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## **APPENDIX B**

**Additional Potential Cancer Risk Isopleths and Data Summaries for Port Operations (Part I), UP Oakland Railyard (Part II), and Non-Port Activity (Part III)**

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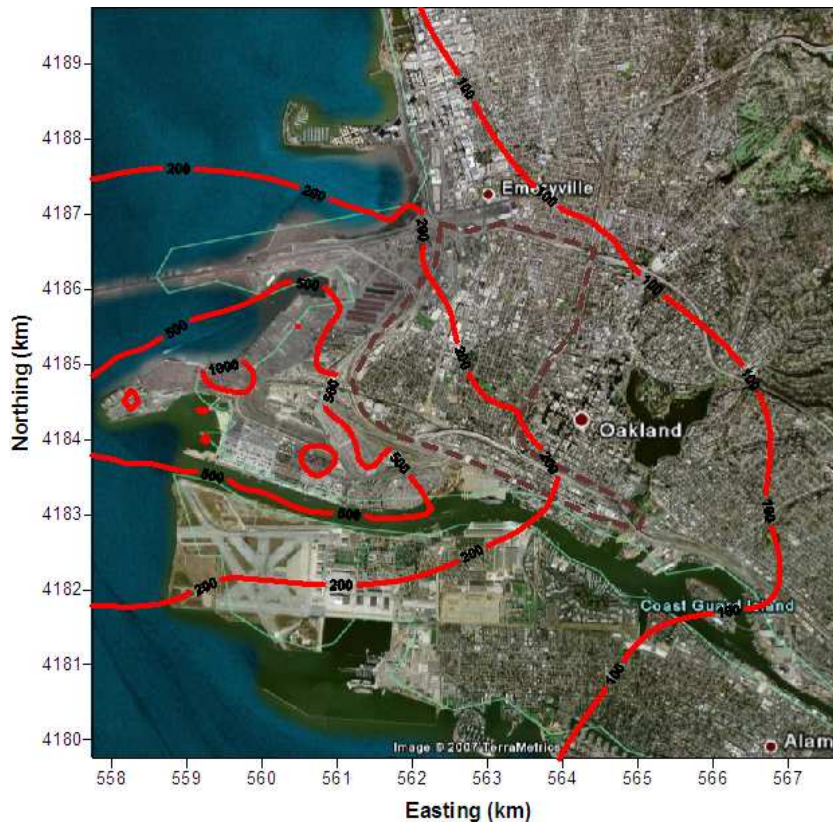
This appendix provides additional potential cancer risk isopleths and associated summary tables by part (Part I, II, & III) and by source category for the West Oakland community. Also provided, are additional isopleths and summary tables for the Part I (Port) source category impacts on the regional domain. As stated in the main report, the West Oakland community is bounded by the Port of Oakland, UP rail yard, and the I580, I880, and I-980 freeways. The community is approximately about 1,800 acres (or about 3 squared miles) and about 22,000 people reside in the community. The regional domain (100 km x 100 km) covers an effective land area (excluding the Port property and the over water region) of about 6,500 square kilometers. The population within the modeling domain is about 5 million based on the U.S. Census Bureau's year 2000 census data. The risk numbers, impacted areas, and affected population presented below are based on the effective land area within the modeling domain; that is, the risk, the area, and the number of population within the port property and over the ocean/lake/water surfaces are excluded from this analysis. Note that if the modeling domain expands, the risks, impacted areas, and affected population presented in this analysis would be changed.

### **A. West Oakland Community Potential Cancer Risks from Port Operations (Part I)**

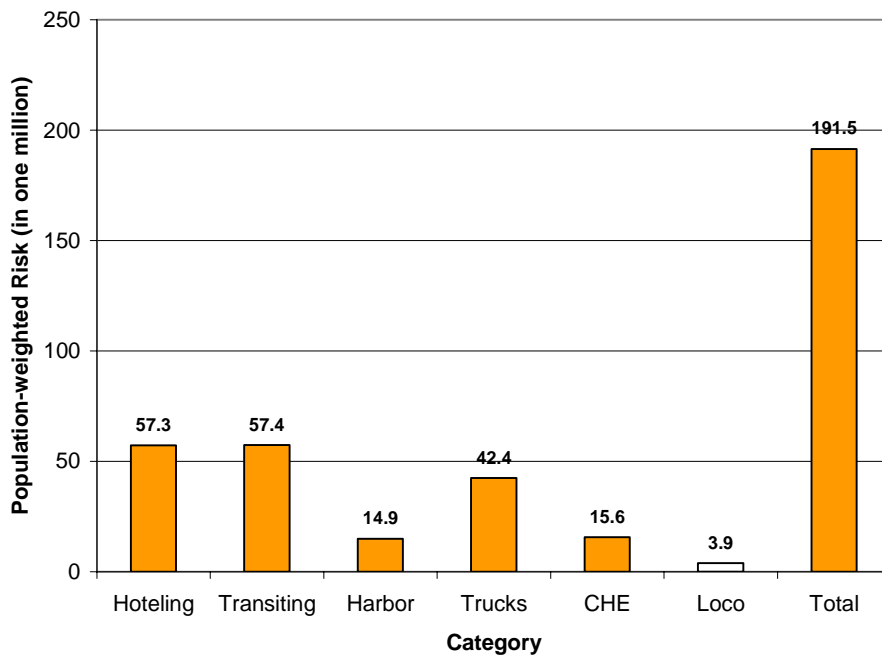
In this section, we provide the potential cancer risk isopleths and summary tables for the Port-related impacts on the West Oakland community. The following is a summary, in order of presentation, of the information included in this section:

- Isopleths showing the potential cancer risks resulting in the West Oakland community from exposures to Port diesel PM emissions – all activities and sources. (Figure B-1)
- A bar chart that shows the population-weighted potential cancer risks by category from Port operations. (Figure B-2)
- Summary tables that present the impacted area and affected population in the West Oakland community by different risk levels for each category. (Tables B-1 and B-2)
- Isopleths showing the potential cancer risks resulting in the West Oakland community due to exposures to the diesel PM emissions from the different Port (Part I) source categories (Figure B-3 to B-8)

**Figure B-1: Estimated West Oakland Community Potential Cancer Risk Due to All Port (Part I) Diesel PM Emissions Sources (2005)**



**Figure B-2: Population-weighted Potential Cancer Risks in the West Oakland Community by Category for Port (Part I) Activities (2005)**





**Table B-1: Impacted Area (Acres) in West Oakland Community by Potential Cancer Risk Levels and by Category from Port (Part I) Activities**

Risk Level	OGV	HOTEL	HARBOR	TRUCK	LOCO	CHE	COMBINED
Risk > 1000	0	0	0	0	0	0	0
Risk > 500	0	0	0	0	0	0	0
Risk > 200	0	0	0	0	0	0	770
Risk > 100	0	0	0	30	0	0	1,800
Risk > 10	1,800	1,800	1,700	1,800	140	1,600	1,800

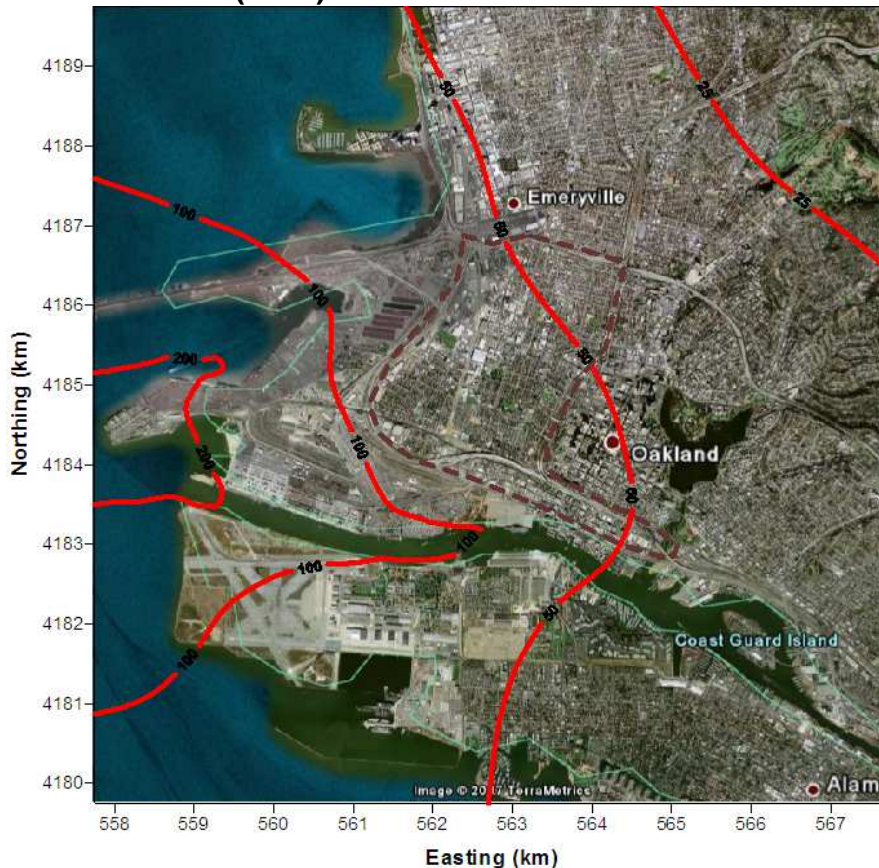
Note: OGV = transiting + maneuvering; total area for West Oakland community = 1,800 acres.

