



Commonwealth of Massachusetts  
Executive Office of Energy & Environmental Affairs

## Department of Environmental Protection

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### Massachusetts Oil Spill Prevention & Response Program

#### Oil Spill Response Trailer Boom Deployment

Each oil spill presents different challenges depending on the type of oil spilled, the location, weather, time of day, the manpower available and the equipment at hand. It is important to plan a practical strategy to protect sensitive resources utilizing the resources available and keeping safety in mind at all times. The effective and timely deployment of the oil spill boom can lessen both cleanup time and money.

There are three types of boom deployment:

- Containment
- Deflection
- Exclusion

This information is available in alternate format. Contact Michelle Waters-Ekanem, Director of Diversity/Civil Rights at 617-292-5751.

TTY# MassRelay Service 1-800-439-2370

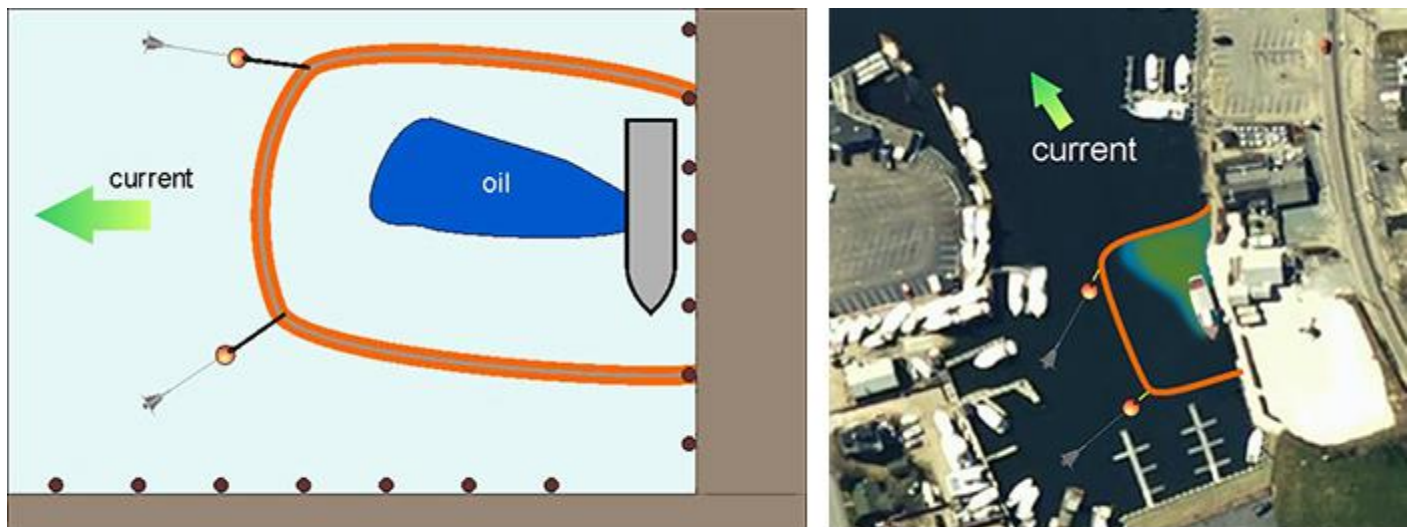
MassDEP Website: [www.mass.gov/dep](http://www.mass.gov/dep)

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## Containment Boom

Containment boom deployment for spill containment requires the placement of a boom in a moving body of water and involves several distinct operations. A simple spill in calm weather along with minimal current movement (<.75 knots) can be contained by stretching a boom across a waterway perpendicular to the path of the spill. Containment boom is also used to encircle or otherwise entrap floating oil so it can be accumulated and recovered at the spill location - a grounded barge, a vessel at anchor or at dockside.

The diagram below shows two examples of partial containment of a spill from a vessel at a dock and a link to a training video showing Partial Containment Boom being deployed.



