

Small Tributaries Loadings Strategy UPDATE

Alicia Gilbreath

Associate Environmental Scientist

Lester McKee

Watershed Science Program Manager

San Francisco Estuary Institute

Richmond California



SAN FRANCISCO ESTUARY INSTITUTE

4911 Central Avenue, Richmond, CA 94804

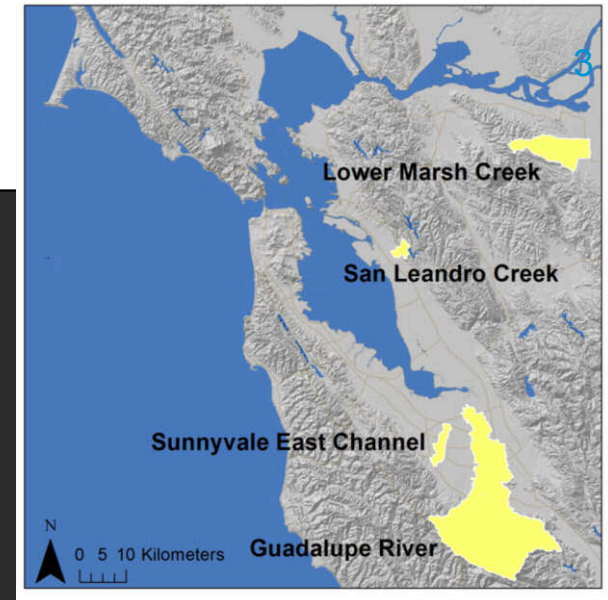
p: 510-746-7334 (SFEI), f: 510-746-7300, www.sfei.org

2012 Budget and Activities at a Glance

- **Total 2012 Budget - \$428,000**
 - **Pollutants of Concern (POC) Monitoring - \$328,000**
 - **Regional watershed spreadsheet model (RWSM) - \$20,000**
 - **Event Mean Concentration (EMC) Development - \$80,000**

2012 loads studies

- 4 watersheds
- 3 years
- 4 storms per year per watershed
- A 1st flush; a large storm, and 2 others
- Hybrid POC sampling approach
 - 6712 ISCO - composite and discrete sample collection
 - D95 - total mercury and total methylmercury
 - DH84 - total methylmercury wading stage
- Continuous turbidity and stage measurements
- Manual discharge measurements



Site Installation Success



2012 Precipitation

...outlook not so good

rank	season	jul-feb	final season total	% of normal
1	1850	3.56	7.42	33%
2	1919	5.81	10.46	46%
3	1975	6.17	7.95	35%
4	1863	6.21	10.08	45%
5	1911	6.3	14.06	62%
6	1990	6.71	14.08	62%
7	2011	7.17		
8	1897	7.32	9.38	42%
9	1898	7.77	16.87	75%
10	1976	8.13	11.06	49%

...except this week! (updated March 12)

Regional Watershed Spreadsheet Model

6

- **Objective**
 - Improve regional average annual estimates of suspended sediment and contaminant loads
- **Development of the Work Plan**
 - Consistent with the intent of the STLS
 - Developed with strong involvement from Arleen Feng and Chris Sommers (BASMAA), and Richard Looker (Water Board)
 - Complete synergy in fulfilling requirements in the MRP (sections C.8.e., C.8.f., C.14)

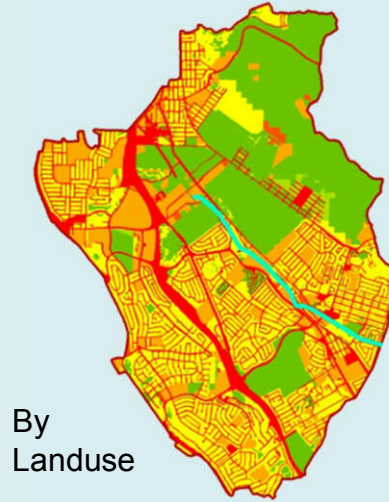
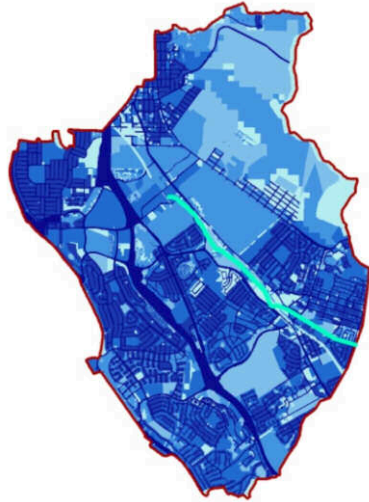
Annual Runoff Volume