**Table B-2: Affected Population in West Oakland Community by Potential Cancer Risk Levels and by Category from Port (Part-I) Activities**

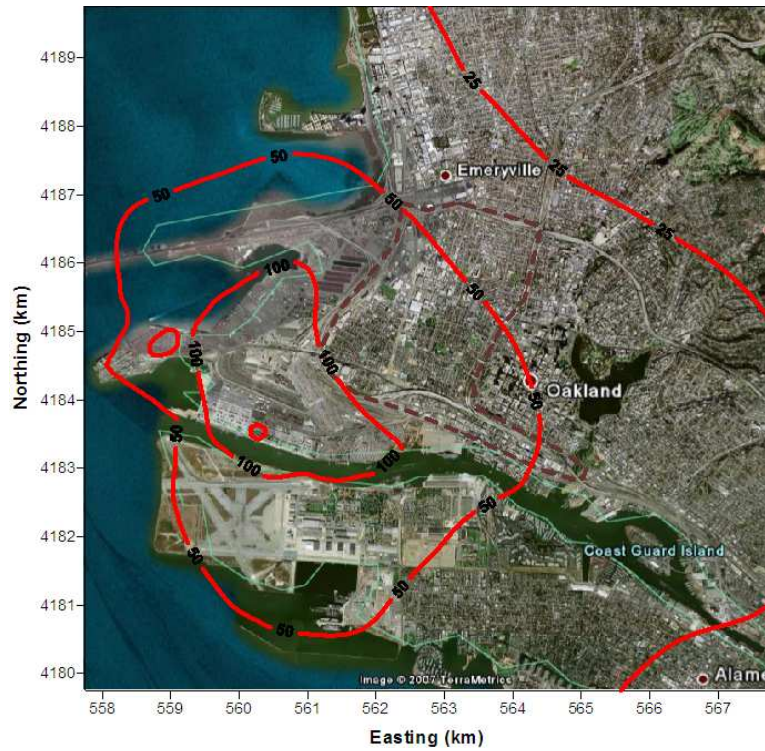
Risk Level	OGV	HOTEL	HARBOR	TRUCK	LOCO	CHE	COMBINED
Risk > 1000	0	0	0	0	0	0	0
Risk > 500	0	0	0	0	0	0	0
Risk > 200	0	0	0	0	0	0	7,000
Risk > 100	0	0	0	20	0	0	22,200
Risk > 10	22,200	22,200	19,600	22,200	1,500	18,000	22,200

Note: OGV = transiting + maneuvering; total population for West Oakland community = 22,200

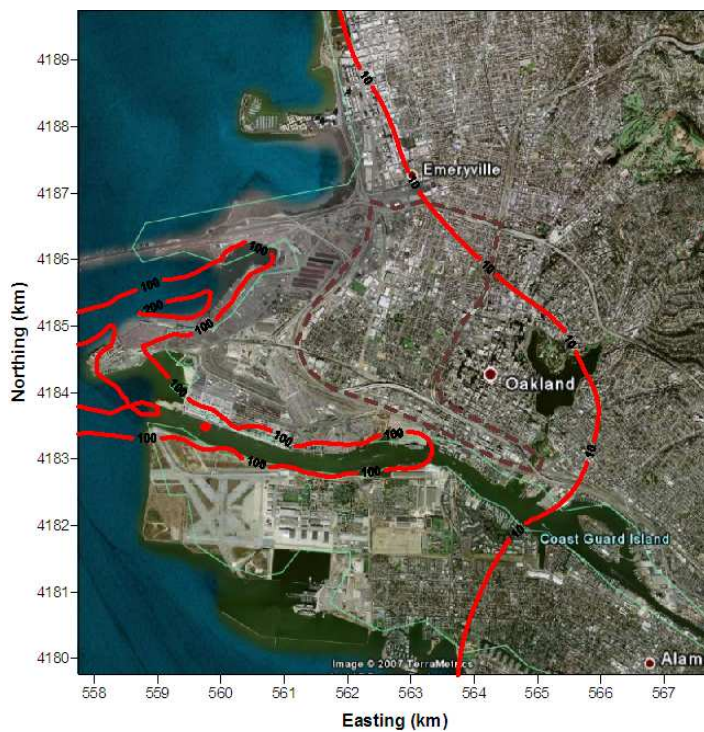
**Figure B-3: Estimated West Oakland Community Potential Cancer Risk Due to Port (Part I) OGV Transiting, Anchorage, and Maneuvering Diesel PM Emissions (2005)**



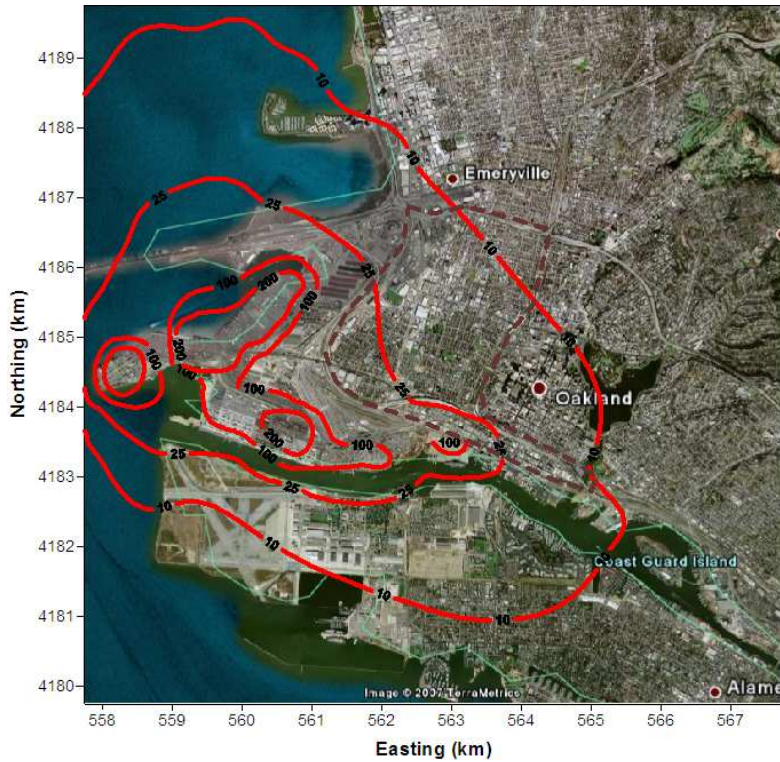
**Figure B-4: Estimated West Oakland Community Potential Cancer Risk Due to Port (Part I) OGV Hotelling Diesel PM Emissions (2005)**



