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Go Before You Go: How Public Toilets Impact Public Transit Usage

by

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Abstract

The emphasis on sustainable solutions in Portland, Oregon includes developing multi-modal transportation methods. Using public transit means giving up a certain amount of control over one's schedule and taking on a great deal of uncertainty when it comes to personal hygiene. Buses, the MAX, and the Streetcar – the cornerstones of public transit in Portland – are not equipped with toilets and rarely are their stations, while most shops and restaurants reserve toilets for patrons only. As a result, many people may bypass public transit in favor of cars, which afford travelers greater autonomy and flexibility. Theories of New Urbanism endorse urban lifestyles, where all a person's needs are within a "twenty-minute neighborhood." The reality is that many people commute to work or school outside that radius. As sustainability focuses on public transit, it must also consider the needs of the public for hygiene and dignity. Using data from an online survey of Portlanders and applying New Urbanism's lens, this article examines the relationship between public toilet availability and public transit usage. Understanding this correlation may enable communities, planners, and administrators to create sound strategies that may increase ridership and align with sustainability goals.

Keywords: public toilet, public restroom, public bathroom, New Urbanism, toilet availability, Portland, public transit, walkability

INTRODUCTION

The United States, while perfectly willing to provide rest stops along highways, seems to be opposed to public toilets in urban settings. Parks, yes. Thoroughfares, no. Much of this hesitation revolves around budgets. Even cities that built public services along with public transit have closed many toilets due to budget cuts. Public toilets must be maintained or they simply become social problems and bio-hazards. Some of this hesitation is cultural. Rural communities had long dealt with public excretion and few communities expanded beyond a twenty-minute walk, so there was less need there for public toilets. However, as the Industrial Revolution crowded people into cities, innovations in water and sewer made the difference between healthy workers and the spread of disease. There was a time, in the late 1800s and early 1900s, that public utilities were among the popular measurements of a successful city.

Today, Americans primarily live in suburbs and drive cars instead of living in cities and walking or using buses, light rail, and streetcars. Americans are very individualistic, expecting people to provide for their own health and security. This includes bowels. However, since the extended recession, urban living has become increasingly attractive and residential growth in city cores is increasing. Theories of urbanism endorse "twenty-minute neighborhoods," much like communities of yore, where all a person's needs are within walking distance. Today, those needs include non-automobile transportation to take people to destinations beyond their twenty-minute radius.

Public transit is more sustainable than individual car ownership and cities spend millions of dollars implementing multi-modal transportation strategies. Using public transit, however, means giving up a certain amount of control over one's schedule and surrendering oneself to the public transit system, for good or ill. As if that weren't daunting enough, it also means taking on a great deal of uncertainty when it comes to personal hygiene. Unlike in a car, one cannot simply return home or pull over at a gas station to use a toilet. Buses, light rails, and streetcars are not equipped with toilets, nor are their stations. Disembarking from a bus to find a toilet open to the public means 1) a walk to the nearest toilet and 2) another wait for the next bus. As a result, many people bypass public transit in favor of cars, which afford travelers greater autonomy and flexibility.

LITERATURE

This article proceeds as follows. First, it briefly discusses the history of public toilet policy from ancient times to the present, then it summarizes the theories of New Urbanism that emphasize walkability and "twenty-minute neighborhoods" and examines toilets as the missing link in the success of

walkable neighborhoods. Next, it briefly describes the methodology and results of the research and finally, draws conclusions and makes recommendations for possible solutions.

A History of Public Toilet Policy

There was a time when the provision of public toilets was a thing taken for granted, not a matter of social policy or urban planning. The history of toilets dates back to the first bowel movement, the first urination. The first trough dug outside an encampment, the first bucket of "night soil" dumped on a garden. In ancient Rome and England, public latrines were the norm – except for wealthy people. The Romans even had a goddess of the sewers, Cloacina. In Medieval London, public latrines were centrally located near main bridges, overhanging rivers. They were such a normal and popular part of people's lives that one particular 84-seater, Whittington's Longhouse, was named after the Mayor of London, Dick Whittington. Queen Mathilda even sponsored a latrine (Greed, 2003, p. 33). At this time in history, chamber pots were regularly emptied out an upper story window or the "nightsoil man" collected their contents daily to create fertilizer. Human waste was a valuable industry and commodity for agriculture even up until post World War II (Greed, 2003, p. 36).

Modern concepts of hygiene and public toilets evolved out of the problems of the Industrial Revolution. During and after the Industrial Revolution, cities swelled and poorly built homes around factories and mills were crammed with workers and their families. Thousands of people, densely packed into dirty and dangerous tenements was a recipe for outbreaks of communicable diseases. In 1854, after Dr. John Snow linked one contaminated pump in London to a major cholera outbreak, the state began to invest in public works to alleviate public stench and disease. In fact, one might say the roots of planning are firmly in the sewers (Greed, 2003, p. 38).

Sanitation policy of the early 20th century firmly established our modern system of water-based sewers and flush toilets. The installation of sewers and the building of public works were a matter of civic pride to Victorian Londoners. No expense was spared. Great systems of pumps, pipes and palatial toilets were funded in style. Despite a global prevalence of collecting and composting waste disposal methods, as front gardens disappeared and the distance between the city and the country increased (reducing the need and feasibility of waste collection, earth closets and night soil buckets), water-based sewerage systems developed. The invention of flush toilets in 1870 firmly linked water and toilets in the Western world, establishing baseline sanitation standards and principles.

A second contribution of the Industrial Revolution was the transportation revolution. Cheap mass transit such as trains, trolleys and horse-drawn streetcars, generated demand for public facilities (Greed, 2003, p. 47). As distinct districts evolved (a product of evolving land use policy), people lived further from where they worked, therefore, they were away from their toilets for longer amounts of time. In addition, women joined the workforce, commuting alongside men and increasing the need for public facilities, including toilets. Modern patterns of home life, work space and the commute that links them became established much as our preference for flush toilets: by policies dating back to the late 19th century.

