The Regional Watershed Spreadsheet Model (RWSM): A Tool for Estimating Regional Loads

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Presenting on work developed by:

The Small Tributaries Loading Strategy Workgroup

BASMAA * SFEI * SF Bay Water Board

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the top 10 Reasons to be **EXCITED** about the RWSM…

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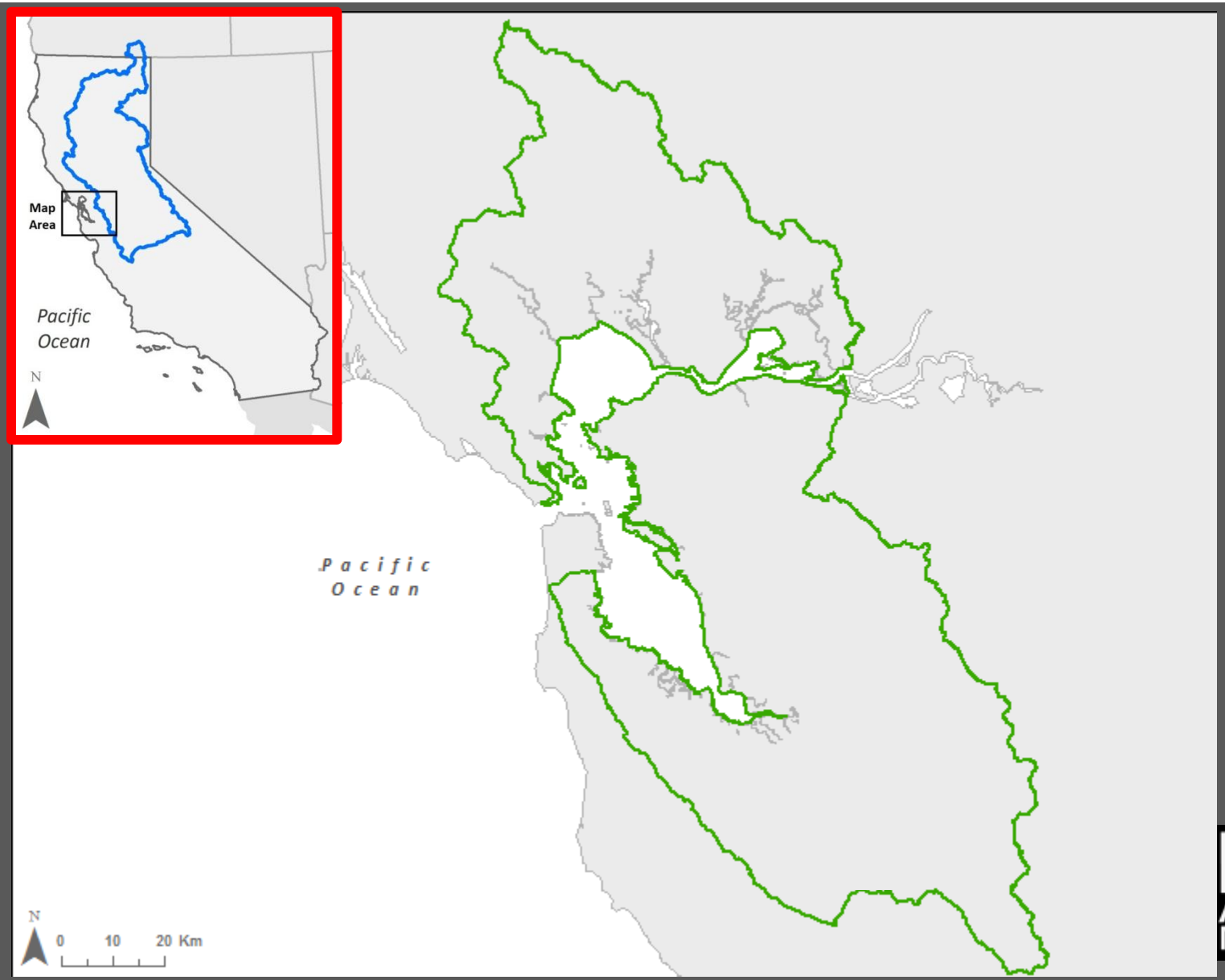
10. Improved Loads Estimates



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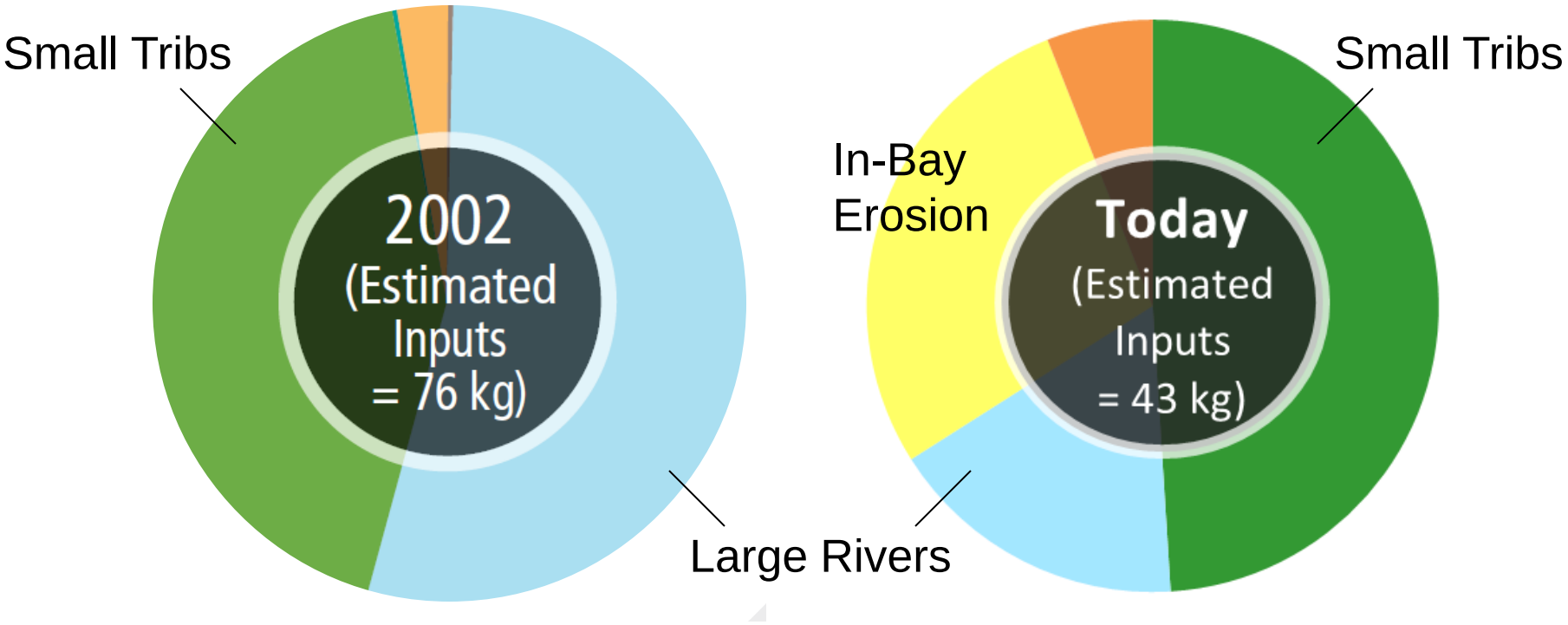
10. Improved Loads Estimates