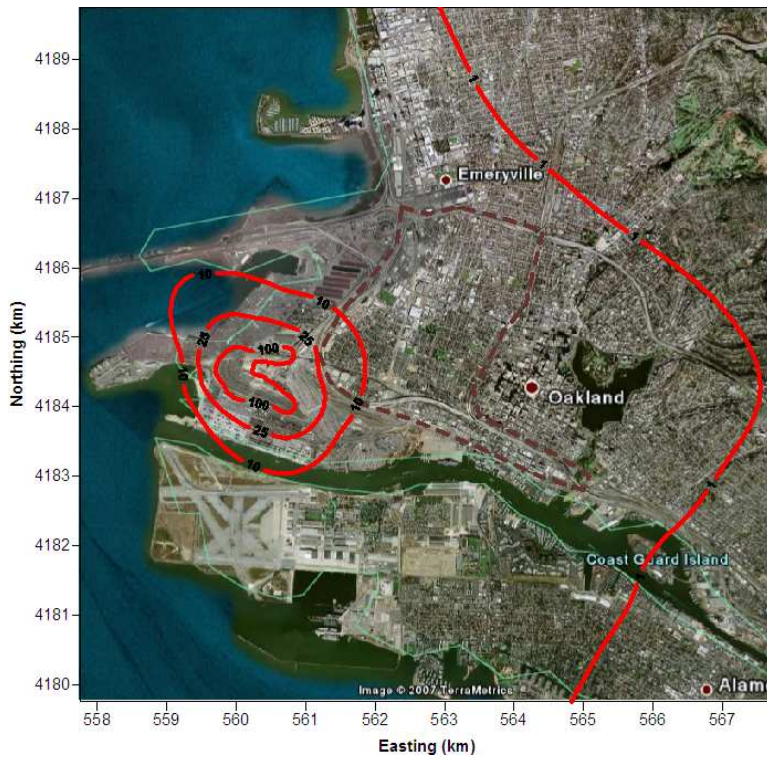
**Figure B-5: Estimated West Oakland Community Potential Cancer Risk Due to Port (Part I) Harbor Craft Diesel PM Emissions (2005)**



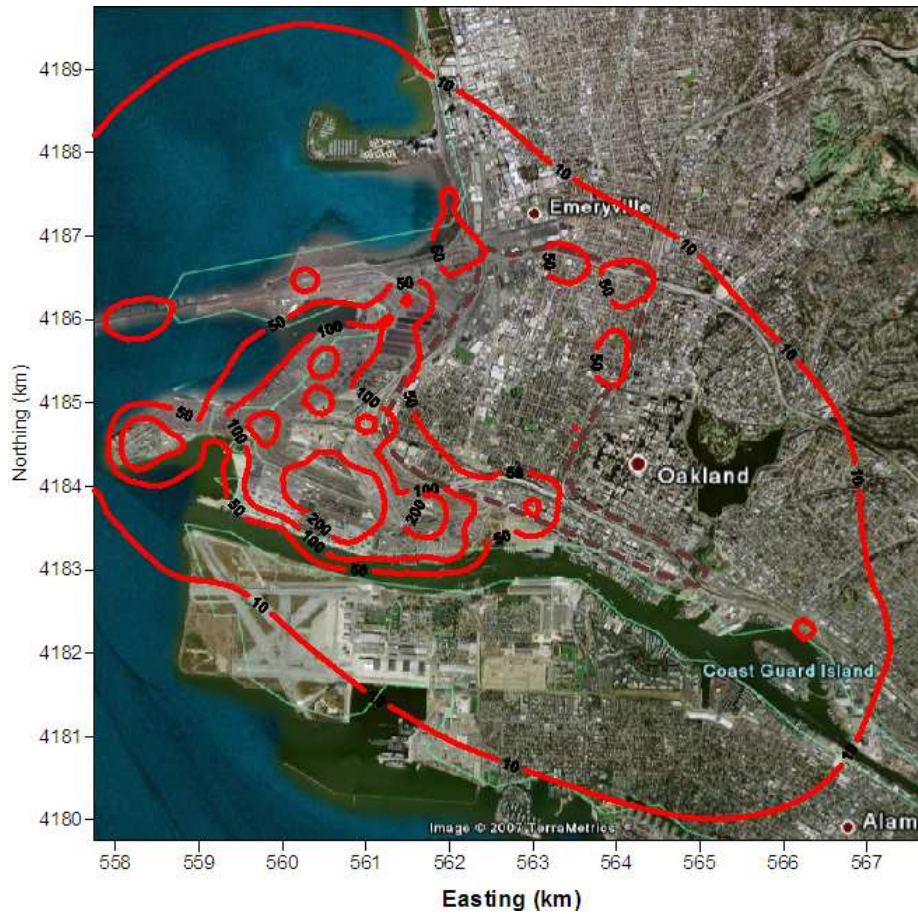
**Figure B-6: Estimated West Oakland Community Potential Cancer Risk Due to Port (Part I) Cargo Handling Equipment Diesel PM Emissions (2005)**



**Figure B-7: Estimated West Oakland Community Potential Cancer Risk Due to Port (Part I) Locomotive Diesel PM Emissions (2005)**



**Figure B-8: Estimated West Oakland Community Potential Cancer Risk Due to Port (Part I) Drayage Truck Diesel PM Emissions (2005)**

