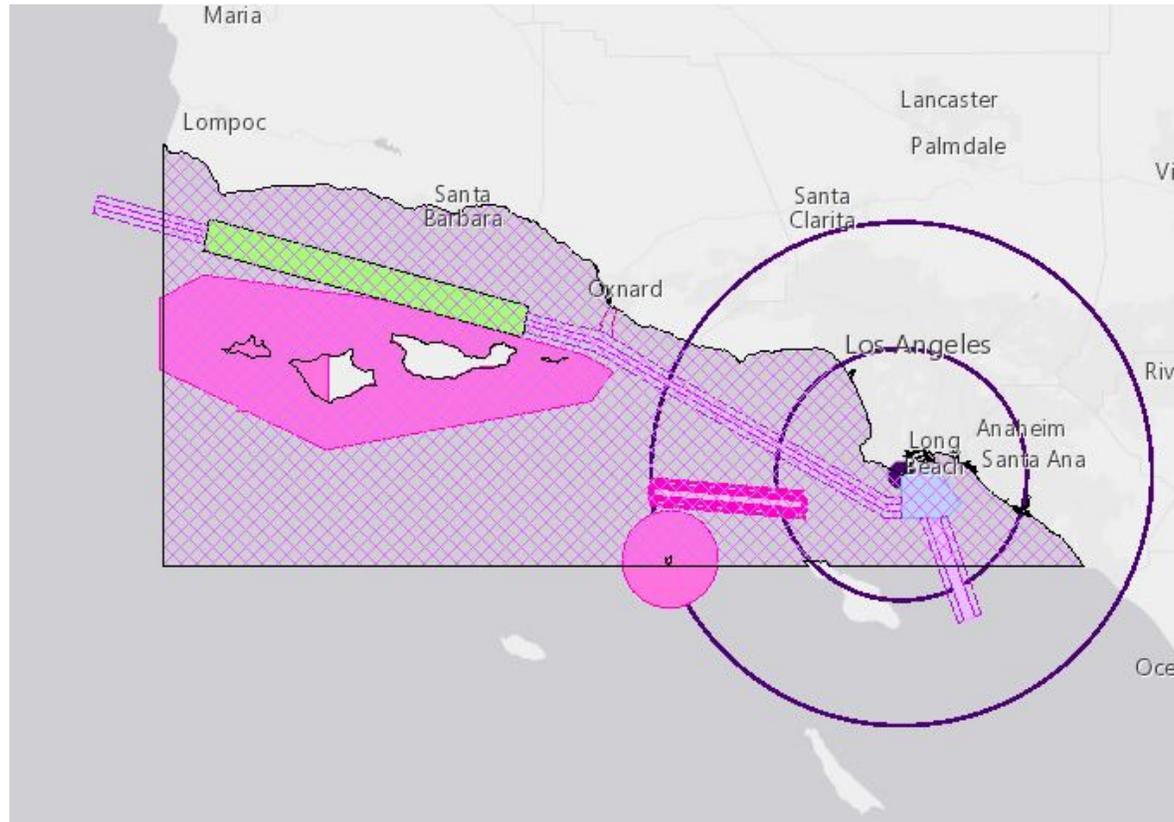


OPTION 1 Status Quo



Description: The status quo includes: a TSS through the SB Channel, a TSS for the southern approach to the port of LA/LB, a voluntary western lane endorsed by the harbor safety committee, an ATBA (area to be avoided) around the sanctuary, and an incentive-based slow speed zone within 40 nm of the port of LA/LB. As of May 2015, NOAA also implemented a voluntary whale advisory zone that stretches from Pt. Arguello to Dana Pt. and a voluntary 10 knot vessel speed reduction zone extending 1 nm outside of the SB TSS from Pt. Conception to San Pedro Pt. on Santa Cruz Island. The whale advisory zone and slow speed zone were implemented after 5 or more endangered whales were observed in or around the SB TSS. These zones are reviewed monthly and are removed when high numbers of whales are no longer observed in the area.

