White Paper: Public Private Partnership action use case – PANYNJ and INTERCEP create the NYC Metropolitan Resilience Network (MRN)

Date: June 2019

Author: Pete O'Dell, CEO, Swan Island Networks, pete.odell@swanisland.net 202-460-9207

Summary: Superstorm Sandy (October 2012) packed an incredible "wow" factor in terms of its damage and impact to the tri-state area of New York, New Jersey and Connecticut. Everyone knew it was coming days in advance, but the impact was significantly greater than expected and is still being felt today. Many after action reports laid out what needed to be done to prepare for future emergency events. This paper focuses on two groups that took action to build an information sharing and situational awareness capability that is usable and scalable for many types of emergency situations including storms like Sandy. It's always hard to be proactive when there are so many day-to-day efforts demanding resources, but the combined post-Sandy resilience efforts of the Port Authority of New York and New Jersey (PANYNJ) and NYU INTERCEP (International Center for Enterprise) have gained momentum in the community every year since inception, and today provide a new foundation for coordinated response in an emergency.

Concept Creation: Jerry McCarty, Director of the PANYNJ Office of Emergency Management and William Raisch, (Director of INTERCEP, a public-private collaboration center at New York University) worked together after Sandy to capture lessons learned from the storm including a multi-stakeholder "war game" that played out the storm step-by-step with about 100 organizational participants. A primary insight was the need for greater information sharing and collaboration between the public and private sectors – a better understanding of who was doing what before, during and after a crisis. Jerry saw the need to create a regional community of public-private stakeholders to collaborate on shared risks and to build and deploy a capability to share information and situational awareness effectively between the public and private organizations that together make up the operating capability of one of the largest metropolitan areas on planet Earth. He challenged INTERCEP to create a "common operating picture" of the region so all parties were on the same page and could make informed decisions not only for their own operations but also to coordinate their actions to ensure that they were not working at cross-purposes. While there were some email alerts from some jurisdictions and some industry-specific information sharing efforts, there was nothing that was broad, simple,

scalable and easily adapted to multiple emergency situations and to the increasing availability of open-source intelligence.

Design & Prototype: After meeting with INTERCEP and considering the requirements for a situational awareness and information capability, Swan Island Networks (www.swanislandnetworks.com) worked together with INTERCEP to build a prototype system leveraging its existing cloud-based TX360 platform used for corporate intelligence and situational awareness. After several improvement cycles, INTERCEP staff were trained on how to use and enhance the system, adding new information sources and creating multiple tri-state/metropolitan area dashboards like the ones shown in the appendix. INTERCEP also developed additional programs to build a collaborative community including monthly web briefings on key threats facing the region, public-private table top exercises, online best practice resources, an annual risk digest and in-person forums for key stakeholders across the region. The overall effort was named the "Metropolitan Resilience Network (MRN)."

Launch: The MRN's situational awareness platform (Metro-Ops) was introduced at INTERCEP's Urgent Threats Forum in 2015, a 100+ person gathering of top corporate security executives, federal, state and local leaders in security, planning, business continuity, and multiple other agencies and organizations. With funding and ongoing input from PANYNJ and a two-year free technology license from Swan Island Networks, MRN Metro-Ops was officially launched.

Growth: Over the last four years, the MRN has grown to over 400 credentialed organizations and over 1,000 credentialed users from key organizations. The MRN has provided automated situational awareness on a 24x7 basis, and during incidents like severe weather, terrorist attacks and commuter train crashes, has published real-time updates and dashboards that aggregate all the breaking news about the incident. INTERCEP has augmented the system with monthly webinars on a wide range of topics, and continued its annual Urgent Threats Forum as an in-person exchange of information and ideas around resilience and security.