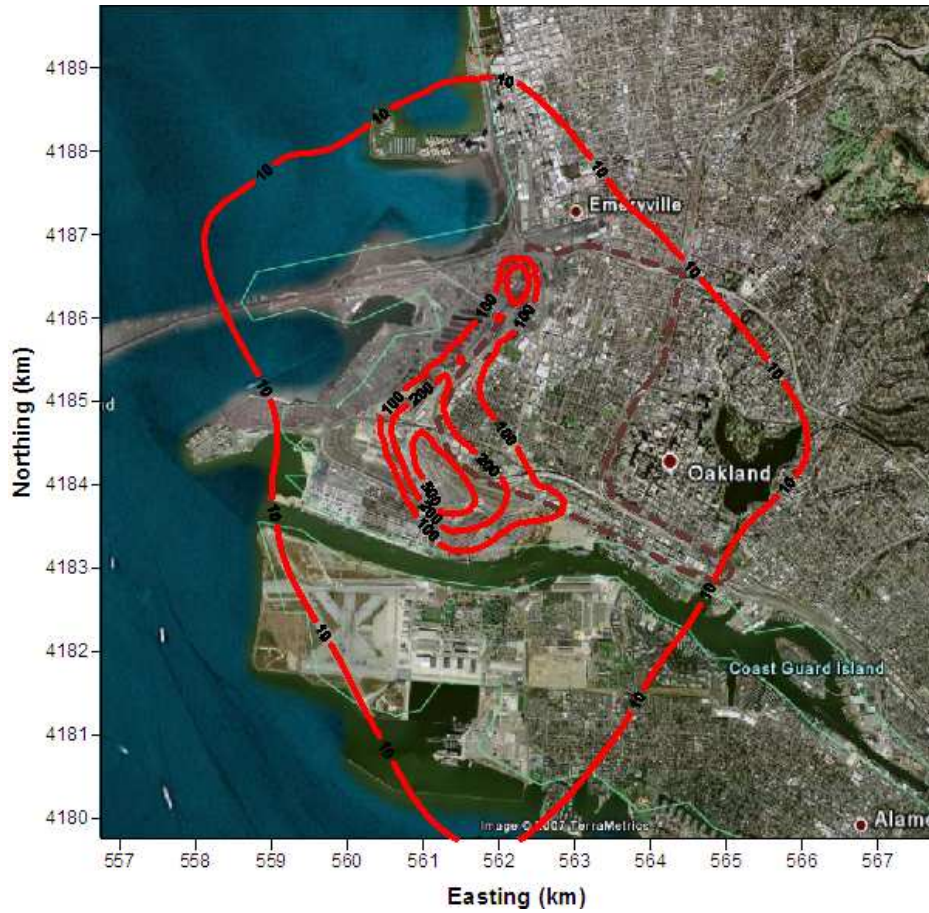


**B. West Oakland Community Potential Cancer Risks from Union Pacific Rail Yard Operations (Part II)**

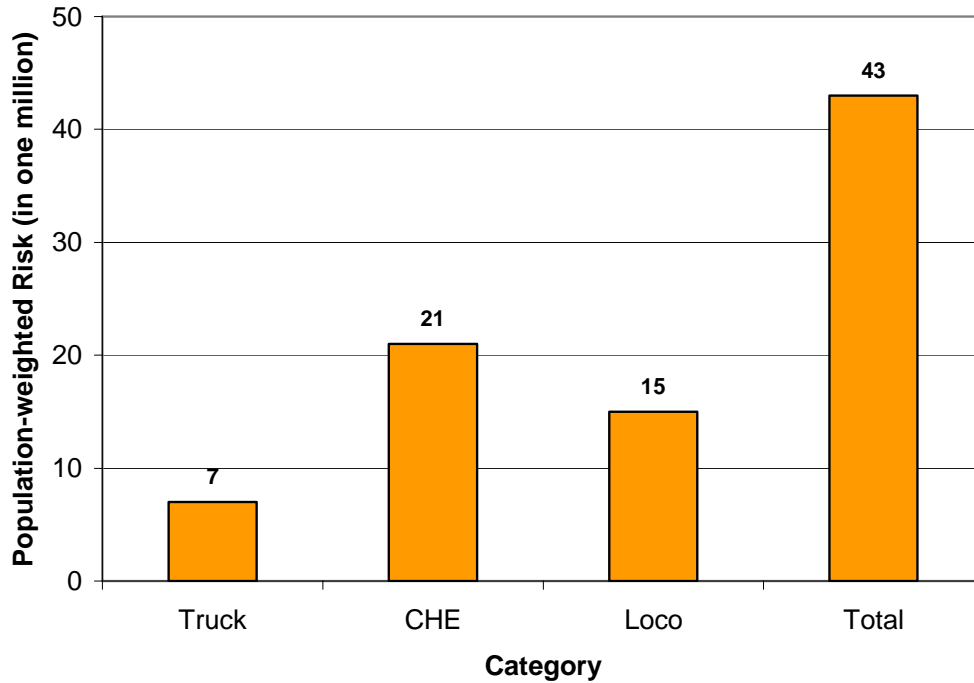
In this section, we provide the potential cancer risk isopleths and summary tables for the UP Railyard-related impacts on the West Oakland community. The following is a summary, in order of presentation, of the information included in this section:

- Isopleths showing the potential cancer risks resulting in the West Oakland community from exposures to UP Railyard diesel PM emissions – all activities and sources. (Figure B-9)
- A bar chart that shows the population-weighted potential cancer risks by category from UP Railyard operations. (Figure B-10)
- Summary tables that present the impacted area and affected population in the West Oakland community by different risk levels for each category. (Tables B-3 and B-4)

**Figure B-9: Estimated West Oakland Community Potential Cancer Risk Due to All UP Railyard (Part II) Diesel PM Emissions Sources (2005)**



**Figure B-10: Population-weighted Potential Cancer Risks in the West Oakland Community by Category for UP Railyard (Part II) Activities (2005)**



**Table B-3: Impacted Area (Acres) in West Oakland Community by Potential Cancer Risk Levels and by Category from UP Railyard (Part II) Activities**

Risk Level	TRUCK	LOCO	CHE	TRUs	COMBINED
Risk > 200	0	0	0	0	80
Risk > 100	0	0	0	0	280
Risk > 10	600	1,100	700	1,000	1,750

Note: OGV = transiting + maneuvering; total area for West Oakland community = 1,800 acres.

**Table B-4: Affected Population in West Oakland Community by Potential Cancer Risk Levels and by Category from UP Railyard (Part II) Activities**

Risk Level	TRUCK	LOCO	CHE	TRUs	COMBINED
Risk > 200	0	0	0	0	100
Risk > 100	0	0	0	0	1,800
Risk > 10	5,200	11,000	6,200	8,700	22,000

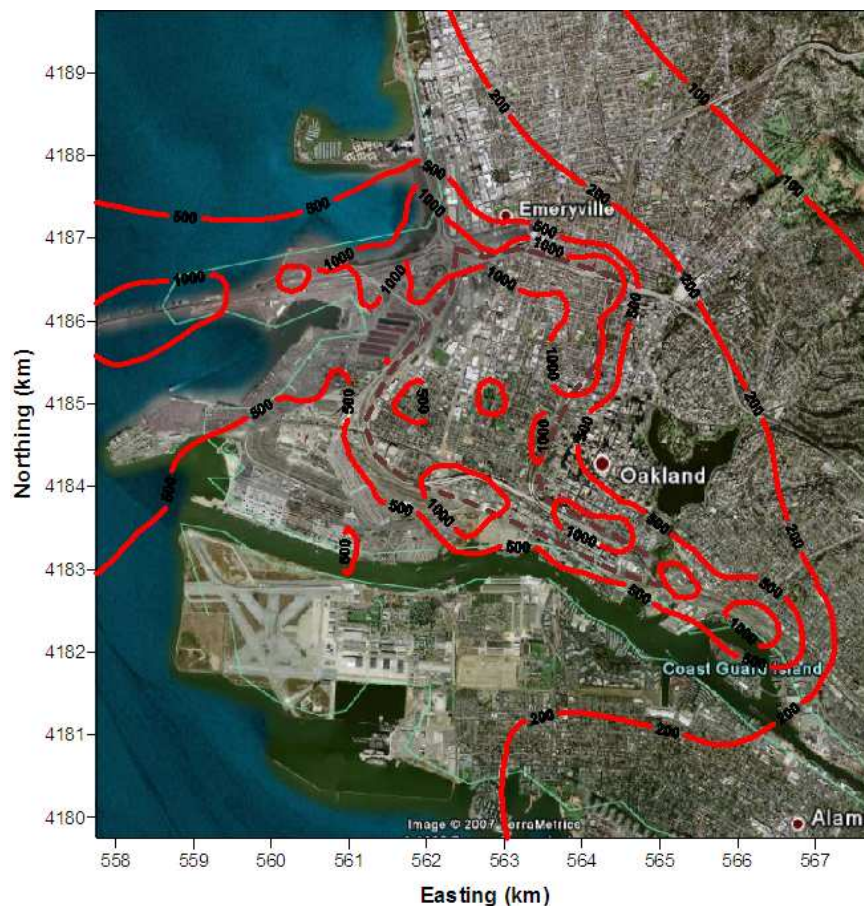
Note: OGV = transiting + maneuvering; total population for West Oakland community = 22,200

### **C. West Oakland Community Potential Cancer Risks from Non-Port/Non-UP Railyard Operations (Part III)**

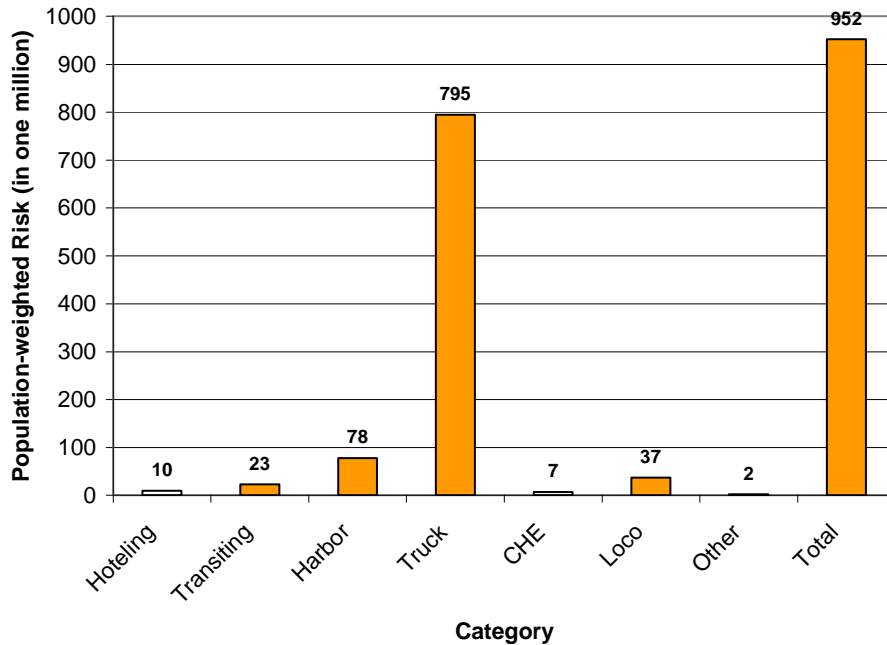
In this section, we provide the potential cancer risk isopleths and summary tables for the Part III (Non-Port and Non-UP Railyard) impacts on the West Oakland community. The following is a summary, in order of presentation, of the information included in this section:

- Isopleth showing the potential cancer risks resulting in the West Oakland community from exposures to Part III diesel PM emissions – all activities and sources. (Figure B-11)
- A bar chart that shows the population-weighted potential cancer risks by category from Part III activities. (Figure B-12)
- Summary tables that present the impacted area and affected population in the West Oakland community by different risk levels for each category. (Tables B-5 and B-6)
- Isopleths showing the potential cancer risks resulting in the West Oakland community due to exposures to the diesel PM emissions from the different Part III source categories (Figure B-13 to B-19)

**Figure B-11: Estimated West Oakland Community Potential Cancer Risk Due to All Part III (Non-Port/Non-UP) Diesel PM Emissions Sources (2005)**



**Figure B-12: Population-weighted Potential Cancer Risks in the West Oakland Community by Category for Part III (Non-Port/Non-UP) Activities (2005)**



**Table B-5: Impacted Area (Acres) in West Oakland Community by Potential Cancer Risk Levels and by Category from Part III (Non-Port/Non-UP) Activities**

Risk Level	OGV	HOTEL	HARBOR	TRUCK	LOCO	CHE	OTHERS	COMBINED
Risk > 1000	0	0	0	300	0	0	0	500
Risk > 500	0	0	0	1,000	0	0	0	1,700
Risk > 200	0	0	0	1,800	140	15	0	1,800
Risk > 100	0	0	540	1,800	250	15	0	1,800
Risk > 10	1,800	1,065	1,800	1,800	1,500	500	15	1,800

Note: OGV = transiting + maneuvering; total area for West Oakland community = 1,800 acres.