Containment - partial encirclement



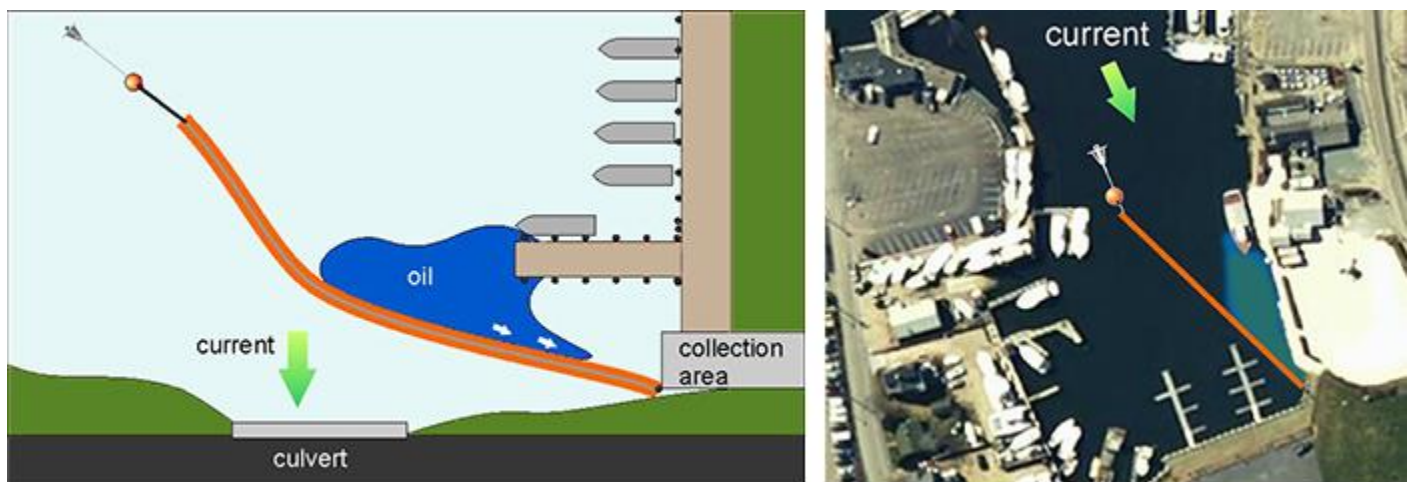
<http://www.archive.org/download/ContainmentBoom/ContainmentBoom.mp4>

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## ***Deflection Boom***

A deflection boom is used to intercept, deflect, or move a slick towards a more desirable recovery site. Deflection booming is a good option when strong currents are present, which make containment impossible. Entrainment or loss of oil under the boom begins to occur when a boom is placed perpendicular to a current of more than .75 knots. To increase the boom's ability to contain oil in a current, the boom must be placed at an angle to the current. Angling the boom has the net effect of deflecting the slick towards the shoreline where currents may be less severe.

The diagram below shows two examples of deflection boom of a spill from a docked vessel, and a link to a training video showing Deflection Boom being deployed.



