

Date: ~~June 30, 2010~~ Sept. 27, 2010

To: Technical Advisory Committee

From: Peter Kozelka, USEPA

Re: Allocations workgroup, minutes from teleconf. call on Sept. 1 and June 22, 2010

New information in yellow highlight below

Participants: Andrew Jirik (POLA), Matt Arms (POLB), Kirsten James (Heal the Bay), Lial Tischler (EXXON-MOBIL), Mike Wang (WSPA), Steve ?? (WSPA), Ying Poon (EVEREST CONSULTANTS), Elaine Darby (ANCHOR ENVIRONMENTAL), Youn Sim (LA County), Peter Kozelka (EPA), Katherine Curtis (POLA),

PK led discussion by going through the draft allocations memo which is arranged by waterbody (WB) and pollutant group (e.g. metals, PAHs, etc). For readers benefit, I have included the relevant outline sections followed by DISCUSSION SUMMARY as well as identify any **action items**.

From Sept. 1st Allocations workgroup conf. call

To do list:

Action items:

- Send out impairments table and WB map
- Send out allocations table by WB (footnote matrix of concern)
- Convene Air & Water folks to address air sources for deposition to WBs

Suggestions/comments:

- Promote mass-based allocations b/c more versatile and can recognize reduced runoff volume due to LID efforts; some entities may have harder time reducing runoff volume
- Request TMDL allocations to ID mechanism/process for revising SQGs; e.g. if not Chemical A = 10 ppm, then Chemical A = 1000 ppm is toxic level
- Consider inserting some type of equation in TMDL/allocations, so as to accommodate the above change in SQG, after stressor ID study has been completed (much like WER)
- Can allocations section include the objective which is different from the criteria?.....leading to Implementation/Compliance evaluation should require MLOE approach.
- Reconsider active sediment layer of 20 cm b/c that it is identified in Part I as 5 cm and Part II is likely to be consistent. (can we footnote change in depth to be accommodated)
- [SQO Part I document does not limit sampling to just first 5 cm depth....."the entire contents of the grab sample, with minimum penetration depth of 5 cm, shall be collected for benthic community analysis."]
- SQO-Part II is not developed, will probably need extension and will address DDT, PCBs, Chlordane and Dieldrin
- Air deposition - can we ID separate emissions for stationary sources vs. mobile sources (perhaps pollutant specific)? Or – within indirect deposition within stormwater runoff – can we ID the contribution from air sources vs. water discharges?
- Can EPA invite air & water regulators to meet with local TMDL folks to get some traction on air emissions that degrade water quality (indirect & direct)?

- Will allocations from LAR and/or SGR be of concern to Inner Harbor? General discussion about applicable allocations for each WB
 - SEE LA RWQCB website for available documents....
- http://www.waterboards.ca.gov/losangeles/board_decisions/basin_plan_amendments/technical_documents/bpa_66_New_td.shtml

5 TMDLS AND ALLOCATIONS

5.1 TMDLS

5.2 Freshwater toxicity and Diazinon TMDLs in DomChannel

Freshwater toxicity and elevated diazinon are impairments of concern. TMDLs will be conc-based for water column, specifically Diazinon in wet weather. Synergistic effects will be considered and may require allocations to be lower than NTs. Toxicity allocations will be addressed similar to other freshwater TMDLs – see CCK toxicity. MS4, construction and industrial stormwater will receive WLAs. LAs – do we have any NPS, will any be included?

NO ADDITIONAL DISCUSSION

5.3 Freshwater Metals TMDLs in DomCh and TorrLat

Dominguez Channel

Freshwater metals TMDLs within Dominguez Channel are based on CTR water column levels for Cu, Pb, Zn in wet weather. No exceedences observed in dry weather.

Similar approach to existing freshwater metals TMDLs, NTs are hardness dependent and expressed in total concentrations; acute NTs apply to wet weather.