PCBs Loads Estimates to the Bay

9. Simple to understand model

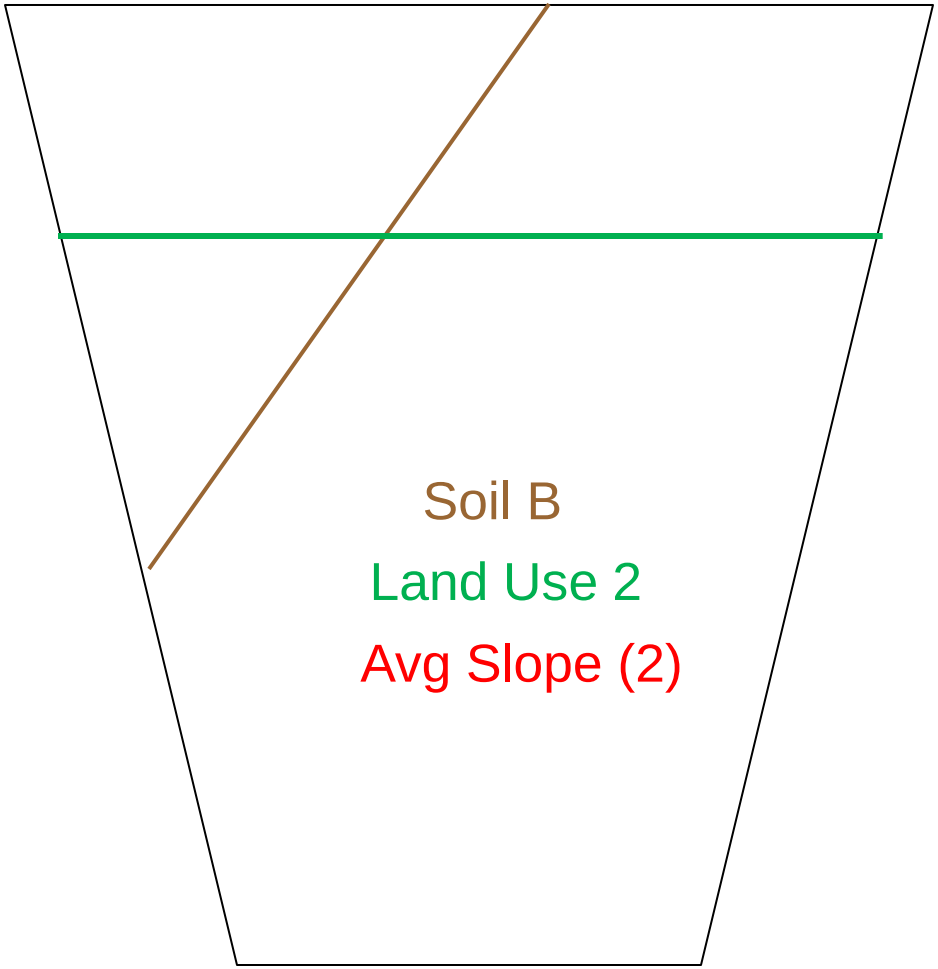
inputs:

watersheds

soils

land use

slope



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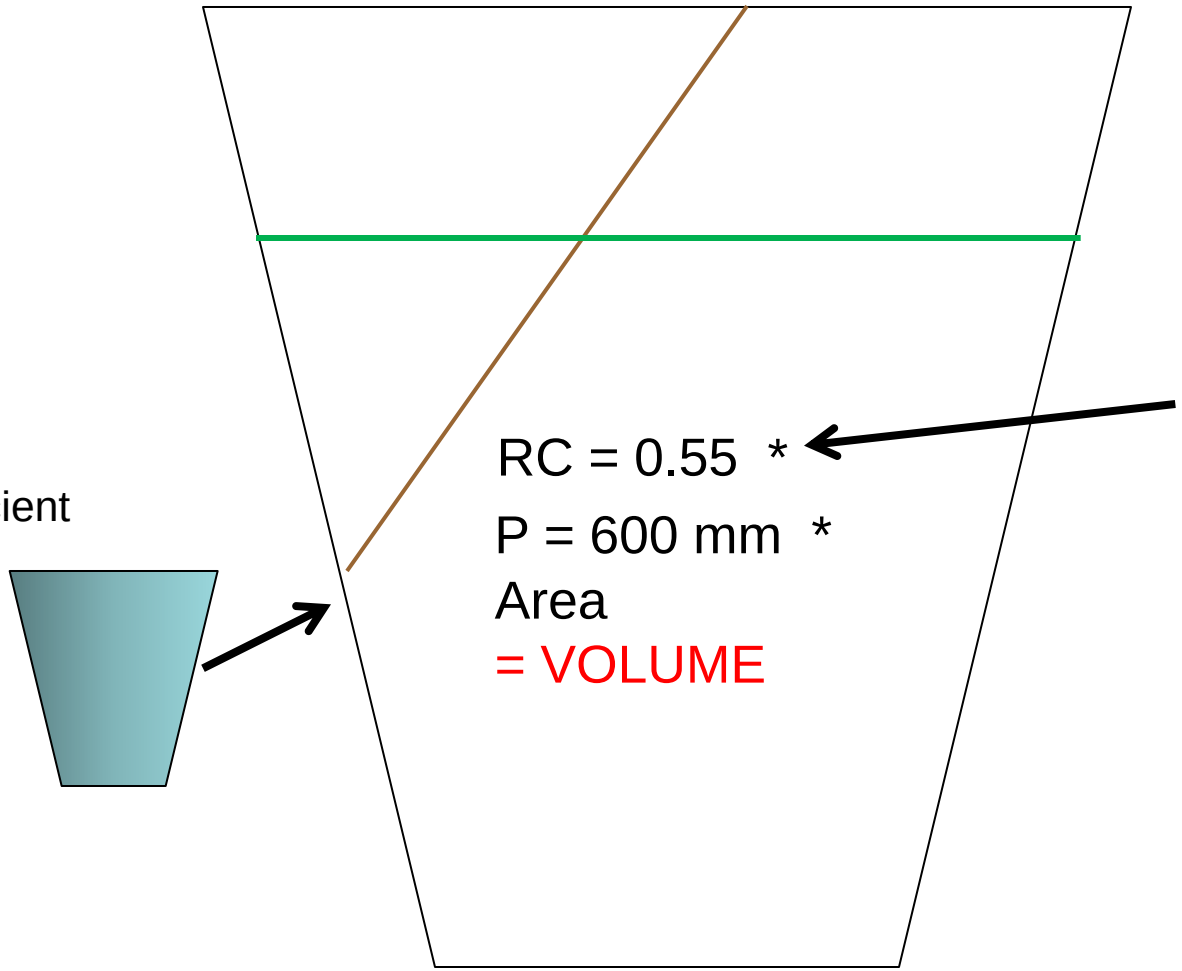
soils