Deflection to a collection area



<http://www.archive.org/download/DeflectionBoom/Deflection-Boom-Pier.mp4>



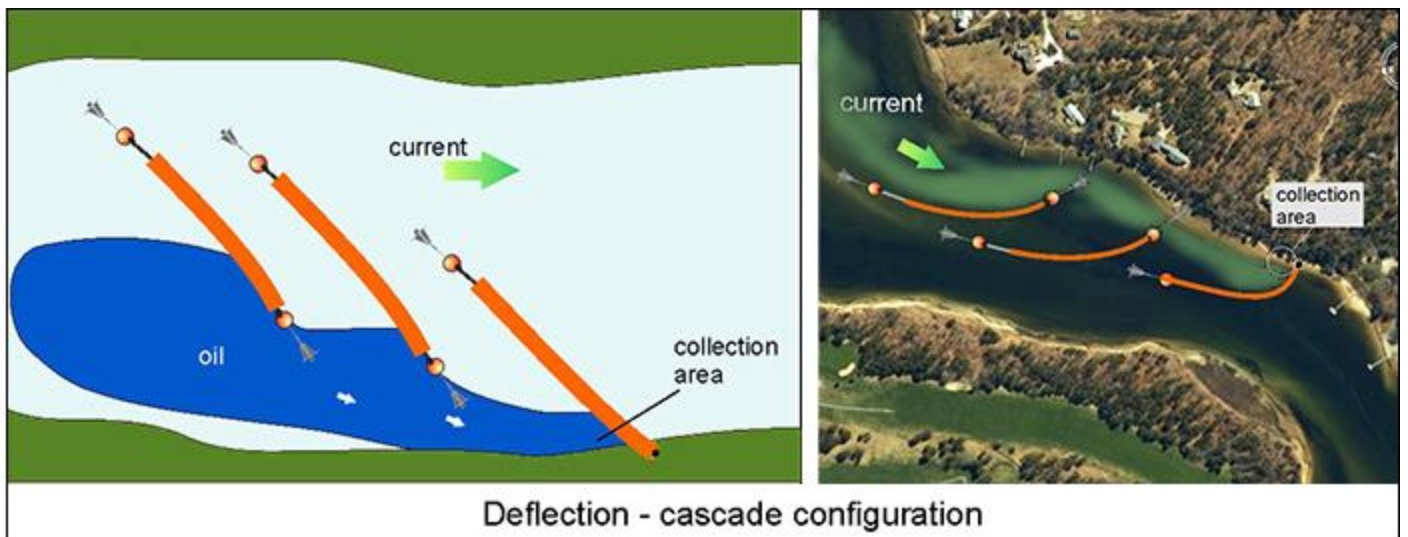
<http://www.archive.org/download/DeflectionBoomShore/Deflection-boom-shore.mp4>

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## ***Other Types of Deflection Boom***