Public Toilet Policy and Portland

Today, public toilet availability varies worldwide. While many Western countries are closing public facilities, Asian countries are emphasizing them. In preparation for the 2008 Olympics, Beijing committed to having a public toilet every eight-minute walk. In Japan, where cleanliness and order are paramount, toilet facilities and their maintenance are a valued occupation. Australia, which boasts nearly 17,000 public toilets, has created a nationwide registry, accessible online, in order to "improve independence and quality of life" for all people, but especially for those who deal with incontinence ("National Public Toilet Map - About," 2013). The City of Melbourne created a 2008-2013 Public Toilet Plan, which replaced and updated their 2002 Toilet Management Plan, that aims to "maintain a network of safe, accessible, clean and environmentally sustainable public toilets" and "improve the quality of the public toilet stock, ensuring toilets are placed at locations that best meet community needs (City of Melbourne, 2008)." In America, the U.S. Department of Labor, through the U.S. Occupational Safety and Health Administration (OSHA), requires employers provide toilets for employees, citing the adverse health effects that can result from not being able to use a toilet regularly. The U.S. Department of Health and Human Services, which is responsible for protecting the health of the public as well as employees, would be the United States' primary tool for creating a national public toilet policy, but to date it has taken no stance on the matter. Therefore, the issue of public toilet availability in America (as in most other countries) falls to cities.

The City of Portland, home to the highly acclaimed Portland Loo – a freestanding public toilet – and renowned for its progressive planning policies, struggles to provide adequate public toilets for its residents, transit users, employees and tourists. The Portland conversation about public toilets dates back to 1915 when Prohibition shut down saloons and created an increased need for more "comfort stations" around the city (Ahmann et al., 2006, p. 12). Today, at least six major plans address the need for public toilets even as the City closes public toilet facilities, citing budget, health,

and safety concerns. Several cities in both the United States and Canada express interest in purchasing Portland Loos even as the City is being sued for maintaining its seven Loos. Clean & Safe, an independent organization of businesses founded in order to maintain an orderly downtown, charges the City an estimated \$12,000 to \$14,000 annually to clean human waste off sidewalks even as residents and business owners cite the homeless as a reason to *not* install more public toilets (S. Adler, personal communication, May 17, 2013).

Going Public!, a 2006 report by Relief Works for the Office of Mayor Tom Potter, focused primarily on public toilet availability in the Central City. Relief Works mapped twenty three toilets that were available to the public at the time and emphasized the need for public toilets particularly as a human dignity issue. They argue that since toilet usage is an issue that crosscuts every social classification we know, because everybody must excrete, provision should be a priority where human activity is sufficiently high. These areas of high activity include recreation corridors, parks and plazas, social service clusters, nightlife clusters, and major transit junctions. The report recommends that "restrooms should be available within four blocks, or no more than 1,000 feet, from major transit junctions (Ahmann et al., 2006, p. 39)." Volunteers at Public Hygiene Lets Us Stay Human (PHLUSH) go even further, recommending that TriMet, the local transit authority, install facilities *at* major transit hubs such as the Gresham Transit Center (Hottman, 2013). TriMet opposes this suggestion, claiming they are in the business of moving people from one place to another and nothing more (Y. Park, personal communication, May 1, 2013).

Perhaps Portland's greatest contribution to public toilet availability is the Portland Loo, affectionately called the Loo. Former Commissioner Randy Leonard organized a Loo Squad in 2006 and the first Loo was unveiled in 2008. Since then, the Loo has been patented, Portland has installed seven Loos throughout downtown and sold three to other cities in North America with interest from many more. Several features make the Loo's "defense-first" design enduring: no running water inside (and no sink), no mirror, bars at the top and bottom, a graffiti-proof coating, and heavy-gauge stainless steel (Metcalf, 2012). The design is solar powered and ADA accessible, large enough for wheelchairs, strollers and bikes. The first Loo cost \$140,000, but they are now closer to \$60,000 per unit. The controversial cost is maintenance, which runs about \$12,000 per unit per year. In 2011, the City of Portland was sued for "improper utility spending," which included the \$617,588 maintenance and marketing of the Loos (Mesh, 2013). The City responded by moving Loo ownership and maintenance from the Water Bureau's budget to the Bureau of Environmental Services' budget. Today, the City is trying to boost its sales of Loos in order to fund the maintenance of existing Loos in its downtown, but according to a recent Willamette

Weekly article, it would need to sell at least four units a year – eight if you include payroll and benefits for staff assigned to the project (Mesh, 2013).

Unfortunately, public toilets are not a common part of the urban landscape today. The primary argument for closing public facilities centers around the budget for their upkeep, but the underlying social reason is the fear of unsavory behavior, such as sex and drug use, in these public spaces. Not only do policymakers wish to control public behavior, but there are also concerns about safety in areas around public toilets.

A Summary of Urbanism

In the 1990s, responding to the effects of urban sprawl, the Congress for New Urbanism wrote the *Charter of the New Urbanism*, which is influenced by planning principles that were prominent before the rise of the automobile. Their goals include restoring urban centers, reconfiguring sprawling suburbs, conserving environmental assets, and preserving the built legacy (Leccese, McCormick, & Congress for the New Urbanism, 2000, p. 2). Peter Calthorpe (2010), a New Urbanist, argues that the planet has an urban future (p. 3). For the first time in history, over half the global population lives in cities and as climate change progresses, urban living is key to addressing the environmental, social and economic problems we face. Calthorpe (2010) defines urbanism broadly

“..by qualities, not quantities; by intensity, not density; by connectivity, not just location. Urbanism is always made from places that are mixed in uses, walkable, human scaled, and diverse in population; that balance cars with transit; that reinforce local history; that are adaptable; and that support a rich public life (p. 3).”