x

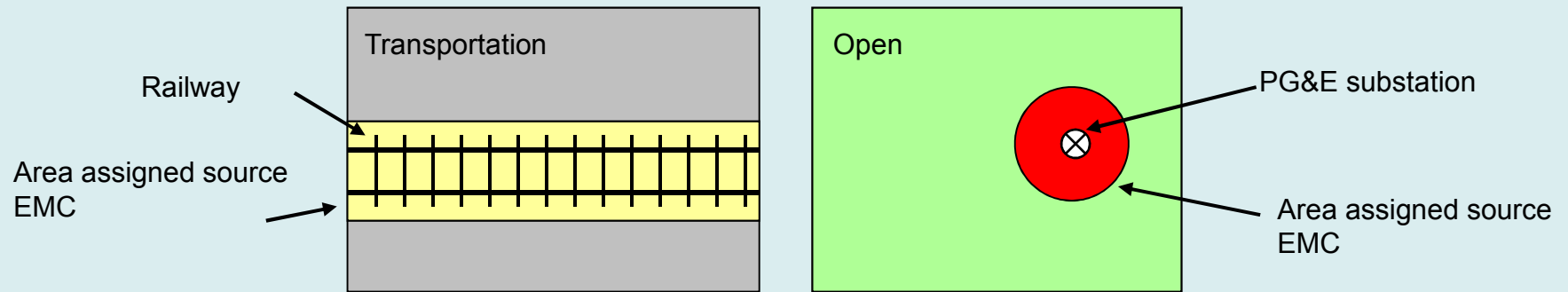
Concentration

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Annual Load



Source Area Concentrations



9 Step Process

1) Develop fact sheet/methodology

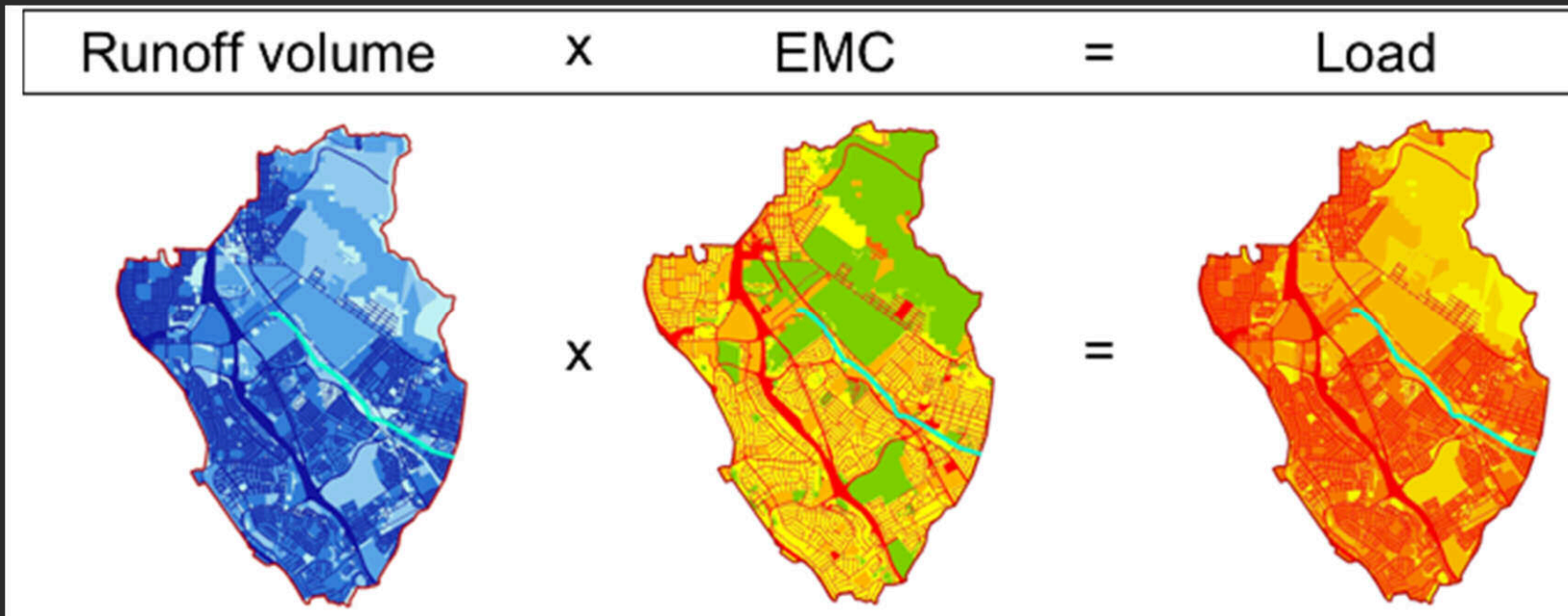
Progress to date

- 2010 - base hydrology model and initial contaminant models - Y1 report
- 2011 - improved hydrology model + model documentation

New model (ABAG 2005 with LU++)	Mean	Median	Minimum	Maximum
Uncalibrated	+1%	+9%	-95%	+60%
Calibrated	+1%	+3%	-75%	+70%

