

**Public Restrooms in NYC:
Problems and Solutions**

By

David Devkota, S M Hossain, Alex Guevara

Writing for Engineering

Instructor: Thomas Barber

The City College of New York

Spring 2018

Table of Contents

	<u>Page#</u>
1. Abstract	3
2. Introduction	3
3. Plan of Work	6
4. Timeline	10
5. Budget	12
6. Qualifications	14
7. Reference list.....	15

Abstract

New York city is one the most public toilet resistant places in the world. The lack of public toilets is very concerning. Often, residents and tourists have to find a toilet in private properties like restaurants and often they have to face unwanted stares. Our solution to the problem is building several public pay toilets in major parts of the city. We also have a plan to raise awareness among the community boards about importance of having public toilets and get the approval to build public toilets.

Introduction

New York City is one of the financial, technological, and cultural centers of the United States and every day, tourists from all over the world visit to experience the diverse wonders of the city. Despite this, there are still a myriad of problems that need to be solved to make the city even better.

One of the major problems is the lack of public bathrooms throughout the city. Although NYC is one of the most heavily populated cities in the world, the scarcity of public bathrooms forces people to crowd private properties such as restaurants and coffee shops just to use the bathroom. This is especially a problem for those traveling with family and children.

There are public bathrooms in the major transportation hubs and public parks of NYC, but even these are unreliable as they can be closed for renovation. Bathrooms in parks are usually closed during the winter season, worsening the issue [1]. The lack of public bathrooms has led to widespread cases of public urination. Every year, the NYPD issues between 20,000 to 30,000 citations of public urinations [2].

There was a deal back in 2005 where NYC worked with a foreign company to sponsor the whole project of building bathrooms around the cities. The project was sponsored by Cemusa, a company originally based in Spain but has been a part of other projects in NYC. Cemusa won the deal worth one billion dollars which would allow them to make ads and advertise their company in buses and trains in NYC. The deal was originally about building 20 public bathrooms and numerous newsstands and bus shelters in NYC [3].

In 2008, there was a public pay bathroom built in Madison Square Park. The self-cleaning, automatic public toilet (APT) allows people to pay 25 cents to use the bathroom for 15 minutes. Unfortunately, this is one of only four bathrooms that have been built since the deal began [4]. This was supposed to be part of the program to build several other bathrooms in NYC, but progress has been stunted for years [2]. Figure 1A and Figure 1B show a rendering of an APT and the first APT in Madison Square Park, respectively.

Figure 1A. Rendering of an Automated Public Toilet



[4]

Figure 1B. Automated Public Toilet in Madison Square Park

[5]

The original plan by Cemusa failed due to not getting the approval of the community board to build the bathrooms. Hesitations towards building the bathrooms include the high cost of installation, the difficulty of finding a suitable location for the toilet, the potential disruption of foot traffic, as well as the bathroom facilities themselves being an unsightly presence in the community [6].

Our company has created a plan to work with the community board and get the approval to hopefully build more public restrooms in the future. Once we have gained the approval to install a toilet at a specific location, we will conduct a trial period with a portable toilet and then install the APT ourselves.

Plan of Work

Our plan to install more public restrooms in NYC has three primary tasks:

1. To convince the community board to do a trial period with a portable toilet
2. To conduct the trial period
3. To install a new Automated Public Toilet

Task 1: Gaining community approval

Installing an APT is a serious commitment because they are designed to be permanent additions to the community. Many considerations must be taken before a new restroom facility is built.

Before installing a new APT, a location must be selected that fits the siting criteria of the NYC Department of Transportation (DOT) as well as having the permission of the community board. Additional permissions from the Department of Parks and Recreation may be required if the new APT will be built on park grounds. Figure 2 is a list of the siting criteria for a new APT, taken directly from the DOT website [4].

Our company will provide a liaison who will work with the DOT and the community board to pick potential locations for a new restroom that match all the criteria in Figure 2. The liaison will first explain the problem and the importance of public bathrooms to the community board. The liaison will then present a Powerpoint of the financial breakdown and explain how much each APT will cost to be built and to be maintained.

The goal of the liaison is to convince the community board to install a temporary portable toilet in one (or more) of the potential locations. The portable toilet will represent the future

APT. If approval is gained, our company will continue on to task 2. If this part of the proposal is rejected, the liaison will move on to the next community.

