ADDENDUM TO THE ENVIRONMENTAL IMPACT REPORT

HAN-LI INTERNATIONAL MARINE TERMINAL

C.U.P. Application No. U-88-36

CITY OF PITTSBURG, CALIFORNIA

STATE CLEARINGHOUSE #89082209

DUNCAN & JONES
Urban & Environmental Planning Consultants

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I. INTRODUCTION

A. PURPOSE OF THE ADDENDUM

This report is an Addendum to the Draft Environmental Impact Report (DEIR, dated April 20, 1990) and the Final Environmental Impact Report (FEIR, dated August 17, 1990), which together constitute the EIR on the proposed Han-Li International Marine Terminal (C.U.P. Application No. U-88-36) on property north of East Third Street in the City of Pittsburg, California. The Project is a proposal to construct a dry bulk transfer facility for marine, rail and truck shipments originating from and destined for both international and regional locations. The EIR addressed the environmental impacts of the Project as originally proposed by the applicants, which are the Han-Li International Group, and its subsidiary Han-Li Pittsburg Terminal Operations.

Conditions of Approval were defined by the City, based in part on the mitigation measures identified in the EIR, and included stipulations for implementing a mitigation monitoring and reporting program. A public hearing was held before the City Planning Commission, during which a spokesman for the applicant described a number of changes Han-Li intended to make in the Project. The revised Project will exhibit new and different characteristics and may possibly result in specific impacts which were not addressed in the EIR. On November 13, 1990, the Planning Commission voted to certify the EIR as complete and adequate for the purposes of rendering a decision on the Project as initially defined, but directed the City staff and the EIR consultants to prepare an Addendum to the EIR in order to address the Project as revised. Information on the character of the changes proposed in the Project, and on the likely differences in impacts that would result is provided in this document, the Addendum to the EIR.

CEQA Guidelines (Section 15164 [a][2] and [3]) state that an Addendum to an EIR is required when "only minor technical changes or additions are necessary to make the EIR under consideration adequate under CEQA" and if "the changes to the EIR made by the addendum do not raise important new issues about the significant effects" of the project. No new issues are presented which have not already been addressed to some degree in the EIR, and the

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II. DESCRIPTION OF REVISED PROJECT

The Han-Li International Group has proposed the construction of a dry bulk transfer facility utilizing road, rail and water transportation modes. Materials to be handled include cement, bauxite, gypsum, limestone, aggregates (sand and gravel), grain, lumber and scrap metal. Sulphur was originally proposed as a commodity to be delivered to the site by trucks for export by ships, involving a process in which molten sulphur would be cooled and granulated (the "prilling" process) for enclosed storage and later shipment. Among the most important changes in the Project description since the EIR was prepared is the elimination of sulphur as a commodity which would be handled on the site. The dome which was previously to be occupied by the sulphur prilling and storage operation is proposed to be utilized for aggregates (sand and gravel) and ore materials (bauxite, limestone and gypsum). The additional storage capacity provided for these materials will not effect the annual tonnage capacity of the facility, which is limited to a greater extent by the capacity of the various transportation modes to be utilized.

The proposed modified facility will serve as a transfer point for the same quantity of materials as originally proposed, an estimated 2.235 million tons a year, with the elimination of sulphur offset by increasing the volume of grain to be handled from 250,000 tons per year to 400,000 tons per year. The character of the Project as currently proposed is summarized in **Figures 1** and **2** respectively, the Product Study and Transportation Study, and may be compared with **Figures 6** and **7** in the Draft EIR.

Approximately 57 percent of all commodities would be transferred to or from the site by trucks, generating a very significant volume of traffic which the EIR indicated would overburden the existing circulation system and increase the average noise exposure in existing nearby residential neighborhoods. The Draft EIR identified as a measure to mitigate these impacts the construction of a new bypass roadway. Such a route would enable nearly all the trucks generated by the Project to be routed away from several critical street sections, including Harbor Street south of Santa Fe Avenue, California Avenue and Railroad Avenue, and the intersection of Railroad Avenue with Highway 4.

Figure 1
(was Figure 6 in DEIR)

TERMINAL PRODUCT STUDY - REVISED PROJECT
Han-Li International Dry Bulk Marine Terminal EIR Addendum
City of Pittsburg, California

Product	Estimated Quantity Tons/Year	DELIVERY		SHIPMENT		STORAGE	NO. OF CARRYING UNITS REQUIRED PER YEAR			
		Carrier	Unloader	Carrier	Loader		Ships	Barges	Trains	Trucks
Cement	1,000,000	Ship	Docksider	Truck	Sealed Overhead Silo	2-40,000T Monolithic Domes	26	--	---	38,500
Grain	400,000	Rail	Bottom dump to sealed conveyor	Ship	Sealed Conveyor	None, direct shipment	13	--	400	---
Bauxite, Gypsum or Limestone	420,000	Ship	Ships Gear (Clam-shells) to Belt Conveyors to open pile	Rail(75%) & Truck (25%)	Front end Loader	Covered area for 13,000T	14	--	158	4,200
Aggregate (Sand and gravel)	240,000	Barge	F.E. Loader to storage pile	Rail(50%) & Truck (50%)	Front end Loader	Covered area for 7,000T	--	24	60	4,800
Scrap Metal	60,000	Truck	Direct to Barge	Barge	none	none, direct shipment	--	6	---	*
Lumber	115,000	Barge	Forklift	Rail	Forklift	open area	--	12	41	2,900
Totals:	**2,235,000**						**53**	**42**	**659**	**50,400**

* 2,400 on one-half-mile private road

Figure 2
(Was Figure 7 In DEIR)

Transportation Study - Revised Project

Han-Li International Marine Terminal EIR Addendum
City of Pittsburg, California

	Annual Tonnage	SHIPS/BARGES Capacity	#/YR	Transfer Days Per Load	Transfer Days Annual	TRAINS Rail Car Capacity	#/YR	Transfer Days Per Ship	Transfer Days Annual[2]	TRUCKS Capacity	#/YR	# Day[3]	TPH[1] In	TPH[1] Out
Cement (Inbound)	1,000,000	40,000	26	4.0	104	—	—	—	—	26	38,500	148	500	500
Bauxite, Gypsum and Limestone (Inbound)	420,000	30,000	14	3.0	42	100	158	4.00[4]	56	25	4,200	16	500	800
Aggergates (Sand and Gravel (Inbound)	240,000	10,000	24[5]	5.0	60	100	60	1.66[6]	20[7]	25	4,800	19	400	800
Grain (Outbound)	400,000	30,000	13	10.0	130	50	285[8]	10.00[9]	130	—	—	—	200	200
Scrap Metal (Outbound)	60,000	10,000	6[5]	4.0	24	—	—	—	—	25	—[10]	—	250	250
Lumber (Inbound)	115,000	10,000	12[5]	7.0	84	70	41	6.25	75	20	2,900	11	160	80
TOTALS:	2,235,000	—	95	33	404	—	544	—	281	—	50,400	194	—	—

1. Tons Per Hour
2. Assuming maximum rate of delivery loading, 15 hour days
3. 260 days a year
4. 4 Trains per day maximum
5. Two 10,000-ton barges per tugboat tow
6. Five trains per single barge load, 4 trains per day maximum
7. 7.5-hour days
8. Within four-month period
9. 15-hour day, 6 trains per day maximum
10. 2,400 on a half-mile private road

The new truck route would utilize Harbor Avenue north of Santa Fe Avenue to East Third Street, and a newly constructed roadway paralleling Santa Fe Avenue and Columbia Street (see Chapter III, **Figure 9**). This route would have the benefit of redirecting commercial traffic originating both from the Project site and from other existing or future industrial uses in the Project area away from residential neighborhoods and the vicinity of schools. An assessment district would be formed, supported by the Project applicants and owners of both developed and undeveloped industrial and commercial property in the Project area.

