

Moving CAN inland for Dams



***Citizen's Action Network: A Best Practice Citizen Watch Organization
and a Benchmark for Inland Critical Infrastructure Protection***

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**Presented at Dam Safety 2011, Washington, DC
Association of State Dam Safety Officials (ASDSO)**

The views expressed herein are the author's only and do not necessarily represent the views of the U.S. Army Corps of Engineers, the U.S. Coast Guard (and Auxiliary), The George Washington University, Integrity Consulting or any other individual associated with the same.

A version of this paper was first submitted in October 2010 by the author as coursework for The George Washington University's Safety and Security Leadership Master's Degree Program.

Moving CAN Inland for Dams

- What is the Citizens' Action Network
- Why CAN is different
- How CAN Works
- How CAN influences Physical Protection Systems
- Utility of CAN for Dams
- Citizen Action and Civil Liberties

Moving CAN Inland for Dams

“It is reckless to leave the task of combating terrorism only to the professionals when the changing nature of the threat requires that ordinary Americans play a larger support role in detecting and preventing terrorist activities.”

Peter Bergen and Bruce Hoffman, *Assessing the Terrorist Threat, A Report of the Bipartisan Policy Center's National Security Preparedness Group (2010)*

Moving CAN Inland for Dams

In the late 1990s, the U.S. Coast Guard in the Puget Sound area experienced an increase in search and rescue activity due to a collateral effect of the technology boom in the Pacific Northwest.

Many inexperienced boaters were purchasing their own watercraft and taking risks afloat for which they were unprepared

Increased USCG operational activity often resulted in squandering of USCG assets and fatiguing Coast Guardsmen assigned to these missions (Billeaudeau 2007).



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In 1999, Lieutenant Commander André Billeaudeau, then the USCG Group Operations Officer for the Seattle District, received a telephone call to the Group Command Center from a beachfront property owner who reported observing a distress flare.

LCDR Billeaudeau recorded the information and captured the caller's contact information; he then plotted the caller's location on the Command Center map and asked the caller if he could call him again in the future should a similar contingency emerge in the caller's line of sight (Vigil 2009).

The first volunteer of the Citizens' Action Network was recruited.



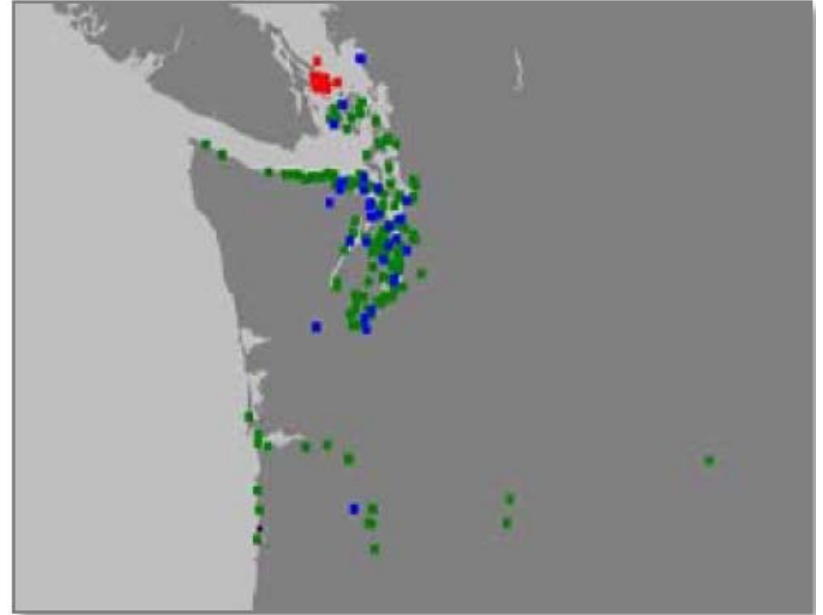
Moving CAN Inland for Dams

Various names -

- “Eyes on the Sound”
- “Northwest Watch”
- “Citizens’ Action Network”

Besides a one-time \$50,000 grant from the Coast Guard Innovation Council, CAN has never had its own budget.