land use

slope

runoff coefficient lookup table

precipitation



Soil + LU + Slope	Runoff Coeff
Soil A, LU2, Slp 2	0.50
Soil B, LU2, Slp 2	0.55
Soil B, LU3, Slp 1	0.59
Soil B, LU3, Slp 2	0.60

9. Simple to understand model

inputs:

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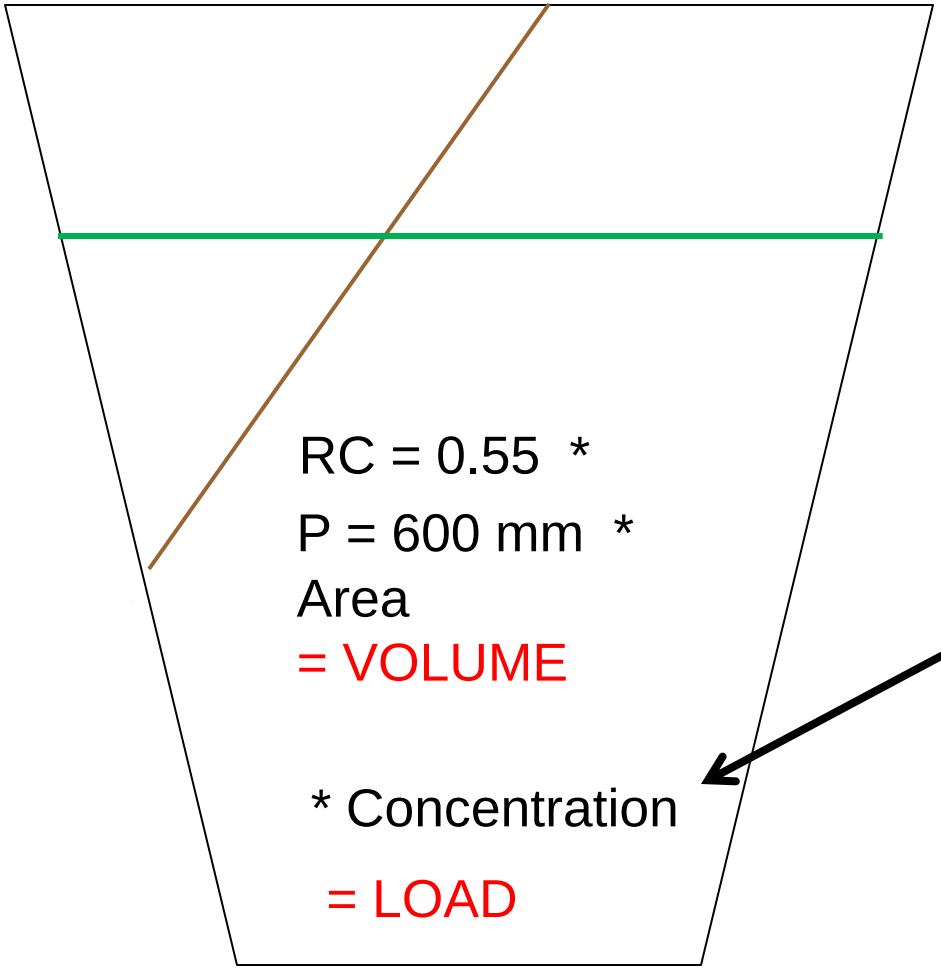
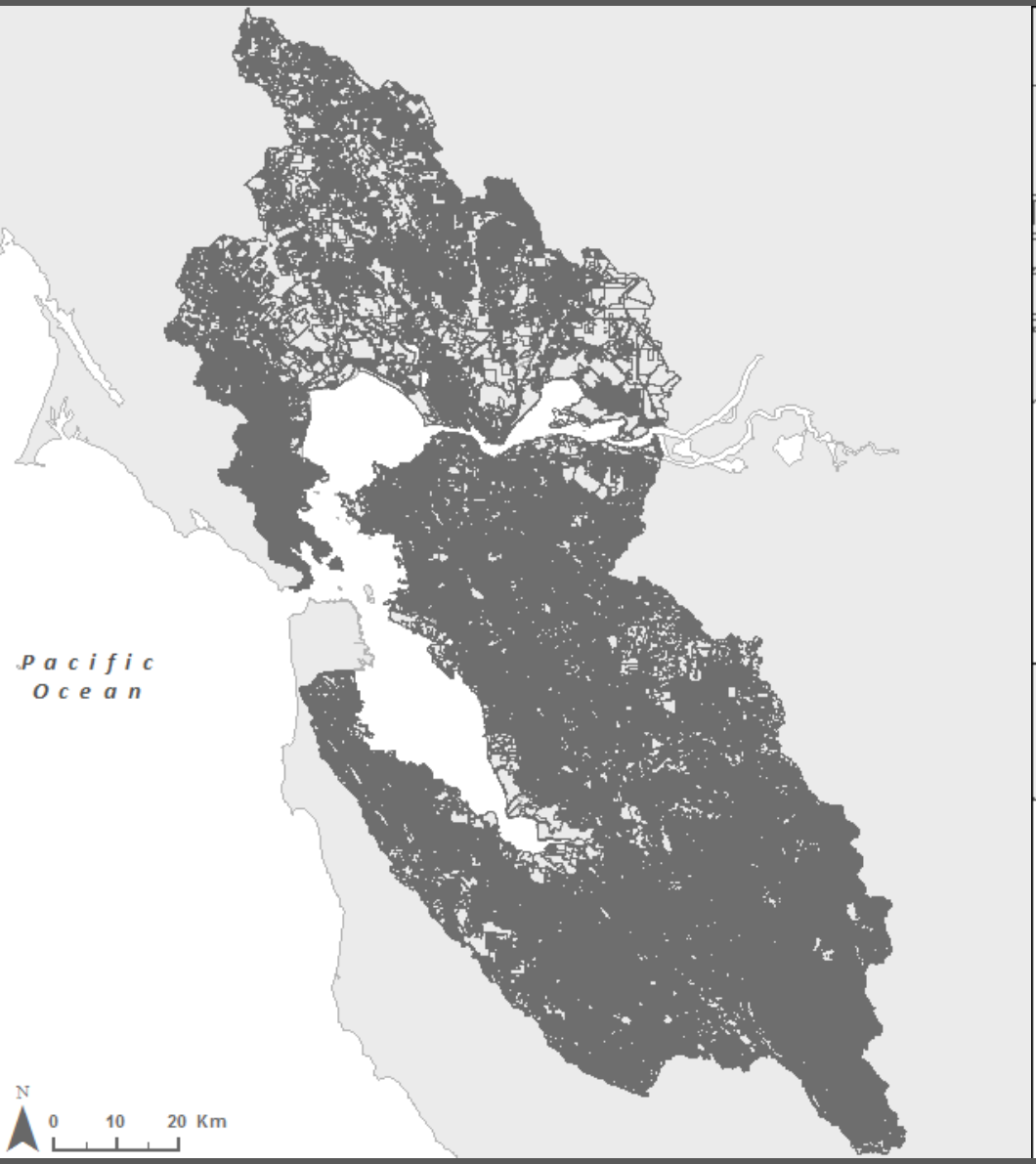


