must include the information required in Section 53-222(b). Section 53-222(c) requires that succeeding plans show subsequent changes in the initial plan and any new data.

The purpose of this regulation is to set standards for the time a customer would expect to wait for a taxicab and the consequences of failure to meet those standards. The regulation is written to create a standard for reasonable customer expectations.

## III. TAXICAB CUSTOMER SERVICE REQUIREMENTS AND CUSTOMER SERVICE PLANS

A. Customer service requirements and minimum performance criteria applicable to each licensee for the entire County;

(1) Prearranged Service. "Prearranged Service" is service requested by telephone or electronically, at least 2 hours before the passenger is scheduled to be picked up.

The specific customer service requirements for pre-arranged service are:

80% of the calls are served no later than 5 minutes after the designated pick up time.

(2) Immediate Service. "Immediate Service" is service requested immediately by telephone or electronically and the passenger is picked up within 25 minutes.

The specific customer service requirements for immediate service are:

75% of the calls are served within 25 minutes.

(3) Guidelines and procedures for timely notice to customers regarding the arrival of taxicabs are:

Fleets must provide customers with the expected time the taxicab will arrive. Fleets must monitor trips waiting for service and take action to ensure that

the trips are dispatched to a driver in a timely manner. Fleets must contact customers if the wait time will be longer than promised to the customer.

B. Required submission dates for the customer service plan and other data;

(1) The Customer Service Performance Plan, including operating data, is due no later than June 30 each year. Affiliated licensees must submit their data to the fleet and it is the responsibility of the fleet to collect the data from the licensees for inclusion in the Plan. Affiliated licensees must meet the minimum requirements of the fleet plan. The planning year will be May 1 through April 30, with a submission date of June 30. If any due date falls on a weekend or holiday, the submissions are due on the next business day.

(2) The minimum levels of service must be met by the end of the planning year.

C. Standards and procedures by which the Director may deny or revoke a license if a licensee does not meet minimum customer service and reporting requirements;

(1) If the licensee has not met the minimum service requirements by the date specified in II. B. (2), the licensee must:

a) Submit, within 30 days of notification, a plan to bring service to the minimum levels of this regulation. The service improvement plan must include a timeline for compliance resulting in full compliance with this regulation within 12 months of the company's notification of failure to meet regulation requirements.

b) Once the service improvement plan is approved by the Department, the licensee must submit monthly certifiable reports documenting the licensee's progress in achieving customer service requirements.

c) The licensee must meet all requirements of this regulation no later than 12 months after notification of failure to meet the requirements of this regulation.

d) Failure to meet the requirements of this regulation in a timely manner, as defined in (c) above, may result in the revocation of 10% of the licensee's Passenger Vehicle Licenses.

(2) If the fleet is not able to meet the minimum planning or reporting requirements by the due date the fleet must request a two week extension to submit the Customer Service Performance Plan or reporting requirements in writing, to the Department no later than June 15. The request must include a justification and specific reasons the information cannot be submitted by June 30.

D. Customer service plan and reporting requirements;

(1) Each fleet and association must report the following statistical operating data:

a) A summary of statistical operating data by month and by total year from May 1 through April 30;

b) A plan for service improvements for the next year May 1 – April 30. Affiliated licensees must submit their data to the fleet/associations. Initial baseline data and information should be submitted based on the best information available. Future data must be supported by information certified as to accuracy and truthfulness;

c) Each company will provide a sample of the following monthly and annual data by geographic area. This data will be reported using a County recognized form:

1. Number of calls received.
2. Number of trips dispatched.
3. The total number of prearranged service calls.
4. The total number of immediate service calls.

5. Total number of no shows (taxi and customer).
6. The number of un-served trips for immediate and pre-arranged trips due to the unavailability of taxicabs.

d) Each fleet and association must describe the following operating programs for both the Performance Criteria and Data Submission and Customer Service Performance Plans:

1. All training programs.

2. Incentive programs established for drivers and dispatchers for exceeding work performance or providing outstanding customer service.
3. Criteria that are in place to measure customer service.
4. Driver recruitment and retention programs.
5. Dispatch system, how it works and how the method enhances customer service.
6. If a GPS or a similar dispatch system is used, describe the system.

7. Programs for drivers that teach them how to succeed in the taxicab business.
8. Both on the road and classroom retraining programs for drivers who have had poor driving records.
9. Initiatives by the company to take responsibility for licensees, affiliates and drivers performance.
10. Specific customer service plans in place for persons with disabilities
11. The development of and participation in innovative taxicab services.
12. All ownership and management interests.
13. Plans to reduce late and no-show trips for areas that are below the minimum service requirements.
14. Prior taxicab productivity as measured by the number of daily trips per taxicab and trips per shift.
15. Description of any other information about operating practices if desired.

e) Each fleet and association must describe the following Customer Service Performance Plans if the taxicab company falls below the minimum service requirements:

1. Training improvements planned for the next year including plans to establish additional training programs.
2. Plans for improving the customer service performance.
3. Additional incentive programs planned to recruit and retain drivers.
4. Programs to retain successful drivers in the taxicab business.
5. Innovative approaches to improve customer service for persons with disabilities.
6. Improvement plans for development of and participation in innovative taxicab services.
7. Additional services planned by the company.
8. Operational changes that would result in improved service.
9. The proposed number of taxicabs needed to achieve required response times.
10. If applicable, justification of the need for an increase in taxicabs based on community needs and public convenience and necessity.
11. A phase in plan for service improvements.
12. Plans to improve service in areas that need additional service.

13. Increased productivity planned as compared to the current number of daily trips per taxicab and trips per shift.

(2) The County's sponsored Mystery Rider program or another County sponsored 3rd party sampling program will be used to collect the following statistical operating data:

a) A summary of the following statistical operating data by month, total year, and geographic area from May 1 through April 30 for each Montgomery County taxicab company:

1. Report the percentage of prearranged trip requests served no later than 5 minutes after the designated pick up time.
2. The average trip response time for prearranged service.
3. Report the percentage of immediate service trip requests served within 25 minutes.
4. The average trip response time for immediate service.
5. Mystery Rider will collect the number of complaints filed regarding taxicabs in the following categories for each geographic area:
   (a) No Shows
   (b) Late arrivals
   (c) Trip refusals
   (d) Not available
   (e) Delayed answering service
   (f) Over-charge
   (g) Unsafe driving and incorrect route
   (h) Service animal refusal
   (i) Other, specify

(3) The DOT must report at least the following statistical operating data to each Montgomery County taxicab company upon full collection of the required statistical data from the Montgomery County taxicab companies and Mystery Rider program:

1. The prearranged service percentage of calls served no later than 5 minutes after the designated pick up time per geographic area.
2. The prearranged service percentage of calls served no later than 5 minutes after the designated pick up time as an average for the entire County.
3. The immediate service percentage of calls served within 25 minutes after the conclusion of the call per geographic area.
4. The immediate service percentage of calls served within 25 minutes for the entire County as a weighted average.