Despite this, today there are over 550 members (including Canadian partners)



“Strategic Views”

Moving CAN Inland for Dams - *How CAN works*

- Alert received or reported
- Volunteers notified via message and phone from CG Operations Center
- Volunteers verify report if observable in their “strategic views”
- Volunteers either confirm and continue to relay information to responders, *or* help responders identify false reports and areas that are not effected

(narrowing the response area; saving resources)



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Active supporters and beneficiaries of CAN information sharing have included:

- Sheriffs' Departments in the Kitsap region
- Washington State Patrol
- Tribal governments
- Customs and Border Protection
- National Marine Fisheries Service
- Beach Watchers
- People for the Puget Sound
- Royal Canadian Mounted Police
- Canadian Coast Guard
- Canadian Border Services Agency



Moving CAN Inland for Dams - *Why CAN is Different?*

See Something, Say Something

- Identify asset
- Post posters
- Flyers
- Radio ads
- Television PSAs
- Wait for call



Moving CAN Inland for Dams - *Why CAN is Different?*

Citizens' Action Network

- Identify asset
- Identify interested people (waterway stakeholders) with “strategic views” of asset
- Start a relationship
- Request, record and plot contact information
- Maintain a dialogue



A picnic for volunteers, and USCG vessel tour followed this meeting



Marina outreach meeting, USCG Auxiliary

It's not the technology; it's the grassroots network.

Moving CAN Inland for Dams – *When CAN worked*

Some CAN successes have included:

- Initial reporting, which later led to the destruction of a methamphetamine lab operation
- Photo identification of a poison canister washed ashore which enabled the appropriate Hazardous Materials response
- Preventing a group of illegal Chinese stowaways from entering the U.S.
- Disruption of a waterborne hostage event, and the recovery of a vessel that was stolen due to gang activity and which led to subsequent arrests of the vessel thieves (Vigil 2009)
- CAN Volunteers with strategic views of the Tacoma Narrows Bridge providing real time information from different vantage points before the Washington State Patrol or the USCG could respond to the scene



Moving CAN Inland for Dams – *Why CAN works*

While advance vulnerable area identification, computer applications and updated contact lists are critical, these components are not decisive to CAN's success. It is the network behind CAN that is its center of gravity.

Law enforcement and intelligence agencies or other government organizations and their employees are *not the focus of the USCG's outreach efforts concerning CAN. The USCG seeks a dialogue with citizens directly.*

It is a “grassroots” strategy (Billeaudeau/NPGS 2007); expressed as “a localized, open, and inclusive engagement of civil society” (Flynn 2011).

Moving CAN Inland for Dams – *CAN and PPS Effectiveness*

"The initial response is usually not government...the public is putting out better information than many of our agencies can with our official data sets..."

"We have this barrier because the public isn't official; it is not an 'official source' of information."