Land Use	Mean Conc
Open	9
Ag.	15
Resid.	30
Comm.	30
Indust.	50
Trans.	50

mean concentration lookup table



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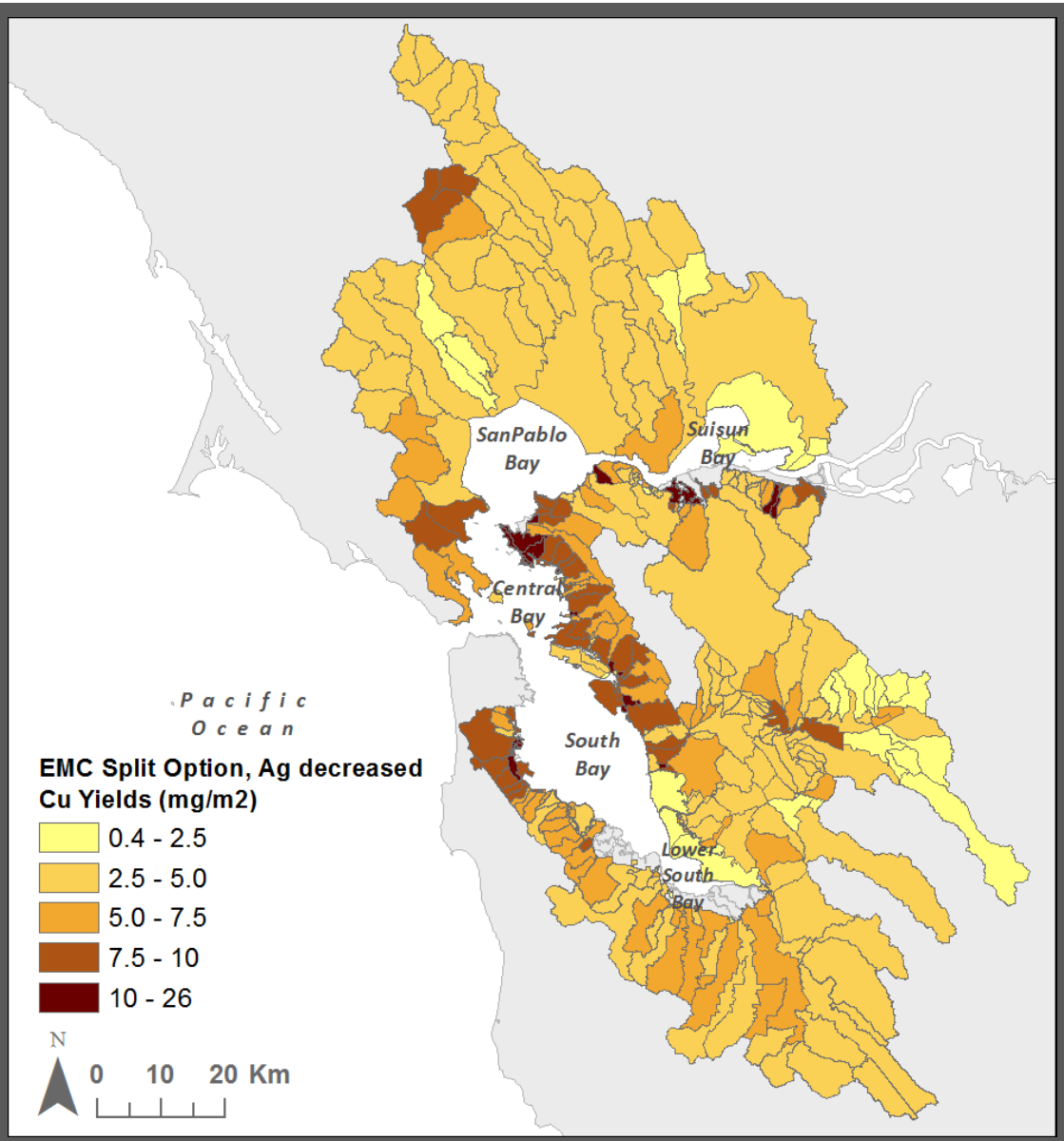
8. Additional Model Uses