According to Jane Jacobs, the key components of urbanism are diverse population and a range of activities; a rich array of public spaces and institutions; and human scale in its buildings, streets and neighborhoods. Calthorpe (2010) adds to that list conservation and regionalism and argues that “urbanism is our single most potent weapon against climate change, rising energy costs, and environmental degradation (p. 17).”

Transportation is at the center of the energy crisis facing the United States, therefore Americans must change their travel habits, abandoning automobiles. The most important community-scale system dependent on urbanism is transit, which is linked to density. The keys to a viable transit system are density, walkability and mixed use. A strong transit system supports and extends the pedestrian environment and the quality of the interface from walking to transit is central to displacing car trips. If a city is determined to increase transit ridership, it must improve the pedestrian experience. This means improving access by creating safer pedestrian zones

and more pedestrian-friendly design, which includes providing facilities that people need when they must be away from home longer.

The overall key to a successful neighborhood or district is walkability. In *Walkable City*, Speck argues that every transit trip begins and ends with a walk, therefore, good transit relies entirely on walkability (Speck, 2012, p. 140). According to G.B. Arrington, another New Urbanist, Europeans use public transit nearly as often as Americans do (which is not very often), they just walk more than Americans do (Leccese et al., 2000, p. 59). Regions that are more walkable are also more livable, drivable and bicycle and pedestrian friendly – they also serve transit better. Most of a person's daily travel consists of short trips, therefore, the goal for any community should be rewarding short trips and pedestrians. Withholding public services does not create a very rewarding experience for pedestrians, cyclists and commuters. In *The New Transit Town*, Dittmar and Ohland also emphasize the importance of building for pedestrians and identify a transit-oriented development's livability goals as location efficiency, rich mix of choices, value capture, and place making. The criteria for measuring livability include access to services and recreation, mobility choice, environmental quality, commute times and, last but not least, health and safety (Dittmar & Ohland, 2004, p. 22). Pedestrian health and safety includes the ability to use a bathroom regularly.

Toilets, the Missing Link

In England, professors Clara Greed, Julienne Hanson and Jo-Anne Bichard have dedicated several years to the study of public toilet availability and accessibility, concluding that public toilets are the missing link to increasing transit ridership (Bichard, Hanson, & Greed, 2013, p. 21). In a chapter of her soon to be published dissertation, Bichard (2013) uses two metaphors to discuss this argument. One is the "bladder leash," which constrains how long people can be away from home (and, therefore, how far they can *get* from home via their various modes of transportation) before they need to use a toilet (p. 21). This varies depending on gender, age, medical history, and whether or not a person is traveling with children. The second metaphor is the "transportation chain," which is the link of trips any commuter takes in order to get from one place to another (Bichard et al., 2013, p. 21). For most transit users, the first link is a walk from home to the transit station. From there, the chain can include bus, streetcar, rail, bicycle, automobile, and more walking before a day's commute is complete. The current approach to transit is very linear, reflecting a "one size fits all" model that does not take into account the flexibility of many people's lives (Bichard et al., 2013, p. 21).

The 2003 London Transport Users Committee's report 'London for the Continent' directly identifies the availability of public toilets as essential to the transportation chain (Bichard et al., 2013, p. 22). In 2008, the British Department of Communities and Local Government published a strategic guide to *Improving Public Access to Better Quality Toilet Facilities* that identifies four key policy priorities in which the provision of public toilets play an important role. The fourth policy is "Sustainable Toilet Transport – encouraging people out of cars and onto public transport or cycling and walking will not be successful if people cannot find toilet facilities within the wider built environment (Bichard et al., 2013, p. 24). If a chain is only as strong as its weakest link, public toilets are, not only the weakest link, but in many American cities, the missing link to increasing transit ridership.

RESEARCH QUESTION

This paper examines how public toilet provision relates to transit usage in Portland, Oregon. It assesses perceived availability and acceptability of facilities and finds no relationship between public toilet provision and transit usage. Indeed, the variable that seems to most strongly influence transit usage is household/family size.

METHODOLOGY

The data for this research were collected via an anonymous online survey, hosted by Qualtrics, which was distributed to Portlanders through the Office of Neighborhood Involvement (ONI) and the neighborhood association network. ONI oversees Portland's ninety five neighborhood associations, giving them support and resources and fostering a certain level of autonomy for neighborhoods. As it appears that a survey tool does not yet exist for measuring the connection between public toilets and public transit, this project involved creating a unique survey tool. The resulting Portland State University 2013 Public Toilets and Transportation Survey was designed similarly to a community needs assessment, asking people to rate certain items or indicate their level of agreement with others.

Participants included any Portlanders who received the survey link and chose to participate in the survey. The sampling frame was the initial ONI neighborhood association board member email list, which is available to the public via the ONI website, and everyone who is subscribed to the mailing lists, blogs, Facebook pages, Twitter accounts and other social media that neighborhood associations use. Though this is not a systematic way of collecting data, this form of convenience sampling reached about 400 people. The use of the neighborhood association network may bias the survey toward people who are already civically inclined, but the network also had the potential to reach a wider socioeconomic variety of Portlanders. Further, through social media, the link to the online survey could reach well

beyond the neighborhood network, being forwarded and shared by anyone who wishes.

In reality, the survey was taken by 398 people, 369 of whom actually completed the survey. Results are predominantly from three neighborhoods, Cully, Pearl District and Overlook. Kenton, Northwest District and Sullivan's Gulch were the next most responsive neighborhoods. The survey was emailed initially to 371 email addresses registered with ONI. The survey link was then shared on neighborhood association Facebook pages, in electronic newsletters, on membership forums, forwarded to a mothers' group and even mentioned in *The Oregonian*.

RESULTS

The results of the 2013 Portland State University Public Toilets and Transportation Survey do not support the hypothesis that having more public toilets would encourage more public transit usage. The number of responses was higher than expected, but still not representative of Portland in general. While the initial mailing reached people from nearly every neighborhood association in the city, only a handful of recipients shared the survey link on a broader scale. Every neighborhood contributed at least one or two responses, but few contributed more than five. The three most responsive neighborhoods were the Pearl District (72), Cully (39), and Overlook (28). Kenton (16), Northwest District (15), Sullivan's Gulch (13) were the next most responsive.

