Tug and Pilot Availability in the Event of a Tsunami

By: Capt. Mark Coynes
Operations Manager
Decisive decision making by USCG and Port Partners
Limitations of Pilot Staff and supporting Pilot boat crew
Benefits of small geographical area compromising both LA/LB Harbors
Use of NOAA Advisories
Jacobsen Pilot Service, Inc.

Decisive Decision Making by Port Partners

- USCG
  - Issue initial warning broadcasts on VHF 16
  - Guidance for Vessel movement and priority
  - Advise JPS and MX/VTS

- Jacobsen Pilot Service
- Marine Exchange/VTS
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Ship Moves

- EARLY AND TIMELY
- JPS coordination of moves with USCG, ship’s agents, tug companies, line-handling agencies and terminals
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Tankers at Berth With Minimum UKC - PRIORITY
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Bigger Ships more difficult to move in urgent conditions - Air and Water draft considerations
Dispatcher at JPS coordinates all moves.
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Pilot Availability

- Available Pilot Staff and JPS Team
- 8 Pilots and Management Pilot on duty
- Additional 8 Pilots on time off/Call in available pilots
- 2 Boatman
- 1 Dispatcher
- 3 Pilot Boats
- Boats to Sea
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3 Major Tug Companies in the Port Complex

- **Foss, Millennium** and **Crowley** – with approximately 16 tugs available
- **Tug Co.’s** will have evacuation plan for their own equipment
Benefit of Geographical Size

- Short distances:
  - 3 Major Tug Companies located within LA/LB Harbors within 5 to 30 minutes for vessel assist
Geographical Benefits

- Short transit time outbound from anchorages and most berths in the harbor complex
- "Doubling back" of Pilots and Tugs
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Use of NOAA Tsunami Advisories and forecasts to determine time frame of safe vessel movement

- Safe Vessel movement can be determined by use of the advisories and warnings
  - Time and amplitude of wave/surge predicted
  - Air gap for Desmond Bridge in Long Beach Real and predicted
  - Water level gauge in Los Angeles
JPS monitored Real-Time Water Level in March 11, 2011 Event
<table>
<thead>
<tr>
<th>Location</th>
<th>Maximum Forecasted (meters)</th>
<th>Observed Tide Gauges (meters)</th>
<th>Estimated By Others (meters)</th>
<th>First Arrival Times (PDT)</th>
<th>Estimated Maximum Current Speeds (knots)</th>
<th>Reported Damage or Other Effects from Tsunami (NDR = no damage reported)</th>
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</thead>
<tbody>
<tr>
<td>Crescent City</td>
<td>0.61</td>
<td>0.64</td>
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<td>1340</td>
<td>1346</td>
<td>NDR</td>
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<td>Eureka</td>
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<td>0.23</td>
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<td>1336</td>
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<td>NDR</td>
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<td>Alameda</td>
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<td>0.12</td>
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<td>San Francisco</td>
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<td>0.32</td>
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<td>1320</td>
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<td>Half Moon Bay</td>
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<td>Santa Cruz</td>
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<td>0.9</td>
<td></td>
<td></td>
<td>8-10</td>
<td>minor damage to boats and marine infrastructure</td>
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<td>Monterey</td>
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<td>1243</td>
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<td>Morro Bay</td>
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<td>4-6</td>
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<tr>
<td>Pismo Beach</td>
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<td>0.9-1.2</td>
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<td>Santa Barbara</td>
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<tr>
<td>Ventura</td>
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<td>12-15</td>
<td>over 20 docks damaged; buoys moved</td>
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<td>1225</td>
<td>NDR</td>
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<td>Two Harbors/Catalina</td>
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<td>minor damage to several docks</td>
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<td>Los Angeles</td>
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<td>1215</td>
<td>4-6 minor damage to docks and marine infrastructure</td>
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<tr>
<td>Seal Beach</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td>minor flooding from storm and tsunami surges 24 hours later</td>
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<td>Dana Point</td>
<td></td>
<td>0.5-0.7</td>
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<td></td>
<td>10-12</td>
<td>bait barge severed</td>
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<tr>
<td>Oceanside</td>
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<td>0.4</td>
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<td></td>
<td>5-8</td>
<td>several buoys carried out to sea; boat trailer swamped</td>
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<td>La Jolla</td>
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<td>0.60</td>
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<td>NDR</td>
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<td>Mission Bay</td>
<td></td>
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<td>8-10</td>
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<td>small sailboat swamped trying to leave harbor; buoys moved</td>
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<td>0.40</td>
<td>0.6</td>
<td>1204</td>
<td>1208</td>
<td>12-15 damage to docks, concrete piers, and boats</td>
</tr>
</tbody>
</table>
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US Navy Contract for Piloting / NWS Seal Beach

- JPS Pilots
  - Assist Navy in Piloting Warships in Seal Beach
  - Movements not under USCG authority
  - Naval Vessels would be part of the evacuation process
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Hurricane Marie Swell Condition Long Beach
August 27, 2014