Craig Fugate
FEMA Administrator
19 Jan 2011

Measuring “Sensor” Effectiveness



Security Risk Equation

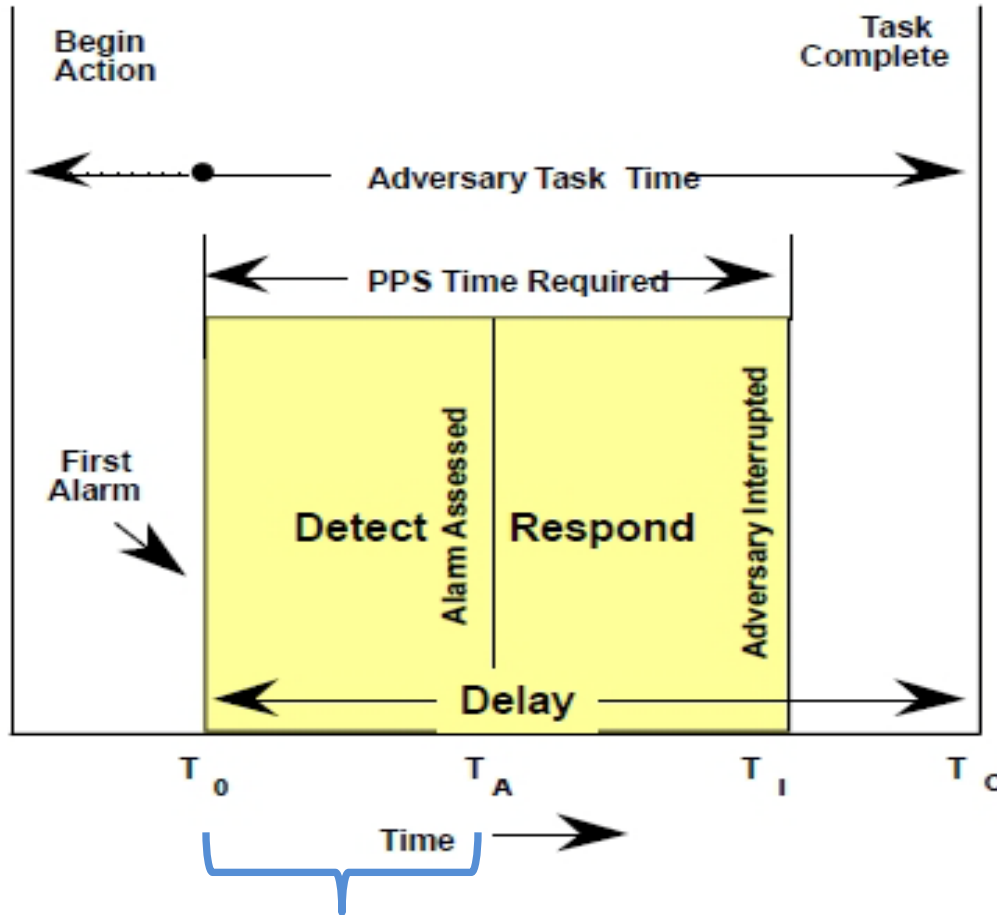
The diagram illustrates the Security Risk Equation: $R = P_A * [1 - P_E] * C$. Annotations include: 'System Risk' pointing to 'R'; 'Likelihood of Attack' pointing to ' P_A '; 'Likelihood of Adversary Success' pointing to ' $[1 - P_E]$ '; 'Consequences' pointing to 'C'; and 'Security System Effectiveness' pointing to ' $[1 - P_E]$ ' with a blue bracket underneath.

$$R = P_A * [1 - P_E] * C$$

Portion of the Risk Equation influenced by Citizen Action Network volunteers. CAN volunteers with “strategic views” may detect and/or assess. An alarm is simply the first instance of detection; not necessarily an electronic sensor.