Mass-based WLAs for combined stormwater sources = MS4, Caltrans, flow data will approximated daily storm volume

Conc-based WLAs for General Construction and General Industrial; (and) non-stormwater discharges; e.g., minor, general and future minor NPDES

Do any refineries discharge into DomCh freshwater? NO

LAs – do we have any NPS?

Torrance Lateral will receive conc-based total metal TMDLs and allocations, approach similar to DomCh freshwater conc-based metals TMDLs, may include conc-based sediment metal TMDLs and allocations

MINIMAL DISCUSSION, NO REFINERIES DISCHARGE INTO DOMCH FRESHWATERS.

Wet Weather Loading Capacity = Daily Storm Volume x Acute Target (total metal conc)

TMDL = WLA + LA + MOS

WLA = TMDL – LA – MOS = Daily storm vol. x target – direct dep – MOS

WLA = combined stormwater permittees

WLA = LA County + Caltrans

= mass-based on percent area of DomCh watershed (g/day)

WLA = conc-based for other ~~minor~~ NPDES stormwater dischargers; i.e., Gen Industrial & Gen. Construction, other minor NPDES permits.

Similar approach to other freshwater metals TMDLs; e.g., LAR Metals (LA RWQCB); Los Cerritos Channel metals (EPA)

DISCUSSION OF IRREGULAR STORMWATER DISCHARGES BY REFINERIES, WHO EMPHASIZED THEIR CURRENT STRATEGY IS TO HOLD AS MUCH STORMWATER ON SITE AS POSSIBLE AND THEN REDIRECT THIS STORMWATER TO TREATMENT PLANTS IN BETWEEN STORMS, THEREFORE 'OVERFLOW' DISCHARGE IS RARE (ONCE IN SEVEN OR MORE YEARS, DISCHARGE ONLY TWICE IN PAST 10 YEARS), SOME MONITORING RESULTS AVAILABLE FOR THOSE TWO DISCHARGE EVENTS, REFINERIES BELIEVE TECHNOLOGY DOES NOT EXIST FOR IMMEDIATE TREATMENT OF STORMWATER, THUS PREFER MASS-BASED ALLOCATIONS, POSSIBLY BASED ON SOME SORT OF DESIGN FLOW, REITERATE THE DISCHARGE OFF SITE IS PRIMARILY STORMWATER (NOT MUCH PROCESSED WATER).

QUESTION - REGARDING WHICH REFINERIES REDIRECT FLOW TO TERMINAL ISLAND TREATMENT PLANT VS. WHITE'S POINT OUTFALL? (because contributions to TITP would eventually be discharged into Outer Harbor)

**REFINERIES/WSPA – will summarize discharge information from 2000-2010 and provide available monitoring results from stormwater discharge events, mass based allocations require some discharge flow data; if not provided then conc. based allocations will be assigned to such refineries

5.4 Impaired Sediment Quality Objective – Direct Effects TMDLs in DomCh estuary and greater Harbor waters

TMDLs for metals, PAHs, organochlorines in sediments apply to DomCh estuary, ConSlip, Inner, Outer and Fish Harbor, LAR estuary, eastern San Pedro Bay and Cabrillo Marina.

Goal is to restore beneficial uses of aquatic life = benthic organisms in sediments

Mass-based WLAs for combined stormwater sources = MS4, Caltrans, ~~General Construction and General Industrial~~; (maybe further refined or individualized based on available information/data, maybe possible separate POLA & POLB MS4 allocations, not for individual tenants)

To extent feasible, individual WLAs for contributing PS will be identified; e.g., refineries, Terminal Island WWTP,

Conc-based WLAs for General Construction and General Industrial stormwater discharges; e.g., minor, general and future minor NPDES

LAs will include direct deposition and existing bed sediments.

Sediment TMDLs will utilize SQOs/triad approach thereby identifying conc-based bulk sediment allocations for these toxicants along with sediment toxicity and benthic indices included.