To calculate the weighted average:

$$Weighted\ Performance\ \% = w_1p_1 + w_2p_2 + \cdots + w_7p_7$$

Where

$$w_x\ is\ the\ percent\ of\ calls\ that\ a\ company\ receives\ from\ area\ x$$

and

$$p_x\ is\ the\ immediate\ service\ performance\ (in\ percent)\ of\ the\ company\ for\ area\ x$$

If a taxicab company reports that less than 5% of their calls are received from a geographic area ($w_x < 5\%$), then that area should be weighted as 5% (instead of 0%) so all areas of Montgomery County are considered. This then requires the total weight percentage to be "bumped up" so that, in the case of a 5% bump, a total adjusted weight scale would be 105%. Once the new weighted performance % is found, it should be divided by the total adjusted weight scale (105%) to rescale it to a 100% scale (from its current total adjusted weight scale). The number calculated is the weighted performance % for immediate service calls that can be juxtaposed to the 75% immediate service call requirement.

Adjusted weight scale example:

Company 1 reports receiving 0 calls in geographic area 1and 2% in area 2, but almost equal call volume in the remaining 7 areas.

| | Area 1 | Area 2 | Area 3 | Area 4 | Area 5 | Area 6 | Area 7 | Total |
|---|---|---|---|---|---|---|---|---|

| | | | | | | | | weight |
|---|---|---|---|---|---|---|---|---|
| Call Volume weight percentage | 0 | 2% | 18% | 20% | 20% | 20% | 20% | 100% |
| Adjusted weight percentage | 5% | 5% | 18% | 20% | 20% | 20% | 20% | 108% |

Using the immediate service % passing (below) and multiplying them term-wise to total adjusted weight percentage (above), and adding the multiplied term-wise parts together, you will find the weighted average before adjustment.

Company 1

| | Area 1 | Area 2 | Area 3 | Area 4 | Area 5 | Area 6 | Area 7 |
|---|---|---|---|---|---|---|---|
| Immediate service % passing | 0% | 0% | 70% | 70% | 90% | 90% | 90% |

$$Weighted\ Performance\ \% = w_1p_1 + w_2p_2 + \cdots + w_7p_7$$
$$= 80.6\%\ \ before\ adjustment$$

Divide weighted average before adjustment by 108% to scale back to a 100% scale.

80.6% / 108%= 74.6% , which does not meet requirement threshold of 75% immediate service within 25 minutes.

If the 5% “bump up” adjustment had not been made for areas that the company reports 0% of their calls then Company 1 would have met the requirement with a weighted average of 80.6%.

IV. DESIGNATED GEOGRAPHIC AREAS

The Director shall use an appropriate market research agency (such as Mystery Rider) to

collect the data defined by Section II. D. (2) for each geographic area of the county (defined in Regulation 14-06).

V. EFFECTIVE DATE:

This regulation becomes effective when the Council adopts a resolution approving the regulation or on a later date specified in the regulation. If the Council takes no action of approval or disapproval, the regulation becomes automatically effective 61 days after the Council received it, or on any later deadline set by regulation.

_____ _____

Isiah Leggett, County Executive Date

## Appendix C: Regulation 13-06 with Comments

TAXICAB CUSTOMER SERVICE PLANS AND SERVICE REQUIREMENTS

DEPARTMENT OF PUBLIC WORKS and TRANSPORTATION

Issued by: County Executive

Authority: Code Section 53-110 and Section 53-222

Supersedes: Executive Regulation N/A

Council Review Method (2) under Code Section 2A-15

Comment Date:

Effective Date:

SUMMARY:

The regulation establishes specific taxicab customer service requirements, minimum performance criteria, and the requirements for a customer service plan and consequences.

ADDRESS:

Director, Department of Public Works and Transportation

Executive Office Building, 10th Floor

101 Monroe Street

Rockville, Maryland 20850

Staff Contacts:

James Ryan, Division of Transit Services, 240-777-CABS [2227]

## VI. BACKGROUND INFORMATION

Montgomery County Code Section 53-110 requires that a regulation be established for specific customer service requirements and minimum performance criteria. Section 53-222 requires each fleet and association to submit a customer service plan to the Director of the Department of Public Works and Transportation as required by Section 53-110. The initial plan and succeeding plans must include the information required in Section 53-222(b). Section 53-222(c) requires that succeeding plans show subsequent changes in the initial plan and any new data.

The purpose of this regulation is to set standards for the time a customer would expect to wait for a taxicab and the consequences of failure to meet those standards. The regulation is written to create a standard for reasonable customer expectations.

## VII. TAXICAB CUSTOMER SERVICE REQUIREMENTS AND CUSTOMER SERVICE PLANS

A. Customer service requirements and minimum performance criteria applicable to each licensee for the entire County;

(1) Prearranged Service. "Prearranged Service" is service requested by telephone or electronically, at least 2 hours before the passenger is scheduled to be picked up.

The specific customer service requirements for pre-arranged service are:

80% of the calls are served no later than 5 minutes after the designated pick up time.

(2) Immediate Service. "Immediate Service" is service requested immediately by telephone or electronically and the passenger is picked up within 25 minutes.

The specific customer service requirements for immediate service are:

75% of the calls are served within 25 minutes.

(3) Guidelines and procedures for timely notice to customers regarding the arrival of taxicabs are:

Fleets must provide customers with the expected time the taxicab will arrive. Fleets must monitor trips waiting for service and take action to ensure that the trips are dispatched to a driver in a timely manner. Fleets must contact customers if the wait time will be longer than promised to the customer.

B. Required submission dates for the customer service plan and other data;

(1) The Customer Service Performance Plan, including operating data, is due no later than June 30 each year. Affiliated licensees must submit their data to the fleet and it is the responsibility of the fleet to collect the data from the licensees for inclusion in the Plan. Affiliated licensees must meet the minimum requirements of the fleet plan. The planning year will be May 1 through April 30, with a submission date of June 30. If any due date falls on a weekend or holiday, the submissions are due on the next business day.

(2) The minimum levels of service must be met by the end of the planning year.

C. Standards and procedures by which the Director may deny or revoke a license if a licensee does not meet minimum customer service and reporting requirements;

(1) If the licensee has not met the minimum service requirements by the date specified in II. B. (2), the licensee must:

a) Submit, within 30 days of notification, a plan to bring service to the minimum levels of this regulation. The service improvement plan must include a timeline for compliance resulting in full compliance with this regulation within 12 months of the company's notification of failure to meet regulation requirements.

b) Once the service improvement plan is approved by the Department, the licensee must submit monthly certifiable reports documenting the licensee's progress in achieving customer service requirements.

c) The licensee must meet all requirements of this regulation no later than 12 months after notification of failure to meet the requirements of this regulation.

d) Failure to meet the requirements of this regulation in a timely manner, as defined in (c) above, may result in the revocation of 10% of the licensee's Passenger Vehicle Licenses.

(2) If the fleet is not able to meet the minimum planning or reporting requirements by the due date the fleet must request a two week extension to submit the Customer Service Performance Plan or reporting requirements in writing, to the Department no later than June 15. The request must include a justification and specific reasons the information cannot be submitted by June 30.