Discussion Points from June 29th MSWG Meeting:

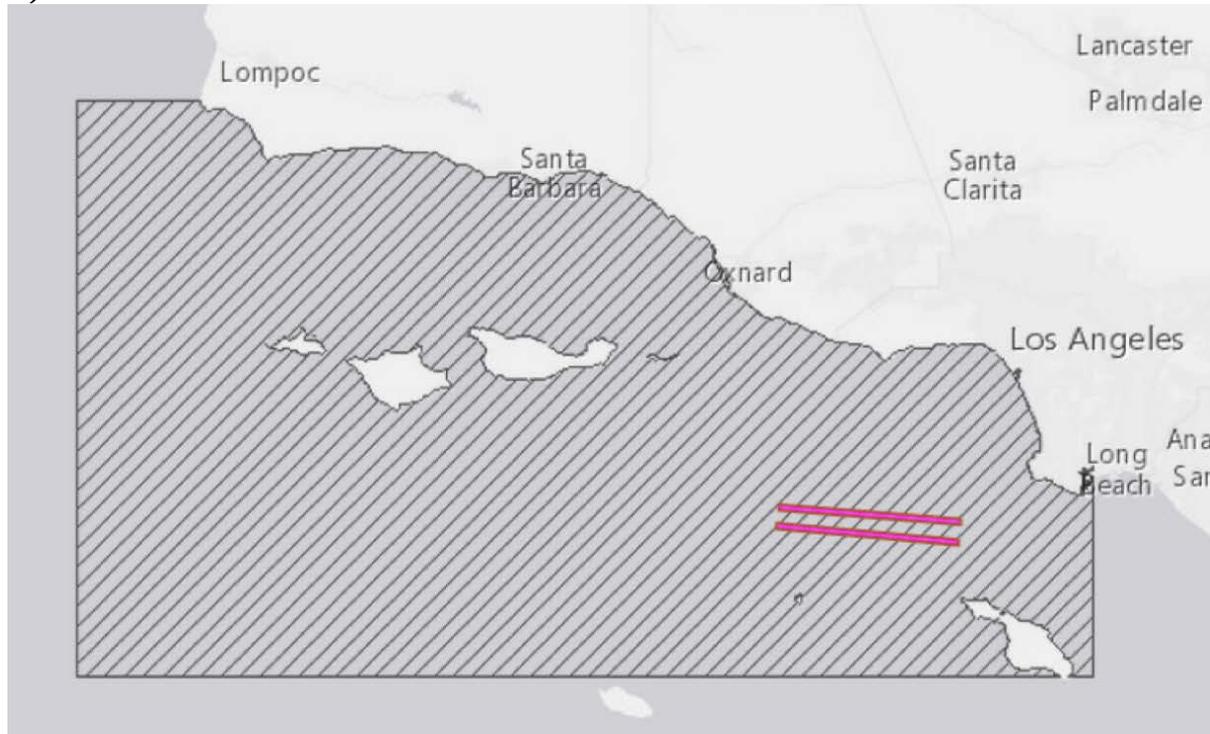
- Existing compliance with voluntary (non-incentive based) slow speed zones is low
- Vessels may speed up after they leave a slow speed zone

OPTION 2 Shipping Lane Idea: Establish Western TSS South of the Channel Islands (USCG PARS Study 2011)



Rationale: By creating western traffic lanes we improve visibility and predictability for vessels transiting south of the Channel Islands. The increase of vessel traffic in the waters south of the Channel Islands has caused concern for mariners and government agencies. Taking into consideration the concerns for safety at sea, and the potential for devastating environmental impacts should two vessels collide, the Harbor Safety Committee in Los Angeles and Long Beach voted to establish a voluntary western approach that extended from the precautionary area in the San Pedro Channel to the limits of the Vessel Traffic Service reporting area. The voluntary traffic lane is not IMO approved; however, it has been effective for predicting and managing vessel traffic in the limited area it covers. If vessels continue to transit south of the Channel Islands after the Emission Control Area begins implementation in 2012, an IMO approved TSS will establish a predictable route for these vessels. There are economic, safety, and security concerns with establishing traffic lanes through the Navy Sea Range as noted in the comments section of the study; however vessels have been transiting through this area since July 2009 without significant impacts being reported. (PARS 2011)

OPTION 3 Shipping Lane Idea: Make Voluntary Western Lane an Official TSS (previously called Permanent Western Lane)