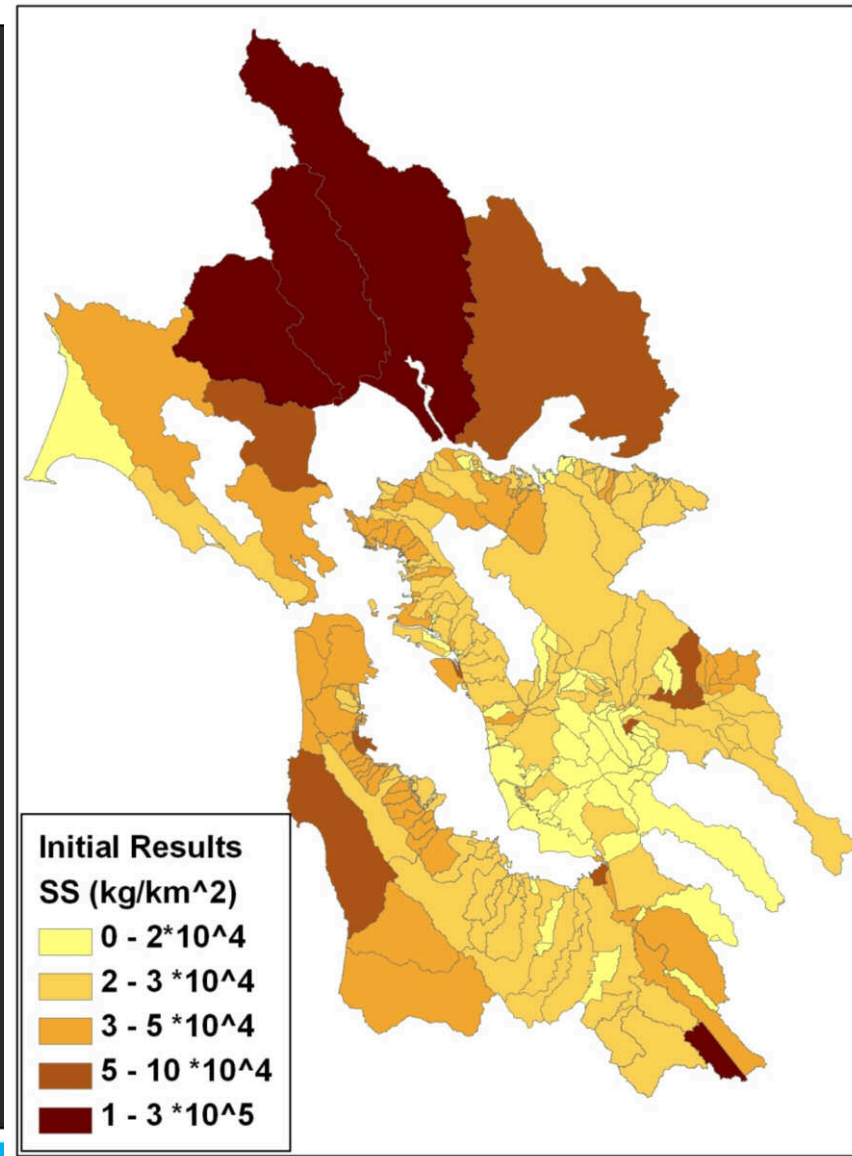
Test Case - Copper

- Steps: 2 - 4
- Funding Source: RMP base model funds



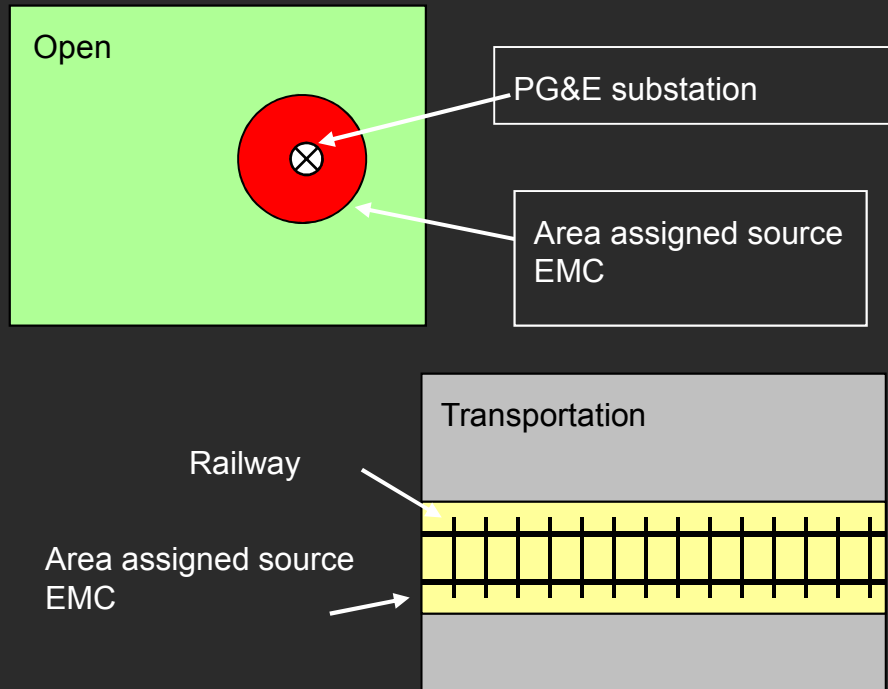