Moving CAN Inland for Dams – *CAN and PPS Effectiveness*

Traditional Adversary *Task Time* vs. Physical Protection System Time



Prevent undesired event

T_0 = First alarm occurs

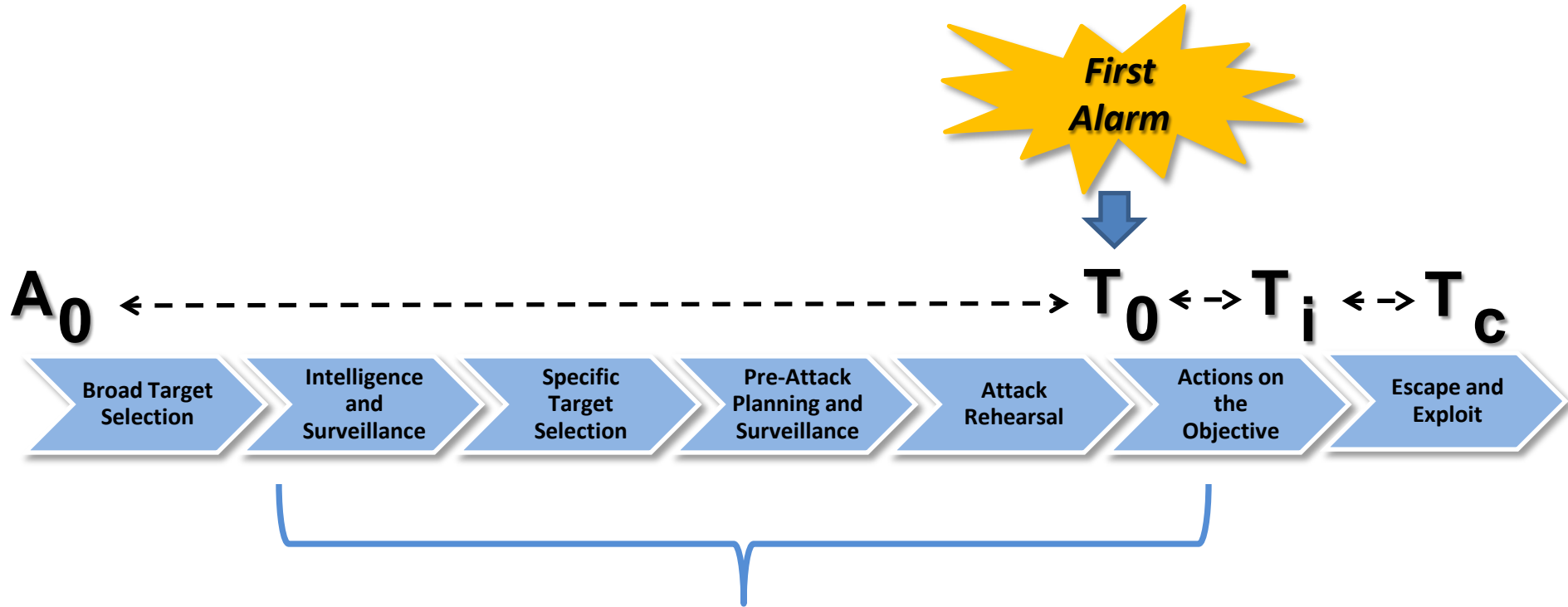
T_A = The time at which the alarm is assessed to be valid

T_I = The time at which the response force interrupts adversary actions

T_C = Adversary task completion time

Portion of the Adversary Task Timeline influenced by Citizen Action Network Volunteers. CAN Volunteers with “strategic views” may detect and/or assess. An alarm is simply the first instance of detection; not necessarily an electronic sensor.