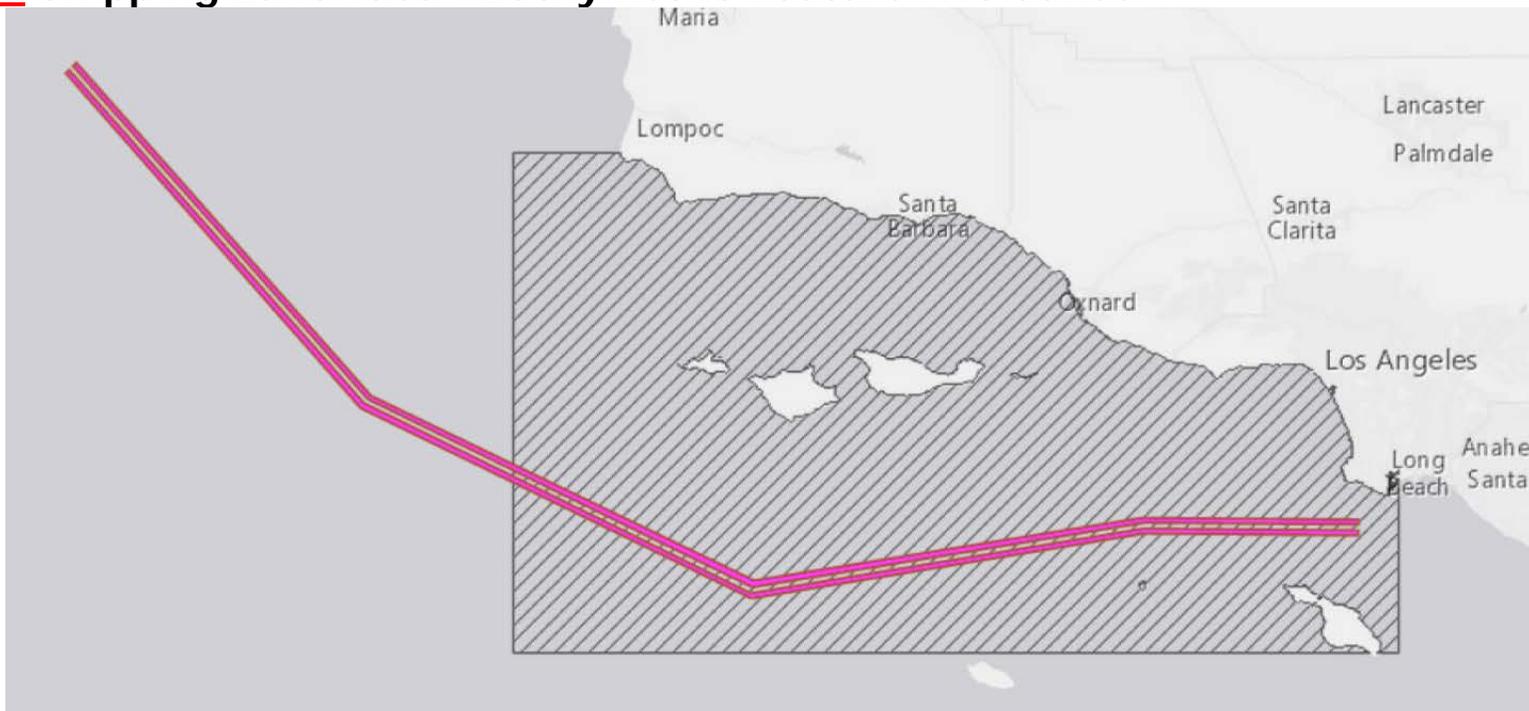


Rationale: The voluntary western lane is already used by many vessels. Official designation of a western lane by the International Maritime Organization (IMO) will encourage even wider use of the lane, reducing unorganized traffic. This will reduce the threat of ship strikes by creating lanes that can be managed for whale protection. For example, whale conservation efforts such as overflights and slow speed zones could be implemented in the western lane as well. It will also improve navigational safety by organizing traffic in designated lanes, thus reducing threat of collisions. Finally, the designation of this lane will reduce user conflicts because port managers can advise whether to use the lane or not based on military activity.