Reductions are anticipated for sediment chemistry levels.

LAs will include direct deposition and existing bed sediments.

Sediment TMDLs will be utilize SQOs/triad approach thereby identifying bulk sediment

allocations for total metals and PAHs, with sediment toxicity and benthic indices included.

Reductions are anticipated for sediment metal levels, although may not be required for water column since existing data shows few exceedances (are these seasonal?).

MORE DISCUSSION OF CONC. BASED VS. MASS-BASED ALLOCATIONS BOTH FOR REFINERIES AS WELL AS PORTS, WITH MASS-BASED BEING PREFERRED BY BOTH TYPES OF STAKEHOLDERS. POLB WILL DREDGE IR-SITE 7 IN COMING MONTHS AND THERE WILL BE MUCH FOLLOW UP MONITORING TO SHOW REMAINING SURFACE SEDIMENT CONCENTRATIONS. POLA INDICATED THEY WERE PLANNING TO DREDGE SOME PARTS OF CABRILLO MARINA TO MAINTAIN NAVIGABLE DEPTH, THERE WILL BE FOLLOW UP MONITORING.

QUESTION REGARDING ALLOCATIONS FOR EXISTING BED SEDIMENTS.... WILL THE COMPLIANCE INCLUDE SOME ASPECT OF BIOLOGICAL INFORMATION (SEDIMENT TOXICITY AS WELL AS BENTHIC COMMUNITY AND NOT BE SOLELY BASED ON CHEMISTRY?)

QUESTIONS REGARDING THE QUANTIFICATION OF PAHS FROM IN WATER AND HARBOR/PORT ACTIVITIES SOURCES; THAT IS, DO WE HAVE ANY ESTIMATES OF DIESEL EMISSIONS FROM BOATS, SHIPS, TRAINS AND TRUCKS FOR SOURCE ANALYSIS

ADDITIONAL DISCUSSION REGARDING MODELING OF 'DIRECT DEPOSITION' WHICH REFERS TO AIR DEPOSITION OF POLLUTANTS FROM THE SKY DIRECTLY ONTO THE WATER SURFACE (not indirect air deposition which falls on land/soils and then transferred via runoff into the surface waters). PK CLARIFIED THAT WE WILL ESTIMATE OF SURFACE AREA OF WATERBODIES AND UTILIZE THE AIR MONITORING DATA THAT SCCWRP (2006) COLLECTED IN LOCAL AREA TO QUANTIFY THE LOAD ALLOCATION OF DIRECT DEPOSITION.

**POLB – will coordinate with air colleagues to learn more about available data for estimating diesel emissions from sources...however may or may not be feasible to yield approximations from these emission sources to deposition onto the surface waters; i.e., uncertainty about fate and transport due to weather conditions. POLB will reply.

Loading Capacity = numeric interpretation of SQO – Direct effects (i.e.; 12 or so chemicals¹)
Federal regulations require TMDLs and allocations to be expressed in numeric values.
Interpretation of narrative SQO includes some language about biological effects such as sediment toxicity and benthic community as well as allowable pollutant loads (allocations).
Reach ERL levels in sediment chemistry and meet desired sediment toxicity and benthos values
 $TMDL = WLA + LA + MOS$
WLA = numeric values (ERLs) for 12 or so chemicals in sediment
LA = numeric values (ERLs) for 12 or so chemicals in sediment
MOS = TBD if necessary

Consider interpretation of SQOs as multiple lines of evidence (MLOE):
Sed toxicity and Benthic community and $Value_{chem}$

Chemistry value, starts out at ERL number, maybe modified once special study is completed indicating revised site specific sediment quality value (per chemical); presumes special study has been tested for sediment toxicity (survival and sub-lethal effects) as well as benthic community response index.

(goal here is to ID sediment chemistry value starting point (that is, ERL is numeric allocation) and then allow some flexibility if this chemical specific Value is revised based on study plans approved by LA RWQCB and by EPA under 303(c).