Terrorist Attack Planning Cycle

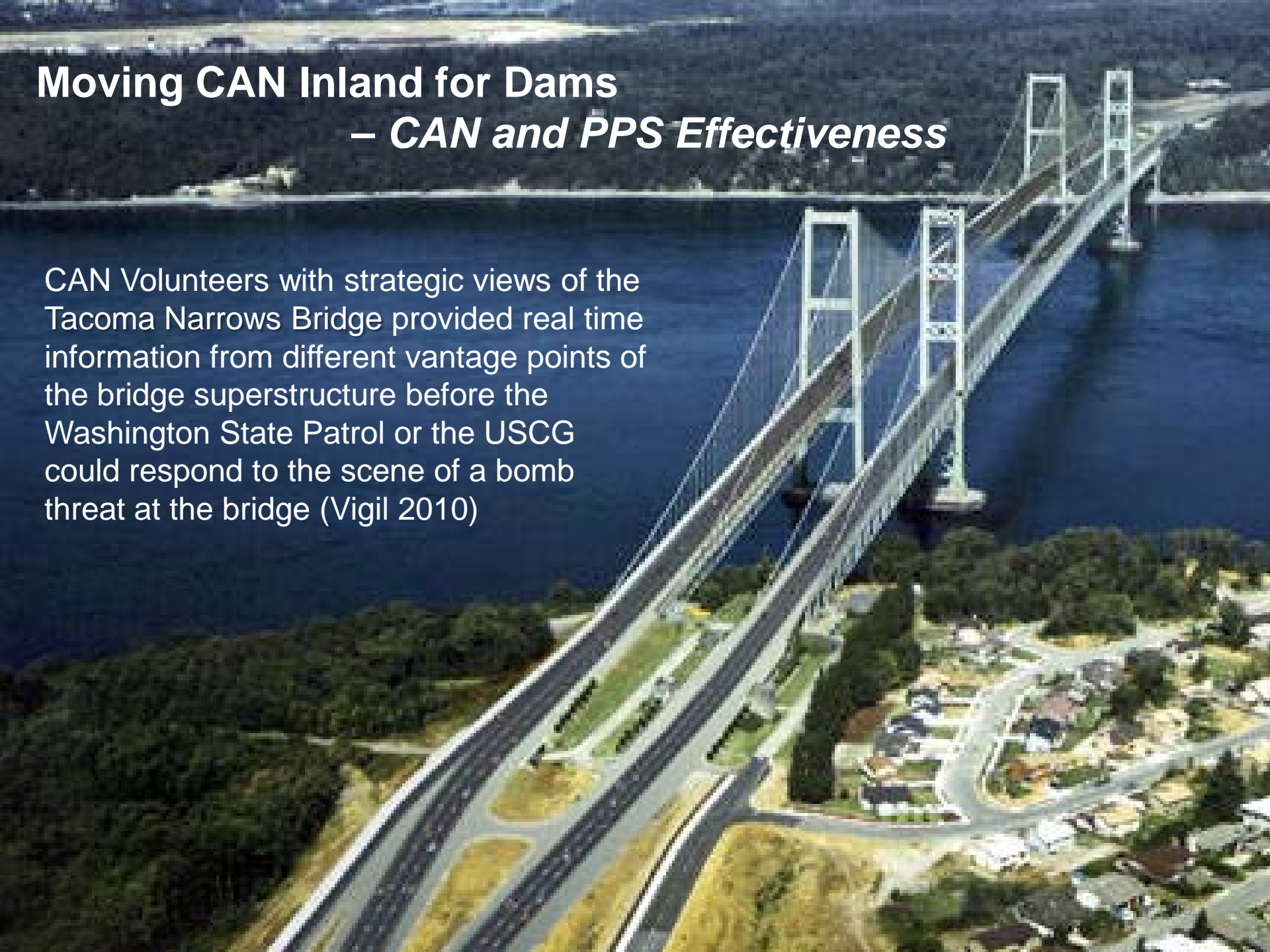


Portion of the Terrorist Attack Planning Cycle influenced by Citizen Action Network Volunteers. CAN volunteers with “strategic views” may detect and/or assess.

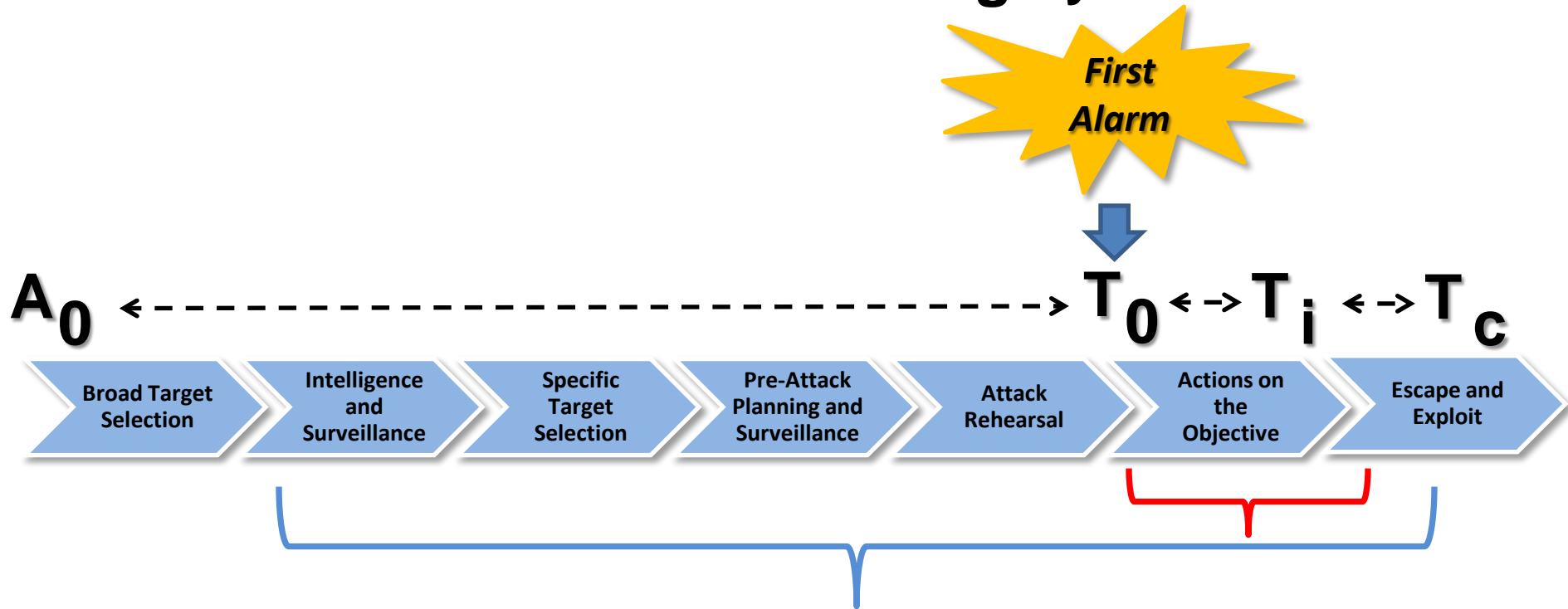
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– *CAN and PPS Effectiveness*