Prior to the completion of the truck route, the conditions of approval proposed by City staff would limit the facility operation to a substantially reduced number of daily truck trips. In addition, in order to reduce impacts on Highway 4, the movement of trucks would be limited to zero during the morning and afternoon peak traffic hours, between 6:30 and 8:30 AM, and 4 and 6 PM.

These measures and their implementation will be discussed in detail in the following chapter, Traffic and Circulation. Prior to the completion of the bypass, which will require separate environmental review and analysis, the capacity of the Project for product handling will be limited by the proposed number of truck trips permitted on the existing truck routes, which would support about half of the proposed level of product handling. This level of activity represents a first phase of Project operation, while the construction of a bypass route would enable the facility to expand operations to achieve a second phase level of activity, equivalent to the original proposal. The two major phases of development are summarized in **Figures 3** and **4**, in terms of commodity handling and transportation activity increments over the period of five or more years before the facility is expected to reach its full capacity.

Figure 3
(New - Not Previously in the DEIR)

ANNUAL INCREMENTS OF TRANSPORTATION ACTIVITY - REVISED PROJECT
Han-Li International Marine Terminal EIR Addendum
City of Pittsburg, California

TRANSPORT MODE	YEARS					
	Without Truck Bypass				With Truck Bypass	
	1	2	3	4*	4	5**
A. MAXIMUM TRIPS/DAY						
Trucks	30	50	80	80	242	242
Trains	4	4	4	4	5	5
B. MAXIMUM TRIPS/YEAR						
Trucks	7,800	13,000	20,800	20,800	50,400	50,400
Trains	198	414	471	559	559	659
Ships	13	22	28	31	50	53
Barges	9	24	24	24	42	42
C. THOUSAND TONS/YEAR						
Trucks	202.8	338.0	429.7	429.7	1,282.5	1,282.5
Trains	270.0	577.5	657.8	792.5	792.5	892.5
Ships	412.0	738.0	910.1	1,044.7	1,720.0	1,820.0
Barges	90.0	240.0	240.0	240.0	415.0	415.0

* Potential 4th and subsequent years of operation without bypass. Train and ship traffic related to grain, bauxite, gypsum and limestone will increase irrespective of construction of the bypass.
** Full Operation.

Figure 4
(New - Not Previously in the DEIR)

ANNUAL INCREMENTS OF TRANSPORTATION ACTIVITY BY COMMODITY
REVISED PROJECT
Han-Li International Marine Terminal EIR Addendum
City of Pittsburg, California

	YEARS					
	Without Truck Bypass				With Truck Bypass	
	1	2	3	4*	4	5**
A. CEMENT						
1) Annual Tonnage	202.0	338.0	356.9	356.9	1,000.0	1,000.0
2) Maximum Daily Truck Trips	30	50	66	66	148	148
3) % of Project Daily Trips	100%	100%	83%	83%	81%	76%
B. BAUXITE, GYPSUM & LIMESTONE						
1) Annual Tonnage	85.0	175.0	293.1	387.8	420.0	420.0
2) Ann. Truck Ton.	0	0	72.8	72.8	105.0	105.0
3) Max. Daily Truck Trips	0	0	14	14	16	16
4) % of Project Daily Trips	-	-	17%	17%	9%	8%
5) Ann. Train Ton.	85.0	175.0	220.3	315.0	315.0	315.0
6) Ann. Train Trips	43	88	110	158	158	158
7) Max. Daily Train Trips	4	4	4	4	4	4
C. AGGREGATES (SAND & GRAVEL)						
1) Annual Tonnage	60.0	120.0	120.0	120.0	240.0	240.0
2) Ann. Truck Ton.	0	0	0	0	120.0	120.0
3) Max. Daily Truck Trips	0	0	0	0	19	19
4) % of Project Daily Trips	-	-	-	-	10%	10%
5) Ann. Train Ton.	60.0	120.0	120.0	120.0	120.0	120.0
6) Ann. Train Trips	30	60	60	60	60	60
7) Max. Daily Train Trips	4	4	4	4	4	4

FIGURE CONTINUES ON NEXT PAGE

* Potential 4th and later years without bypass. Also see * on 2nd page.
** Full Operation.
NOTE: All tonnage in thousands of tons.

Figure 4 (Continued)
(New - Not Previously in the DEIR)
ANNUAL INCREMENTS OF TRANSPORTATION ACTIVITY BY COMMODITY
REVISED PROJECT
Han-Li International Marine Terminal EIR Addendum
City of Pittsburg, California

	YEARS					
	Without Truck Bypass				With Truck Bypass	
	1	2	3	4*	4	5**
D. LUMBER						
1) Annual Tonnage	0	57.5	57.5	57.5	57.5	115.0
2) Ann. Truck Ton.	0	0	0	0	0	57.5
3) Max. Daily Truck Trips	0	0	0	0	0	11
4) % of Project Daily Trips	-	-	-	-	-	6%
5) Ann. Train Ton.	0	57.5	57.5	57.5	57.5	57.5
6) Ann. Train Trips	0	41	41	41	41	41
7) Max. Daily Train Trips	0	2	2	2	2	2
E. GRAIN						
1) Annual Tonnage	125.0	225.0	260.0	300.0	300.0	400.0
2) Ann. Train Trips	125	225	260	300	300	400
3) Max. Daily Train Trips	4	4	4	4	4	5
F. SCRAP METAL						
1) Annual Tonnage	30.0	60.0	60.0	60.0	60.0	60.0
G. TOTALS						
1) Annual Tonnage	502.8	975.5	1,147.5	1,282.2	2,077.5	2,235.0
2) Max. Daily Truck Trips	30	60	80	80	183	194
3) Annual Train Trips	198	414	471	559	559	659
4) Max. Daily Train Trips	4	4	4	4	4	5

* Potential 4th and subsequent years of operation without bypass. Train and ship traffic related to grain, bauxite, gypsum and limestone will increase irrespective of construction of the bypass.
** Full Operation.
NOTE: All tonnages in thousands of tons.

The proposed facility was originally shown as providing an area in which bauxite, gypsum, limestone, sand and gravel would be stockpiled in open storage, with a maximum capacity of about 20,000 tons. Water sprays were proposed as a means of controlling the effects on local air quality of particulate emissions from the storage piles, although this mitigation measure did not appear likely to be fully effective. Combined with water sprays in other areas of the facility, the sprays used in the open storage area would require approximately 15,000 gallons per day, which appeared to be excessive under current water conservation conditions that are expected to continue in the long term.

The City has defined a new condition of approval to which the Project applicant has agreed, whereby the commodities previously to be stored in open piles would be housed in an enclosed structure having a capacity similar to that proposed for the open storage piles. The structure would not change the mode of operation by which materials would be transported to and from the site, except that the front-end loaders would now operate partially in the enclosed structure, and partially in the open. While truck loading would occur inside the structure, train and ship loading would be handled as before, as exterior activities. Exterior conveyor belts and hoppers would remain as components of the facility's equipment. The modified site plan diagram, reflecting these changes, is provided in **Figure 5**.

At full buildout, the facility will employee an estimated total of 34 employees, an increase of 16 persons in comparison to the previous estimate of 18 employees.