D. Customer service plan and reporting requirements;

(1) .

(2) Each fleet and association must report the following statistical operating data:

a) A summary of statistical operating data by month and by total year from May 1 through April 30;

b) A plan for service improvements for the next year May 1 – April 30. Affiliated licensees must submit their data to the fleet/associations. Initial baseline data and information should be submitted based on the best information available. Future data must be supported by information certified as to accuracy and truthfulness;

c) The following monthly and annual data for each geographic area:

1. Number of calls received.
2. Number of trips dispatched.
3. The total number of prearranged service calls.
4. Mystery rider will report the percentage of prearranged trip requests served no later than 5 minutes after the designated pick up time.
5. The total number of immediate service calls.
6. Mystery Rider will report the percentage of immediate service trip requests served within 25 minutes.

7. .

8.
9. Total number of no shows (taxi and customer).
10. The number of un-served trips for immediate and pre-arranged trips due to the unavailability of taxicabs.
11. .
12. Mystery Rider will collect the number of complaints filed regarding taxicabs in the following categories for each geographic area:
    (a) No Shows
    (b) Late arrivals
    (c) Trip refusals
    (d) Not available
    (e) Delayed answering service
    (f) Over-charge
    (g) Unsafe driving and incorrect route
    (h) Service animal refusal
    (i) Other, specify
    (j)
13. .

d) Each fleet and association must describe the following operating programs for both the Performance Criteria and Data Submission and Customer Service Performance Plans:

1. All training programs.
2. Incentive programs established for drivers and dispatchers for exceeding work performance or providing outstanding customer service.
3. Criteria that are in place to measure customer service
4. Driver recruitment and retention programs.
5. Dispatch system, how it works and how the method enhances customer service.
6. If a GPS or a similar dispatch system is used, describe the system.
7.
8. Programs for drivers that teach them how to succeed in the taxicab business.
9. Both on the road and classroom retraining programs for drivers who have had poor driving records.
10. Initiatives by the company to take responsibility for licensees, affiliates and drivers performance.
11. Specific customer service plans in place for persons with disabilities
12. The development of and participation in innovative taxicab services.
13. All ownership and management interests.
14. Plans to reduce late and no-show trips for areas that are below the minimum service requirements.
15. .
16. Prior taxicab productivity as measured by the number of daily trips per taxicab and trips per shift.

17. Description of any other information about operating practices if desired.

e) Each fleet and association must describe the following Customer Service Performance Plans if your company falls below the minimum service requirements:

1. Training improvements planned for the next year including plans to establish additional training programs.
2. Plans for improving the customer service performance.
3. Additional incentive programs planned to recruit and retain drivers.
4. Programs to retain successful drivers in the taxicab business.
5. Innovative approaches to improve customer service for persons with disabilities.
6. Improvement plans for development of and participation in innovative taxicab services.
7. Additional services planned by the company.
8. Operational changes that would result in improved service.
9. The proposed number of taxicabs needed to achieve required response times.
10. If applicable, justification of the need for an increase in taxicabs based on community needs and public convenience and necessity.
11. A phase in plan for service improvements.
12. Plans to improve service in areas that need additional service.
13.

VIII. DESIGNATED GEOGRAPHIC AREAS (Regulation 14-06)

The minimum criteria must be applied separately in each of the designated geographic areas which may be found in another executive regulation. A fleet or an association, if it so chooses, may apply the same criteria to each geographic area. A geographic map will be used for data reporting purposes. There will be a phase-in process. The first year, fleets can select their top four active areas and report data based on their selected areas. The second year, fleets will be required to give data on six areas of their choice and from the third year onwards, fleets will be required to report data on all the areas.

IX. EFFECTIVE DATE:

This regulation becomes effective when the Council adopts a resolution approving the regulation or on a later date specified in the regulation. If the Council takes no action of approval or disapproval, the regulation becomes automatically effective 61 days after the Council received it, or on any later deadline set by regulation.

_____ _____

Isiah Leggett, County Executive Date

## Appendix D: Regulation 13-06

TAXICAB CUSTOMER SERVICE PLANS AND SERVICE REQUIREMENTS

DEPARTMENT OF PUBLIC WORKS and TRANSPORTATION

Issued by: County Executive

Authority: Code Section 53-110 and Section 53-222

Supersedes: Executive Regulation N/A

Council Review Method (2) under Code Section 2A-15

Comment Date:

Effective Date:

SUMMARY:

The regulation establishes specific taxicab customer service requirements, minimum performance criteria, and the requirements for a customer service plan and consequences.

ADDRESS:

Director, Department of Public Works and Transportation

Executive Office Building, 10th Floor

101 Monroe Street

Rockville, Maryland 20850

Staff Contacts:

James Ryan or Nancy Kutz, Division of Transit Services, 240-777-CABS [2227]

X. BACKGROUND INFORMATION

Montgomery County Code Section 53-110 requires that a regulation be established for specific customer service requirements and minimum performance criteria. Section 53-222 requires each fleet and association to submit a customer service plan to the Director of the Department of Public Works and Transportation as required by Section 53-110. The initial plan and succeeding plans must include the information required in Section 53-222(b). Section 53-222(c) requires that succeeding plans show subsequent changes in the initial plan and any new data.

The purpose of this regulation is to set standards for the time a customer would expect to wait for a taxicab and the consequences of failure to meet those standards. The regulation is written to create a standard for reasonable customer expectations.

XI. TAXICAB CUSTOMER SERVICE REQUIREMENTS
AND CUSTOMER SERVICE PLANS

A. Customer service requirements and minimum performance criteria applicable to each licensee;

(1) Prearranged Service. "Prearranged Service" is service requested by telephone or electronically, at least 2 hours before the passenger is scheduled to be picked up.

The specific customer service requirements for pre-arranged service are:

90% of the calls are served within 15 minutes.

(2) Immediate Service. "Immediate Service" is service requested immediately by telephone or electronically and the passenger is picked up within 25 minutes.

The specific customer service requirements for immediate service are:

90% of the calls are served within 25 minutes.

(3) Medical Facility Service. Trips for special medical needs or non-emergency travel to or from medical facilities must meet additional criteria if the trip is identified as a trip to or from a medical facility when the request for service is made.

The licensee must ensure that the driver is notified that the request for service is for transportation to and from a medical facility. The

driver and the company must give priority to requests to or from medical facilities as follows:

a) The specific customer service requirements for pre-arranged transportation to or from medical facilities are:

90% of the calls for service are provided within 10 minutes and the remaining service is provided within 15 minutes.

b) The specific customer service requirements for immediate transportation to or from medical facilities are:

90% of the calls for service are provided within 20 minutes and the remaining service is provided within 25 minutes.

(4) Performance ratings for pre-arranged and immediate request for service trips to and from medical facilities are as follows:

For the purpose of performance evaluation, service is rated as Excellent at 90% or better; Very Good at 85% or better; Satisfactory at 74%-84%; Mediocre at 64%-74%; and Poor at 64% or lower.