Capability Summary:

- **Cross organizational / Multi-jurisdictional:** The MRN crosses the boundaries of public, private, non-profit and other organizational types, allowing for a broad sharing capability.
- **Controlled access:** Each organization and user is vetted by INTERCEP personnel, and has username/password access to the system.
- **Blue sky automated situational awareness:** The all-hazards dashboards of the MRN are updated continuously from hundreds of information sources that pertain to the New York City area and surrounding states. News, social media, weather, crime, public health and many other types of feeds are combined to give users one stop information access.
- **Geospatial views:** Dashboards incorporate maps of different areas with visuals oftraffic, public cameras, alerts and other items.

- **Segmented sharing:** Dashboards can be used to selectively share information with a subset of users due to sensitivity or sector relevance.
- **Incident specific dashboards:** When a major event occurs, INTERCEP analysts can quickly build a dashboard that incorporates all known information about the specific event.
- **Email notification:** INTERCEP emails MRN members when a incident occurs with a link to the newly created dashboard.
- **Updatable status boards:** Based on a pre-defined threshold, green/amber/red visual codes can indicate the operational status of critical infrastructure (e.g. air, mass transit, etc.), providing an at-a-glance understanding of critical functions.

Results Summary: Today, the MRN has over 1,000 credentialed users from over 400 organizations across the city. Because of the Microsoft Azure-based architecture, it can scale almost infinitely if needed. Situational awareness dashboards are available as a regional overview, but also cover potential event topics like infectious disease, transportation disruption, and cyber alerts. The MRN brings many of the regional open source feeds together in a continually updated, easy to use capability. Specialty dashboards, not available to general members, support the World Trade Center Security operations and all of the regions major airports. The INTERCEP team can create a custom, incident-based dashboard in under an hour when an event occurs. The program is moving to be self-sustaining through a small, monthly membership subscription and the availability of add-on services.**Toward the future:** The MRN and its situational awareness platform has been acknowledged as a prototype for wider national and international application. INTERCEP is looking at multiple ways of sustaining and expanding the network and collaborating with other stakeholders and groups. The center has created a large inventory of international city dashboards, and has provided input to multiple other groups, including London First and the Rockefeller Foundation's 100 Resilient Cities effort. New technologies are being considered for integration, particularly in the area of video access and cross-organization collaboration.

About INTERCEP: New York University's International Center for Enterprise Preparedness (INTERCEP) is the first research and engagement center dedicated to organizational resilience and agility. The center maintains a global outreach with a special focus on multi-party collaboration including business-to-business and public-private partnerships. Founded in 1831, New York University is a global institution and the largest private university in the United States. The University includes fourteen schools and colleges, occupies six major centers in New York, and has facilities worldwide. Contact Bill Raisch, William.raisch@nyu.edu.

About PANYNJ: The Port Authority of New York and New Jersey operates some the nation's most iconic and critical infrastructure including the region's major airports, bridges, tunnels, maritime ports, the World Trade Center and its own subway system. The agency was established by the Compact of April 30, 1921, between the States of New York and New Jersey as one of the first interstate agencies created under the clause of the United States Constitution

permitting compacts between states with the consent of Congress. The Compact, designed to improve the region's economic health, also created the Port District, which comprises an area of about 1,500 square miles in both states, centered about New York Harbor. In the nearly 100 years since then the Port Authority's mandate has evolved to promote and protect the commerce of the bi-state Port Region, as well as to undertake improvements to regional transportation: modern wharfage for the harbor shared by the two states, tunnel and bridge connections between the states, airports, terminal and transportation facilities such as the Port Authority Trans-Hudson (PATH) rail system; the World Trade Center, as well as general trade and transportation projects to promote the region's well-being.

About Swan Island Networks: Swan Island Networks (www.swanislandnetworks.com) is a Portland, Oregon based software-as-a-service company. Its TX360 situational awareness and threat intelligence platform is easy to use, scalable to any size, interoperable with other tools, and configurable to a wide range of industry types and sizes. Contact: Pete O'Dell, CEO, pete.odell@swanisland.net.