Preliminary Cu Model Results of Watershed Yields

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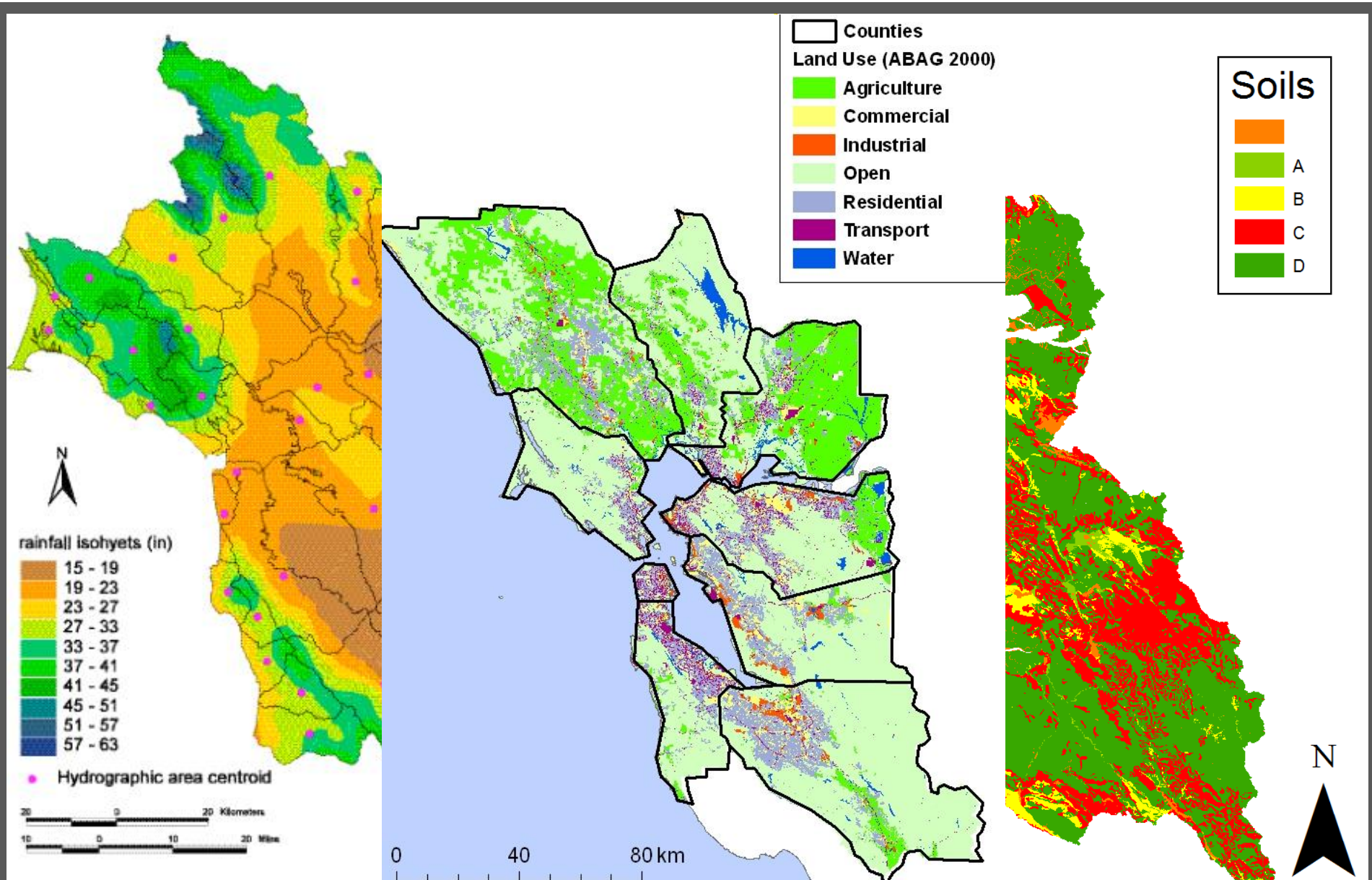
7. The RWSM follows a plan

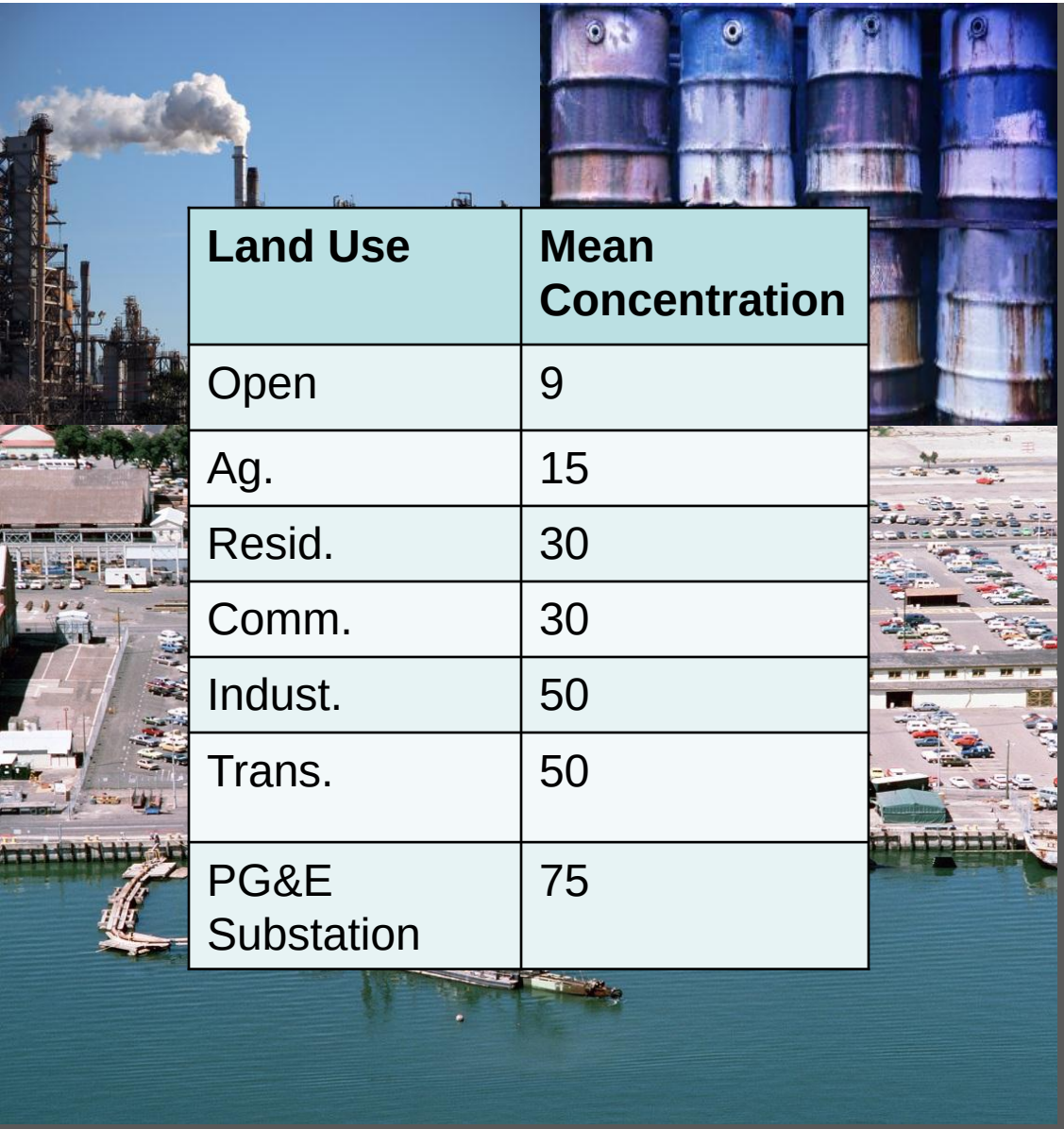
1) Develop fact sheet/methodology
2) Develop GIS layers
3) Collate input data and calibration data
4) Run Version 1 of the model
5) Improve model structure or input data
6) Run Version 2 of the model
7) Complete FINAL input dataset
8) Run Version 3 (FINAL) of the model
9) Complete model packaging and user manual