(5) Guidelines and procedures for timely notice to customers regarding the arrival of taxicabs are:

Fleets must provide customers with the expected time the taxicab will arrive. Fleets must monitor trips waiting for service and take action to ensure that the trips are dispatched to a driver in a timely manner. Fleets must contact customers if the wait time will be longer than promised to the customer.

B. Required submission dates for the customer service plan and other data;

(1) The Customer Service Performance Plan, including operating data, is due no later than June 30 each year. Affiliated licensees must submit their data to the fleet and it is the responsibility of the fleet to collect the data from the licensees for inclusion in the Plan. Affiliated licensees must meet the minimum requirements of the fleet plan. The planning year will be May 1 through April 30, with a submission date of

June 30. If any due date falls on a weekend or holiday, the submissions are due on the next business day.

(2) The minimum levels of service must be met by the end of the planning year.

C. Standards and procedures by which the Director may deny or revoke a license if a licensee does not meet minimum customer service and reporting requirements;

(1) If the licensee has not met the minimum service requirements, the licensee must:

a) Submit a plan to improve service within 30 days of notification by the Director. The service improvement plan must include a timeline for compliance.

b) Once the service improvement plan is approved by the Department, the licensee must submit monthly certifiable reports documenting customer service data.

c) The licensee must meet all customer service requirements and performance plan no later than 12 months after notification.

d) Failure to meet customer service requirements may result in the revocation of 10% of the licensee's Passenger Vehicle Licenses.

(2) If the fleet is not able to meet the minimum planning or reporting requirements by the due date the fleet must request a two week extension to submit the Customer Service Performance Plan or reporting requirements in writing, to the Department no later than June 15. The request must include a justification and specific reasons the information cannot be submitted by June 30.

D. Customer service plan and reporting requirements;

(1) Data submission and Information required for a review of performance of criteria.

(2) Each fleet and association must report the following statistical operating data:

a) A summary of statistical operating data by month and by total year from May 1 through April 30;

b) A plan for service improvements for the next year May 1 – April 30. Affiliated licensees must submit their data to the fleet/associations. Initial baseline data and information should be submitted based on the best information available. Future data must be supported by information certified as to accuracy and truthfulness;

c) The following monthly and annual data for each geographic area:

1. Number of calls received.
2. Number of trips dispatched.
3. The total number of prearranged service calls.
4. The number of prearranged trip requests served at 90% or better, 85% or better, 75%-84%, 65%-74%, and 64% or lower.
5. The total number of immediate service calls.
6. The number of number of immediate service trip requests served at 90% or better, 85% or better, 75%-84%, 65%-74%, and 64% or lower.
7. The number of pre-arranged trip requests at 90% or better, 85% or better, 75%-84%, 65%-74%, and 64% or lower from the total number trips for special medical needs or non-emergency travel to or from medical facilities.
8. The total number of special medical needs or non-emergency travel immediate service calls.
9. The number of immediate service trip requests served at 90% or better, 85% or better, 75%-84%, 65%-74%, and 64% or lower from the total number trips for special medical needs or non-emergency travel to or from medical facilities.
10. Total miles driven.
11. Total paid miles driven.
12. Total number of trips served.
13. Total meter revenue and extra revenue.
14. Taxicab vehicles in service.
15. Taxicab vehicles not in service.
16. The number of un-served trips for immediate and pre-arranged trips due to the unavailability of taxicabs.
17. Total number of accidents.
18. Number of complaints filed regarding taxicabs in the following categories for each geographic area:
    (a) No Shows

(b) Late arrivals
(c) Trip refusals
(d) Not available
(e) Delayed answering service
(f) Over-charge
(g) Unsafe driving and incorrect route
(h) Service animal refusal
(i) Other, specify
(j) Types of driver complaints including, late service, no shows, service refusal, and over-charges

19. Enforcement actions against the applicant or its drivers for the past 12 months.
20. Number of consumer complaints, by type, during the past 12 months.
21. Number of citations for drivers, vehicles and companies.

d) Each fleet and association must describe the following operating programs for both the Performance Criteria and Data Submission and Customer Service Performance Plans:

1. All training programs.
2. Incentive programs established for drivers and dispatchers for exceeding work performance or providing outstanding customer service.
3. Criteria that are in place to measure customer service.
4. Driver recruitment and retention programs.
5. Dispatch system, how it works and how the method enhances customer service.
6. If a GPS or a similar dispatch system is used, describe the system.
7. Vehicle maintenance schedules.
8. Vehicle replacement schedules.
9. Promotional and marketing programs.
10. Programs for drivers that teach them how to succeed in the taxicab business.
11. Both on the road and classroom retraining programs for drivers who have had poor driving records.
12. Initiatives by the company to take responsibility for licensees, affiliates and drivers performance.
13. Specific customer service plans in place for persons with disabilities
14. The development of and participation in innovative taxicab services.
15. All ownership and management interests.
16. All services provided by the company in addition to taxicab service.
17. Plans to reduce late and no-show trips.
18. The geographic areas of service.

19. Prior taxicab productivity as measured by the number of daily trips per taxicab and trips per shift.
20. Description of any other information about operating practices.

e) Each fleet and association must describe the following Customer Service Performance Plans:

1. Training improvements planned for the next year including plans to establish additional training programs.
2. Plans for improving the customer service performance.
3. Additional incentive programs planned to recruit and retain drivers.
4. Innovative marketing programs planned.
5. Programs to retain successful drivers in the taxicab business.
6. Improved techniques for supervision of drivers' conduct and performance.
7. Innovative approaches to improve customer service for persons with disabilities.
8. Improvement plans for development of and participation in innovative taxicab services.
9. Additional services planned by the company.
10. Operational changes that would result in improved service.
11. The proposed number of taxicabs needed to achieve required response times.
12. If applicable, justification of the need for an increase in taxicabs based on community needs and public convenience and necessity.
13. A phase in plan for service improvements.
14. Plans for growth in a service area or a willingness to serve areas that need additional service.
15. Increased productivity planned as compared to the current number of daily trips per taxicab and trips per shift.

## XII. DESIGNATED GEOGRAPHIC AREAS

The minimum criteria must be applied separately in each of the designated geographic areas which may be found in another executive regulation. A fleet or an association, if it so chooses, may apply the same criteria to each geographic area. A geographic map will be used for data reporting purposes. There will be a phase-in process. The first year, fleets can select their top four active areas and report data based on their selected areas. The second year, fleets will be required to give data on six areas of their choice and from the third year onwards, fleets will be required to report data on all the areas.

## XIII. EFFECTIVE DATE:

This regulation becomes effective when the Council adopts a resolution approving the regulation or on a later date specified in the regulation. If the Council takes no action of

approval or disapproval, the regulation becomes automatically effective 61 days after the Council received it, or on any later deadline set by regulation.

_____ _____

Isiah Leggett, County Executive Date

# Appendix E: Interview Protocols

## Interview 1: Montgomery County Taxi Companies: Issues with Regulation

We will likely ask the interviewee to review Executive Regulation number 13-06 before our interview.