Demographics

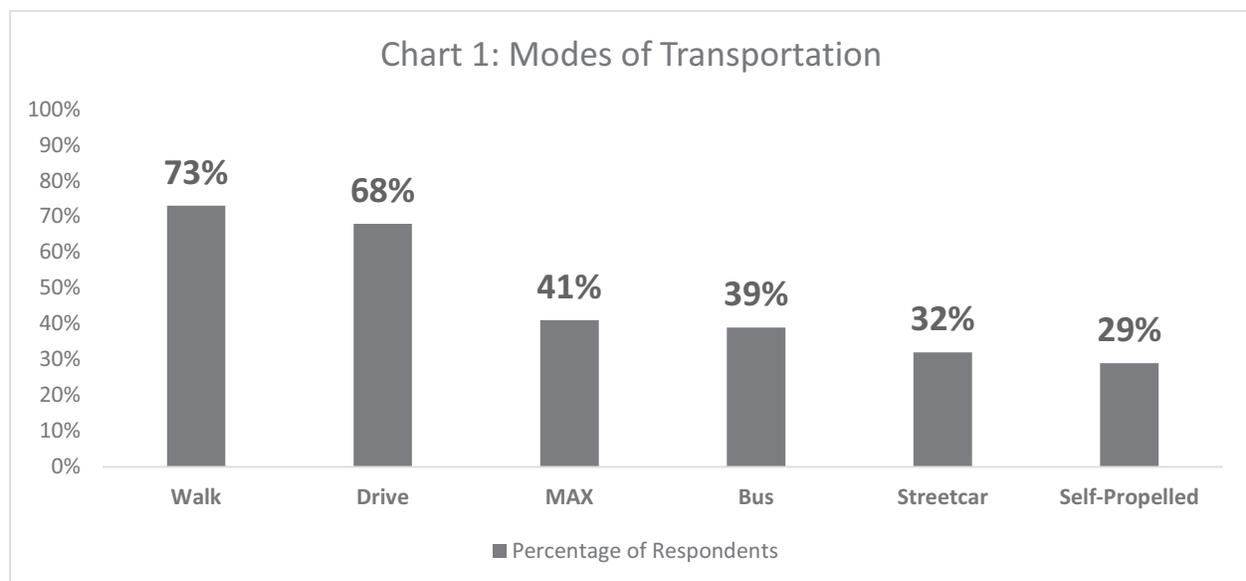
The demographics of the respondents are, similarly, not representative of Portland in general. Demographically, the respondents were predominantly female (67%), aged 60-71 years (34%), and very well educated with 85% earning a 4-year degree or higher. Of those, 39% have a 4-year degree and 46% have a graduate degree. The median annual income of the responses was \$65,000 and 26% reported earning over \$100,000 annually. In comparison, the City of Portland is 50% female with only 10% of the population aged 65 years or older and 42% earning a 4-year degree or higher. The median annual income for Portland is about \$52,000 ("Portland (city) QuickFacts from the US Census Bureau," 2013).

Another measure of affluence, car ownership, is only slightly more representative of Portland. Of the 369 respondents, 16% did not have cars. In Portland, 12% of households do not own cars. Most respondents (50%) owned one car and a quarter (26%) owned two cars. In Portland, the median number of cars per household is two, 38% of Portlanders own one car and 34% own two cars ("Portland, OR Number of Vehicles Per Household - CLRSearch," 2013).

Most Portland households consist of at least two people. The average for Portland is 2.27 people per household ("Portland (city) QuickFacts from the US Census Bureau," 2013). Of the respondents, 28% live alone and 60% have two to three people in their households and 12% have four or more people. These households are predominantly childless with 84% reporting no children in the home, 14% reporting one or two children.

Commuting Habits

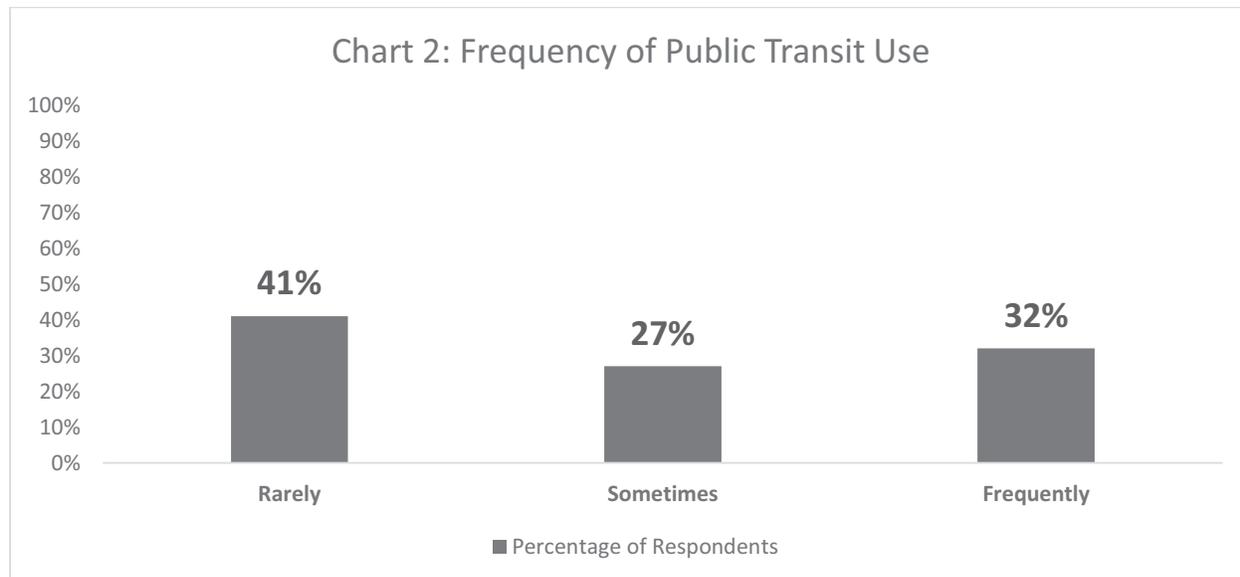
When asked about their commuting habits, most respondents indicated they walk (73%) and drive (68%). A relatively large percentage of respondents indicated using a variety of public transit methods with 39% of respondents using the bus, 32% using the Streetcar and 41% using the MAX. In comparison, according to the American Community Survey, 12% of Portlanders use public transit. That number indicates people who use public transit *instead of* driving or walking and this survey allowed respondents to indicate public transit *in addition to* driving or walking, however the comparison is valuable to understand that this sample is skewed toward public transit users. A slightly lower percentage of respondents (29%) get around via bicycle. Surprisingly, several respondents chose the "other" category and wrote in car sharing strategies such as ZipCar, Car2Go, and Getaround, indicating that they somehow do not see car sharing as driving.