Hydrology
Sediment
Cu (Test Case)
Hg
PCBs
Selenium
Dioxins
OC Pest
PBDEs
Nutrients

6a. Spatial Data: Much already exists



6b. Spatial Data: Some is being created



Land Use	Mean Concentration
Open	9
Ag.	15
Resid.	30
Comm.	30
Indust.	50
Trans.	50
PG&E Substation	75

1) Electrical Transformers
2) Military Areas
3) Drum Recycling
4) Cement Production
5) Crematoria
6) Oil Refineries/petrochemicals
7) Metals manufacture
8) Rail Transport
9) Shipping Transport
10) Metals Recycling
11) Auto Recycling
12) Old Industrial Areas
13) Power Plants

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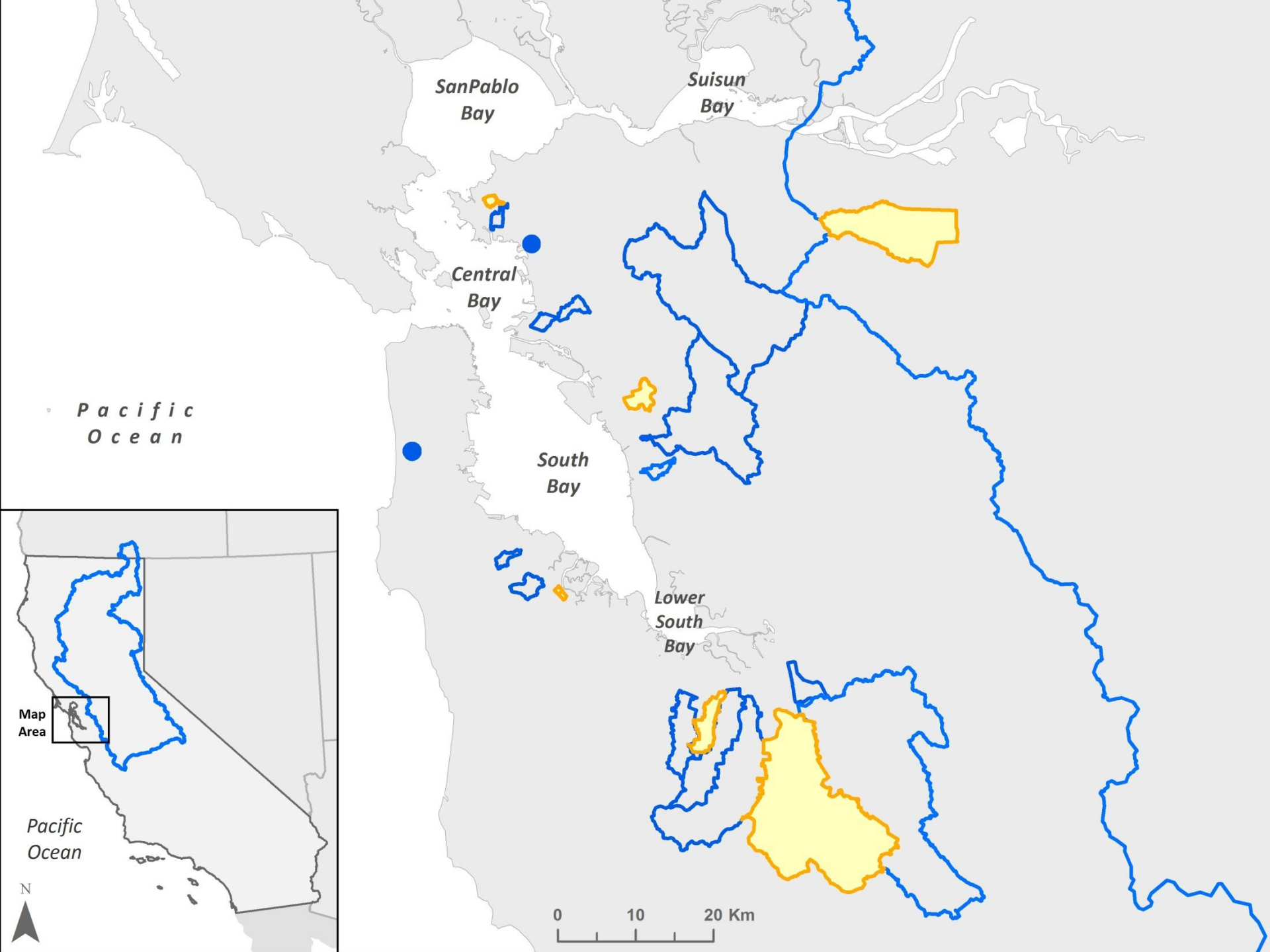
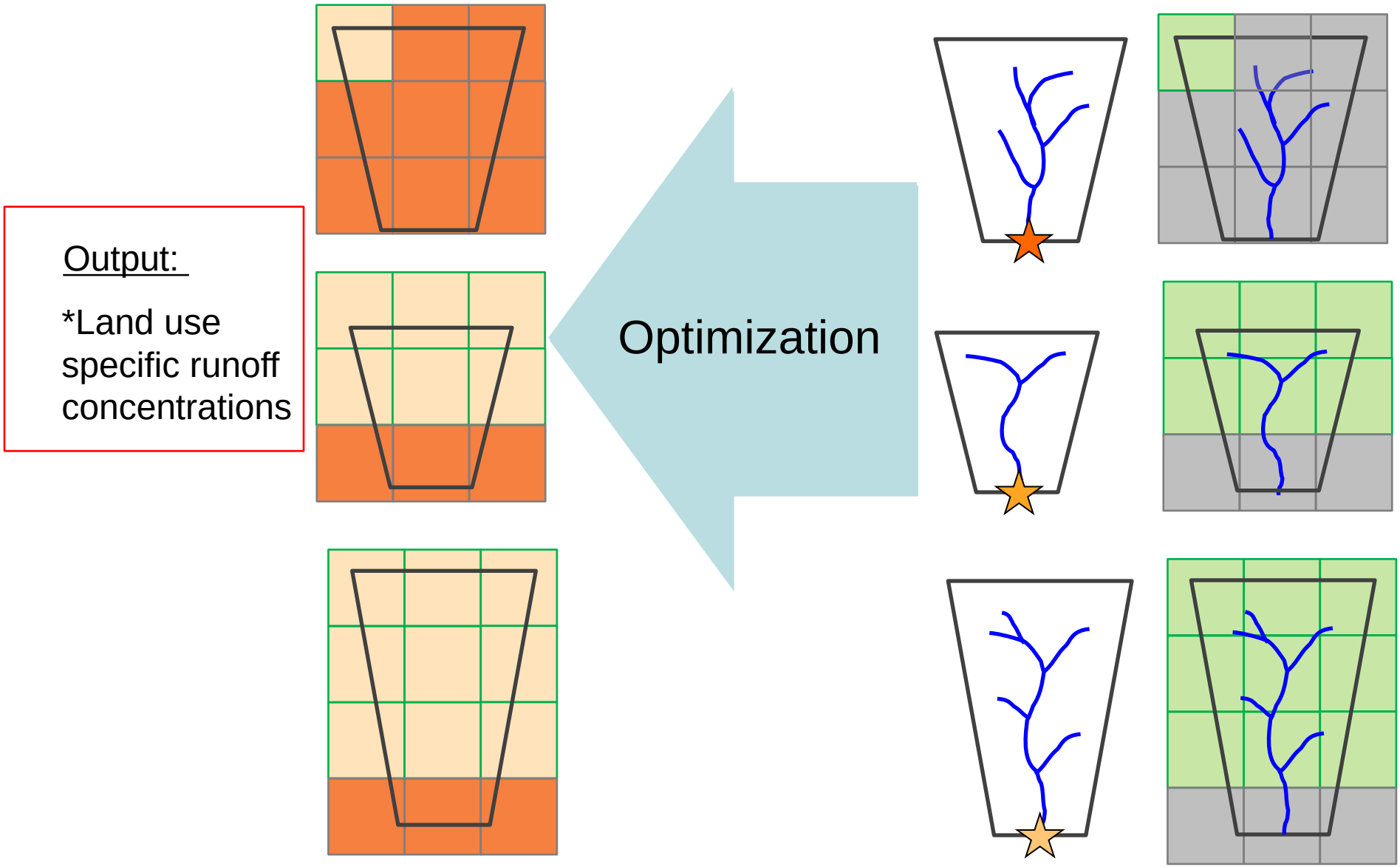

SanPablo Bay
Suisun Bay
Central Bay
South Bay
Lower South Bay
Pacific Ocean
Map Area
Pacific Ocean
N
0
10
20 Km

4. Cost-effective Approach



Hydrology

Workspace

C:

OPTION

HydResults.gdb (optional)

Watersheds (optional)