Author's note: The bulk of this paper will appear as a use case in an upcoming book "Global Shared Resilience – Confronting Disaster with 21st Century Technology" that will be published in early 2020. If you have stories or lessons learned about your own resilience efforts, please contact me and I'll work to include them.

01. Regional Overview – Metro NY/NJ/CT ⛶ ★

pete.odell@swanisland.net ▾

Navigation:
- 00. INFO REQUESTS
- 00. YOUR FEEDBACK
- 01. Regional Overview …
- 02. Public Safety Annou…
- 03. Weather - Metro NY…
- 04. Power & Fuel - Metr…
- 05. Communications - …
- 07. Transportation Oper…
- 08. Cross-Hudson Tran…
- 09. Cyber & Technologi…
- 10. Infectious Disease …
- 11. Natural Hazards - M…
- 12. Terrorism Alerts - M…
- Acme Auto Parts Suppl…

Public Safety Announcements
Vehicle Collision: Expect Bronx-bound traffic delays on the Whitestone Bridge. Consider alternate routes. Multiling…
https://twitter.com/i/web/status/1144582619549638656
1 hour ago · Fri Jun 28 2019 8:25:36 AM · published by twitter.com

RT @nycgov: Fire Commissioner presides over graduation ceremony for @FDNY High School:
https://on.nyc.gov/2ZR3kAS http://pbs.twimg.com/media/D-GSxv5XUAEuZUB.jpg
1 hour ago · Fri Jun 28 2019 8:13:31 AM · published by twitter.com

Following a prior closure, all southbound lanes of the Major Deegan Expressway have reopened at Van Cortland Park l…
https://twitter.com/i/web/status/1144517336277196800
6 hours ago · Fri Jun 28 2019 4:06:11 AM · published by twitter.com

Weather Observations & Alerts
Fair and 79 F at New York City, Central Park, NY
Winds are Calm. The pressure is 1022.0 mb and the humidity is 60%. Last Updated on Jun 28 2019, 8:51 am EDT.
44 minutes ago · Fri Jun 28 2019 9:21:40 AM · published by w1.weather.gov

Fair and 77 F at New York City, Central Park, NY
Winds are Calm. The pressure is 1021.7 mb and the humidity is 62%. Last Updated on Jun 28 2019, 7:51 am EDT.

Weather Radar
7:55 AM
LIGHT / HEAVY / MIXED / SNOW

Traffic & Public Transport Alerts
(map of Metro NY/NJ/CT region)

Traffic Announcements
Updated: Construction on #KoreanWarVeteransParkway NB from Foster Road to Huguenot Avenue
http://511nj.org/EventDetails/TRANSCOM/ORI205205507
1 hour ago · Fri Jun 28 2019 8:24:37 AM · published by twitter.com

River LINE both directions:holiday
NJ Transit Rail: due to fireworks and holiday, both directions River LINE between Trenton (Trenton City) and Entertainment Center (Camden Ci…
4 hours ago · Fri Jun 28 2019 5:55:07 AM · published by txlink.net

Systemwide :Congestion
NJ Transit Bus: due to Congestion Systemwide at Lincoln Tunnel (New York) The Exclusive Bus Lane will close at 9:45 a.m…
4 hours ago · Fri Jun 28 2019 5:54:03 AM · published by txlink.net

Traffic Cameras (NYC DOT)
2019-06-28 10:06:28

MRN Announcements & Key Links
MRN ALERT: Midtown Manhattan Helicopter Crash Landing 06.10.2(
https://txlink.net/#Dashboards/dashboards/Viewer/1720

INTERCEP Website
http://www.intercep.nyu.edu/

National Weather Service - New York City
https://www.weather.gov/okx/

MTA
http://www.mta.info/

NJ Transit
https://www.njtransit.com/tp/hp_servlet.srv?hdnPageAction=HomePa…

PANYNJ PATH
http://www.panynj.gov/path/

NYC DoT Traffic Cameras

Electric Power Provider Announcements
PSE&G wants to help participating customers lower their energy bills through #EnergyEfficiency methods -- because t… https://twitter.com/i/web/status/1144334561326895106
18 hours ago · Thu Jun 27 2019 3:59:54 PM · published by twitter.com