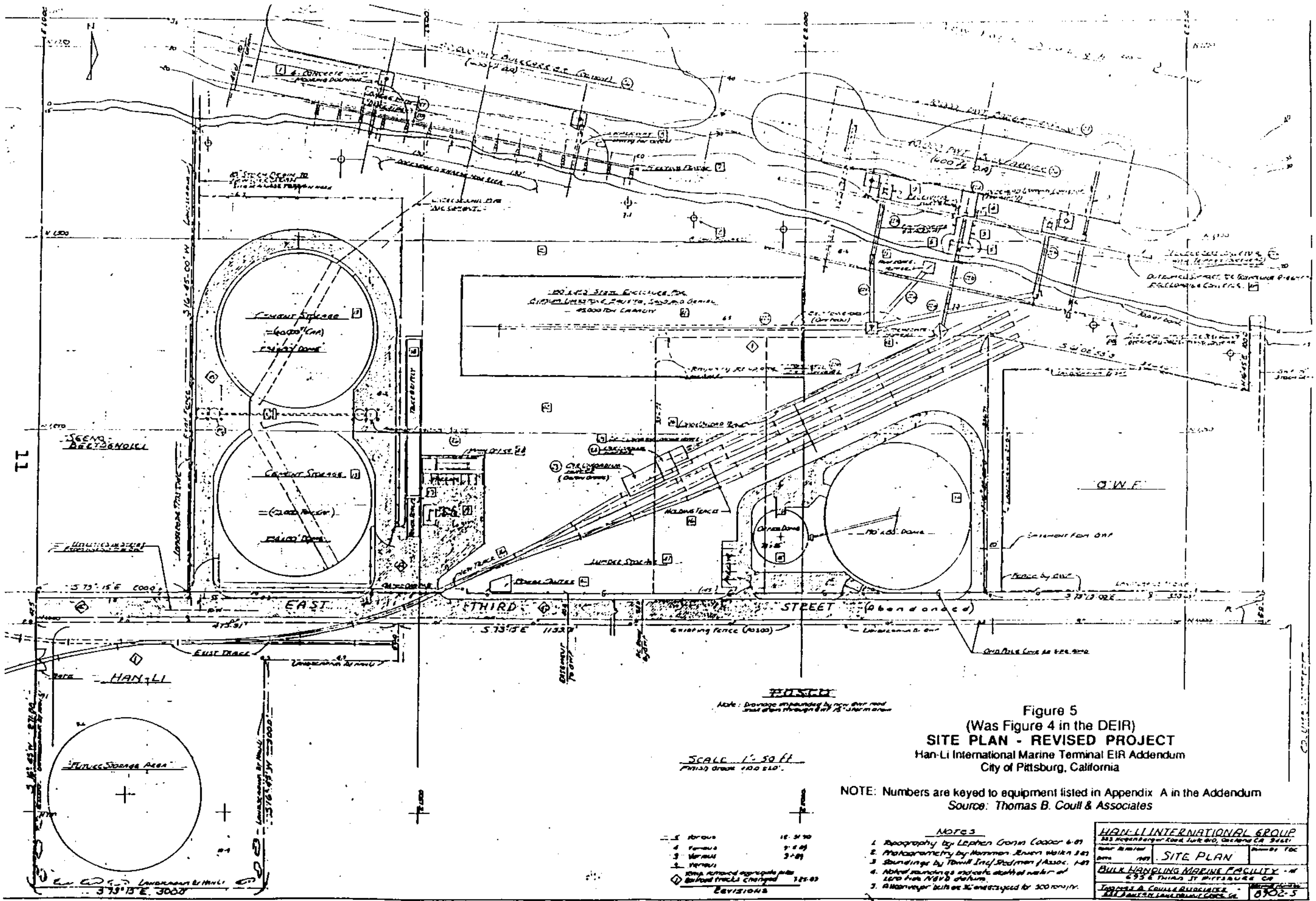

Figure 5
(Was Figure 4 in the DEIR)
SITE PLAN - REVISED PROJECT
Han-Li International Marine Terminal EIR Addendum
City of Pittsburg, California

NOTE: Numbers are keyed to equipment listed in Appendix A in the Addendum
Source: Thomas B. Coull & Associates

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III. TRAFFIC AND CIRCULATION

This chapter of the EIR Addendum presents new information relating to the revisions in the traffic and circulation impacts of the proposed Han-Li Project, and additional discussion of the bypass mitigation measure. Specifically, two major subjects are addressed:

- **Project Revisions** - The Project, as now proposed, would have a limit of 80 truck loads per day (up to 160 one way trips), until such time as a truck bypass route would be completed. This would reduce the traffic impacts of the Project well below those discussed in the EIR.

- **Truck Bypass Route** - Additional planning and preliminary engineering has now been accomplished for this facility. The traffic impacts of this facility are addressed below.

A. PROJECT REVISIONS

For the initial period of operation of the Han-Li Terminal, the total number of trucks will be limited to 80 trips entering and 80 trips leaving the site each day. It has been assumed that this condition would last for no more than five years, until such time as a truck bypass route would be completed. The Project proponents estimate that the facility could be open for business in 1991, and that the bypass route would be completed by 1996.

There would also be limitations on the generation of truck trips during the peak commute traffic hours. Loaded trucks would be restricted from leaving the plant in the morning peak on weekdays between 6:30 a.m. and 8:30 a.m. During the afternoon peak, truck traffic would be restricted from leaving the terminal between 4 p.m. and 6 p.m. Unloaded trucks returning to the terminal would also be restricted during the afternoon commute period. The net effect of these limitations would be to significantly reduce the impacts of this Project during the peak hours.

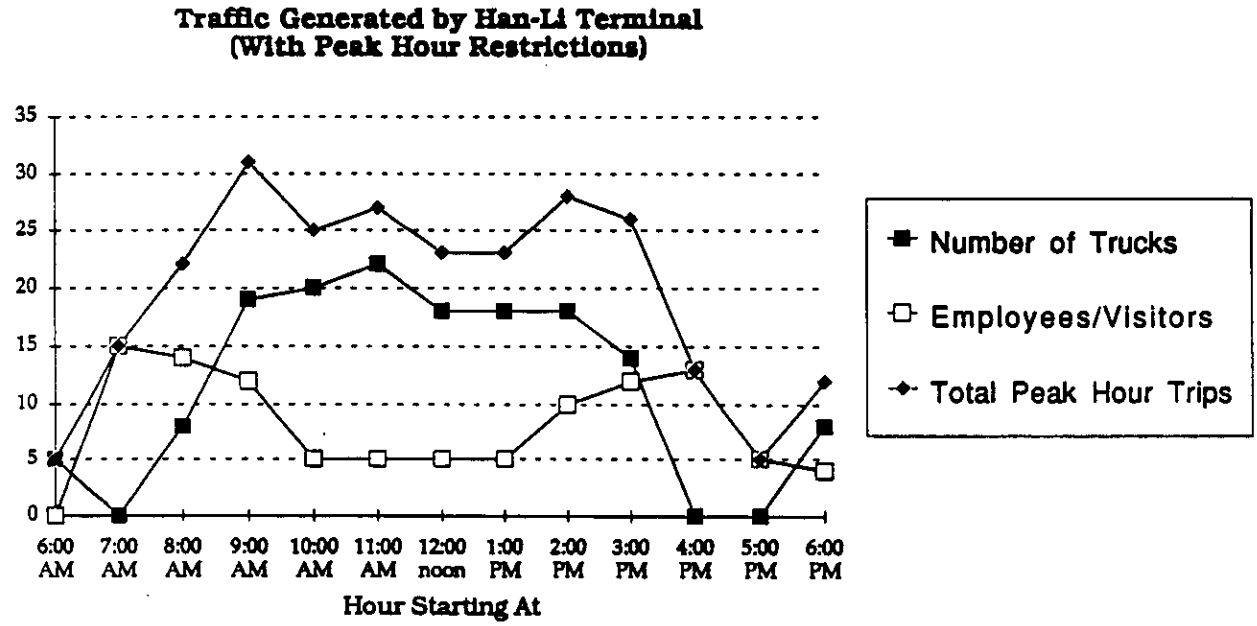
During this initial period, the traffic impacts of Han-Li would be quite different from those described in the EIR. The revised Project would generate 160 one way truck trips per day, as compared to 542 with the original Project. The total daily traffic from the Project site (including employees and visitors) would be about 300 vehicles per day, as compared to the 817 trips associated with the originally proposed Project, and the important indicator of AM peak hour traffic would be reduced from 79 to 22 vehicle trips per hour. Several of the figures which appeared in the Draft EIR have been modified to illustrate revised estimates of trip generation and traffic impacts. **Figure 6** shows the total hourly traffic volumes to be generated by the modified Project, reflecting the conditions of approval defined by the City. The average daily traffic volume conditions, with existing plus Project traffic, are shown in **Figure 7**, indicating a sharp drop in Project-generated traffic, as compared with the traffic impacts described in the EIR (compare with Figure 27 in the DEIR).