Updated Suspended Sediment Model

- Steps: 5 - 6
- Funding Source: BASMAA sediment funds via ACCWP contract



GIS layer development for Hg and PCBs

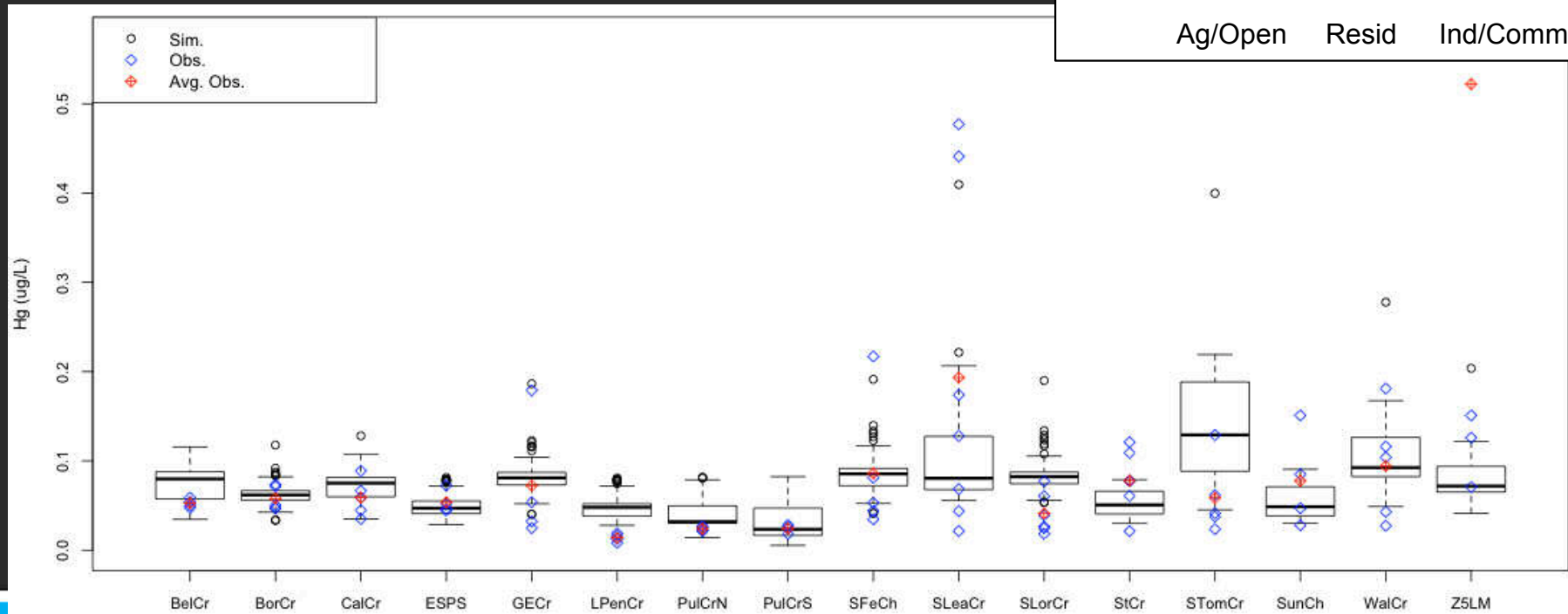
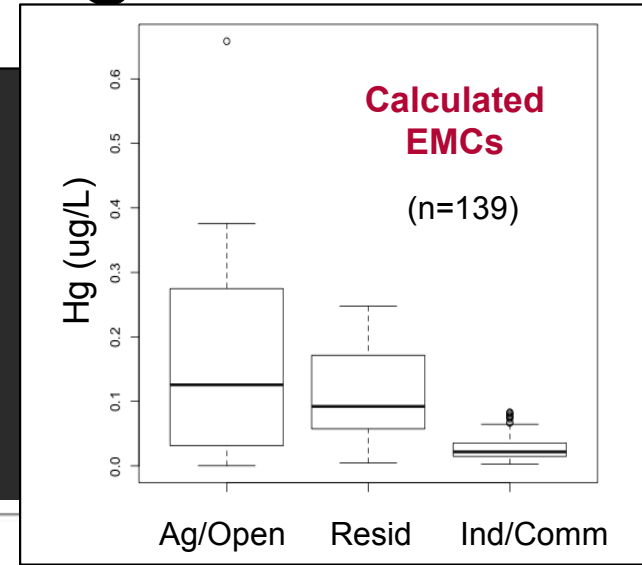
- Step: 2
- Funding Source: RMP EMC development funds