Summer Energy Tip: Give the stove a break during the hottest hours of the day. Consider using a slow cooker or outd…
https://twitter.com/i/web/status/1144304335087689733
20 hours ago · Thu Jun 27 2019 1:59:48 PM · published by twitter.com

#LoveIsPower Hundreds of our employees are ready to march in #WorldPrideNYC @NYCPride. Check out what #PRIDE means…
https://twitter.com/i/web/status/1144290542462885888
21 hours ago · Thu Jun 27 2019 1:04:59 PM · published by twitter.com

Public Transportation Announcements
JSQ-33 line and HOB-33 line operating with a delay because of car equipment mechanical issues. [66]
1 hour ago · Fri Jun 28 2019 8:51:11 AM · published by twitter.com

Southbound 2 and 3 trains are moving at slower speeds near 50 St because of a signal problem on the express track near that station.
1 hour ago · Fri Jun 28 2019 8:49:58 AM · published by twitter.com

@AWasteOfAtoms We will look into what may have caused a long wait. *JP
1 hour ago · Fri Jun 28 2019 8:48:22 AM · published by twitter.com

LIRR crews have repaired the grade crossings at Long Beach

Powered by TX360

---

07. Transportation Operational Status - Metro NY/NJ/CT ⛶ ★

pete.odell@swanisland.net ▾

Navigation:
- 00. INFO REQUESTS
- 00. YOUR FEEDBACK
- 01. Regional Overview …
- 02. Public Safety Annou…
- 03. Weather - Metro NY…
- 04. Power & Fuel - Metr…
- 05. Communications - …
- 07. Transportation Oper…
- 08. Cross-Hudson Tran…
- 09. Cyber & Technologi…
- 10. Infectious Disease …
- 11. Natural Hazards - M…
- 12. Terrorism Alerts - M…
- Acme Auto Parts Suppl…

PATH Operational Status
PATH — Operational Status — More info

Rail - NJ Transit & Light Rail Operational Status
NJ Transit — Operational Status — More info
Light Rail — Operational Status — More info

Bus - NJT, NYC MTA, PABT Status
B1 - B92 DELAYS *updated just now*
B100 - B103 GOOD SERVICE *updated just now*
BM1 - BM5

Airport - JFK, LGA, EWR Operational Status
Air - Kennedy Airport (JFK)
General Arrival/Departure delays are 15 minutes or less.
Departure Delays: 6 Cancellations: 1
Arrival Delays: 0 Cancellations: 1
updated 10 minutes ago

Air - LaGuardia Airport (LGA)
General Arrival/Departure delays are 15 minutes or less.
Departure Delays: 10 Cancellations: 5
Arrival Delays: 7 Cancellations: 3

PATH Official Official Tweets & Alerts
PATHAlert
HOB-33 line operating with a delay because of police activity. Unsubscribe: http://pealerts.com/u.aspx?368784
2 hours ago · Fri Jun 28 2019 7:36:55 AM · published by txlink.net

HOB-33 line operating with a delay because of police activity. [59]
2 hours ago · Fri Jun 28 2019 7:36:52 AM · published by twitter.com

HOB-33 line operating with a delay because of police activity.