During peak hours, before 8:30 AM and after 4 PM, traffic generated by the Project would consist only of employees and visitors, and these trips would be dispersed in many directions. These trips would have very little impact on the surrounding street system, and the impact on Highway 4 conditions at these peak hours would be very limited.

As shown in **Figure 8**, the modified Project in its initial stage of development would have a limited effect on existing Levels of Service (LOS) for the critical intersections on Harbor Street and on Railroad Avenue, and at the Highway 4 entry and exit ramps. The Project would not affect peak hour traffic conditions on Highway 4. The existing LOS at most locations would not be changed as a result of the Project, with the exceptions of the intersections of California Street with Harbor Avenue and Loveridge Road. The remaining available capacity of the intersections of Railroad Avenue with California Street and with the eastbound Highway 4 entry ramp would be reduced to a minor extent.

Figure 6
(was Figure 26 in DEIR)
ESTIMATED HOURLY DISTRIBUTION OF VEHICULAR TRAFFIC - REVISED PROJECT (WITHOUT BYPASS)
Han-Li International Marine Terminal EIR Addendum
City of Pittsburg, California

Hour Starting At	Percent of Traffic	Number of Trucks	Employees/ Visitors	Total Peak Hour Trips
6 AM	3.0	5	0	5
7 AM	0	0	15	15
8 AM	5.0	8	14	22
9 AM	12.0	19	12	31
10 AM	13.0	20	5	25
11 AM	14.0	22	5	27
12 NOON	11.0	18	5	23
1 PM	11.0	18	5	23
2 PM	11.0	18	10	28
3 PM	9.0	14	12	26
4 PM	0	0	13	13
5 PM	0	0	5	5
6 PM	5.0	8	4	12
TOTALS:	94.0	150	105	255
REMAINDER OF THE DAY	6	10	35	45
TOTALS:	100.0	160	140	300



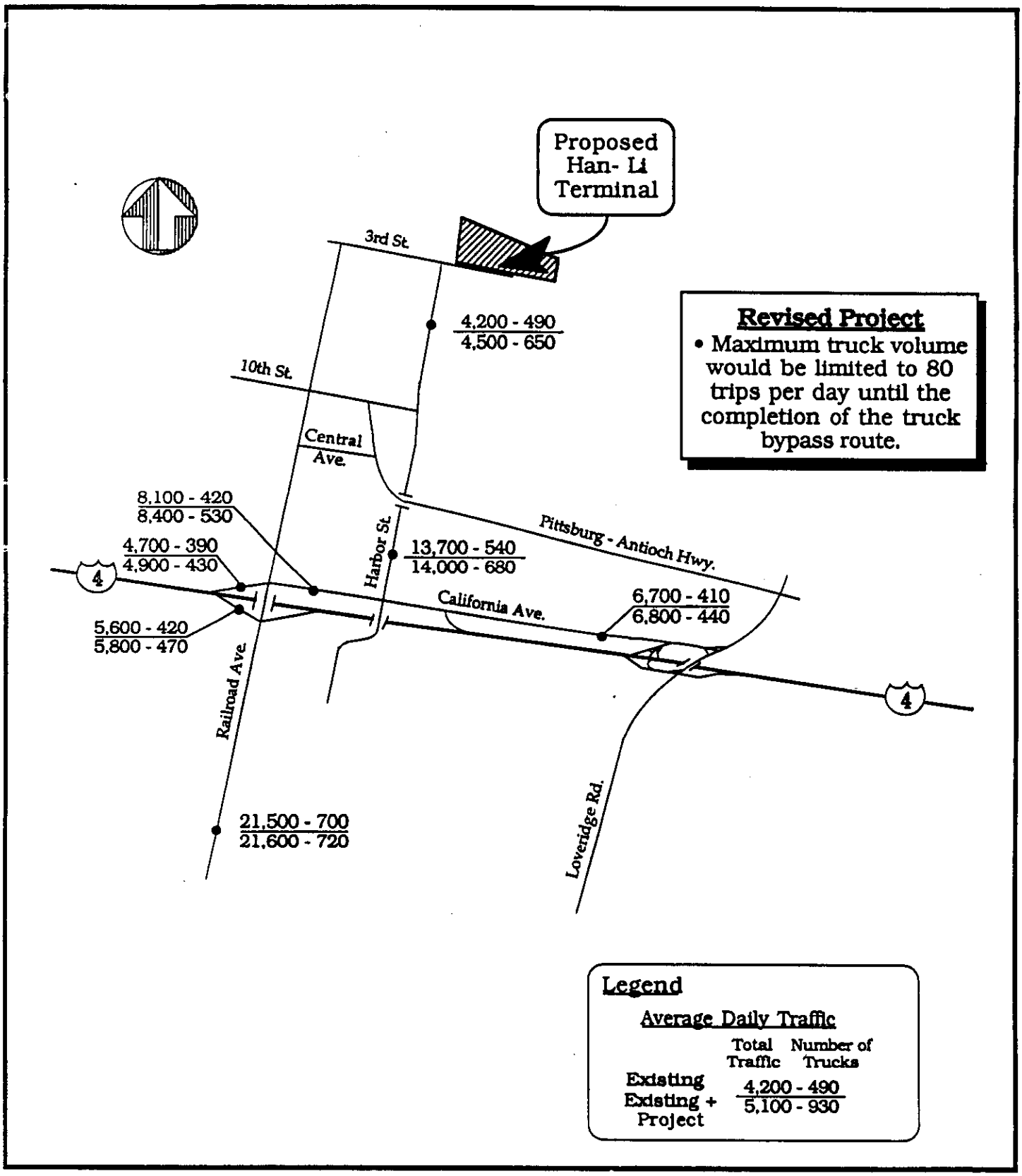


Figure 7
(Was Figure 27 in the DEIR)
AVERAGE DAILY TRAFFIC VOLUMES - REVISED PROJECT (WITHOUT BYPASS)
Han-Li International Marine Terminal EIR Addendum
City of Pittsburg, California

Figure 8
(was **Figure 28** in DEIR)

FUTURE INTERSECTION LEVELS OF SERVICE
REVISED PROJECT*
Han-Li International Marine Terminal EIR Addendum
City of Pittsburg, California

Intersection	Traffic Control	Existing Conditions	Existing plus Project Without Bypass	Cumulative plus Project With Bypass
Harbor Street - East Third Street	Stop Signs	A	B	C
Harbor Street - East Tenth Street	Stop Signs	B	B	C
Harbor Street - California Avenue	Signal	0.60/A	0.64/B	0.77/C
Railroad Avenue - California Street	Signal	0.82/D	0.85/D	0.94/E
Railroad Avenue - Hwy 4 EB Ramps	Signal	0.85/D	0.87/D	0.92/E
California Avenue - Hwy 4 Harbor Street Off-ramp	Stop Signs	F	F	F
Loveridge Road - Hwy 4 Off-ramps	Stop Signs	D	D	D
California Avenue - Loveridge Road	Stop Signs	C	D	D

* Calculated for PM peak hour - 4:30 to 5:30 PM.

Mitigations

During the off-peak hours (8:30 AM to 4 PM), the traffic from the Han-Li Terminal will not adversely affect roadway capacity on any local Pittsburg streets, or on Highway 4, and no further mitigation measures are necessary. While the Han-Li Project could generate up to 20 truck trips per hour on any single street, this is not a significant number from the standpoint of roadway capacity. On Harbor Street, the City of Pittsburg may consider 20 truck trips per hour (10 in each direction) to be an undesirable impact in the vicinity of the schools. The City may wish to work cooperatively with the applicants to ensure that truck trips are distributed among several routes, including Railroad Avenue, so that the impacts on any one street would be reduced even further.