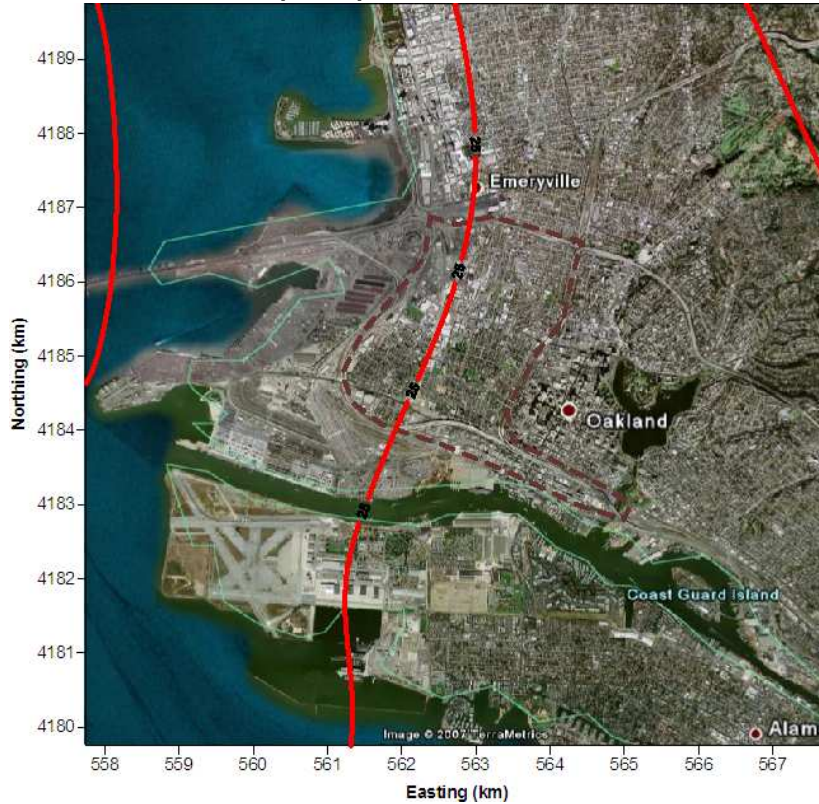
**Table B-6: Affected Population in West Oakland Community by Potential Cancer Risk Levels and by Category from Part III (Non-Port/Non-UP) Activities**

Risk Level	OGV	HOTEL	HARBOR	TRUCK	LOCO	CHE	OTHERS	COMBINED
Risk > 1000	0	0	0	5,700	0	0	0	6,300
Risk > 500	0	0	0	13,500	0	0	0	20,500
Risk > 200	0	0	0	22,200	450	40	0	22,200
Risk > 100	0	0	5,900	22,200	1,250	40	0	22,200
Risk > 10	22,200	10,800	22,200	22,200	16,400	4,700	150	22,200

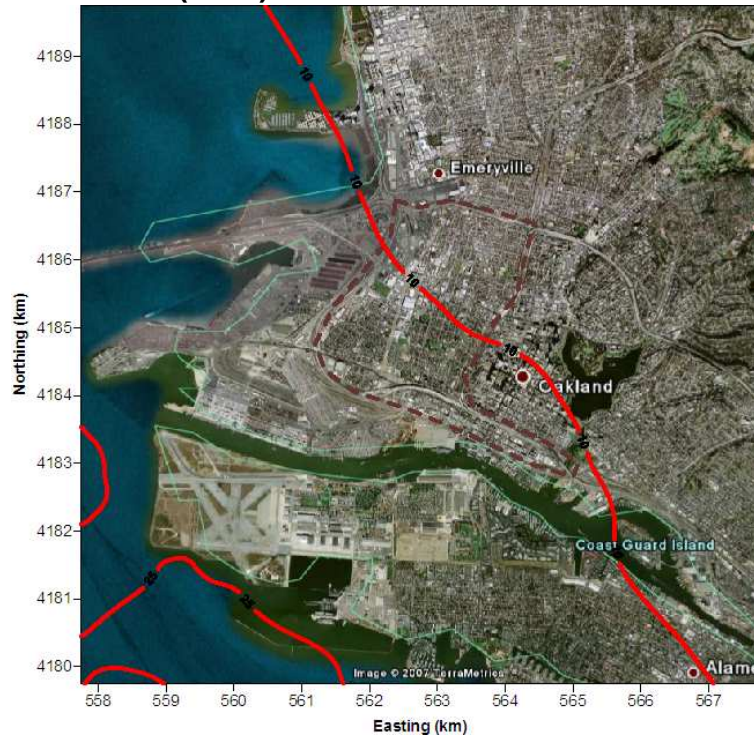
Note: OGV = transiting + maneuvering; total population for West Oakland community = 22,200



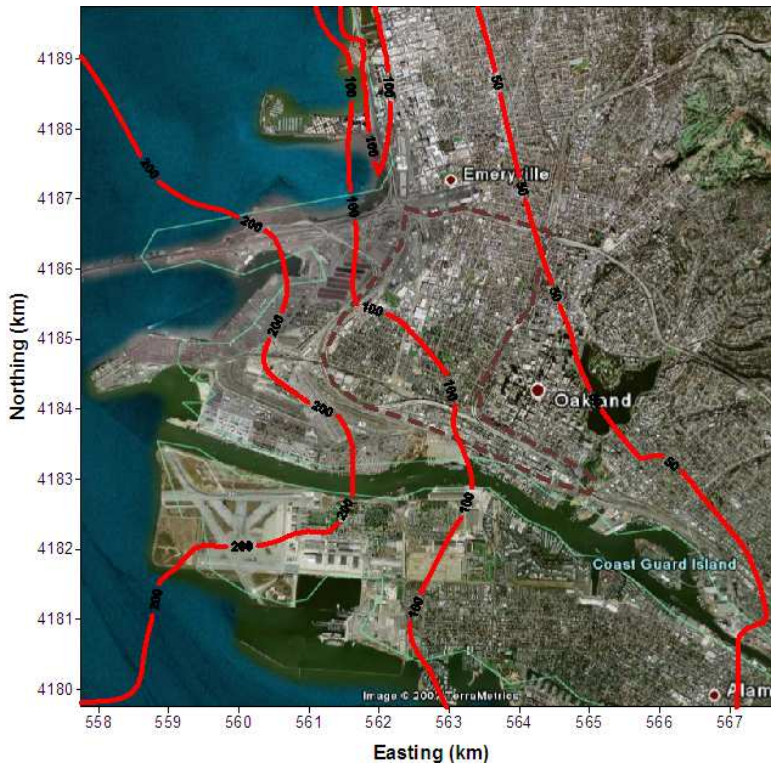
**Figure B-13: Estimated West Oakland Community Potential Cancer Risk Due to Part III (Non-Port/Non-UP) OGV Transiting and Maneuvering Diesel PM Emissions (2005)**