WLA apply to existing NPDES permittees, including:
Combined Stormwater – LA County, Caltrans, Ports, refineries; TITP – mass based allocations
Power generating stations; Indust & Construction; minor permits – conc based allocations

LAs apply to non-point sources; e.g., existing sediments, direct air deposition and possibly tidal sources; i.e., exchange between upstream and downstream waterbodies

Connection to Implementation Plan – Given the MLOE nature of the SQO narrative objective, the allocations aim to achieve the following specific goals:

- 1 Reduce sediment toxicity (both lethal and sub-lethal tests),
- 2 improve benthic organism communities (via mean index score),
- 3 minimize negative impact of sediment chemicals (e.g., clean up hot spots)
- 4 reduce pollutant loads.

¹ Cu, Pb, Hg, Zn, PAHs, Chlordane, Dieldrin, DDT, PCBs, TOC, % fines

Recognizing the existing impaired status within each waterbody, the intent of these TMDLs and allocations herein is to require improvements in each of these lines of evidence.

Whereas certain chemicals are identified in these TMDLs as pollutants of concern, future site specific studies may yield results that point to other toxicants as causative agents. The SQO – Direct Effects Policy provides for sediment stressor ID studies, which may be pursued as long as stakeholders/responsible parties are concurrently pursuing activities supporting the (four) goals defined above. Demonstrable improvement in these lines of evidence should be provided along with progress in stressor ID studies. We expect SQO implementation efforts to produce demonstrable improvement in these lines of evidence and achieve a milestone for each within specific timeframe. Progress solely in stressor ID studies is not an acceptable substitute; thus sediment quality improvements must be concurrent.

5.5 Bioaccumulative/Organochlorine cmpds. TMDLs in DomCh estuary and greater Harbor waters

1. Chlordane TMDLs apply to DomCh estuary, ConSlip, Inner, Outer and Fish Harbors, LAR estuary and eastern San Pedro Bay.
2. Dieldrin applies to DomCh estuary, ConSlip; Toxaphene applies to ConSlip only.
3. DDT and PCBs (total) apply to all estuarine and marine waters in greater Harbor area, including Cabrillo Beach Inner, LAR estuary and eastern San Pedro Bay.
4. Goal is to restore beneficial uses of sport and commercial fishing.
5. Mass-based WLAs for combined stormwater sources = MS4, Caltrans, (maybe further refined or individualized based on available information/data, maybe possible separate POLA & POLB MS4 allocations, not for individual tenants)
6. To extent feasible, individual WLAs for contributing PS will be identified; e.g., refineries, Terminal Island WWTP, Superfund site(s)
7. Conc-based WLAs for General Construction and General Industrial; stormwater discharges; e.g., minor, general and future minor NPDES
8. LAs will include direct deposition and existing bed sediments.
9. Linkage analysis shows fish tissue levels are linked to contaminated sediment levels thereby establishing a Biota-sediment accumulation factor (BSAF) to identify bulk sediment concentrations for dieldrin, chlordane, toxaphene and DDT TMDLs. .
10. PCBs TMDLs will require lower sediment levels (than ERLs = benthos) to attain human health protection from fish consumption, suggest sediment target = 3.6 ug/kg dry wt. total PCBs (Gobas and Arnot, 2010)
11. Reductions are anticipated for most organochlorine sediment levels.

PK REMINDED FOLKS THAT SEDIMENT ALLOCATIONS WILL BE INTENDED TO ACHIEVE FISH TISSUE TARGETS FOR THESE BIOACCUMULATIVE POLLUTANTS. AND LOWER PCBs SEDIMENT TARGET IS PRESENTED ABOVE. AGAIN PREFERENCE INDICATED BY STAKEHOLDERS FOR MASS-BASED ALLOCATIONS. DISCUSSION ON POSSIBLE USE OF 'ACTIVE SEDIMENT LAYER' (20 cm) TO DEFINE THE VOLUME OF POLLUTED SEDIMENTS. QUESTION REGARDING THIS POSSIBLE ACTIVE LAYER VS. SEDIMENT SURFACE LAYER (5 cm) WHICH IS REQUIRED IN MONITORING FOR SQOs.