S:\Research\RMP\Small Tribs Loadings Studies\Spreadsheet Model\Hydrology Model\GIS\tc

Watershed Field (optional)

Land Use (optional)

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Land Use Field (optional)

l_use_code

Soils (optional)

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Soils Field (optional)

HydrolGrp

Slope (optional)

S:\SFEI\SFEI GIS\GIS Organization at SFEI\SDE connections\Direct Connections\BL_Elevat

Slope Bins

[0,2],[2,6]

Precipitation (optional)

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Land Use Lookup Table

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LU Code Field

l_use_code

LU Desc Field

l_use_desc

LU Bin Field

LULOOKUP

Runoff Lookup Table

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Runoff Coeff Field

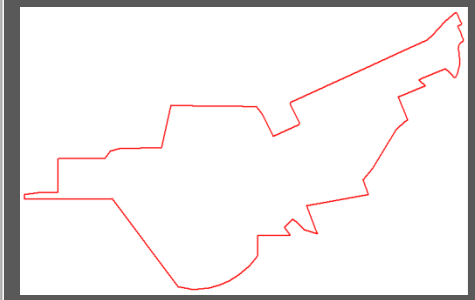
Run_Coeff

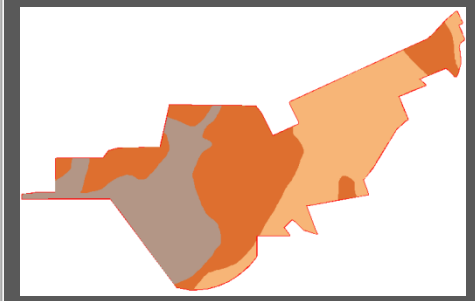
Runoff Code Field (optional)

