# Comparison of Urban Transit Planning Responses to Pandemic Influenza

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**Background**
Pandemic influenza and other large scale communicable disease outbreaks pose a unique public safety concern in respect to transit and emergency planning. While local transit agencies, supported by federal funds, have identified disaster planning and response as critical to maintaining continuity of service and quality of life, most plans contend solely with event-based scenarios such as responding to natural hazards and manmade disasters. A pandemic is particularly challenging, given no discrete event but a slow accumulation of organizational and social disruption. Contending with 'second order' consequences and of the long-term effects of an influenza pandemic is of equal importance in city planning and operations. A major objective for City of New York and the Metropolitan Transit Authority will be to mitigate the effects of second order consequences. Pre-planning and connecting the public and employees to those plans will serve to minimize concerns and aid in the continuity of transit usage, service delivery and potentially minimize negative economic, social and political impacts.

**Gathering & Analyzing Data**
In order to best recommend actions to local planners a review of existing urban transit plans was conducted. The data gathered during this survey complements the CDC's pandemic rating system and community strategy recommendation released in February 2007, with further information specific to transit operations included. The comparison of seven major U.S. cities and of six major international cities revealed a wide range of transit authority or governmental contingency planning for pandemic influenza. We compared available public documents from 14 mass transit authorities, news articles and documents generated by security consultants. The results of the comparison highlight a varying degree of preparedness.

Domestic cities were chosen based upon funding allocations from the Department of Homeland Security to improve security and disaster planning, operations and infrastructure. We reviewed documentation from metropolitan and regional transit authorities, and local governments of Atlanta, Chicago, Miami, Portland, OR, Seattle, San Francisco and Washington, DC. International cities reviewed include London, Madrid, Mumbai, Hong Kong, Tokyo and Toronto, where each city has experienced either a transit-related disaster or public health epidemic that affected transit operations. Findings regarding international cities are not included in this memorandum.

**Findings**
Most cities do identify transit, in documentation, as a primary concern, not only as a vital component of daily city operations but also for moving ailing populations to health providers, hospitals and clinics. The documents provided in this packet are meant to simply a search across municipal practices. A quick reference table (Master Matrix) reflects to what extent pandemic flu-specific planning has been implemented within each city, and from what type of source the information came.

A one-page summary is included for each transit system surveyed with the subsequent information:

- Ridership information when available;
- What airports connect with the public transit system;
- What modes of public transit are utilized within that city;
- Who the regional or local planning authority is for pandemics and/or transit
- Where local plans identify transit within the hierarchy of emergency service operations;
- Among other relevant information.

Following each summary is a matrix detailing transit preparedness per locale. Transit plans were compared using the following criteria:

- Closing or partial curtailment of public transit systems;
- Sanitizing and disinfecting of the transit environment;

- Promoting social distancing on rapid transit;
- Restricting or surveillance of passenger vehicle traffic;
- Stockpiling and or securing the transit authority supply chain; and
- Communicating with the public prior to and during the crisis.

**Discussion**

The complete closure of transit systems, though explicitly mentioned in the Federal Pandemic Response Plan released in 2005, is clearly noted by most cities as having too high an economic impact to employ. Partial closures and route changes are being considered by many municipalities. Social distancing, though mentioned in local public health department pandemic plans, is only incorporated in a marginal number of municipal transit plans. Sanitizing or disinfection of the environment including the provision of masks, hand sanitizer and the cleaning of bus/train interiors is mentioned in documentation from the Chicago and Seattle.

In cities where transit authority plans specific to pandemic flu were not readily available, transit operations and responses to other disasters and hazards were taken into account. Hurricanes, tornadoes, floods and extreme temperature conditions are reflected in general hazard mitigation planning. Using transit as a means to evacuate residents is a common practice in Miami, as is shifting populations to emergency shelters. It is likely that further planning around pandemic influenza will be able to incorporate similar transportation measures, moving passengers to healthcare facilities. The partnership and or cooperation between city agencies and private businesses are of high importance in most of the cities surveyed, as is the need to maintain transit operations at some level during a pandemic or other hazard. A few cities have left the greater bulk of pandemic response to state and federal agencies.