Highway 4 will be widened in the future in conjunction with the extension of BART to East Contra Costa County. Traffic generated either by the interim Project or the Project at full buildout will not require the overall highway design parameters for Highway 4 to be changed. The land use assumptions that were used by Caltrans and Contra Costa County to forecast future Highway 4 traffic assumed new industrial uses in the undeveloped areas of the Pittsburg waterfront. The Han-Li Project, with the modifications currently proposed, is reasonably consistent with these land use assumptions, and would not change or add to the long-term mitigation measures needed on Highway 4.

B. TRUCK BYPASS ROUTE

The proposed truck bypass route from Highway 4 to Harbor Street is shown in **Figure 9**. The proposed new roadway would follow a north-south alignment from East 14th Street (the Pittsburg-Antioch Highway) just east of the parcels fronting on the east side of Columbia Street and turn to an east-west alignment located between Santa Fe Avenue and the SFRR tracks. The bypass would extend west on this alignment to Harbor Street. New signalized intersections would be created at Santa Fe Avenue and Harbor Street, and at 10th and Harbor Streets.

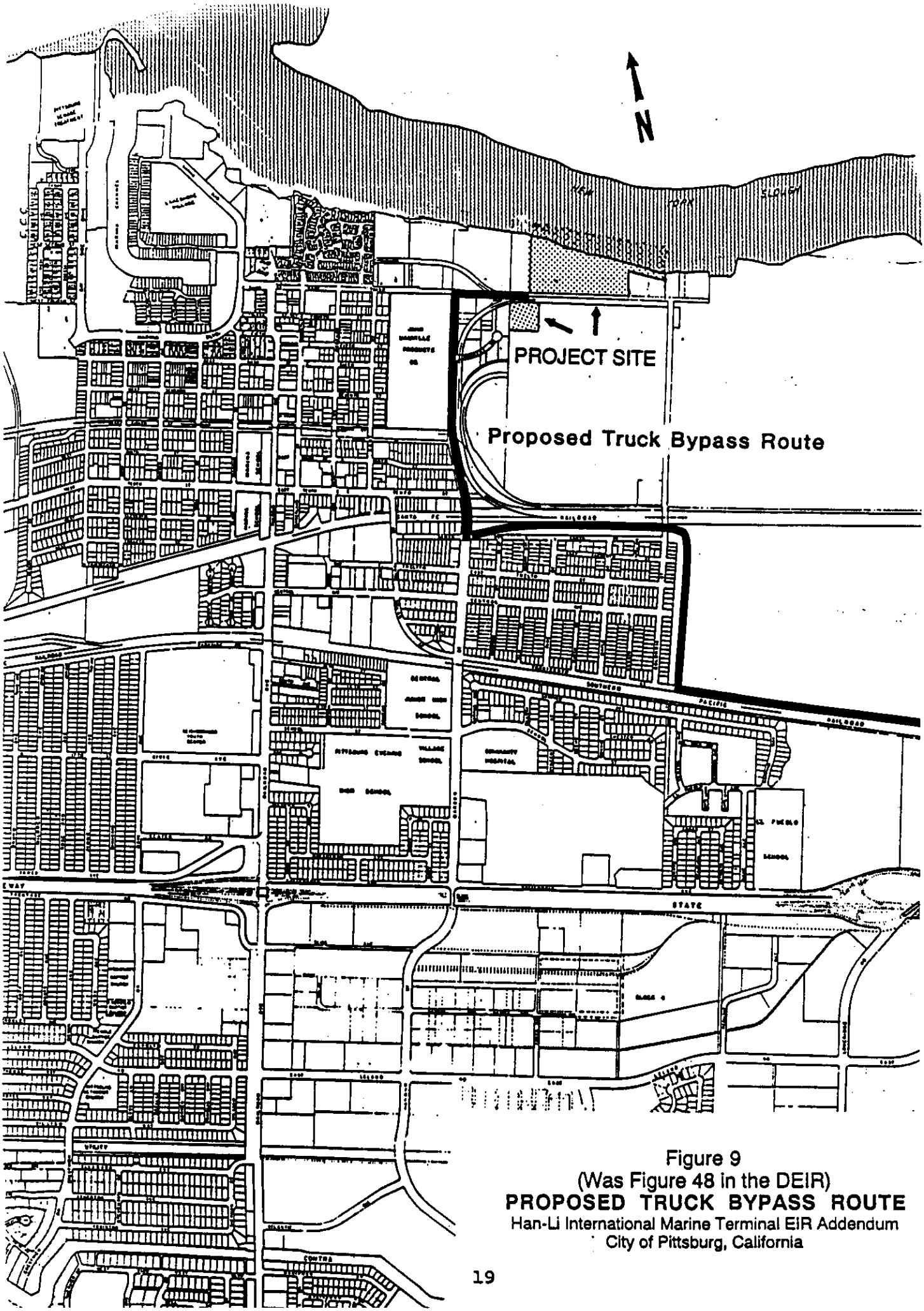


Figure 9
(Was Figure 48 in the DEIR)
PROPOSED TRUCK BYPASS ROUTE
Han-Li International Marine Terminal EIR Addendum
City of Pittsburg, California

Traffic signals would also be constructed where the bypass route would intersect with East 14th Street and Harbor Street. The new road would probably be constructed as a 40-foot wide street, with a right-of-way width of 60 to 80 feet. Sound walls would be constructed in areas adjacent to residential neighborhoods (see Chapter V of this Addendum).

The bypass project has been approved in concept by the City of Pittsburg, and preliminary design is currently underway. Although no specific funding had been identified at present, the City intends to use an assessment district to finance the project. The applicants would be a major participant in this district. Other participants would likely include Diablo Services, Johns Manville, and other industrial property owners. Annexation of the Posco and Dow Chemical areas by the City of Pittsburg would expand the possible boundaries of the Assessment District.

The traffic volumes that are forecast to use the new bypass route are shown in **Figure 10**. The total truck volumes at full development with all route users would amount to about 1,500 truck trips per day. Total traffic (all vehicles from all sources) is estimated to be 8,000 vehicles per day on the bypass route. The new road would serve truck traffic from Diablo Services (216 vehicles), GWF (90), Cal Asia (10), Johns Manville (40) and other trucking-related businesses and this traffic would also be transferred on to the new truck route. It is also likely that some truck traffic with routings to and from the west along 10th Street would use the truck route.

Although Project-related truck trips and other truck traffic would be eliminated at the critical intersections of California Street with Railroad and Harbor Avenues, these intersections, as shown in **Figure 8**, will be subject to a deterioration in Level of Service (LOS) under the cumulative conditions. However, the change in LOS would not be attributable to the Project itself, but to the cumulative development in central Pittsburg.