Source: 2013 Portland State University Public Toilets and Transportation Survey
N = 369

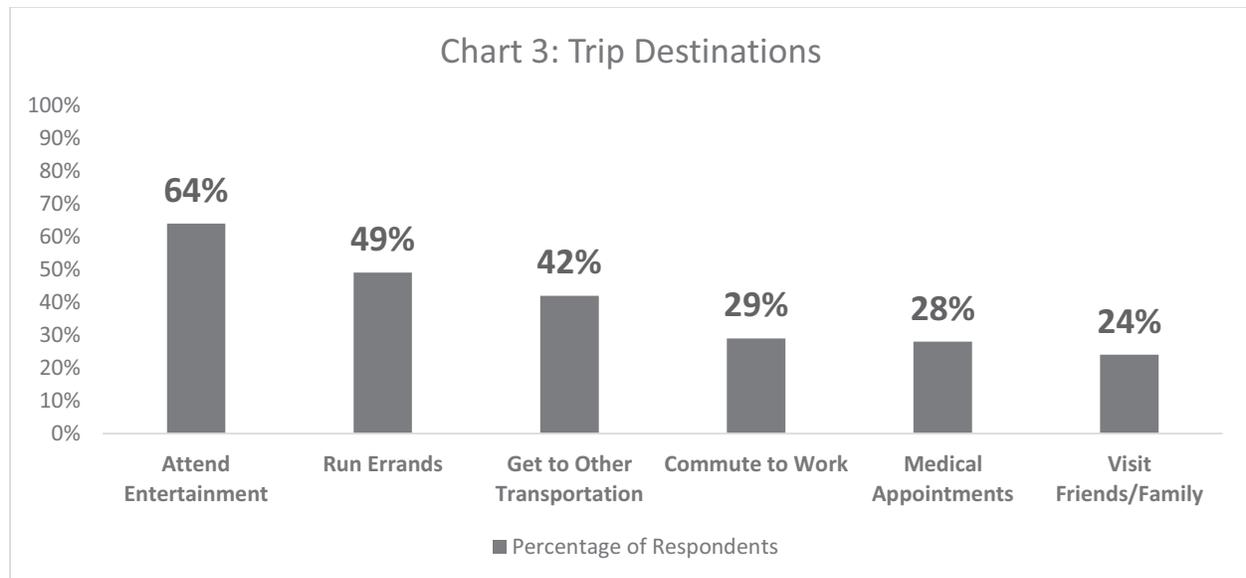
Though many survey respondents indicated using a variety of public transit methods, they use these methods infrequently, indicating possibly a failure to comprehend the word "usually" in the question or a broad interpretation of the word. A quarter (25%) of respondents, the largest

group, use public transit less than once a month, however, when grouped into three categories of rarely, sometimes, and frequently, 41% use public transit rarely (less than monthly), 27% use it sometimes (almost weekly), and 32% use it frequently (almost daily).



Source: 2013 Portland State University Public Toilets and Transportation Survey
N = 369

The survey also asked the purpose or trip destinations of public transit use. Most respondents use public transit to attend entertainment (64%) or run errands (49%). They also use public transit to get to other transportation such as the airport or train station (42%). Some use public transit to commute to work (29%), get to medical appointments (28%), and visit friends and/or family (24%). Very few respondents use public transit to commute to school (5%) or take children to school (2%). A surprising 15% selected the "other" category, of which many wrote in "to get downtown" with no indication of what they did there. Several also wrote "jury duty" and "volunteer opportunities" as public transit destinations. When asked how far they commute to school or work, most respondents (38%) indicated they do not commute, perhaps reflecting the results' bias in the direction of older, retired people. Non-commuters aside, 28% commute one to five miles and 19% commute six to ten miles.



Source: 2013 Portland State University Public Toilets and Transportation Survey
 N = 369