We are two students currently enrolled at Worcester Polytechnic Institute, Massachusetts, who are doing a project in accordance with Montgomery County Government to find fair and affordable customer service regulations among all MC taxicab companies. We are also attempting to find ways in which we can improve the current data exchanging systems between the County and taxicab companies.

May we quote you in our project report? (Our final report will go to Montgomery County Government, and will be published on our school website). If you would prefer, we can quote you anonymously. Is it okay if we make an audio recording of this interview to help us with note taking? (We can pause the recording for any question, if you wish.)

- What is your role at [name of taxicab company]?
- Can you describe your "day-to-day operations?" What does a typical day at [taxicab company] look like?
- What do you see as the biggest challenges to providing good customer service?
    - Why is that difficult for you?
- Which elements of the proposed regulation are easiest to implement for your company?
    - Why is that?
- Which of the required elements, if any, would you have trouble meeting for your company?
    - Why is that?
    - Can you think of any unconventional way to extract that information from your current system?

- What system or systems do you feel you would need to meet the requirements of the proposed regulation?
- Would any of the information you are required to extract be beneficial to you as a business owner?
- In the customer's eyes, do you think the Regulation's pre-arranged service response time of 15 min is too long because the service was prearranged?
- What would you define as reasonable response times for immediate service?
    - Can you give some examples?
    - What factors would influence the response times?
- Do you give ETAs for immediate service calls?
- If so, how do you come up with it?
- Would it be easier for you to meet response time requirements if they were based on an ETA given to the customer?
    - If it were, in the customer's eyes, would they see this as better customer service instead of the defined time for immediate service as said in the regulation?
- From your perspective, are there any challenges with providing good customer service with PVL holders as opposed to leasing cab drivers?
- Based on your knowledge of the other fleets' capabilities, do you think the current proposed regulation is fair and balanced among the fleets?
    - Is there anything you think could be done to improve this?
- How much time does the dispatcher have between each call?
- How do you deal with medical calls?
- Do you give priority to them?
- How do you collect the information for your annual taxi report?

- Is there anything else you would like to add that we didn't cover concerning potential issues with the regulation?
- Is there anything else specific to your company that you think we should know?

Thank you for your time!

## Results:

Table 9 -*MC Taxi Company Interview 1 Responses*

| Questions | Primary Results | |
|---|---|---|
| Challenges with providing good customer service | Cabbies | 4 of 4 |
| Which part(s) is(are) easiest to implement? | On time performance | 3 of 4 |
| Which part(s) is(are) hardest to implement? | Geographic area | 4 of 4 |
| What system do you need/use to meet requirements? | New Software/ GPS/$ | 3 of 4 |
| Required info that benefits company | yes | 2 of 4 |
| Do you think the Regulation's pre-arranged response time is too long? | Could be shorter | 3 of 4 |
| Define reasonable response time: immediate | Variable | 2 of 4 |
| Do you give ETA? (immediate service) | Yes | 4 of 4 |
| If so, how do you come up with it? | Dispatcher | 3 of 4 |
| Easier to give meet time req if based on ETAs? | No | 2 of 2 |
| Would this improve customer service? | | |
| Are there any differences (or challenges) with customer service with PVL holders vs. non PVL holders? | Yes | 2 of 2 |
| How much time do you have between each call? | Variable | 2 of 4 |
| How do you collect info for annual report? | Meters | 4 of 4 |
| How do you deal with medical calls? | Why should it be different than other calls | 4 of 4 |

| | | |
|---|---|---|
| Do you give priority to them? | No | 4 of 4 |
| Fair and balanced? | no | 4 of 4 |

| Questions | Secondary Results | |
|---|---|---|
| Challenges with providing good customer service | | |
| Which part(s) is(are) easiest to implement? | All of them | 1 of 4 |
| Which part(s) is(are) hardest to implement? | | |
| What system do you need/use to meet requirements? | Impossible to meet | 1 of 4 |
| Required info that benefits company | no | 2 of 4 |
| Do you think the Regulation's pre-arranged response time is too long? | Is right length | 1 of 4 |
| Define reasonable response time: immediate | 25 min | 1 of 4 |
| Do you give ETA? (immediate service) | | |
| If so, how do you come up with it? | Call Taker | 1 of 4 |
| Easier to give meet time req if based on ETAs? | | |
| Would this improve customer service? | | |
| Are there any differences (or challenges) with customer service with PVL holders vs. non PVL holders? | | |
| How much time do you have between each call? | minutes | 1 of 4 |
| How do you collect info for annual report? | | |
| How do you deal with medical calls? | | |
| Do you give priority to them? | | |
| Fair and balanced? | | |

| Questions | Action Taxi |
|---|---|
| Challenges with providing good customer service | new drivers and hard to manage drivers, language. |
| Which part(s) is(are) easiest to implement? | none of them |
| Which part(s) is(are) hardest to implement? | Geographic area, do not track pickup time, only dispatch times |
| What system do you need/use to meet requirements? | can't meet them ever if regs not changed (in their opinion) |
| Required info that benefits company | no, cost> than benefit |
| Do you think the Regulation's pre-arranged response time is too long? | 10 min could work |
| Define reasonable response time: immediate | depends on call |
| Do you give ETA? (immediate service) | time of day and area, they can do it though |
| If so, how do you come up with it? | dispatcher, cabs available and weather, communicates to operator |
| Easier to give meet time req if based on ETAs? | |
| Would this improve customer service? | can change ETA's |
| Are there any differences (or challenges) with customer service with PVL holders vs. non PVL holders? | no answer from what I could gather |
| How much time do you have between each call? | variable |
| How do you collect info for annual report? | print it out and put in spreadsheet with mileage from vehicles |
| How do you deal with medical calls? | emergency= ambulance, why should these calls be different |
| Do you give priority to them? | no |
| Fair and balanced? | no |

| Questions | Barwood |
|---|---|
| Challenges with providing good customer service | Driving conditions, drivers, customer expectation, comparison to past |
| Which part(s) is(are) easiest to implement? | prearranged and immediate time, can be manipulated though |
| Which part(s) is(are) hardest to implement? | Total miles per Geographic area |
| What system do you need/use to meet requirements? | More software, and server to gather and manage data |
| Required info that benefits company | No, already has a "lay of the land" |
| Do you think the Regulation's pre-arranged response time is too long? | 15 min or even 10 is reasonable |
| Define reasonable response time: immediate | 25 min |
| Do you give ETA? (immediate service) | Yes |
| If so, how do you come up with it? | Call taker makes ETA, looks at call zone and gives ETA's before cab is reached |
| Easier to give meet time req if based on ETAs? | No |
| Would this improve customer service? | |
| Are there any differences (or challenges) with customer service with PVL holders vs. non PVL holders? | PVL will be more likely to spend more money |
| How much time do you have between each call? | 89% utilization |
| How do you collect info for annual report? | Meters, calls loged in Seamen telephone system |
| How do you deal with medical calls? | treat like other calls |
| Do you give priority to them? | Could |
| Fair and balanced? | no |
| | have diver training program |
| x | on time, professional driver, safety, cleanliness |