CAN Volunteers with strategic views of the Tacoma Narrows Bridge provided real time information from different vantage points of the bridge superstructure before the Washington State Patrol or the USCG could respond to the scene of a bomb threat at the bridge (Vigil 2010)

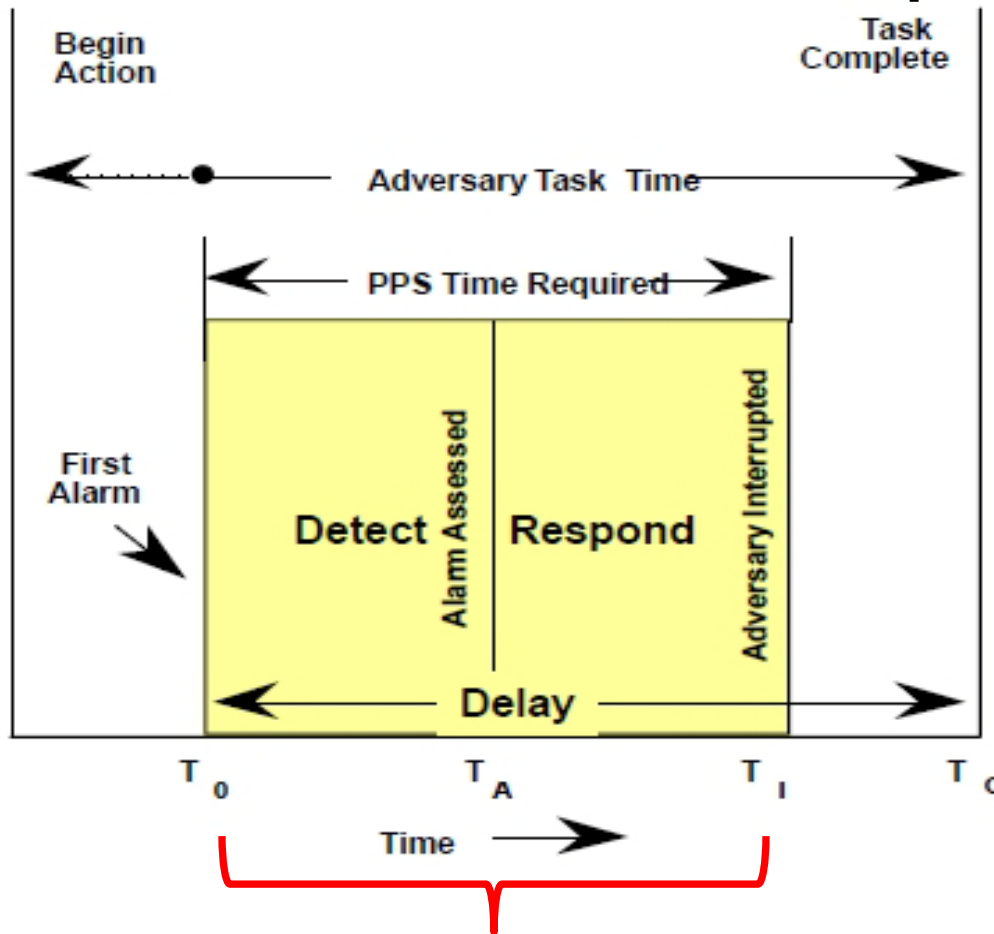


Terrorist Attack Planning Cycle



Potential portion of the Terrorist Attack Planning Cycle influenced by Citizen Action Network Volunteers, given example of **Tacoma Narrows Bridge**. Actual portion in **red**.