Attitudes

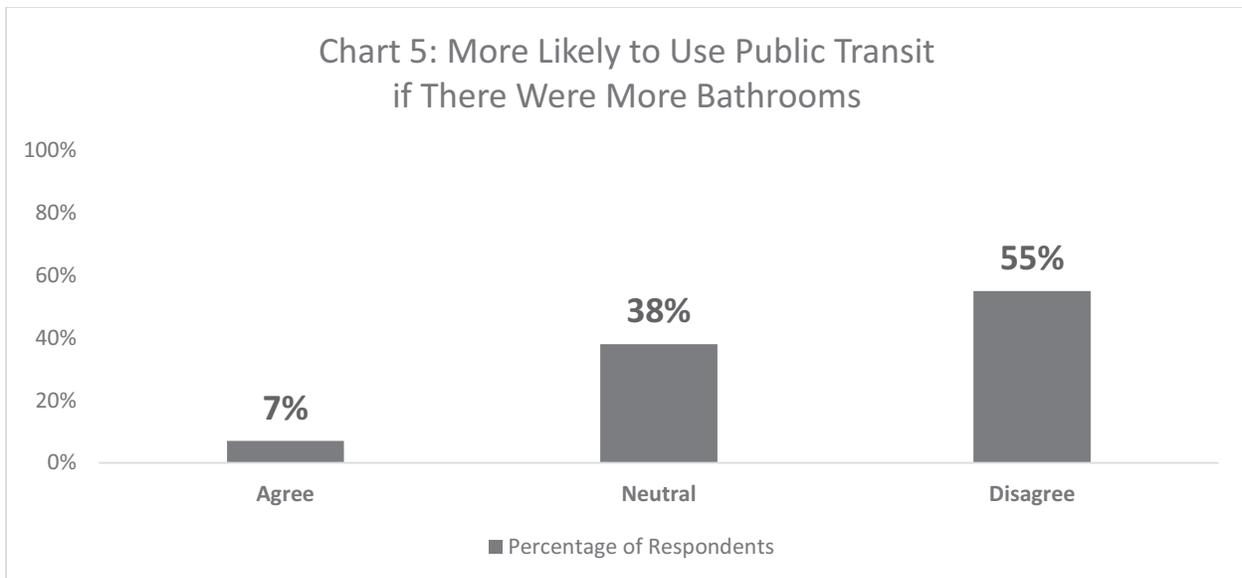
When asked to rate the availability and cleanliness and public and private toilets in Portland, respondents seemed satisfied with private toilets, but not public toilets. For the purpose of this survey, a public toilet was defined as one provided by the city and a private toilet was defined as one found in private businesses. Forty one percent rated the availability of private toilets as good and 49% rate their cleanliness as good. However, 35% rated the availability of public toilets as poor (a close 29% rated availability as fair) and 35% rated their cleanliness as fair. Most are comfortable using public toilets (44%) and most have no hygienic reservations about public toilets (45%). Overall, survey respondents believe that public toilet availability is an important issue for both people and transit providers (66%). A smaller quarter (26%) believe it is an important issue for people, but *not* for transit providers.

CHART 4: ATTITUDES REGARDING PUBLIC AND PRIVATE TOILETS



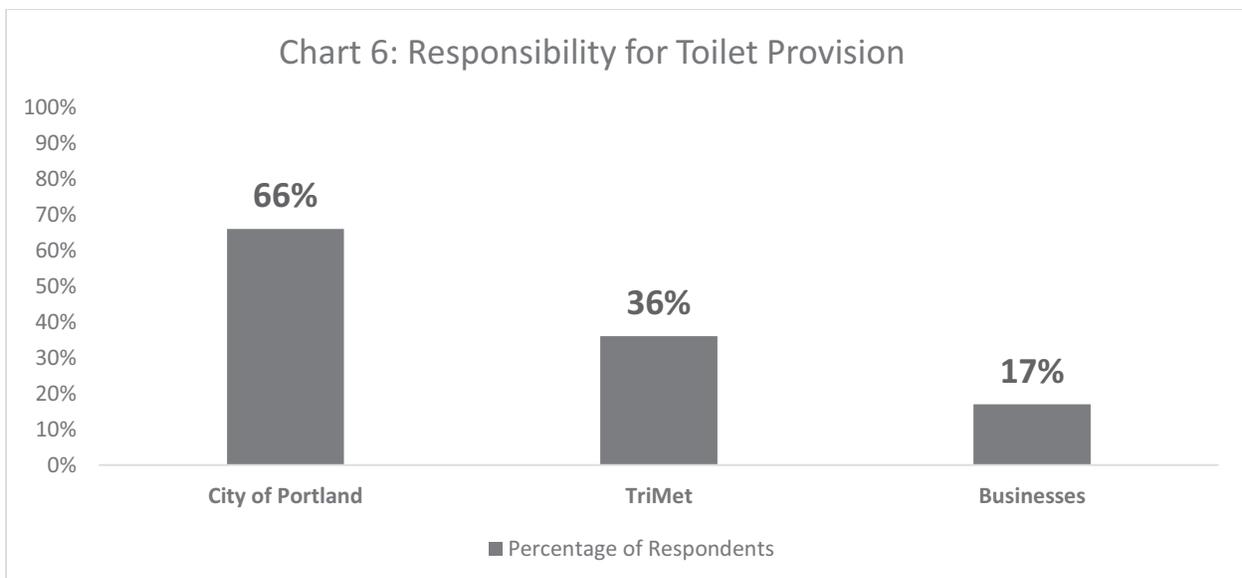
Source: 2013 Portland State University Public Toilets and Transportation Survey
 N = 369

Finally, the survey gets to the heart of the question, asking three questions designed to measure whether better toilet availability would increase transit usage. Combining the three questions into an index reveals that about half of the respondents (55%) do not feel that having more public toilets would encourage them to use public transit more often. A large portion (38%) remained neutral on the matter and only 7% feel they would use public transit more often. This does not support the literature’s hypothesis that more public toilets would increase public transportation usage; however, it bears repeating that this small sample is overwhelmingly affluent and retired and may simply have less need for public transit than a younger, working population.



Source: 2013 Portland State University Public Toilets and Transportation Survey
N =369

Having established that most respondents do not feel they would use public transit more often, but that most also believe public toilet availability is an important issue for both people and transit providers, the analysis moves next to who should provide these important toilets that may not necessarily increase ridership. Given the options of TriMet, the City of Portland, and private businesses, most respondents (66%) felt that the City should provide public toilets, 36% felt that TriMet should, and only 17% felt that private businesses were responsible.