SQOs does not intend to constrain or limit the sediment depth of applicability...yes 5 cm is described for monitoring in Direct Effects; however Indirect Effects may recognize organisms exist at lower depths.

Loading Capacity = numeric loads for bioaccumulatives²

Addressed via bioaccumulative sediment loads that will attain desired fish tissue levels
Utilize active sediment layer approach to quantify the volume and mass of allowable sediment bound loads; e.g., ~~WB volume x utilize~~ bioaccumulative sediment conc factor (BSAF) to determine desired sediment concentrations to attain specific fish tissue levels.

Use existing bioaccumulation spreadsheet model to capture foodweb, sediment concentrations and evaluate pollutant levels in specific fish tissues.

TMDL = WLA + LA + MOS

WLA = numeric values for bioaccumulatives in sediment (BSAF)

LA = numeric values for bioaccumulatives in sediment (BSAF)

MOS = TBD if necessary

Consider TMDL = waterbody area x active sediment layer x BSAF

BSAF defines sediment chemistry value for bioaccumulatives; presumably BSAFs for DDT and PCBs and Chlordane are lower than Value_{chem} for direct effects; more protective value applies.

Area times active layer yields total volume of contaminated sediment (not including sand and other large particles that are presumed to not adhere much pollutant). Active layer depth TBD. Adjust for % fines in existing sediments, see Ballona Creek Toxics TMDLs

~~5.6 Sediment Toxicity TMDLs in DomCh estuary and greater Harbor waters~~

~~5.7 Benthic community TMDLs in DomCh estuary; greater Harbor waters~~

Impaired SQOs – Direct Effects applies to: DomCh estuary, ConSlip, Inner, Fish, Outer Harbor, Cabrillo Marina, LAR estuary and eastern San Pedro Bay.

PK has reconfirmed assessment status based on SQO – Part I assessment guidelines; i.e., evaluating studies with complete sediment triad results (Bight 98, WEMAP 99, Bight 03, WEMAP 05) apparently there may be some results from Bight 08 available soon.

TMDLs need to address MLOE sediment triad goals not just sed. toxicity, nor just benthic community. See description above for SQO-Direct Effect TMDLs and allocations.

² DDT, PCBs, Chlordane, Dieldrin, toxaphene

Table 1. TMDL Allocation Categories

waterbody	Pollutant(s)	Wasteload Allocations									Load allocations			
		mass-based					conc				mass	conc		
		MS4 DomCh	CalTrans	MS4 nearshore	Refineries ¹	TITP	Other strmwtr ²	Power Stations	LAR discharges	SGR discharges	Minor Permits	Direct (air) Dep.	Existing Sediments	Open/Agric. Land
Dominguez Channel Freshwater	Metals (Cu, Pb, Zn) Toxicity (water)	•	•				•			•	•			
Torrance Lateral (freshwater)	Metals (Cu, Pb)	•	•		•		•			•	•	•		
Dominguez Channel Estuary (estuarine)	Impaired SQOs; Bioaccumulatives	•	•		•		•			•	•	•		○
Consolidated Slip (estuarine)	Impaired SQOs; Bioaccumulatives				•		○			○	•	•		○
Inner Harbor	Impaired SQOs; Bioaccumulatives				•		•			○	•	•	○	○
Outer Harbor	Impaired SQOs; Bioaccumulatives				•					○	•	•		○
San Pedro Bay	Impaired SQOs; Bioaccumulatives				•					○	•	○	○	○
LAR Estuary	Impaired SQOs; Bioaccumulatives				•				•	○	•	○	○	○
Fish Harbor	Impaired SQOs; Bioaccumulatives				•		○			○	•	•		○
Cabrillo Inner Beach	Bioaccumulatives				•		○			○	•	○	○	
Cabrillo Marina	PAHs (B[a]p) Bioaccumulatives				•		○			○	•	•	○	