| Questions | Regency |
|---|---|
| Challenges with providing good customer service | On cabbie end |
| Which part(s) is(are) easiest to implement? | Reports for on time performance |
| Which part(s) is(are) hardest to implement? | Geographic area- time consuming |
| What system do you need/use to meet requirements? | Change in software, MTAs, $ invested |
| Required info that benefits company | yes, advertisements |
| Do you think the Regulation's pre-arranged response time is too long? | yes, 5 min, 30 min in advance, get there early |
| Define reasonable response time: immediate | difficult to tell, suggests 15 min normal, 30 min for rush hour |
| Do you give ETA? (immediate service) | yes 15 min, call if will be late |
| If so, how do you come up with it? | |
| Easier to give meet time req if based on ETAs? | |
| Would this improve customer service? | |
| Are there any differences (or challenges) with customer service with PVL holders vs. non PVL holders? | |
| How much time do you have between each call? | variable |
| How do you collect info for annual report? | can do excell, collect from meters, could do on quartly basis |
| How do you deal with medical calls? | don't handle emergency |
| Do you give priority to them? | no |
| Fair and balanced? | no |

| Questions | Sun Cab |
|---|---|
| Challenges with providing good customer service | The cabbies, because they are independent |
| Which part(s) is(are) easiest to implement? | Prearranged and immediate service |
| Which part(s) is(are) hardest to implement? | Geographic area, some |
| What system do you need/use to meet requirements? | GPS |
| Required info that benefits company | yes, shows where rides are |
| Do you think the Regulation's pre-arranged response time is too long? | 90% exception for 15 or 20 min is good |
| Define reasonable response time: immediate | 15 is reasonable, 25 too long |
| Do you give ETA? (immediate service) | most times just say 15 min and call back if different |
| If so, how do you come up with it? | Dispatcher, knows from weather, available cabs |
| Easier to give meet time req if based on ETAs? | no, you can lie about your time |
| Would this improve customer service? | |
| Are there any differences (or challenges) with customer service with PVL holders vs. non PVL holders? | PVL holders provide better C.S. (generally) |
| How much time do you have between each call? | minutes |
| How do you collect info for annual report? | From the meter data, manually add in spreadsheet |
| How do you deal with medical calls? | treat all them the same, why should they be different |
| Do you give priority to them? | no |
| Fair and balanced? | no |

Table 10 -*Current Company Dispatch Capabilities*

| | Action Taxi | Barwood | Regency | Sun Cab |
|---|---|---|---|---|
| Radio dispatch | Yes | Yes | Yes | Yes |
| MDT in cab | No | Yes | No | No |
| GPS dispatch/ GPS integrated in cab | No | Yes | No | No |

## Interview 2: Montgomery County Taxi Companies: Reporting Capabilities

May we quote you in our project report? (Our final report will go to Montgomery County Government, and WPI will publish it on our school website). If you would prefer, we can quote you anonymously. Is it okay if we make an audio recording of this interview to help us with note taking? (We can pause the recording for any question, if you wish.)

- What is your role at [MC taxicab company]?
- How does your company evaluate customer service?
- How do you collect customer service data?
- How do you report customer service data to MCG?
- How expensive (money and time) is collecting or delivering customer service data to the County?
- How do you receive and dispatch calls?
- Do you use any sort of computer system? (Fancy expensive rig, Excel spreadsheet, etc.)
    - What is it called?
- What information can it collect?
- How do you assign priority to medical calls?
- Have you ever considered purchasing a computer dispatch system?
- If so, what is the biggest obstacle to obtaining one?

## Results:

Table 11 -*MC Taxi Company Interview 2 Responses*

| Regulation 13-06 Criteria | Action Taxi | Sun Cab | Barwood | Regency |
|---|---|---|---|---|
| by Geographic area: | | | | |
| Reporting % Prearranged Service serviced within 15 min | | | | |
| Reporting % Immediate Service serviced within 25 min | | | | |
| Reporting if it was a Medical call | | | | |
| Reporting if the Medical call got priority | | | | |
| Reporting % Medical Service serviced within 10 min | | | | |
| Recording an ETA for Immediate Service | | | | |
| # of calls | | | | |
| # of trips dispatched | | | | |
| # of prearranged service calls | | | | |
| # of immediate service calls | | | | |
| # of medical service calls | | | | |
| Total miles driven | | | | |
| Total paid miles driven | | | | |
| Total number of trips served | | | | |
| Total meter revenue and extra revenue | | | | |
| Taxicab vehicles in service | | | | |
| Taxicab vehicles not in service | | | | |
| # of unserved trips for immediate and pre-arranged trips | | | | |
| Total number of accidents | | | | |
| # of complaints by Geographic area: | | | | |
| No shows | | | | |
| Late arrivals | | | | |
| Trip refusals | | | | |
| Not available | | | | |
| Delayed Answering service | | | | |
| Over-Charge | | | | |
| Unsafe driving and incorrect route | | | | |
| Service animal refusal | | | | |
| Other, specify | | | | |

| Key |
|---|
| green= currently reporting |
| yellow= could report but currently not |
| red= needs investment to report |

## Interview 3: Non-Montgomery County Taxi Companies

We are two students currently enrolled at Worcester Polytechnic Institute, Massachusetts, who are working on assessing customer service regulations for taxis in Montgomery County, Maryland. We are trying to evaluate a proposed County regulation to determine if it is reasonable and fair to all Montgomery County taxi companies. We are also attempting to find ways in which we can improve the current data exchanging systems between the County and taxicab companies.

May we quote you in our project report? (Our final report will go to Montgomery County Government, and will be published on our school website). If you would prefer, we can quote you anonymously by removing your name, and optionally the name of your company, from our documents. Is it okay if we make an audio recording of this interview to help us with note taking? (We can pause the recording for any question, if you wish.)

- What is your role at [name of taxicab company]?
- Can you describe your "day-to-day operations?" What does a typical day at [taxicab company] look like?
- How many customers do you serve on a regular basis?
    - How do you measure that number?
- Do you have any "independent contractor" drivers?
    - (If so) Are there any challenges with providing good customer service, since they are less dependent on your company?
- How do you evaluate your customer service?
- What do you see as the biggest challenge to providing good customer service?
- Is there anything the local government could do that would help you improve customer service?
- What type of customer service data are you required to report to the local government?

    - How do you collect this data?
- Do you have any sort of training program for new drivers?
- What do you think is a reasonable response time for a immediate service request?
- How about a pre-arranged call?
- What type of dispatch system do you use?
    - (If applicable) How much did it cost? (money, time, personnel)
- Do you know of any dispatch systems that could meet the requirements of this regulation?
        - Miles and paid miles driven by geographic region
        - Number of calls received, dispatched, and picked up by area
        - % of calls served within 15 minutes
    - How much would it cost?
- How do you deal with medical calls?
- Can you assign a priority to received calls? (such as for a medical emergency)
- Do you give ETAs to customers?
    - If so, how do you calculate it?
    - Who gives it, the dispatcher or the taxi driver?
- How do you measure on-time performance of the taxis?