- 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

Back-calculations of PCB and Hg EMC data

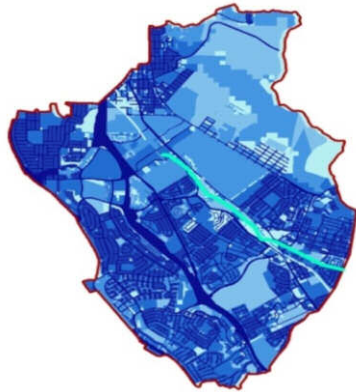
- Step: 5
- Funding Source: RMP EMC development funds



PCB and Hg RWSMs - Version 2

- Step: 6
- Funding Source: RMP base model & RMP EMC development funds

Runoff Volume by Area

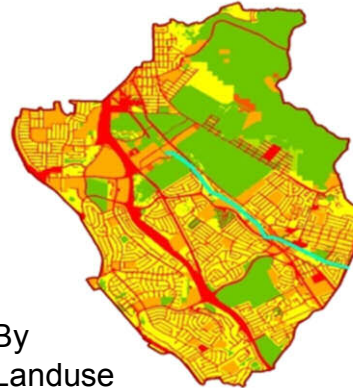


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SS Load by Area



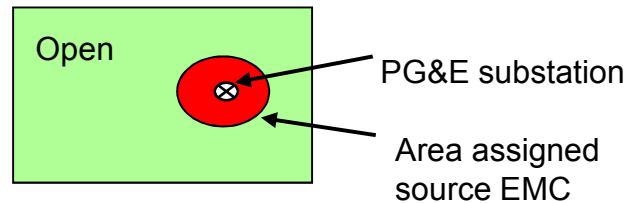
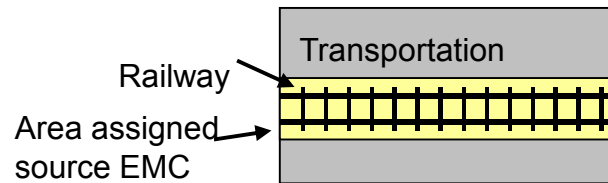
Back-calculated EMCs



By Landuse

and

Source Area Concentrations



= Load



PBDE and OC Pesticide contaminant profiles ¹⁵

- Step: 1
- Funding Source: BASMAA PBDE/OC Pest funds via ACCWP contract

Each profile includes review of:

- 1) Known sources
- 2) Regulatory databases on contaminated sites/spills
- 3) Concentrations in local and world soils literature
- 4) Concentrations in stormwater
- 5) Presently known GIS layers in relation to recommended land use/source area categories

Summary of RWSM Tasks & Budget

Task #	Description	RMP base model funds		BASMAA sediment funds via ACCWP contract	BASMAA PBDE/OC pest funds via ACCWP contract	RMP EMC development funds		BASMAA POC Monitoring via ACCWP contract	Estimated Completion Date
		2012	2013	2012	2012	2012	2013	2012	
Cu-2, 3, 4	Test Case (Cu)	\$9,700				\$2,500			March-July 2012
SS-5, 6	Updated version of the suspended sediment RWSM			\$32,250					April-November 2012
PCB-2 Hg-2	GIS layer development for PCBs and Hg					\$25,850			March-July 2012
PCB-5 Hg-5	Back-calculations of PCB and Hg EMC data					\$19,500			July-September 2012
PCB-6 Hg-6	PCB and Hg Regional Watershed Spreadsheet models (RWSMs):	\$10,300	\$20,000			\$12,700			March-July 2013
PBDE-1 OCpest-1	Contaminant profiles and model workplan recommendations for PBDEs, DDT, chlordane, and dieldrin				\$35,000				OC Pest March-September 2012; PBDE September-December 2012
Mgmt-0	STLSEMC spreadsheet model communication and coordination:					\$17,200		\$6,800	Ongoing
	Total Cost	\$20,000	\$20,000	\$32,250	\$35,000	\$77,750		\$6,800	
	Funds Available	\$20,000	\$20,000	?	?	\$80,000	\$80,000	\$6,800	