Discussion Points from June 29th MSWG Meeting:

- A disadvantage of this idea is that tankers headed for El Segundo would have to make a sharp left turn to reach port
- There was general support among the group for the existing voluntary western lane, but formalizing this segment with the IMO wouldn't carry specific benefits with regard to the goals of the MSWG.
- If you force ships into a smaller area, this results in smaller area to do whale reconnaissance.
- This lane falls within the 40 nm slow speed zone around the Ports of LA/LB. High compliance with speed reduction zones into the Ports of LA/LB already exists, although one could further reduce speeds in this zone.

OPTION 4 Shipping Lane Idea: Bathymetric Feature Avoidance



Rationale: 1. Whale protection - Assumes upwelling events off bathymetric features may concentrate whales and routing should consider avoidance of those features - Potential to tie to weather related forecasting - Generally follows the existing tracks of vessels using the "Western Voluntary Approach" (overlay the AIS data) to the south of the Channel Islands and CINMS - Further Pushed to the west to avoid shelf features and seamounts - Vessel Convergence Point Pushed approx. 80 nm north-west. When measurements are taken from new convergence point the actual transit is less than 20 nm further.

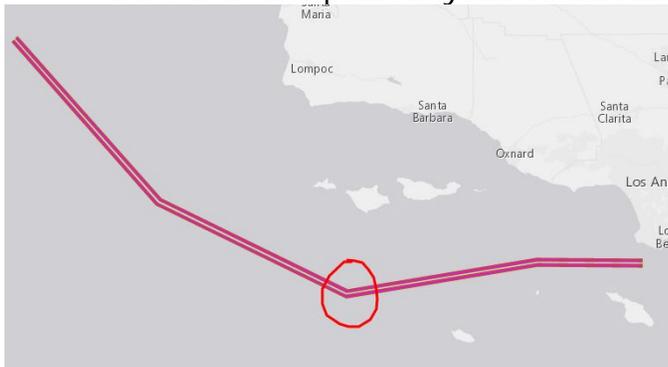
2. Air quality - the modest increase in emissions would be offset to some degree by the prevailing winds moving the mass southerly. According to the extensive tracer study done by CARB in 2000, almost none of the offshore ship emission made landfall in either Santa Barbara or Ventura Counties. Of the emissions that did make land they generally didn't do so until southern Orange and San Diego Counties. More importantly the Santa Barbara is already in attainment for all National Ambient Air Quality Standards NAAQS (designed to protect the most sensitive individuals in the population) including at the current 75 ppb O3 (ozone). While there seems to be some concern by the Santa Barbara County Air Pollution Control District (SBCAPCD) that the proposed new O3 NAAQS (est. 65 - 70 ppb) may be a problem. However, that concern is based on a 2005 fleet that simply doesn't exist today and air quality improvements that have been made are significant. More importantly continuing improvements are already hardwired into the system through international treaty. Including the further reduction of greenhouse gases.

3. No real difference to the Navy from current conditions; same potential for increased frequency of transits. Further from whale watching, fishing impacts unknown but unlikely.

4. Would need to consider in associated with a vessel speed reduction (VSR) proposal in the SB Channel and the increased traffic avoiding the existing vessel traffic separation scheme (TSS).

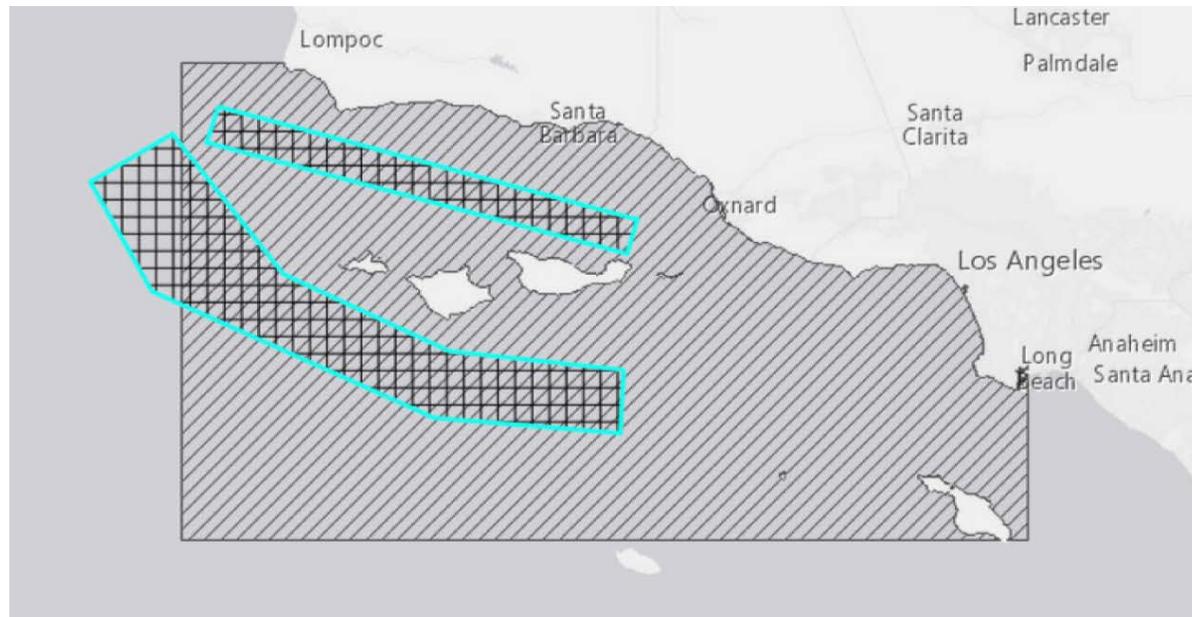
Discussion Points from June 29th MSWG Meeting:

- This idea aims to move ships to lower density whale areas.
- It is consistent with existing traffic patterns (see AIS data).
- A TSS in this area might incentivize more ships to use it; this would increase the potential for more ships traveling through the Navy's sea range.
- Potential for increased interaction between ships and whales according to Navy aerial survey data.
- This idea would benefit from increased communications with and among vessels to alleviate potential impacts to the sea range.
- The greatest risk of ship-to-ship collision is at the southwest point of proposed shipping lane (see map below) because there is a turn-point beyond visual navigational aids.



- Could improved organization of ship traffic (i.e., better than the status quo) help address Navy interests in the Sea Range?
- A concern is that establishing a TSS south of the islands tells ships to come in to the sea range. Currently, there are not too many ships in the sea range and they heed navy re-location requests.
- We need to consider unintended consequences. For example, a mandatory speed reduction only in the SB Channel will likely encourage ships to go through the sea range.

OPTION 5 Seasonal Management Area Idea: VSR Seasonal Inside and Outside Channel



Description: Voluntary and possibly incentive-based speed reductions to 12 knots or less. Existing rules in effect in this area include CARB fuel rule and North America Emission Control Area (ECA) rules.

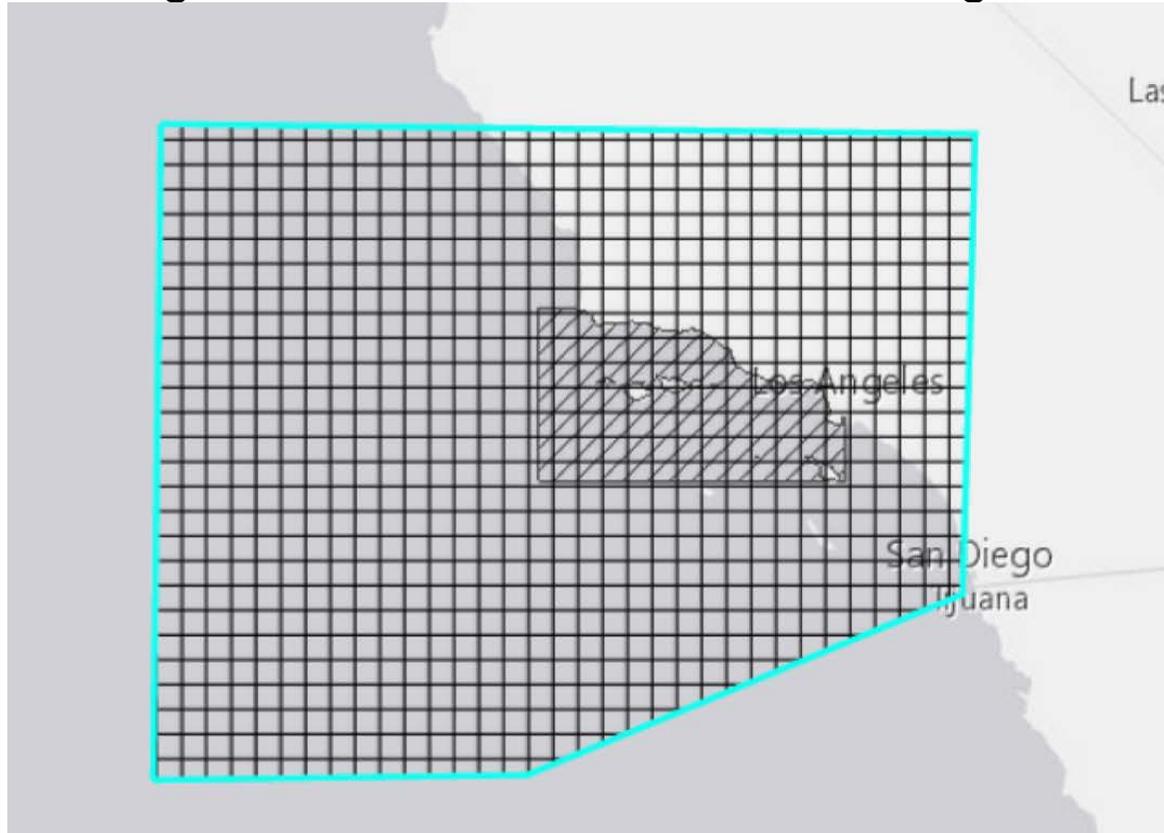
Rationale: Reductions of air emissions during peak ozone season, and reduces lethality to whales during peak whale season.