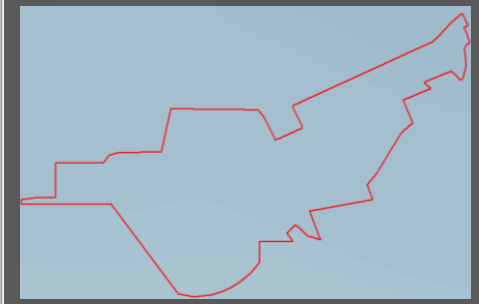
CODE

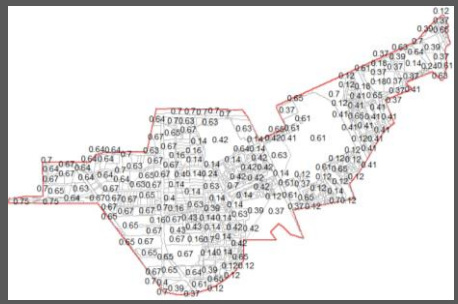
Make Tables

ce









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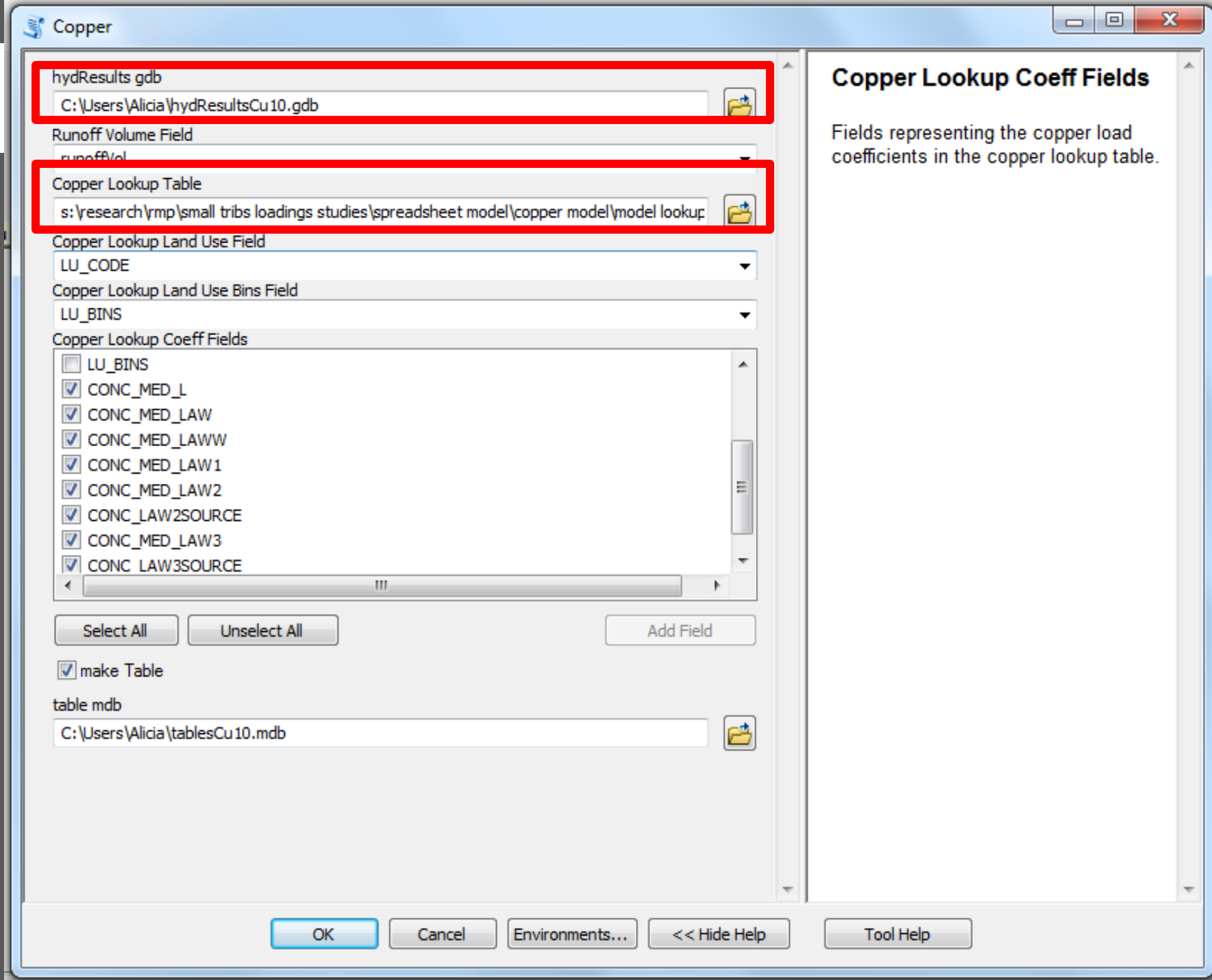
RWSM Summary Table Output

Watershed Name
Total Area
Total Runoff Volume
Average Slope
Average Precipitation
% Area in each soil category
% Area in each land use category


Copper
hydResults gdb
C:\Users\Alicia\hydResultsCu10.gdb
Runoff Volume Field
Copper Lookup Table
s:\research\rmp\small tribs loadings studies\spreadsheet model\copper model\model lookup
Copper Lookup Land Use Field
LU_CODE
Copper Lookup Land Use Bins Field
LU_BINS
Copper Lookup Coeff Fields
LU_BINS
CONC_MED_L
CONC_MED_LAW
CONC_MED_LAWW
CONC_MED_LAW1
CONC_MED_LAW2
CONC_LAW2SOURCE
CONC_MED_LAW3
CONC_LAW3SOURCE
Select All
Unselect All
Add Field
make Table
table mdb
C:\Users\Alicia\tablesCu10.mdb
Copper Lookup Coeff Fields
Fields representing the copper load coefficients in the copper lookup table.
OK
Cancel
Environments...
<< Hide Help
Tool Help

RWSM Summary Table Output

Watershed Name
Total Area
Total Runoff Volume
Average Slope
Average Precipitation
% Area in each soil category
% Area in each land use category

Total Contaminant Load

2. We’ve already completed some of this plan…

Step	Hydro	Sed	Cu	Hg	PCB	Se	Diox	PBDE	OC Pest
1									
2									
3									
4									
5									
6									
7									
8									
9									

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And the # 1 reason to be excited about the RWSM is….

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1. Compliance with the MRP

- C.11/12.g Monitor Stormwater Pollutant Loads and Loads Reduced




- C.8.g Reporting

= HAPPY BASMAA Reps
and Water Board Regulators

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