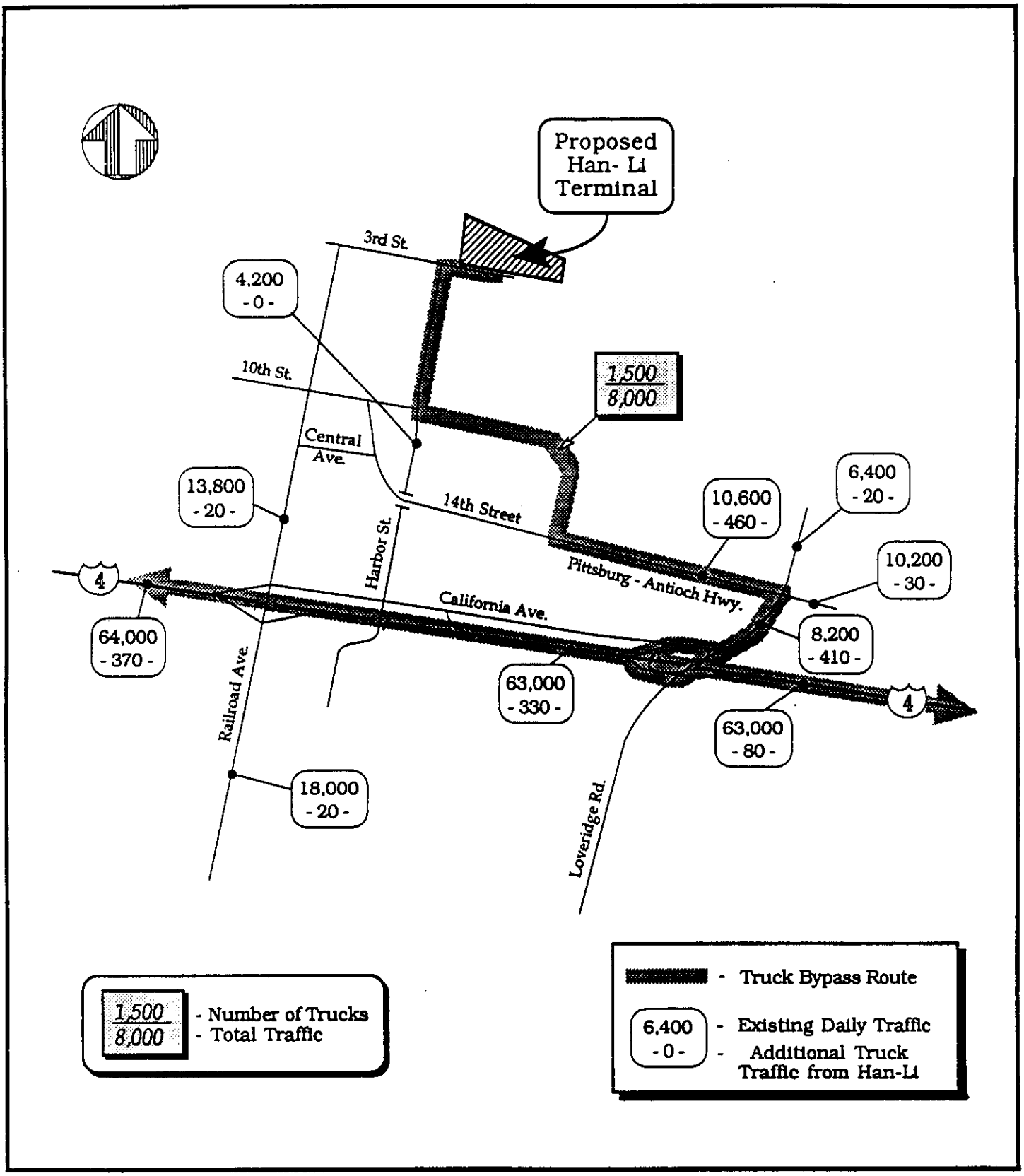


Figure 10
(Was Figure 49 in the DEIR)
AVERAGE DAILY TRAFFIC VOLUMES - REVISED PROJECT (WITH BYPASS)
Han-Li International Marine Terminal EIR Addendum
City of Pittsburg, California

The Project at full buildout will not result in lowering of the LOS at the Loveridge Road intersections with California Street and the Highway 5 exit and entry ramps, beyond those changes which would occur due to the Project in its initial, modified stage of development.

The construction of this bypass route would not eliminate impacts on Harbor Street to the north of the railroad underpass at Santa Fe Avenue. However, the intersections of Harbor Street south of the SFRR tracks would be substantially improved, including those at 12th Street, Central Avenue, School Street and California Street. In addition to eliminating all Project-related traffic at these intersections, the City could require that the truck bypass route be used by other existing and potential industrial and commercial truck traffic.

As a result of the elimination of sulphur as a Project-related commodity, the currently proposed facility would generate a maximum of 194 truck trips per day (round-trip), 23 trips less than estimated in the EIR (Figure 25 in the DEIR). With consideration of a 25 percent peaking factor, the Project would generate 243 inbound and 243 outbound truck trips, for a total of 486 trips, a reduction of 56 trips from the original estimate in the EIR. The revised number of truck trips is reflected in **Figure 10**.

IV. AIR QUALITY

A. AIR POLLUTANT EMISSIONS

On-Site Particulate Emissions

Emissions of particulate matter from on-site activities for the modified Project as currently defined would be substantially less than the levels described in the EIR. The majority of this reduction is due to the use of a higher-efficiency air filtration system than was previously proposed. The manufacturer of the proposed fabric filters has guaranteed an outlet particle loading of 0.0013 grain/scf compared to an assumed efficiency of 0.01 grain/scf in the EIR. This equipment reduces emissions from most material handling and storage activities by about 87 percent compared to the mitigation measures included in the EIR.

In comparison to the Project as described in the EIR, the estimated on-site emissions of the revised Project have been reduced by the use of enclosures with fabric filters for all equipment and the enclosure of the open storage area for mineral commodities within a structure. The current proposal utilizes fabric filters to control emissions from all hoppers, conveyors and storage structures. Water sprays are only proposed for loading and unloading of materials by front-end loaders.

Maximum daily on-site particulate emissions are shown in **Figure 11** for the modified Project assuming that truck traffic is limited to 80 trips per day. Storage losses are no longer included in the inventory of sources since mineral storage now occurs in a structure. On an annual basis, emissions of TSP and PM-10 for the modified Project are 18.7 and 12.1 percent of those estimated in the EIR, respectively. On a maximum daily basis, emissions of TSP and PM-10 for the current Project are 36.4 and 20 percent of those estimated in the EIR, respectively.

Maximum daily on-site particulate emissions are shown in **Figure 12** for the current modified Project at full capacity. Comparison to **Figure 11** reveals that daily maximum emissions would be the same even without truck restrictions, but that annual emissions would increase.

Figure 11

ANNUAL AND MAXIMUM DAILY ON-SITE PARTICULATE EMISSIONS IN LBS/DAY - REVISED PROJECT (WITHOUT BYPASS)
Han-Li International Marine Terminal EIR Addendum
City of Pittsburg, California

Source	Annual Emission		Maximum Daily Emission	
	TSP	PM-10	TSP	PM-10
Cement Handling	987	987	12.3	12.3
Grain Handling	144	144	2.1	2.1
Bauxite Handling	3,935	1,845	88.6	35.0
Sand/Gravel Handling	4,802	1,586	138.5	31.1
TOTAL	**9,868**	**4,562**	**150.8***	**47.3***
PREVIOUS TOTAL IN DEIR**	**52,720**	**37,616**	**413.1**	**236.6**

* Maximum daily emissions are calculated by combining the highest emitting activity with cement handling. Maximum daily emissions are calculated this way because only one material, other than cement, could be handled during one day.

** Superseded by new total.

Figure 12

ANNUAL AND MAXIMUM DAILY ON-SITE PARTICULATE EMISSIONS IN LBS/DAY - REVISED PROJECT (WITH BYPASS)
Han-Li International Marine Terminal EIR Addendum
City of Pittsburg, California

Source	Annual Emission		Maximum Daily Emission	
	TSP	PM-10	TSP	PM-10
Cement Handling	1,301	1,301	12.3	12.3
Grain Handling	206	206	2.1	2.1
Bauxite Handling	5,743	2,745	88.6	35.0
Sand/Gravel Handling	8,003	2,643	138.5	31.1
TOTAL	**15,253**	**6,895**	**150.8***	**47.3***
PREVIOUS TOTAL IN DEIR**	**52,720**	**37,616**	**413.1**	**236.6**

* Maximum daily emissions are calculated by combining the highest emitting activity with cement handling. Maximum daily emissions are calculated this way because only one material, other than cement, could be handled during one day.