## Interview 4: Non-Montgomery County Taxi Regulators

We are two students currently enrolled at Worcester Polytechnic Institute, Massachusetts, who are working on assessing customer service regulations for taxis in Montgomery County, Maryland. We are trying to evaluate a proposed County regulation to determine if it is reasonable and fair to all Montgomery County taxi companies. We are also attempting to find ways in which we can improve the current data exchanging systems between the County and taxicab companies.

May we quote you in our project report? (Our final report will go to Montgomery County Government, and will be published on our school website). If you would prefer, we can quote you anonymously by removing your name, and optionally the name of your company, from our documents. Is it okay if we make an audio recording of this interview to help us with note taking? (We can pause the recording for any question, if you wish.)

- How many cabs are there in [name of city]?
- How are the companies structured? (Co-operatives, fleet-based)
- How do you evaluate taxi customer service?
- How do you measure company performance in terms of customer service?
- Do you use any third party services to evaluate company performance?
- Do you have any sort of County/city sponsored taxi driver training program?
    - What do you think about that idea?
- What does it take to become a cab driver?
    - Is there a driving test?
    - Are there any customer service elements to the test(s)?
        - Do you think the addition of a customer service element would improve taxi driver performance?
    - From your perspective as a regulator, what do you see as the biggest challenge to providing good customer service (for the taxi fleets)?
        - How could you or the taxi companies overcome that challenge?
- Is there any customer service information that you require taxi companies to report?
    - What systems do the companies need to gather this data?
    - Do you think that the data reported by taxicab companies would be accurate?
    - Is there any data that taxi companies are required to report by geographic area?
    - Do you know of any dispatch systems that can collect data by geographic area?
    - How do you deal with complaints against taxi drivers or companies?
        - Is there a protocol you use?
- What information does [County/City/local government] need to effectively improve customer service?
- Are you aware of any programs the taxi companies have to improve customer service?

- What do you think about medical calls?

(explain regulation's application - 10% of PVLs)

- Do you have any reward/punishment system for customer service?

- Do you use medallions or licenses for taxicabs?
    - How often (if ever) do you issue new ones?
    - How do you decide when and who to issue new licenses to?
    - Do you ever use the customer service record of a company in determining whether to issue them more licenses?

## Interview 5: Montgomery County Hospital Receptionists

Receptionists are the people in hospitals that deal with cab calls.

We are two students currently enrolled at Worcester Polytechnic Institute, Massachusetts, who are working on assessing customer service regulations for taxis in Montgomery County, Maryland. We are trying to evaluate a proposed County regulation to determine if it is reasonable and fair to all Montgomery County taxi companies. One of the criteria of the regulation is that non-emergency calls gain dispatching priority over other calls. We will be keeping your names anonymous.

-When someone is discharged from the hospital and needs a cab, do you call the cab company?

Yes, other does sometimes

-Is it ever an issue for someone to get a cab after being discharged?

Phones are available and cabs arrive from 20 to 30 minutes later

-How often do people get dropped off by taxicab?

Not often that the receptionists knew of.

-Do you think it is necessary for non-emergency medical calls to gain dispatching priorities?

No, it is not an emergency.

They also mentioned the bus system stopped there every 30 to 40 minutes, and that metro stations were near by.

## Interview 6: Montgomery County Taxicab Drivers

We are two students currently enrolled at Worcester Polytechnic Institute, Massachusetts, who are working on assessing customer service regulations for taxis in Montgomery County, Maryland. We are trying to evaluate a proposed County regulation to determine if it is reasonable and fair to all Montgomery County taxi companies. We are also attempting to find ways in which we can improve the current data exchanging systems between the County and taxicab companies. We will be keeping your names anonymous. (We interviewed cabbie's from each Montgomery County taxicab company.)

-What training did you have to complete to become a cabbie?

Basic training (how to operate cab) 6/8, 1 day class 1/8 Regency, Training Barwood 1/8

-Did it include customer service training?

No 7/8, Yes 1/8

-How much driver turnover is there in your company?

1 driver gave answer of 50% in 6 months, over all large turnover

-What do you see as the biggest customer service issue?

Difficult customers, miscommunication

-Is there anything your company or County could do to help improve customer service?

"Meeting with the taxicab company owners or managers so you feel like a person"

-Is there anything about the taxicab industry you wish you knew or were taught before you started?

-What information are you required to give your company? (accident info, # of trips, mileage, ect.)

Accident info, trip pick up and drop off, money, and working hours

# Appendix F: GPS Dispatching Retail Company Recording Ability

Table 12 -*Dispatch Company Capabilites*

| By Geographic Area: | Mobile Knowledge | Teltronic | TranWare | Cordic |
|---|---|---|---|---|
| Reporting % Prearranged Service served within 15 min | | | | |
| Reporting % Immediate Service served within 25 min | | | | |
| Reporting if it was a Medical call | | | | |
| Reporting if the Medical call got priority | | | | |
| Reporting % Medical Service served within 10 min | | | | |
| # of calls | | | | |
| # of trips dispatched | | | | |
| # of prearranged service calls | | | | |
| # of immediate service calls | | | | |
| # of medical service calls | | | | |
| Total miles driven | | | | |
| Total paid miles driven | | | | |
| Total number of trips served | | | | |
| Total meter revenue and extra revenue | | | | |
| Taxicab vehicles in service | | | | |
| Taxicab vehicles not in service | | | | |
| # of unserved trips for immediate and pre-arranged trips | | | | |

# Appendix G: Sample Method per Criteria (modified regulation)

Table 13 -*Geographic Criteria by Sampling Organization*

| by Geographic area: | Sample Method: |
|---|---|
| Reporting % Prearranged Service serviced within 5 min | Mystery Rider |
| Reporting % Immediate Service serviced within 25 min | Mystery Rider |
| Reporting if it was a Medical call | Excluded-Company |
| Reporting if the Medical call got priority | Excluded-Company/Mystery Rider |
| # of calls | Company |
| # of trips dispatched | Company |
| # of prearranged service calls | Company |
| # of immediate service calls | Company |
| # of medical service calls | Excluded-Company, Reporting= Does not Improve C.S. |
| Total miles driven | Excluded-Company, Reporting= Does not Improve C.S. |
| Total paid miles driven | Excluded-Company, Reporting= Does not Improve C.S. |
| Total number of trips served | Excluded-Company, Reporting= Does not Improve C.S. |
| Total meter revenue and extra revenue | Excluded-Company, Reporting= Does not Improve C.S. |
| Taxicab vehicles in service | Excluded-Company, Reporting= Does not Improve C.S. |
| Taxicab Vehicles not in service | Excluded-Company, Reporting= Does not Improve C.S. |
| # of unserved trips for immediate and pre-arranged trips | Excluded-Company/ Mystery Rider, Data= (# calls - # trips dispatched) |
| Total number of accidents | Excluded- Already reporting |
| # of complaints by Geographic area: | |
| No shows | Mystery Rider |
| Late arrivals | Mystery Rider |
| Trip refusals | Mystery Rider |
| Not available | Mystery Rider |
| Delayed Answering service | Mystery Rider |
| Over-Charge | Mystery Rider |
| Unsafe driving and incorrect route | Mystery Rider |
| Service animal refusal | Mystery Rider |
| Other, specify | Mystery Rider |