Source: 2013 Portland State University Public Toilets and Transportation Survey
N =369

This brings us to the question of who is more likely to feel they would use public transit more often. In a series of crosstabs evaluating the relationship between certain independent variables and the combined three questions, few variables approached significance (measured here at .10). Income drew near, but only household size, number of children, and age were soundly significant – and even then, .10 is more inclusive of variability than the general standard of .05. People living in households of two or three people are more likely to agree that they would use public transit more often. As household size increases, however, they are less likely to agree. People with zero children are more likely to agree that they would use public transit more often, however, as the number of children increases, they are less likely to agree. These two results may indicate a belief that using transit with multiple children is more difficult than alone or with one child and perhaps no amount of toilet provision can make up for moving around on public transit with a stroller and/or child in hand. Finally, people who are 54 to 65 years old are more likely to agree they would use public transit more often, supporting the “bladder leash” hypothesis that older people are more likely to want and need more public toilets.

DISCUSSION

Given the neighborhood and demographic biases of the data, it is difficult to draw any conclusions with confidence. The data were rather skewed toward affluent, retired people and, therefore, not representative of Portland in general. As a result, the survey results can only be applied to the respondents and not more broadly. Further research might be more representative with systematic sampling of Portlanders or sampling that focuses on socioeconomic groups that are more likely to use public transit and whether public toilets would encourage more use. Another research strategy may be to only survey people who live within a certain distance of major transit lines, examining whether public toilets might incent them to use nearby transit more often.

Several interesting questions arise from the results. When asked to indicate how they usually get around, why did so many recipients select public transit though they use it so infrequently? Is this a different understanding of the word “usually”? Why were certain neighborhoods more responsive than others? One of the most striking questions to arise is why are car sharing strategies not considered driving? Is there a component of ownership that defines driving? And finally, given the resistance to providing public services for homeless people, how do people’s attitudes toward the homeless impact their attitudes toward public toilet provision?

Ultimately, this report concludes that public toilet availability is best presented as an economic issue, rather than a human dignity issue. Improving the pedestrian experience in the central city and neighborhood centers encourages pedestrians to stay longer, spending more money and activating public spaces more often throughout the day and night, which is good for business. One important way to improve the pedestrian experience is by providing accessible toilets that are safe and clean. According to urbanist theories of transit-oriented development, if the City of Portland committed to providing public toilets, the improved pedestrian environment would contribute toward increased transit usage. It seems that while toilets are an important link in the transportation chain, the goal should be walkability, not transit usage.

According to the survey results, the respondents feel the City is responsible for providing public toilets; however, the current trend is toward cutting city budgets, not increasing them. In addition, given the recent lawsuit for mismanagement, it seems unlikely the City will be expanding the Loo's budget any time soon. Private businesses are the least preferred option for toilet provision, yet an expansive infrastructure of toilets already exists within those businesses. Currently, many private toilets are reserved for paying customers; however, this creates a serious accessibility issue. Not everyone can afford a cup of coffee every time they need to use a toilet.

One creative option for public toilet provision is to create a public-private partnership between the City and businesses, contracting to make their toilets available to the public. Two cities in England already reimburse private businesses for opening their toilets to the public. Participation is voluntary and these businesses agree to certain standards of maintenance and are allowed to charge for use (Ahmann et al., 2006, p. 46). Amsterdam simplifies the process by requiring that all restaurants and pubs provide free public access to their toilets. In Portland, resistance would likely center around fear of the homeless using these newly available toilets; however, if enough businesses participated, the use would be spread across thousands of toilets, not the current handful.

A more unique solution to public toilet availability in Portland is to employ the food cart model. In many cities around the world, public toilets are privately maintained, whether inside a business or adjacent to a kiosk. Portland could break new ground by privately licensing public toilets in the same way it licenses food carts. Owners would purchase permits for one or several portable toilets, which come in a variety of styles and sizes, then wheel their unit or bank of units to the permitted location (perhaps a parking space). They would agree to maintain their toilets to a certain standard, be subject to inspection, and could charge whatever they like for use, but would be required to provide an attendant on site. Owners would determine their

own hours of operation, giving a variety of coverage throughout the day and night and, by their very design, the portable toilets could be removed at the end of a shift or moved around the city to accommodate parades, transit, events, festivals, and street closures. Portland's indie spirit is, perhaps, the ideal incubator for such a revolutionary solution.

CONCLUSION

Although the unfortunately biased data of this survey do not support the relationship between public toilet availability and public transit usage, the literature strongly indicates that increased public toilet availability is part of the equation for improving non-automobile transportation. Any city determined to strengthen its central city and neighborhood centers should address public toilet availability as a way of improving the pedestrian environment, which, according to urbanist and transit-oriented theories, will increase not only the amount of time pedestrians spend out of their homes and, presumably, the amount of money they spend while away from home, but also transit usage in areas where walkability is a priority. Public toilet availability need not be solely the responsibility of one entity. In fact, variety always creates a stronger network that can survive more crises and provide greater flexibility. Therefore, any city exploring the issue of public toilet provision should integrate various solutions in its strategy. Not only is public toilet availability a human dignity issue and an indicator of civilization, it is a sound economic tactic.

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Survey Welcome Page

Portland State University 2013 Public Toilets and Transportation Survey

Thank you for taking the time to participate in the 2013 Portland Public Toilets and Transportation Survey. This survey is part of a Portland State University research project. Information gathered via this survey will be used to analyze possible connections between public toilet provision and public transportation usage.

Please be assured that the information you share will be anonymous, meaning no one will be able to identify you. The survey asks 20 short questions and will take about 5 minutes to complete. You may not skip any questions, however, you are free to stop at any time.

For the purposes of this survey, public toilets are defined as those provided in parks, at transit stations and on sidewalks, such as the Portland Loo. Private toilets are those provided by local businesses and restaurants. A personal toilet, would be one inside someone's home.

Note: This survey is a Portland State University project and not affiliated with the Pearl District Neighborhood Association. The researcher is a member of her neighborhood association and initially distributed this survey via the Office of Neighborhood Involvement email list.