** Superseded by new total.

On an annual basis, emissions of TSP and PM-10 for the current Project are 28.9 and 18.3 percent of those estimated in the EIR, respectively. On a maximum daily basis, emissions of TSP and PM-10 for the current Project are 36.4 and 20 percent of those estimated in the EIR, respectively.

Regional Emissions

Revised estimates of daily regional emissions associated for the current Project have been prepared. **Figure 13** shows regional emissions attributable to the Project during the period when truck traffic is limited to 80 trips per day. **Figure 14** shows regional emission changes resulting from the current proposed Project at full capacity, following construction of the bypass route.

B. PROJECT IMPACTS ON AIR QUALITY

Local Impacts

The local impacts of the proposed Project would be due to particulate matter released from the site and increased vehicular emissions along roads accessing the site.

The EIR projected annual impacts from on-site emissions based upon a frequency distribution of wind speed and direction at Pittsburg. Project PM-10 concentrations at the closest residences were a maximum of 1 microgram per cubic meter, an amount not considered significant.

Since predicted concentrations are directly proportional to emission rate, it is possible to estimate the current Project's impact based upon the EIR analysis. Annual emissions of PM-10 for the current Project (assuming a limit of 80 truck trips per day) would be 12.1 percent of those predicted in the EIR, and the maximum PM-10 impact at the closest residences would be 0.12 microgram per cubic meter.

Figure 13

DAILY REGIONAL EMISSION INCREASES IN LBS/DAY
REVISED PROJECT (WITHOUT BYPASS
Han-Li International Marine Terminal EIR Addendum
City of Pittsburg, California

Source	CO	HC	NOX	PM
Trucks	17.3	6.5	26.7	3.6
Trains	27.4	8.0	206.0	10.0
Ships	187.0	93.5	523.6	37.4
Barges	60.0	30.0	168.0	12.0
Site Activities	---	---	---	47.3
PROJECT TOTAL	**291.7**	**138.0**	**924.3**	**110.3**
PREVIOUS TOTAL IN DEIR*	**412.9**	**210.3**	**1,959.7**	**357.6**

CO = Carbon Monoxide
HC = Hydrocarbons
NOX = Oxides of Nitrogen
PM = Particulate Matter

* Superseded by new total.

Figure 14

DAILY REGIONAL EMISSION INCREASES IN LBS/DAY
REVISED PROJECT (WITH BYPASS)
Han-Li International Marine Terminal EIR Addendum
City of Pittsburg, California

Source	CO	HC	NOX	PM
Trucks	52.1	19.6	81.2	10.8
Trains	27.4	8.0	206.0	10.0
Ships	187.0	93.5	523.6	37.4
Barges	60.0	30.0	168.0	12.0
Site Activities	---	---	---	47.3
PROJECT TOTAL	**326.5**	**151.0**	**978.8**	**117.5**
PREVIOUS TOTAL IN DEIR*	**412.9**	**210.3**	**1,959.7**	**357.6**

CO = Carbon Monoxide
HC = Hydrocarbons
NOX = Oxides of Nitrogen
PM = Particulate Matter

* Superseded by new total.

At full capacity the current Project would generate PM-10 emissions that are 18.3 percent of those estimated in the EIR; the maximum PM-10 impact at the closest residences would be 0.18 micrograms per cubic meter. These incremental increases are not considered to be significant.

The EIR analyzed the carbon monoxide impacts resulting from activities generating 550 truck trips per day along streets accessing the Project site. The impact of the original project traffic on carbon monoxide levels was at most 0.3 PPM, and concentrations were well below the ambient air quality standards. This impact was considered not to be significant.

The impact of the current Project would be less than that described in the EIR, particularly when truck traffic is limited to 80 trips per day. At full capacity, truck traffic would travel along the new truck bypass route, and carbon monoxide impacts would be shifted to this new corridor. No violations of ambient standards would be expected and this impact would not be significant.

Regional Effects

The combined on-site and off-site emissions associated with the Project are shown in **Figures 13** and **14**. The total increases are to be compared to the Bay Area Air Quality Management District's "thresholds of significance", which are 550 pounds per day for carbon monoxide and 150 pounds per day for other pollutants.

The emissions associated with the modified Project addressed in this Addendum are substantially lower than those described in the EIR. Nevertheless, project emissions exceed 150 pounds per day for oxides of nitrogen and for hydrocarbons, both of which are precursors of ozone. The current Project would therefore have a significant effect on regional air quality, and the Project would contribute to the continuing ozone problems in the Bay Area.

Mitigations

The current Project utilizes Best Available Control Technology for control of particulate emissions from transport and storage of materials. All loading hoppers, conveyors and storage areas are enclosed and ventilated via fabric filters. The use of water for dust control is only proposed for material movement by front-end loader or clamshell where enclosure is not possible. The mineral storage area is now enclosed within a structure, and the structure is positively ventilated via fabric filters.

With the addition of a structure over the mineral stockpiles, truck and train transport of these materials is the only uncontrolled source of dust remaining. In the Project as currently proposed, all aggregate, sand, and ores would be covered or enclosed except for final transport from the site in train cars or trucks. This is not a large source, since the amount of fine particulate matter within these materials has been reduced by washing prior to arrival at the site, and through removal by fabric filters whenever the material is disturbed.

Two methods exist to eliminate dust from trucks and train cars filled with mineral materials. Fabric covers are available for trucks that would eliminate emissions. Fabric covers for train cars are probably impractical.

Installation of spray bars is a second control method applicable to both trucks and train cars. Spray bars can be used to wet loads before they leave the site.

D. OTHER ISSUES

Water Use for Dust Control

The current Project utilizes a strategy of enclosure with ventilation through a fabric filter to control on-site emissions. Water sprays are now envisioned only for processes where enclosure is not practical: loading of materials via front-end loader.

Zero Pollution Industry

Bulk materials handling cannot be a zero-pollution industry with current air pollution control technology. The current Project utilizes enclosures and fabric filters for emission reduction, which is considered state-of-the-art. Even so, the high-efficiency fabric filters, proposed for this Project, are less than 100 percent effective in removing pollutants.

Effect of North Winds

The current modified Project would enclose the mineral stockpiles in a structure. Any dust created by the unloading or loading of materials within the structure would be controlled by a ventilation system utilizing fabric filters. With this addition, wind losses from stockpiles would be essentially eliminated as a source of dust.

Significance of Project Impacts

The regional emissions associated with the Project as currently proposed would exceed the threshold of significance as defined by the Bay Area Air Quality Management District for oxides of nitrogen. All emissions of oxides of nitrogen associated with the Project result from transportation sources: autos, trucks, trains, ships and tug-assisted barges.

The proposed Project represents an expansion of the area's economy that would increase utilization of the various transportation systems. As long as fossil fuels provide the primary means of power for the area's transportation system, a project of this magnitude would have a significant regional impact.

The City of Pittsburg has little or no ability to require mitigation of transportation-related impacts other than to restrict amounts or types of materials handled. The legal authority to regulate transportation sources (e.g., setting emission standards) has been given to regional (Bay Area Air Quality Manage-

ment District), state (California Air Resources Board) and federal (Interstate Commerce Commission, Coast Guard) agencies.

Hydrocarbon and oxides of nitrogen emissions from trucks, trains and ships are currently limited by performance standards set by the regulating agencies. These existing controls on emissions have been reflected in the analysis of project transportation impacts.

Reductions in the allowable emissions from transportation sources have been adopted periodically over the past twenty years as new technology has become available, and stricter emissions standards can be expected to be adopted for these sources in the future. There are no current proposals to set stricter emission limits for ships, but several recent actions by the California Air Resources Board will reduce future emissions associated with diesel trucks. These new controls include:

- a roadside diesel truck smoke enforcement program designed to cite trucks with excessive smoke emissions;

- new diesel fuel quality standards, scheduled for implementation in 1992, that would result in reductions in emissions from diesel vehicles, including trucks; and

- lower oxide of nitrogen standards for diesel trucks scheduled to occur for the 1990 model year and 1997 model year.