Discussion Points from June 29th MSWG Meeting:

- Benefits include:
 - o This approach avoids DMA (dynamic management area), which is more complicated.
- Problems/challenges include:
 - o How to have a SMA (seasonal management area) when whales seem to be everywhere; different species have different seasonality
 - o We need to consider issue of unintended consequences (e.g. shifting traffic patterns).
 - o Ships will avoid the VSR zone if it does not cover the entire area.
 - o Past solutions avoided a southern lane because it was found to exacerbate air pollution.
 - o Jurisdictional concern – if it is not in the channel, it needs to be designated internationally.
 - o DMA is more likely to cause “speed up” when vessel leaves the zone.
 - o Will VSR below 16 knots be a big difference for air quality?
- The risk of collision should not be an issue going forward due to low numbers of ships each day.
- The shape of the southern VSR zone is arbitrary. A potential fix is to expand the zone.
- Note – the northern VSR zone already exists.
- The southern VSR zone needs data to support it.

- Context for existing VSR zones in the Santa Barbara TSS (status quo): the focus is on blues, humpbacks and fins, the requirement is to see 5 whales or more in or around the TSS to implement the VSR zone; this is a voluntary measure.
- Note – on the east coast, SMAs are based on historical data, and DMAs are based on real-time data.
- It is less certain that protection south of the islands will work because there is less information about whales south of the islands.
- From the Navy's perspective, it is important to take the same action in the Santa Barbara channel and south of the islands because ships will move.
- Note – this is not a new idea.
- Whale distribution tends to be driven by bathymetric features, so we do have some information on where they tend to be.
- Note – new IMO policies may give more authority to nations/states.
- Dynamic vs. Seasonal approaches – dynamic approaches allowed those on the east coast to make seasonal areas as small as possible.
- Voluntary approaches have not worked very well on the west coast, but there has been some success with incentive-based.
- Shippers like the predictability of seasonal management, but on the west coast, we need to demonstrate that SMAs actually benefit whales.
- Vessels are incentivized to use TSSs.

OPTION 6 Dynamic Management Area Idea: AIS Whale Warning Zone



Description: This DMA would be based upon the actual presence of whales as seen by observers, scientists, ships, etc. Anyone observing an aggregation of 3 or more whales remaining in an area of less than 10 square miles over the course of 2 or more days would report to a central clearinghouse. Such sightings would then be transmitted in spatial form via Automatic Identification System (AIS) to ships with a recommendation to avoid the area or reduce speeds through it.

Criteria: Sightings of 3 or more whales remaining in a 10 square mile area for 2 or more days.

Rationale: The biggest issue with any sort of spatial management at this point in time is the relative paucity of spatially specific data on whale aggregations. Additionally, both within and among years the locations where whales aggregate change. The above system would take advantage of existing communications systems to alert ships to the specific locations where whales are being seen, allowing them to either alter course or reduce speed to avoid.