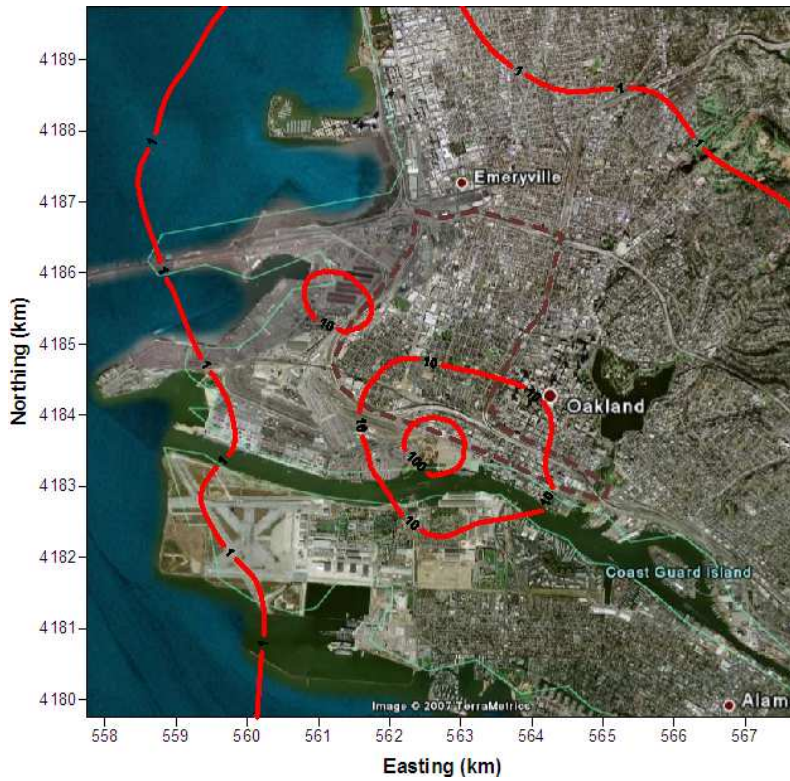
**Figure B-14: Estimated West Oakland Community Potential Cancer Risk Due to Part III (Non-Port/Non-UP) OGV Hotelling and Anchorage Diesel PM Emissions (2005)**



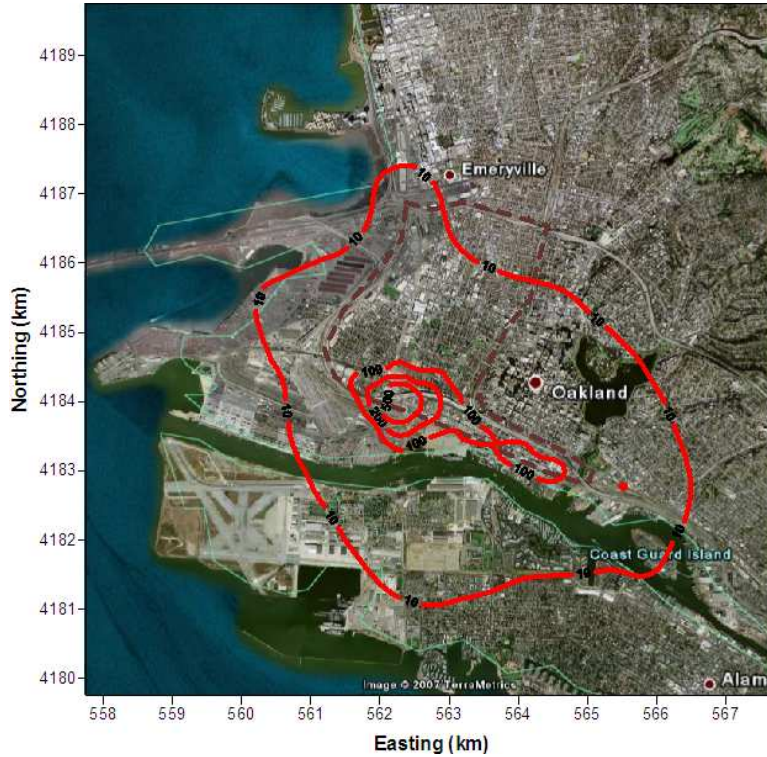
**Figure B-15: Estimated West Oakland Community Potential Cancer Risk Due to Part III (Non-Port/Non-UP) Harbor Craft Diesel PM Emissions (2005)**



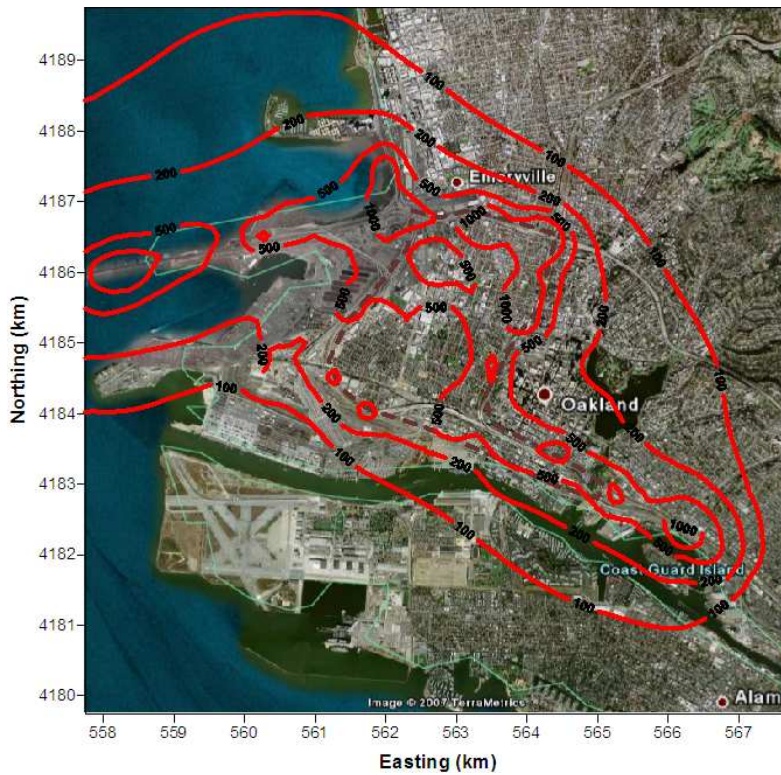
**Figure B-16: Estimated West Oakland Community Potential Cancer Risk Due to Part III (Non-Port/Non-UP) Cargo Handling Equipment Diesel PM Emissions (2005)**



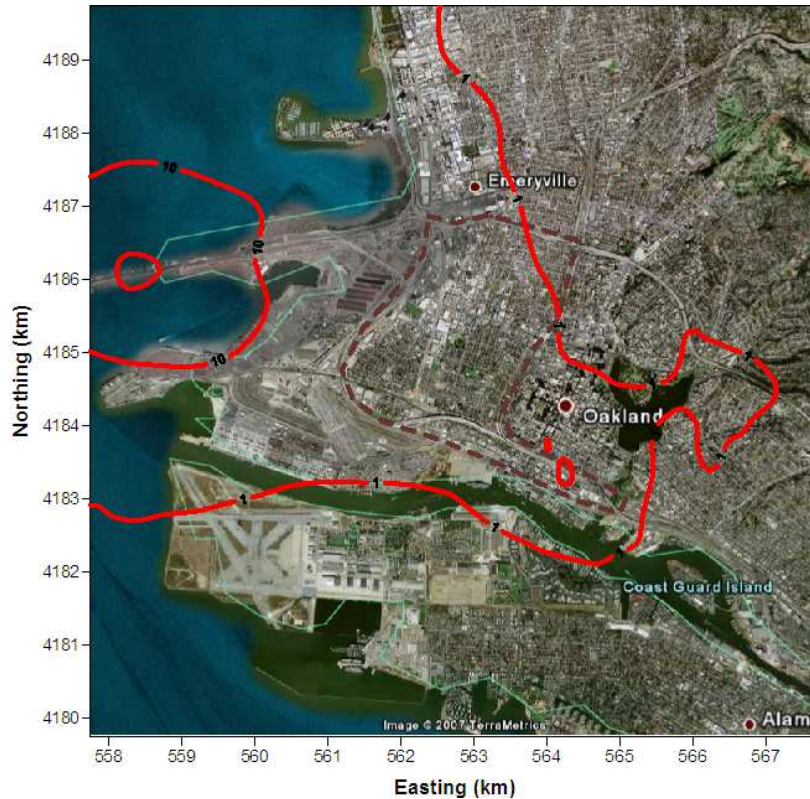
**Figure B-17: Estimated West Oakland Community Potential Cancer Risk Due to Part III (Non-Port/Non-UP) Locomotive Diesel PM Emissions (2005)**



**Figure B-18: Estimated West Oakland Community Potential Cancer Risk Due to Part III (Non-Port/Non-UP) On-Road Truck Diesel PM Emissions (2005)**



**Figure B-19: Estimated West Oakland Community Potential Cancer Risk Due to Part III (Non-Port/Non-UP) Construction and Stationary Sources Diesel PM Emissions (2005)**