Rail - NJ Transit & Light Rail Official Tweets
@armandhmmertime Morning, thank you for notifying us of this issue. I forwarded this information to the appropriate…
https://twitter.com/i/web/status/1144583533299679232
1 hour ago · Fri Jun 28 2019 8:29:14 AM · published by twitter.com

@VictoriaEstrei1 Hi, may I have your train number and location?-SC
1 hour ago · Fri Jun 28 2019 8:18:57 AM · published by twitter.com

@EmilyKhol Morning, thank you for notifying us of this issue. I forwarded this information to the appropriate depar…

Bus - NJT, NYC MTA, PABT, GWBBS Official Tweets & Alerts
@armandhmmertime Morning, thank you for notifying us of this issue. I forwarded this information to the appropriate…
https://twitter.com/i/web/status/1144583533299679232
1 hour ago · Fri Jun 28 2019 8:29:14 AM · published by twitter.com

@VictoriaEstrei1 Hi, may I have your train number and location?-SC
1 hour ago · Fri Jun 28 2019 8:18:57 AM · published by twitter.com

@EmilyKhol Morning, thank you for notifying us of this issue. I forwarded this information to the appropriate depar…

Airport - JFK, LGA, EWR Official Tweets
@Jelpers13 Good morning. Can you tell us what terminal? *AS
42 minutes ago · Fri Jun 28 2019 9:25:19 AM · published by twitter.com

@Jmbass_ @Jmbass_ We are truly sorry to read about your experience at LGA. Please know that our traffic team and PA…
https://twitter.com/i/web/status/1144592349588262912
1 hour ago · Fri Jun 28 2019 9:04:16 AM · published by twitter.com

@SabaBok Hi, Saba. Can you provide some detail on what

Rail - Amtrak Operational Status
Rail - Amtrak — Operational Status — More info

Rail - LIRR & Metro North Operational Status
Long Island Rail Road (LIRR) — Operational Status — More info
Metro North — Operational Status — More info

Subway - MTA NYCT Subway Operational Status
1 / 2 / 3 PLANNED WORK *updated just now*
4 / 5 / 6 PLANNED WORK *updated just now*
7

Ferrys, Tunnels, Bridges, and Terminals
George Washington Bridge — Operational Status — More info
Holland Tunnel — Operational Status — More info
Lincoln Tunnel

Amtrak Northeast - Official Twitter
Vermonter Train 56 is currently operating about 25min late due to an earlier mechanical issue north of Washington (WAS).
https://twitter.com/i/web/status/1144599679322
1 hour ago · Fri Jun 28 2019 9:02:13 AM · published by twitter.com

Service Advisory: Due to extensive track work, schedules are being adjusted to reduce the number of trains operatin…
https://twitter.com/i/web/status/1144591388711018498
1 hour ago · Fri Jun 28 2019 9:00:27 AM · published by twitter.com

Rail - LIRR & Metro North Official Tweets
@Cassiopeia420 Good morning. I am sorry to hear that. If you'd like to make a formal complaint, please email us at…
https://twitter.com/i/web/status/1144588334905331713
1 hour ago · Fri Jun 28 2019 8:48:19 AM · published by twitter.com

Safety First! Never drive around LIRR crossing gates when they are down, a train could be approaching from either direction at any time.
1 hour ago · Fri Jun 28 2019 8:44:54 AM · published by twitter.com

LIRR crews have repaired the grade crossings at Long Beach

Subway - MTA NYCT Subway Official Tweets
@Petty_Palmer Good morning. When the A train holds at Broad Channel, that means the South Channel Bridge opened and…
https://twitter.com/i/web/status/1144590222061125632
1 hour ago · Fri Jun 28 2019 8:55:49 AM · published by twitter.com

@BumbyFoto Good morning. Our crews are actively working to resolve a signal problem on the 2 and 3 lines at 50 St t…
https://twitter.com/i/web/status/1144589232180224000
1 hour ago · Fri Jun 28 2019 8:51:53 AM · published by txlink.net

Bridges, Tunnels, Roads & Ferries Official Tweets
NJ 34 southbound : Delays
22 minutes ago · Fri Jun 28 2019 9:45:23 AM · published by txlink.net

I-80 eastbound : Pothole repairs
22 minutes ago · Fri Jun 28 2019 9:45:02 AM · published by txlink.net

I-295 southbound : Construction
32 minutes ago · Fri Jun 28 2019 9:34:53 AM · published by txlink.net

NJ 35 both directions : Construction

Powered by TX360