Notes:

• = Known allocation

○ = Potential allocation; further source research

¹Refineries = must provide discharge flow data for mass-based allocations, otherwise conc.- based

²Other Stormwater = General Construction, General Industrial

³Tidal = source is tidal exchange between waterbodies

Impaired SQOs - Direct effects = sediment toxicity, benthic community and sediment chemistry

Bioaccumulatives = Organochlorine cmpds; e.g., DDT, PCBs, Chlordane, Dieldrin, Toxaphene

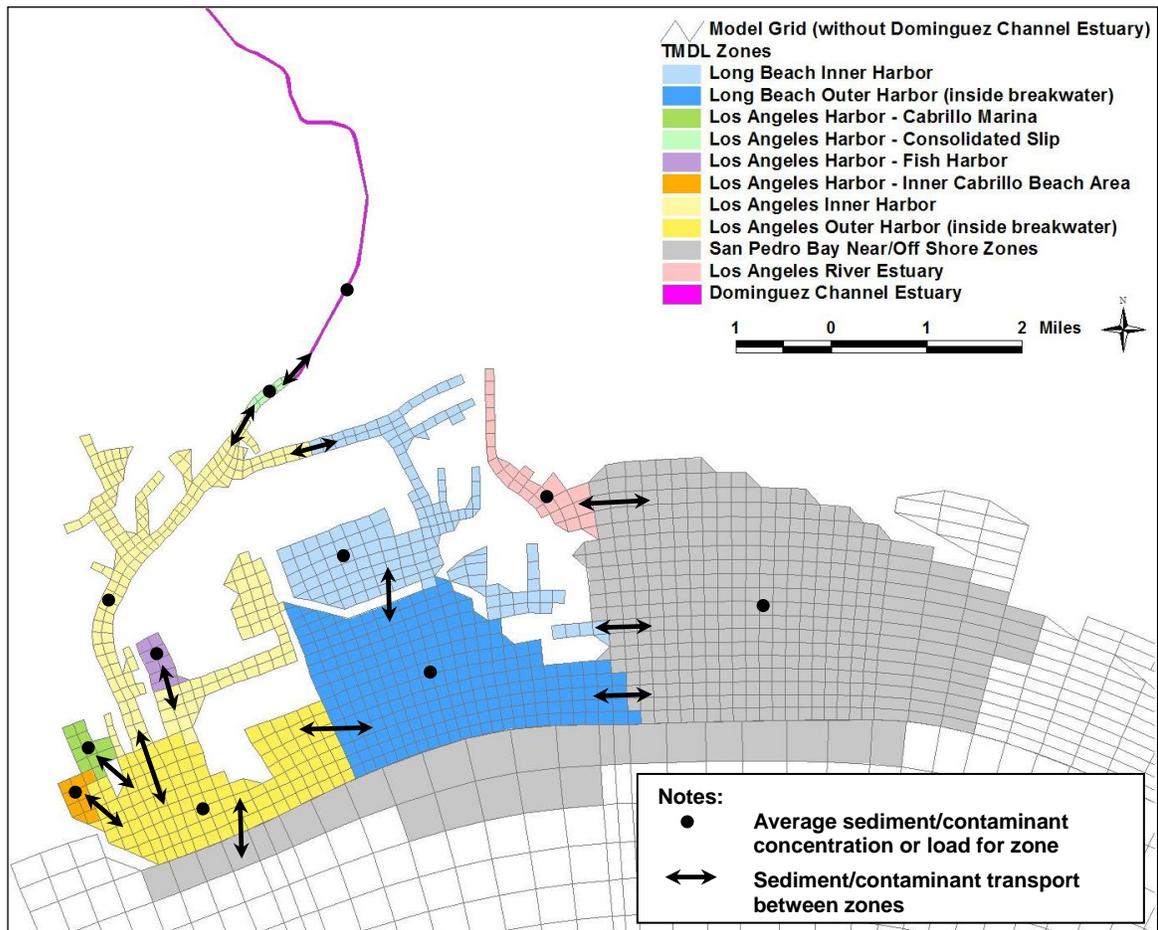


Figure 1. TMDL model zones

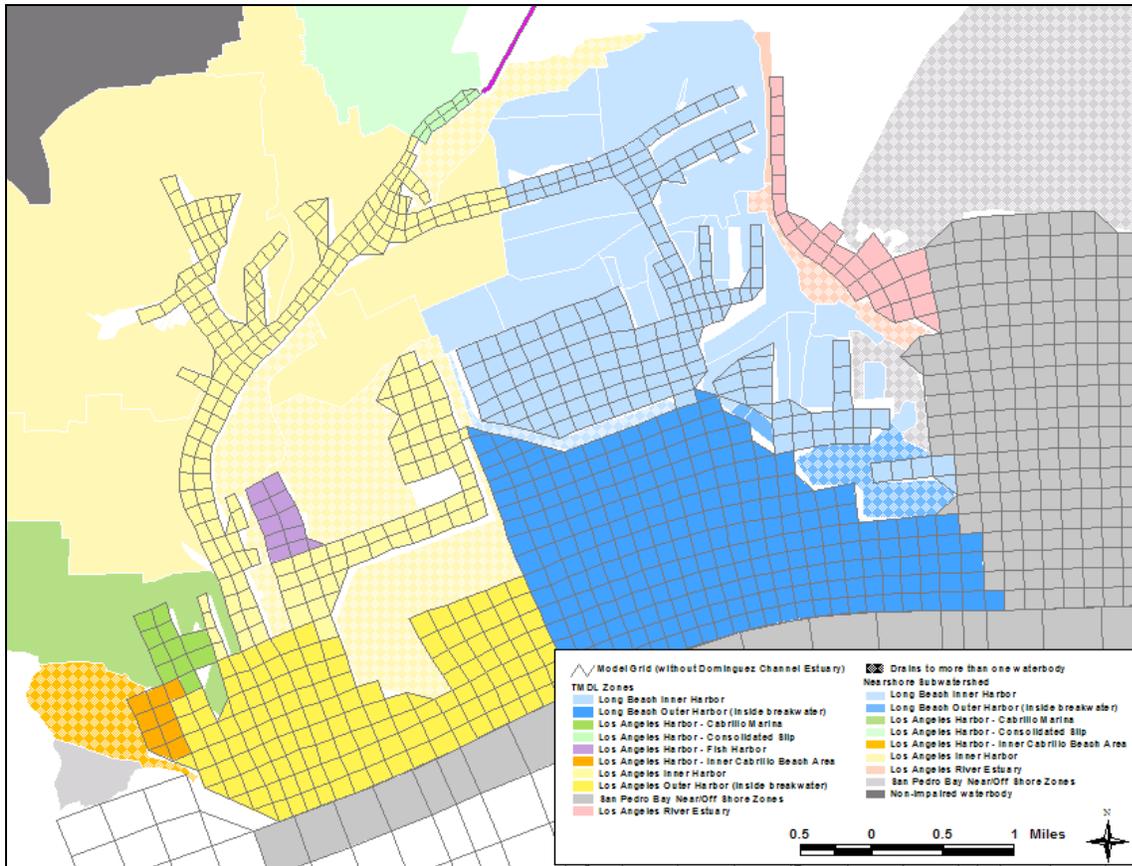


Figure 2. Nearshore subwatersheds associated with TMDL model zones