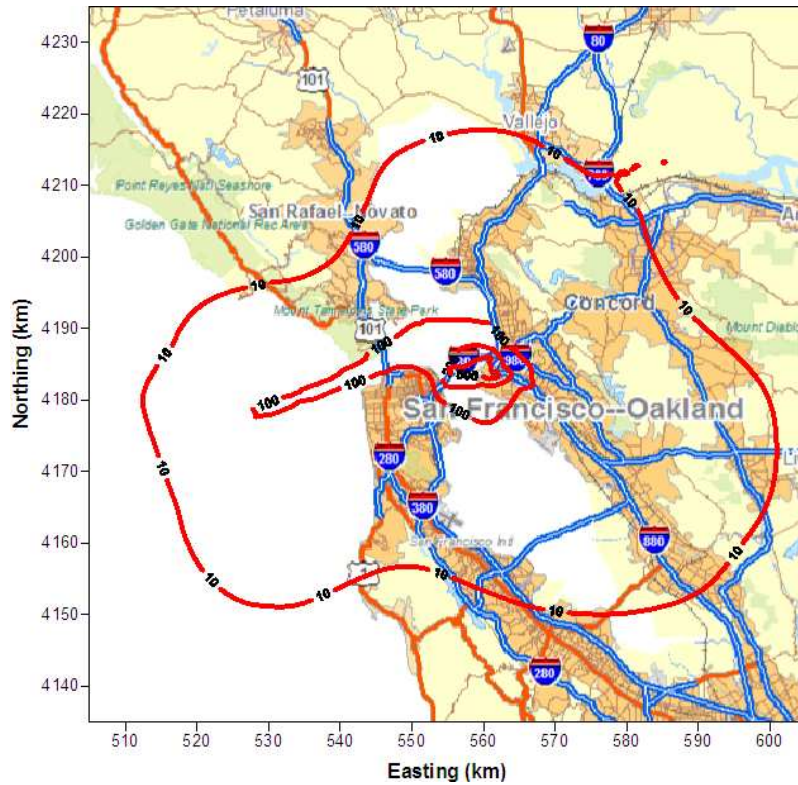


#### **D. Regional Potential Cancer Risks from Port Operations (Part I)**

In this section, we present the potential cancer risks resulting in the regional domain (100 km x 100 km) due to diesel PM emissions from the Port (Part I) activities. The following is a summary, in order of presentation, of the information included in this section:

- Isopleths showing the potential cancer risks resulting in the regional domain from exposures to Port (Part I) diesel PM emissions – all activities and sources. (Figure B-20)
- A bar chart that shows the population-weighted potential cancer risks in the regional domain by category from Port (Part I) operations. (Figure B-21)
- Summary tables that present the impacted area and affected population in the regional domain by different risk levels for each category. (Tables B-7 and B-8)
- Isopleths showing the potential cancer risks resulting in the regional domain due to exposures to the diesel PM emissions from the different Port (Part I) source categories (Figure B-22 to B-27)

**Figure B-20: Estimated Regional Domain Potential Cancer Risk Due to All Port (Part I) Diesel PM Emissions Sources (2005)**



**Table B-7: Impacted Area (Acres) in the Regional Domain by Potential Cancer Risk Levels and by Category from Port (Part I) Activities**

Risk Level	OGV	HOTEL	HARBOR	TRUCK	LOCO	CHE	COMBINED
Risk > 1000	0	0	0	0	0	0	0
Risk > 500	0	0	0	0	0	0	60
Risk > 200	60	0	0	0	0	0	2,600
Risk > 100	1,250	60	250	60	0	0	11,800
Risk > 10	254,200	49,600	9,800	9,600	250	5,300	551,500

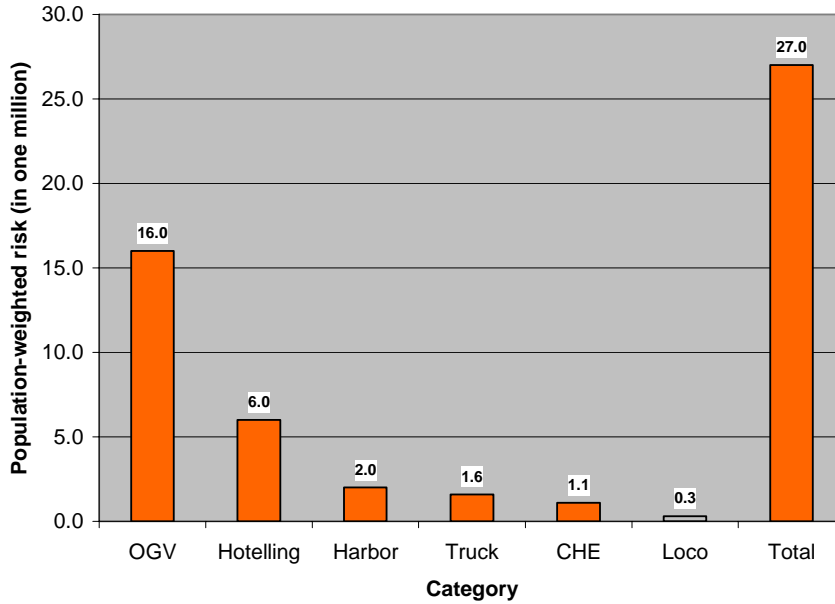
Note: OGV = transiting + maneuvering; total area for the regional domain = 1,564,000 acres.

**Table B-8: Affected Population in the Regional Domain by Potential Cancer Risk Levels and by Category from Port (Part I) Activities**

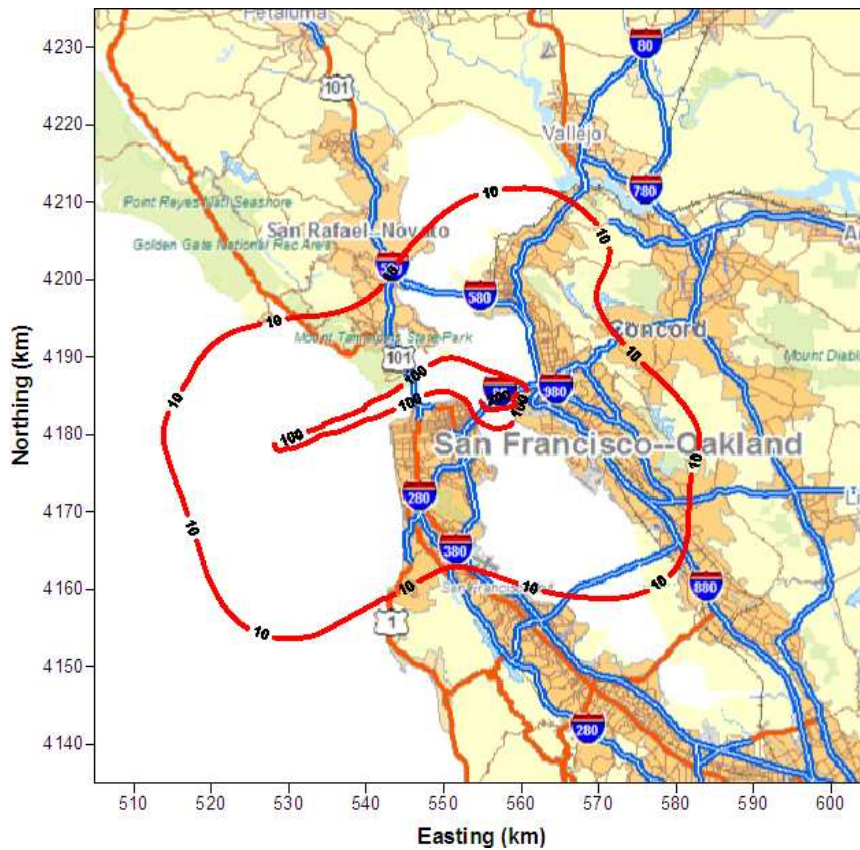
Risk Level	OGV	HOTEL	HARBOR	TRUCK	LOCO	CHE	COMBINED
Risk > 1000	0	0	0	0	0	0	0
Risk > 500	0	0	0	0	0	0	20
Risk > 200	100	0	0	0	0	0	9,600
Risk > 100	1,250	20	140	150	0	0	131,000
Risk > 10	2,185,000	618,500	95,700	127,000	1,700	41,700	3,179,000

Note: OGV = transiting + maneuvering; total population for the regional domain = 5 million.