Before you start the survey, please confirm:

I am over the age of 18 and voluntarily participating in this survey. By participating, I acknowledge that I have read and understand the above paragraph.

Yes

No

Survey

Usually, I get around via (select all that apply) (multiple choice)

Walking

Self-propelled vehicles (bicycle, skateboard, scooter, etc.)

Driving (includes carpooling)

Bus

Portland Streetcar

MAX

Taxi

Medical scooter/wheelchair

Other (text box)

How often do you use public transportation? (multiple choice)

Never

Less than once a month

Monthly

2-3 times a month

4-5 times a month

Weekly

2-3 times a week

4-5 times a week

Daily

For which of the following do you use public transportation? (select all that apply)

Commute to work

Commute to school

Errands

Visit friends and/or family

Attend entertainment

Medical appointments

Take child(ren) to school

Get to other transportation (airport, train station, carpool, etc.)

Other (text box)

How far do you commute to work or school? (multiple choice)

less than 1 mile

1-5 miles

6-10 miles

11-15 miles

16-20 miles

more than 20 miles

I do not commute to work or school

	Poor	Fair	Neutral	Adequate	Excellent
How would you rate the availability of public toilets in Portland? (at parks, transit stations, etc.)	1	2	3	4	5
How would you rate the cleanliness of public toilets in	1	2	3	4	5

Portland? (at parks, transit stations, etc.)					
How would you rate the availability of private toilets in Portland? (in businesses, restaurants, etc.)	1	2	3	4	5
How would you rate the cleanliness of private toilets in Portland? (in businesses, restaurants, etc.)	1	2	3	4	5

	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
It is the responsibility of TriMet to provide toilets at stations.	1	2	3	4	5
If there were more public toilets, I would use public transportation more often.	1	2	3	4	5
It is the responsibility of the city of Portland to provide public toilets for use throughout the city.	1	2	3	4	5
Businesses, shops and restaurants should provide toilets for the city.	1	2	3	4	5
I have chosen not to use public transportation based on the availability of toilets along my route.	1	2	3	4	5
I would be more likely to take public transportation if there were more public toilets available.	1	2	3	4	5
I prefer not to use public toilets for hygienic reasons.	1	2	3	4	5
Having public toilets available would NOT affect my commute.	1	2	3	4	5
I feel uncomfortable using public toilets.	1	2	3	4	5

The last part asks a few questions about your background

Which neighborhood do you live in? (drop down list)

Alameda
Arbor Lodge
Ardenwald-Johnson Creek
Argay
Arlington Heights
Arnold Creek
Ashcreek
Beaumont-Wilshire
Boise
Brentwood-Darlington
Bridgeton
Bridlemile (includes Glencullen)
Brooklyn
Buckman
Cathedral Park
Centennial
Collins View
Concordia
Creston-Kenilworth
Crestwood
Cully
East Columbia
Eastmoreland
Eliot
Far Southwest
Forest Park
Foster-Powell
Glenfair
Goose Hollow
Grant Park
Hayden Island
Hayhurst (includes Vermont Hills)
Hazelwood
Healy Heights
Hillsdale
Hillside
Hollywood
Homestead
Hosford-Abernethy (includes Ladd's Addition)
Humboldt

Irvington
Kenton
Kerns
King
Laurelhurst
Lents
Linnton
Lloyd District (includes the Rose Quarter)
Madison South
Maplewood
Markham
Marshall Park
Mill Park
Montavilla
Mt. Scott-Arleta
Mt. Tabor
Multnomah (includes Multnomah Village)
North Tabor
Northwest District (includes Uptown, Nob Hill, Alphabet Historic District)
Northwest Heights
Northwest Industrial
Old Town Chinatown
Overlook
Parkrose
Parkrose Heights
Pearl District
Piedmont
Pleasant Valley
Portland Downtown
Portsmouth
Powellhurst-Gilbert
Reed (included Lambert Gardens)
Richmond
Rose City Park
Roseway
Russell
Sabin
Sellwood-Moreland
South Burlingame
South Portland (includes Corbett, Fulton, Lair Hill, Terwilliger, and the Johns Landing and South Waterfront developments)
South Tabor
Southwest Hills, Portland, Oregon
St. Johns

Sullivan's Gulch
Sumner
Sunderland (includes the Dignity Village homeless encampment)
Sunnyside
Sylvan-Highlands
University Park
Vernon
West Portland Park (includes Capitol Hill)
Wilkes
Woodland Park
Woodlawn
Woodstock
Don't know

What is your gender? (multiple choice)

Male

Female

Other

What is your age? (drop down list)

18-23

24-29

30-35

36-41

42-47

48-53

54-59

60-65

66-71

72-77

78 or older

Do you have any disabilities? (multiple choice)

Yes

No

How many people live in your household? (multiple choice)

I am the only person in my household

2-3

4-6

7-9

10 or more people

How many children (under 18) live in your household? (multiple choice)

There are no children in my household

1

2

3

4

5

6 or more

How far did you go in school? (drop down list)

Less than high school

Some high school

High school diploma/GED

Some college/technical school

Junior college degree (AA, AS)

College graduate (BA, BS)

Master's degree

Doctoral degree (Ph.d., MD, JD, etc.)

Please indicate your household income BEFORE taxes. (drop down list)

Under \$10,000 yearly

\$10,000 to \$19,999 yearly

\$20,000 to \$29,999 yearly

\$30,000 to \$39,999 yearly

\$40,000 to \$49,999 yearly

\$50,000 to \$59,999 yearly

\$60,000 to \$69,999 yearly

\$70,000 to \$79,999 yearly

\$80,000 to \$89,999 yearly

\$90,000 to \$99,999 yearly

more than \$100,000 yearly

End of Survey Message

Thank you for taking the time to participate in this survey. Your input makes this entire research project a richer experience. Please remember to forward this survey to your friends, family, colleagues, classmates and neighbors who live in Portland. The more responses, the better!

Sincerely -

Kate Washington

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Portland State University