Discussion Points from June 29th MSWG Meeting:

- Benefits include:
 - o This approach lets ships manage their own behavior based on better information.
 - o Easy to do. This is already being done in an ad hoc fashion.
- A key incentive is that ships are more likely to respond to a specific need/purpose

- Problems/challenges include:
 - o Ships don't read incoming messages consistently.
 - o It is a challenge getting information from ships to shore and back.
 - o Limitation is that the Port of LA/LB only transmits notices to outgoing ships; for inbound ships near Pt. Conception, Port of LA/LB can contact Vessel Traffic Service San Francisco to notify the southbound ships, but that doesn't address the ships traveling Great Circle
 - o This approach is limited by available whale sightings information.
 - o What is the mariner expected to do with the information? Slow down? Avoid the area? How?
- In the future, there may be more whales with AIS tags which would provide more data of where whales are located.
- Idea – use commercial shipping as a platform for thermal imaging (see research from NZ); start with a pilot program.
 - o Can detect whales within 1-2 km
 - o Potential issue: risk for ships regarding ESA
- The MSWG should consider all potential tools to inform DMA decisions including but not limited to: passive acoustic monitoring, whale reporting system (Channel Islands Naturalist Corps and/or Whale Alert), overflights, thermal detection, active acoustic monitoring, etc.

OPTION 7 Multi-part Management Idea: Area of Interest, DMA, SMA & TSS Shipping Lane



Overall Rationale: Large area encompassing entire Santa Barbara Channel Down to Ports of Long Beach/LA. New Study Region This Area of Interest would be a large Management Zone and include two components. First, Dynamic Management during the year. Sightings of 3 or more whales trigger operating vessels 65 feet (19.8 meters) or greater route around speed reduction zones (Dynamic Management Areas—DMAs) or transit through them at 12 knots or less. Once whales have left the area to DMA could be removed. The second component would be a shipping corridor (to be identified) through the Naval range. When dynamic management is triggered, ships could choose to use either the Santa Barbara TSS (at a slower speed) or transit south of the islands through the alternate transit corridor. This corridor could be designed to minimize overlap with known whale habitat areas identified in the biologically important areas (BIAs), Redfern modeling, and Irvine modeling, while also minimizing interruption of naval testing operations. Some suggestions include having ships transit a similar (but slightly different) path from the tankers to avoid being inside the Santa Barbara Channel. Having the corridor encompasses the areas of high use from the 2012 & 2013 AIS data.

Support Goals of MSWG: 1) Reduced risk of ship strikes: Yes. Ships would either slow down to 12 knots or re-route during times when there are high concentrations of whales in the Santa Barbara TSS. Identifying a corridor through the Naval testing range that minimizes overlap with BIA's, Redfern model, and Irvine model could result in reduced co-occurrence with whales through the region.

2) Decrease air pollution: Yes. Fewer air emissions from ships that chose to slow down in the SB TSS, instead of re-routing.

3) Improve navigational safety: Uncertain. Proposed corridor could identify directional travel corridors for north and south bound traffic (similar to shipping lanes). This would reduce the chances of north and southbound traffic crossing paths through the navy range and could improve navigational safety.

4) Minimize interruptions to Navy operations and other ocean users: Uncertain, but trending towards yes. Establishing a known corridor through the Navy range would allow the Navy to plan and execute operations outside the area. Should the Navy choose to conduct trainings in the corridor they could then easily identify ships within the corridor and notify them to re-route to avoid testing operations. This option could build on the existing role the Marine Exchange already plays in intercepting and communicating with ships when they enter the Navy zone, letting them know of any testing operations and if they need to vacate the zone.

Discussion Points from June 29th MSWG Meeting:

- Benefit include:
 - o This idea has more options and recognizes that individual management options alone may not be enough.
 - o This is the best approach for not interfering with navy interests.
 - o Predictability improves with 12 hour lead time.
- Problems/challenges include:
 - o We still need more information where whales are in general. At least this idea is based on habitat data.
 - o Ship crews don't all speak English.
- This idea is similar to the East Coast approach in that there are multiple options.
- Key to success: the DMA needs to be well implemented.
- Recommendation: Look more closely at AIS data to see whether speeds are already sufficiently slow in specific areas.