Traditional Adversary *Task Time* vs. PPS Time Requirements



Prevent undesired event

T_0 = First alarm occurs

T_A = The time at which the alarm is assessed to be valid

T_I = The time at which the response force interrupts adversary actions

T_C = Adversary task completion time

Actual Portion of the Post-Alarm Adversary Task Timeline influenced by Citizen Action Network Volunteers, given example of [Tacoma Narrows Bridge](#).

Moving CAN Inland for Dams – *CAN and PPS Effectiveness*

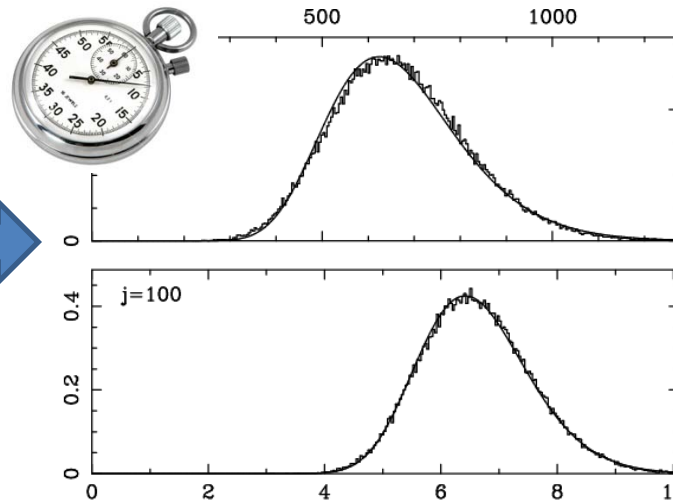
Evaluating “Sensor” Effectiveness

The time it takes for a CAN Volunteer to observe, assess and report a situation within his/her “strategic view.”

Whether a false alarm or not, or the result of exercise participation, this is a quantifiable measure of a “sensor’s” response time. A monte carlo simulation can produce a more precise score which can be used to help populate the **system effectiveness** portion of the Security Risk Equation.