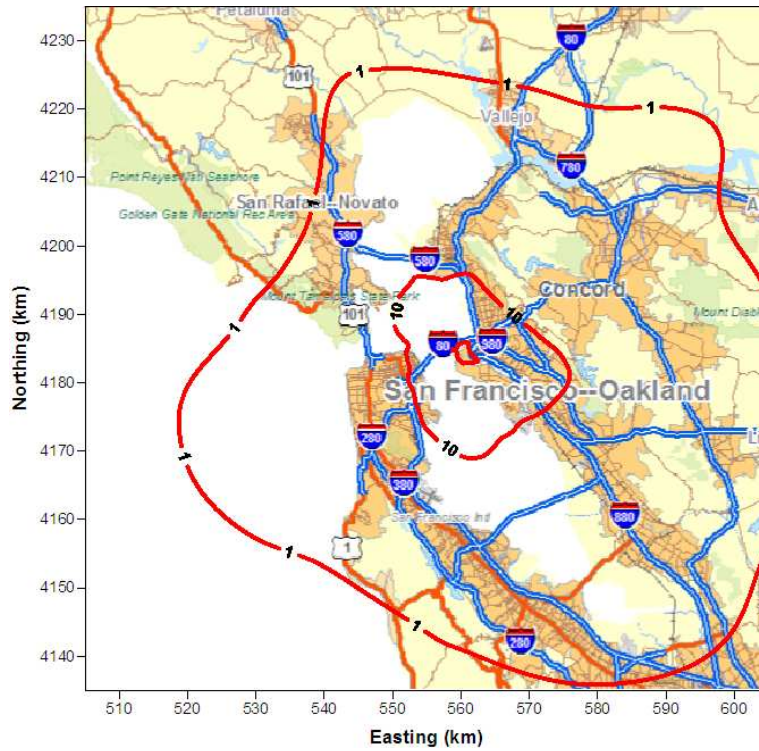
**Figure B-21: Population-weighted Risks by Category for the Port Operations (Part I) in the Regional Domain for 2005**



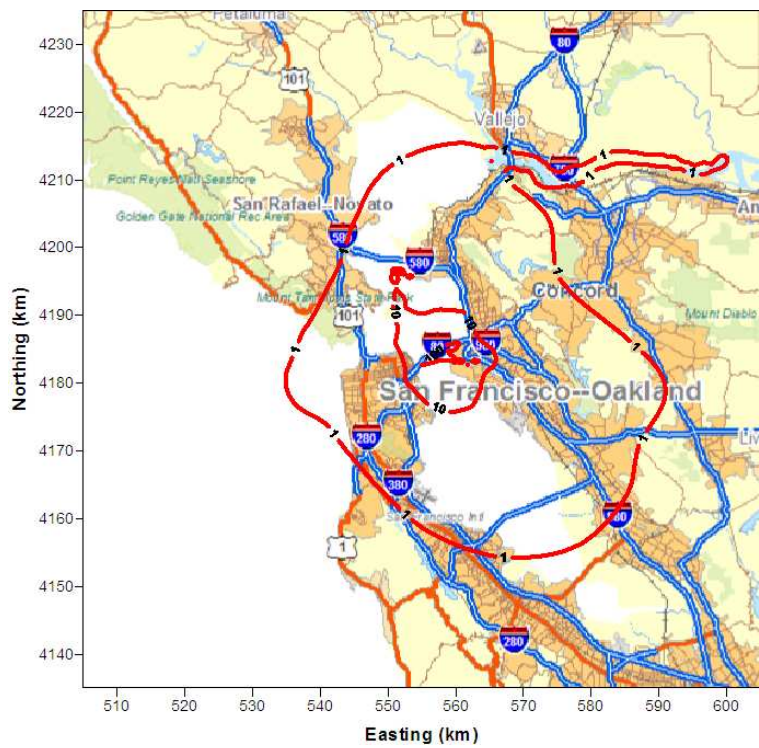
**Figure B-22: Estimated Regional Domain Potential Cancer Risk Due to Part I (Port) OGV Transiting, Anchorage, and Maneuvering Diesel PM Emissions (2005)**



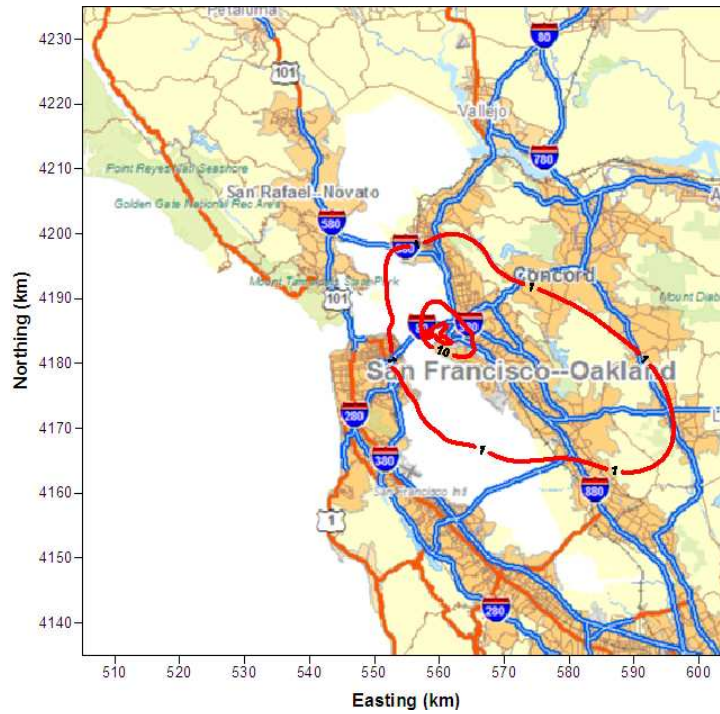
**Figure B-23: Estimated Regional Domain Potential Cancer Risk Due to Part I (Port) OGV Hotelling Diesel PM Emissions (2005)**



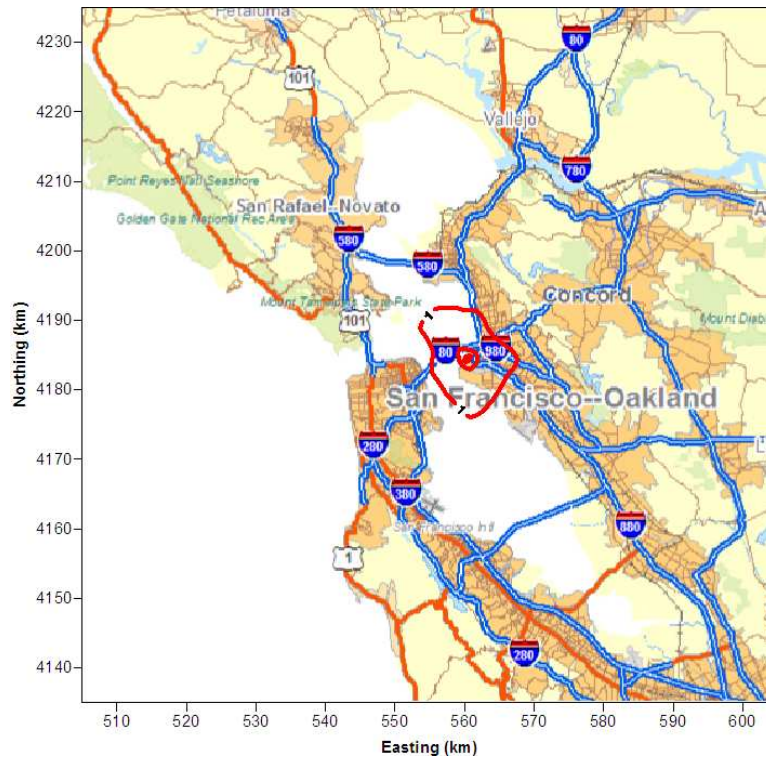
**Figure B-24: Estimated Regional Domain Potential Cancer Risk Due to Part I (Port) Harbor Craft Diesel PM Emissions (2005)**



**Figure B-25: Estimated Regional Domain Potential Cancer Risk Due to Part I (Port) Cargo Handling Equipment Diesel PM Emissions (2005)**



**Figure B-26: Estimated Regional Domain Potential Cancer Risk Due to Part I (Port) Locomotive Diesel PM Emissions (2005)**





**Figure B-27: Estimated Regional Domain Potential Cancer Risk Due to Part I (Port) Drayage Truck Diesel PM Emissions (2005)**