Figure 2. Siting Criteria for a New Automated Public Toilet

Automatic public toilet siting

The footprint of the automatic public toilets is 6'7" x 12'. Siting criteria include:

- **Clear Path:** automatic public toilets must allow a minimum clear path of 8 feet in width in front of the APT and a minimum of 5' on all other sides..
- **Clearance from Curb:** All APTs must allow a straight, unobstructed path of at least 1.5 feet between the APT and the curb.
- **Other Minimum Distances:**
 - 10 feet from fire hydrants or standpipes
 - 5 feet from tree trunks or canopies
 - 3 feet from street lights or traffic signal poles
 - 2 feet from ventilation grates, street signs or cellar doors
- **Permissible Locations:**
 - On wide streets, only in commercial, manufacturing or mixed use districts
 - On sidewalks or plazas adjacent to property owned or leased by a government agency or public authority, or under the jurisdiction of the EDC.
 - On traffic islands or public places bounded on all sides by mapped streets under DOT jurisdiction.
 - On or adjacent to parks property of playgrounds, subject to the approval of the [Department of Parks and Recreation](#).

Task 2: Trial period with a portable toilet

The next step is to conduct a two month trial period with the the portable restroom. Displayed in Figure 3, the chosen portable toilet has heavy duty handrails and is large enough to accommodate wheelchairs and other people with physical disabilities.

Our company's project manager will work with our senior civil engineer to install the portable restroom. During the trial period, the liaison will be closely communicating with the project manager, the community board, and the community itself to gauge the public's reception to the presence of a public toilet. The liaison will create surveys to take notes of pros and cons of the new bathroom as well as get an estimate on the number of people who use the bathroom each day over the course of the trial period.

This data will be presented to the community board to show the necessity of the public bathroom. With positive public reception and high numbers of users, the liaison will be able to convince the community board that an APT is a valuable long-term investment for the community. If permission to install the APT is granted, our company will immediately begin task 3. If the community board decides not to pursue the installation of the APT, we will uninstall the portable toilet and move on to the next community.

Figure 3. An Accessible Portable Restroom Facility



[7]

Task 3: Installing the new Automated Public Toilet

The final task is to install the new APT. We will contract the engineers, construction workers, and inspectors necessary to complete the project. We will also handle equipment rental and the acquisition of any necessary building permits. Our senior civil engineer will be on site to oversee the construction work and address any issues during the 8 week installation process.

Timeline

The liaison will begin by reaching out to a single community to gain approval to install the portable toilets. If approval is gained, it will take one day to install the portable toilet and begin the trial period.

The trial period will last 2 months. Once the trial period begins for one community, the liaison will then reach out to the next community on the list to begin negotiations for another APT.

The portable toilet will be removed on the same day the APT installation process begins. Each APT will take up to 2 months to install. The entire process of installing APTs in all 5 communities will take up to 6 months.

Depending on the success of our project, our company may negotiate with the DOT to build more public pay bathrooms throughout all boroughs of NYC, starting with Manhattan. The list of initial communities is presented in Figure 4 and the full list of Manhattan communities is present in Table 1.

Figure 4. Timeline for the Construction of Bathroom Facilities

Location	Timeline					
Midtown						
West Harlem						
Midtown East						
Chinatown						
Central Harlem						
	Aug	Sep	Oct	Nov	Dec	Jan

Trial Period	APT Installation
--------------	------------------

Table 1. Complete List of Manhattan Communities

Community Board #	List of Neighborhoods	Trial	APT
1	Tribeca, Seaport/Civic Center, Financial District, Battery Park City	TBD	TBD
2	Greenwich Village, West Village, NoHo, SoHo, Lower East Side, Chinatown, Little Italy	TBD	TBD
3	Tompkins Square, East Village, Lower East Side, Chinatown, Two Bridges	TBD	TBD
4	Clinton, Chelsea	TBD	TBD
5	Midtown	TBD	TBD
6	Stuyvesant Town, Tudor City, Turtle Bay, Peter Cooper Village, Murray Hill, Gramercy Park, Kips Bay, Sutton Place	TBD	TBD
7	Manhattan Valley, Upper West Side, and Lincoln Square	TBD	TBD
8	Upper East Side, Lenox Hill, Yorkville, and Roosevelt Island	TBD	TBD
9	Hamilton Heights, Manhattanville, Morningside Heights, and West Harlem	TBD	TBD
10	Central Harlem	TBD	TBD
11	East Harlem	TBD	TBD
12	Inwood and Washington Heights	TBD	TBD

[4]

Budget

The liaison will be a contract position at a rate of \$45 per hour, up to 20 hours per week.