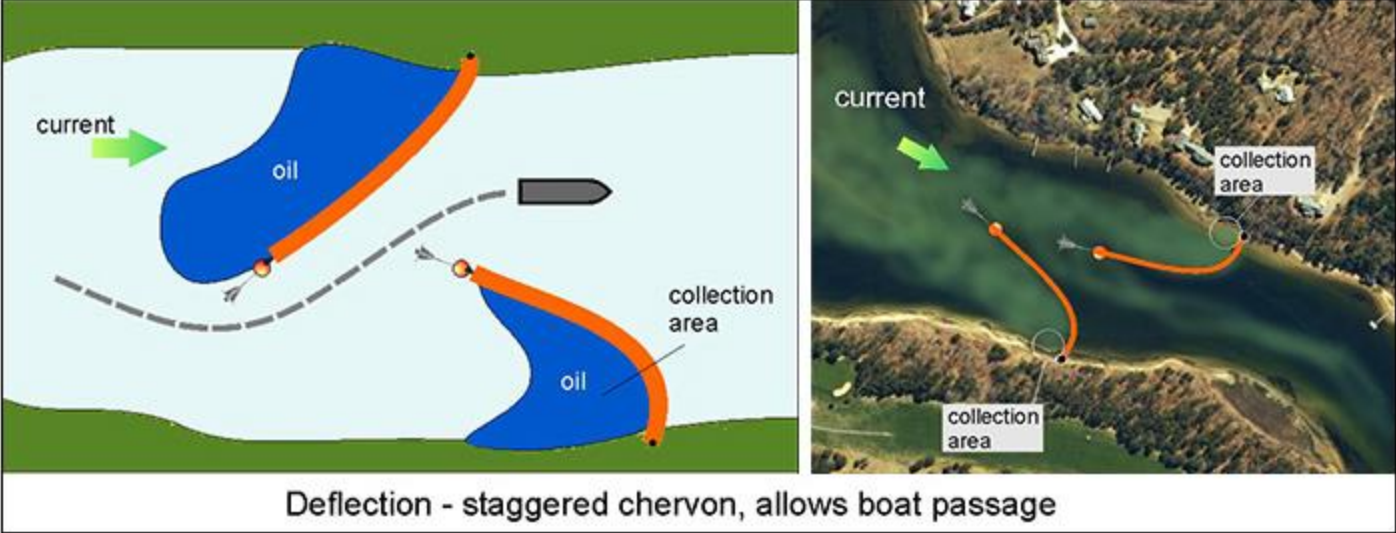
### ***Cascade Boom***

A cascade boom configuration can be used to remove, intercept, deflect, or move a slick towards a more desirable recovery site. Several booms can be deployed in this configuration when a single boom cannot be used because of fast currents or because it is necessary to leave openings in the boom for vessel traffic, etc. A cascade boom can be used in strong currents where it may be impossible to effectively deploy one continuous section of boom. Shorter sections of boom, when used in a cascade deployment, are easier to handle in faster water, thereby increasing safety and efficiency. Additional equipment will be required to set and maintain this system in comparison to the single boom configuration.



**Staggered Chevron**

A staggered chevron boom configuration can be used in areas with strong currents to remove, intercept, deflect, or move a slick towards a more desirable recovery site. While the closed chevron configuration is used to divide a slick for diversion to two or more recovery areas, an open chevron can be used where boat traffic must be able to pass. In the open chevron configuration the two booms are anchored separately midstream, with one anchor point up-stream or downstream of the other. An inverted chevron can also be used to funnel an oil slick to a marine recovery unit anchored mid-channel.

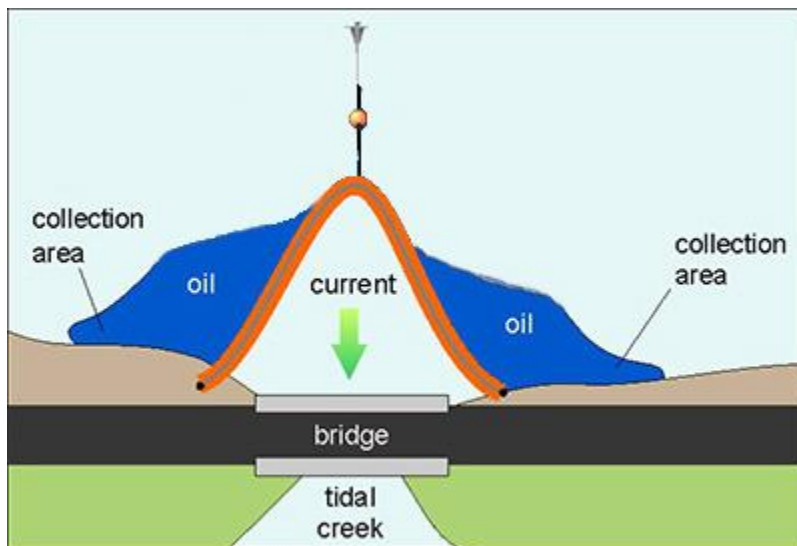


Deflection - staggered chevron, allows boat passage

## Exclusion Boom

Exclusion booming is largely a protective measure, the idea being to protect sensitive areas such as marshlands, water intakes and shorelines.

This technique requires the area to be completely boomed off, thereby forming a protective barrier. Conventional oil boom, tidal-seal boom, or a combination of each can be used to exclude spilled oil from a sensitive area. Typically, tidal-seal boom is employed at the shoreline/water interface on both shores and is secured/anchored into position. Conventional oil boom is then connected to the tidal-seal boom and is secured with additional anchor systems to form a barrier and to maintain shape. This technique is most efficient in low current areas. Freshwater outflow from a river or stream may assist in maintaining boom configuration and pushing oil away from the area inside the boom.



Exclusion - closed chevron



**EXCLUSION BOOM  
TRAINING VIDEO**

<http://www.archive.org/download/ClosedChevronBoom/ClosedChevronBoom.mp4>