## Appendix H: Quantified Complaint Hotline with Analysis

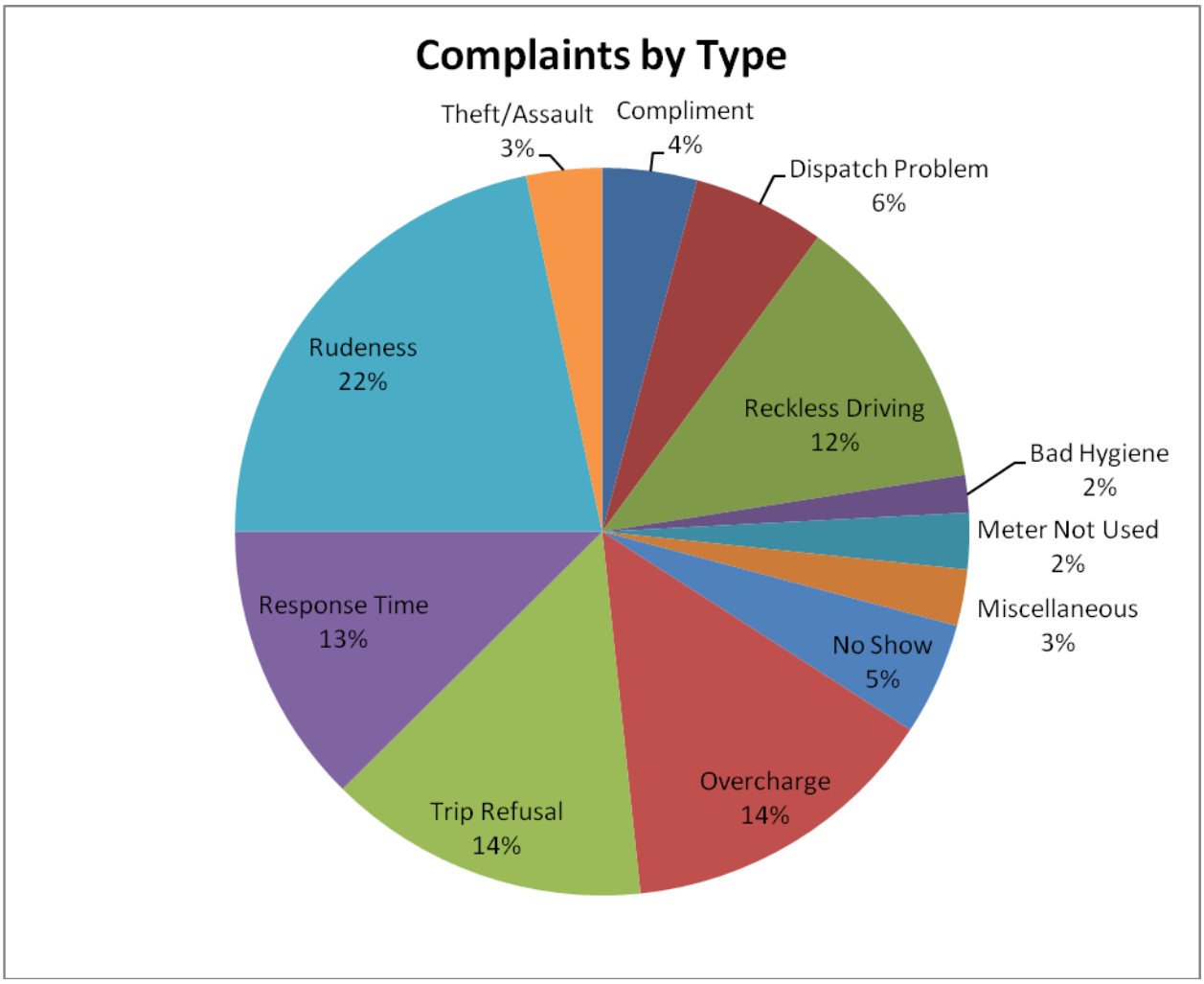


*Figure 2* -County Hotline Complaints for Fiscal Year 2009

Table 14 -*FY09 County Hotline Complaint Details*

| Complaint | # | Suggested preventative method for addressing complaint type |
|---|---|---|
| Rudeness | 26 | Driver training program –driver etiquette |
| Overcharge | 17 | Driver training program, better informed customers (This is a difficult issue to address) |
| Trip Refusal | 17 | Company incentives/programs, driver training program |

| | | |
|---|---|---|
| Reckless Driving | 15 | Driver training program – vehicle driving skills |
| Response Time | 15 | CS Regulation, instruction of customer about expectations, driver training program |
| Dispatch Problem | 7 | Dispatcher training with customer service element |
| No Show | 6 | Company incentives/programs, driver training program, customer taxi expectation instruction |
| Compliment | 5 | DOT could write a letter to the cabbie acknowledging the compliment |
| Theft/Assault | 4 | |
| Meter Not Used | 3 | Driver training program |
| Miscellaneous | 3 | |
| Bad Hygiene | 2 | |

## Appendix I: Customer Service Example Handout

Your Path to Success!

**Taxi Customer Service**


Montgomery County Government
Division of Transit Services

**240-777-CABS (2227)**

# Tips for Good Customer Service

Below is a list of tips that will improve a customer's view of service:

- Provide a timely response to dispatched calls
- If you are late to pick up a customer, first apologize, then give the reason for being late. Do not be forceful in speaking.
- Greet and treat customer with respect. A first impression is often the one that lasts the longest
- Try to build a personal relationship. Speak to their interests
- Driving defensively, if you have to think about making a maneuver, do not make it.
- Operate a clean taxi and having good hygiene. Wearing a shirt and tie will show professionalism to your customer.

Good customer service requires forward thinking

- Providing comfort or entertainment items like an unopened bottle of water or multiple newspapers like the Washington Post, Washington Times, and the USA Today can improve customer service.

- Take initiative to do anything extra for the customer, like opening doors or even ask if they need assistance in carrying any cumbersome items.

- Smile frequently =)

## Good Customer Service Increases Income

Providing good customer service will lead to a happy customer. A happy customer will more likely tip you higher than an unhappy customer. Consistently providing good customer service will overall increase your income.

Another way to increase your income is by building a list of personals. A list of personals is a list of people who have your phone number (or business card) and will call you when they need a ride because they have confidence with your service. Make a goal to communicate pleasantly with your customer and offer your future services if you feel the ride went well. Make sure that you go out of your way to provide excellent service to this customer in the future.

**Montgomery County Government**
**Division of Transit Services**

Taxicab Regulation Office
101 Monroe Street, 5th Floor
Rockville, MD 20850

240) 777-CABS


TAXI

# Appendix J: Taxicab Mystery Rider Program