The budget of the two different bathroom facilities is presented in Table 2. The Toilet Cost represents the cost of the actual toilet facility [6][7].

Table 2. The Cost of Different Types of Bathroom Facilities

Bathroom Type	Toilet Cost	Installation	Maintenance
Portable Toilet	\$1800 / toilet	\$4,000	\$3960 / month
Automatic Public Toilet	\$175,000 / toilet	\$500,000	\$40,000 / year

The \$4000 installation fee for the portable toilet covers the cost of renting equipment to transport the toilet, as well as the time and labor it takes to operate the transportation equipment.

The \$3960 monthly maintenance fee accounts for the presence of a security officer who would be present for the 12 hours of the day the toilet is open to the public. The security officer would be in charge of preventing any illegal activities from occurring as well as keeping track of the number of people using the bathroom. The maintenance fee also supports a custodian who will clean the bathrooms every four hours and keep it serviceable.

The automatic public toilets are significantly more expensive than the portable toilets, but are meant to be a permanent addition to the city. The \$500,000 installation cost for the APT covers all of the following:

- Permit fees
- Inspector Fees

- Rental of transportation and construction equipment
- Salary for construction workers, plumbers, and electricians
- Salary for senior civil engineer
- Salary for project manager

The \$40,000 annual maintenance fee covers the cost of a custodian to clean the facility at the end of each day, as well as an inspector who will review the condition of the facility three times a week.

Installing a new APT will be costly, but this is a long-term investment for the community. While the 25 cents paid for each use will slightly offset the costs, the majority of costs will be covered by renting out advertisement space on the exterior of the new facility.

Qualifications and Experience

We have several extraordinary well qualified Team members.

1. David Devkota, **Senior Civil engineer**. He finished his bachelor in Civil Engineering at The City College of New York In 2010. He worked as a Project Manager for building public restrooms in MTA subway stations. He is currently working as a civil engineer in the Laguardia airport renovation project.
2. Alex Guevara, **Estimator**. He Finished his BA/MA in Economics at Colin Powell School for Civic and Global Leadership, CCNY. He has a vast experience in estimating costs, materials and labor needed to complete construction projects. He is currently working on the Hudson Yards construction project as an estimator.
3. S M Hossain, **Project Manager**. He earned his BS and MS degree in construction management at NYU. He worked in a numerous projects as a project manager where he successfully oversaw the planning, design and construction of projects. Currently he is working on the Hudson Yards construction projects.

Reference List

[1] S. Trangle. (2018, Feb. 5). Finding a public toilet in NYC still difficult 10 years into program launch. *amNY*. [Online]. Available:

<https://www.amny.com/news/new-york-public-toilets-1.16544793>

[2] D. Nosowitz. (2016, Jan. 28). Why New York city has a public bathroom problem. *A. Obscura*. [Online]. Available:

<https://www.atlasobscura.com/articles/why-new-york-city-has-a-public-bathroom-problem>

[3] J. Lee. (2008, Jan. 10). New Yorkers, you may be excused: A pay toilet opens. *T. N. Y. Times*. [Online]. Available:

<https://cityroom.blogs.nytimes.com/2008/01/10/a-pay-toilet-opens-no-need-to-hold-everything/>

[4] NYC Department of Transportation. Coordinated street furniture [online]. Available:

<http://www.nyc.gov/html/dot/html/infrastructure/streetfurniture.shtml#apt>

[5] M. Frost. (2013, Oct. 16). Futuristic automatic pay toilet coming to Downtown Brooklyn. *B. D. Eagle*. [Online]. Available:

<http://www.brooklyneagle.com/articles/futuristic-automatic-pay-toilet-coming-downtown-brooklyn-2013-10-16-190800>

[6] S. Roberts. (2014, Mar. 11). In 9 years of work, just 3 public toilets go live. *T. N. Y. Times*. [Online]. Available:

<https://cityroom.blogs.nytimes.com/2014/03/11/in-9-years-of-work-just-3-public-toilets-go-live/>

[7] Global Industrial. (2018). PolyPortables Enhanced Access Portable Restroom [online].

Available:

<https://www.globalindustrial.com/p/janitorial-maintenance/bathroom/portable-restrooms/enhanced-access-portable-restroom-green-61-l-x-61-w-x-86-12h-ppeau-06>