A few transportation plans did mention the ongoing concern of stockpiling sufficient fuel supplies; however, most municipalities did not have this information available in public documentation. One screening criteria was looking at surveillance of passenger vehicles and/or closing of bridges and tunnels to passenger or commuter traffic, though none of the cities within the survey discuss this practice. Instead, much of the commuter traffic mitigation during a pandemic came from workplace social distancing measures provided in public health department statements and plans.

The efficacy of these transit plans has yet to be tested in a real-time pandemic flu situation and it is unknown as to what extent these selected municipalities engage in exercises and drills specific to outbreaks.

**Best Practices**

Some of the most noteworthy practices of outward integration of the criteria of this study and the Federal Pandemic Response Plan released in 2005 come from the City of Seattle. King County Metro, serving the City of Seattle and other outlying locales in Washington State's most populous county, has released a version of its plan specific to pandemic influenza, made available via their website. The city does have a unique relationship to communicable disease planning responding to the SARS outbreak of 2004.

The King County Metro Pandemic Flu Plan is guided by five major assumptions placing emphasis on delivery of service, protection of employees, social distancing, public communications, supply chain security and interdepartmental coordination. A few highlights include:

- Planners have identified that, "Transit is essential [and] must operate under pandemic conditions";
- Not defined as option. Plan instead accounts for contingencies of 60% and 40% reductions in drivers and other transit employees;
- Maintaining services for special needs populations is prioritized

- Employees are directed to sanitize immediate workspace, which given context would mean driver seats and immediate surroundings.
- Reserving a 4-6 day supply of fuel and other necessities is noted in the plan;
- Understanding that cuts to routes and/or transit fleet may become necessary;
- Social distancing measures to be incorporated by extended service to certain high traffic routes.

What the King County Metro Plan transit plan does not outline is the system for determining service delivery changes, the exact form of public communications or the method for action-based outcomes to contend with any or all of these contingencies.

As New York City looks to strengthening its operational planning to contend with pandemic influenza, transit policies will no doubt be one of the most trafficked service delivery points the city has with its residents and daily commuter/tourist populations. The distinctive characteristics of a pandemic influenza crisis warrant sufficient lead time for government officials, employees and the general public to mitigate the situation. An example of which occurred following the 2005 3-day transit strike, which cost the city approximately $1 billion, where the mitigating factor was providing the public and the city time to plan for contingencies. The recognition being that a strike with no warning would have cost the city considerably more.[1]

[1] Susan Kim, Transit Strike Teaches Lessons, Disaster News Network, 23 December 2005. http://www.disasternews.net/news/news.php?articleid=2999

**General Comparison of Transit Preparedness: Pandemic Influenza**

| Policy Action | United States | | | | | | | International | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Atlanta | Chicago | Miami | Portland, OR | San Fran | Seattle | Wash, DC | Beijing | London | Madrid | Mumbai | Toronto |
| Close or Curtail Service | 4 | 3 | 3 | | 3 | 1 | 3 | 3 | 3 | | 2 | |
| Sanitize the Environment | | | | | | 1 | | 3 | 2 | | | 2 |
| Social Distancing | | 3 | | | 3 | 3 | | 4 | 2 | | 2 | 2 |
| Surveillance of Passenger Vehicles | | | | | | | 3 | | | | | |
| Stockpiling and Supply Chain | | 3 | 3 | 3 | | 1 | 3 | | 2 | 1 | | 2 |
| Communications Plan | | 3 | 3 | 3 | 3 | 1 | 3 | | 2 | 1 | | |

*1 -- Transit specific plan, pandemic influenza*

*2 -- Non-transit specific plan, pandemic influenza*

*3 -- Specific plan, all hazards, non-specific to pandemic influenza*

*4 -- Data from other sources*

*Gray Cell -- No mention in available documentation*