Volunteer observes and reports



Reporting time of “sensor” submitted to monte carlo analysis



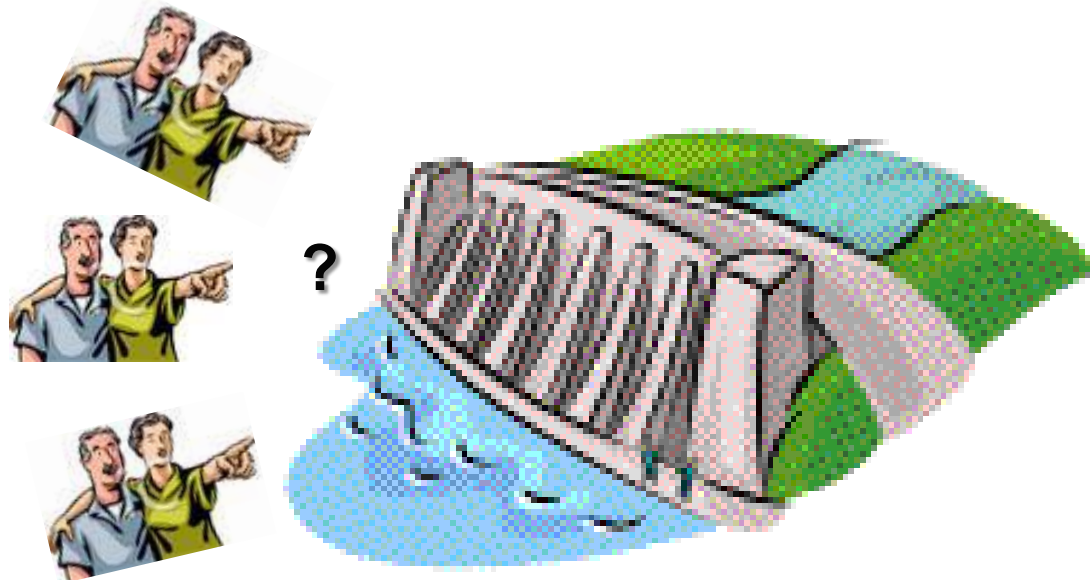
$$(1 - P_E)$$

Data populates system effectiveness equation

Moving CAN Inland for Dams – *CAN and PPS*

Evaluating “Sensor” Accuracy

In answer to the common objection that “people will give us bad information” FEMA Administrator Craig Fugate says that “crowd sourcing is faster [at correcting it],” than waiting for an “official” source.



To put it another way, surveys with larger sample sizes have smaller margins of error.

The more volunteers, the greater the accuracy.

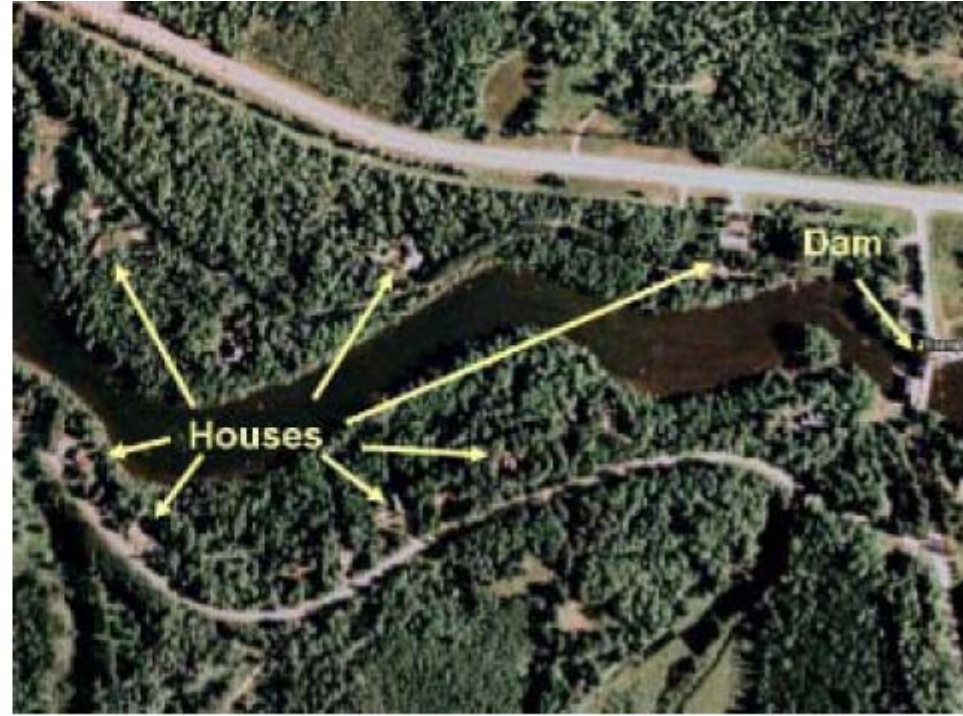
Moving CAN Inland for Dams – CAN for Dams



- Remote locations; small networks
- Premium on economy of force, and early warning
- Lengthy response times
- Major consequences, limited PPS resources

“Strategic Views of Dams”

Moving CAN Inland for Dams – CAN for Dams



Mapped inundation areas between the yellow lines (left). A photograph of the same area (right) depicts multiple homes within this area; at least one appears to have a partial line of site, or a “strategic view” of this dam.

Other homes upstream may also be able to observe this dam. Those homes without a view of the project have observation of avenues of approach to the same (Photo: ASDSO 2009)

Moving CAN Inland for Dams – CAN for Civil Liberties

- Always voluntary; don't call anyone without asking permission first
- Inherently local; neighbors communicating with neighbors (it doesn't require an Op Center to start a network)
- Requires Information Assurance and Privacy Policies in order to protect volunteer information.
- CAN Volunteer information should stay within the CAN Network and be used for the purposes of CAN only.



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