Additionally, AB 234, enacted in 1987, authorized studies of locomotive emissions in California. A report on the findings of the study and any recommendations on implementing controls on locomotive emissions is due to be completed by January 1, 1993.

V. NOISE

The following analysis reflects the changes in the Project since the EIR was prepared. The major difference is the volume of truck traffic traveling on Harbor Avenue. The analysis also addresses comments and issues discussed at the Planning Commission meeting on November 13, 1990. Also presented are a further analysis of ship docking noise and a more detailed discussion of Alternative C, the truck bypass route.

A. ON-SITE NOISE SOURCES

Impacts

In the EIR, the docksider was identified as the major noise source during nighttime hours. Based on noise of similar equipment, measurements performed by Charles M. Salter Associates, Inc., the Project-generated residential noise was predicted to be 9 dB greater than the lowest background noise level measured at the residential receivers in March 1989. Although this noise would not exceed City's residential noise goal and would not significantly increase average noise levels, it would be noticeable and may be annoying to some people.

Mitigation

To minimize the potential of annoyance from the docksider unloading equipment, the conditions of approval for the current modified Project could contain an A-weighted noise level limit of 65 dB at a distance of 100 feet from the docksider. This is the original noise quotation from the vendor and would bring the docksider noise down to the nighttime background noise level at the residences. Similarly, a performance standard of 70 dB at a distance of 50 feet could be applied to the ventilation fans for the dome structures or on other air-quality control devices which operate 24 hours a day.

B. OFF-SITE NOISE SOURCES

1. Ships and Barges

Impacts

Additional analysis of ship docking noise has been performed since the EIR was prepared. A full description of this analysis is presented in a letter from Charles M. Salter Associates, Inc. dated November 12, 1990, reproduced in Appendix A of the Addendum.

In summary, noise from ship activity due to the Project would only be noticeable at the sensitive receivers along the water as the ships pass by on their way to the dock. The noise of ships idling at the dock and the ship-to-shore conversations are not expected to be noticeable at the nearest residential receivers. Currently, three to four ships per day use the New York slough to access ports in Pittsburgh, Antioch and Stockton. The Han Li Project will result in an average of one additional ship movement every two days, either inbound or outbound. The noise impact from this added ship activity would be less than significant.

Mitigation

The City has conditioned the Project such that the ships shall be docked for loading or unloading with their sterns to the east except for safety as determined by the ship's master.

2. Trains

Impacts

The train activity under the revised Project is not significantly different than that analyzed in the EIR. However, assuming the construction of sound walls as part of the truck bypass route as discussed below, the homes south of Santa Fe Avenue could experience a substantial decrease in noise generated by train activity in general.

Mitigation

Since no new noise impacts have been identified from truck and train activities, no new mitigation measures are recommended.

3. Trucks

Impacts

The number of truck trips has changed significantly since the EIR was prepared because of the elimination of sulphur, and the conditions placed on the Project by the City. The noise assessment is revised assuming a maximum of 160 truck trips per day until a truck bypass is opened, and 486 after the truck bypass is completed. The most likely truck bypass route currently under consideration by the City follows Harbor Street south from Third Street under the railroad overcrossing. Just south of the railroad overcrossing at Santa Fe Avenue, the truck bypass route would leave Harbor Street and travel east along the north side of Santa Fe Avenue. At Columbia Street, the route travels south to 14th Street along the backyards of homes fronting on the east side of Columbia Street.

The following is a discussion of impacts of truck noise impacts of residential receivers along Harbor Street. The noise impacts at receivers along Santa Fe Avenue and Columbia Street are discussed in the Alternatives Section of the EIR.

Prior to Truck Bypass Construction

A maximum of 160 one-way truck trips per day would be generated by the modified Project until the bypass route is implemented. This truck volume would generate a DNL of 59 dB at residential areas along Harbor Street. The existing measured noise levels at homes along Harbor Street is 67 dB. Combining these two noise levels results in a future DNL of 68 dB, an increase of 1 dB over the existing condition. During the peak hour (11:00 am to 12:00 noon), approximately 19 trucks will travel on Harbor Street.

Typical maximum noise levels from truck passbys are 80 dB at residential receivers along Harbor Street. Although maximum noise levels from truck passbys will be loud enough to cause speech interference outdoors during the passby, the 24-hour average noise level (DNL) is the appropriate descriptor for assessing the impacts of new trucks for the following reasons:

- It takes into account the maximum noise level of the passby and the total number of passbys.
- Nighttime noise levels are penalized 10 dB to reflect residential receivers' increased sensitivity during these hours.
- The City's noise element standards are in terms of DNL which are, in turn, based on State and Federal recommendations.

Following Truck Bypass Construction

The Project will generate a maximum of 486 trucks per day after the bypass is constructed. According to current bypass designs, this truck traffic will be diverted from Harbor Street at Santa Fe Avenue. Therefore, north of Santa Fe Avenue, Harbor Street will contain the total number of Project-generated trucks. For the few homes along the west side of Harbor Street at 9th and 10th Streets, the truck noise impacts, after the bypass is built, will be the same as those discussed in the EIR.

For those homes along Harbor Street south of Santa Fe Avenue, noise impacts would be less than those occurring before the bypass is built and as currently exist, since both the Project and non-Project-generated trucks would use the bypass.

The new truck route would reduce the noise exposure in residential areas along Harbor Street south of Santa Fe Avenue. If all trucks in the study area used the truck route, a significant reduction in existing residential noise levels along Harbor Street south of Santa Fe Avenue would be achieved.

Re-routing the trucks would generate the potential for noise impact at residential areas near the proposed truck route. The

latest proposed alignment of the truck route would affect the single-family residential areas along Santa Fe Avenue and Columbia Street. The estimated average daily traffic along the truck route would be 4,000 vehicles per day, 1,500 of which would be trucks. There would be one travel lane in each direction. Assuming a distance of 50 feet between the center of the roadway and residential area, the unmitigated DNL at the residential area would be 72 dB. Noise levels in this range are considered "normally unacceptable" in the City's standards for residential development.

Mitigation

Noise mitigation would probably take the form of a wall located approximately 10 feet from the edge of the roadway. To reduce the residential DNL to 60 dB, the City's "normally acceptable" level, would require a wall approximately 14 feet high. (The final design must be based on detailed topographic information of the proposed roadway and the existing residential area). Although the proposed route would closely parallel Santa Fe Avenue, the segment parallel to Columbia Street could be set back at a distance of about 300 feet to meet the 60 dB DNL goal.

Although the truck bypass noise can be mitigated to "normally acceptable" noise levels, the residential areas would be exposed to a significant increase over existing noise levels generating the potential for community response. The alignment and implementation of the truck route bypass requires a <u>full</u> noise impact analysis.

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APPENDIX A

ADDITIONAL MATERIAL PROVIDED BY THE APPLICANT

Your dry bulk future is at Brunswick, Georgia today.

Typical
for Bauxite, Gypsum
Limestone Aggregates
· handling/storage

The design of Colonel's Island Dry Bulk Terminal at Port of Brunswick is a direct response to shippers' demands for an efficient modern, state-of-the-art facility on the U.S. east coast. Located in the agricultural and mineral rich Deep South, Brunswick is an ideal site for your dry bulk shipments.

Colonel's Island offers 135,000 square feet of covered storage available for edible or non-edible cargoes. We receive by rail or truck and load up to 2,400 tons per hour. On-site switching is provided by our own Colonel's Island Railroad with connections to the major rail services of Norfolk Southern and CSX.

Our location provides timely access to the bustling markets of the south, midwest, and points beyond. Colonel's Island Terminal is located within three minutes of the Interstate.

Secure your dry bulk future today at the Port of Brunswick.

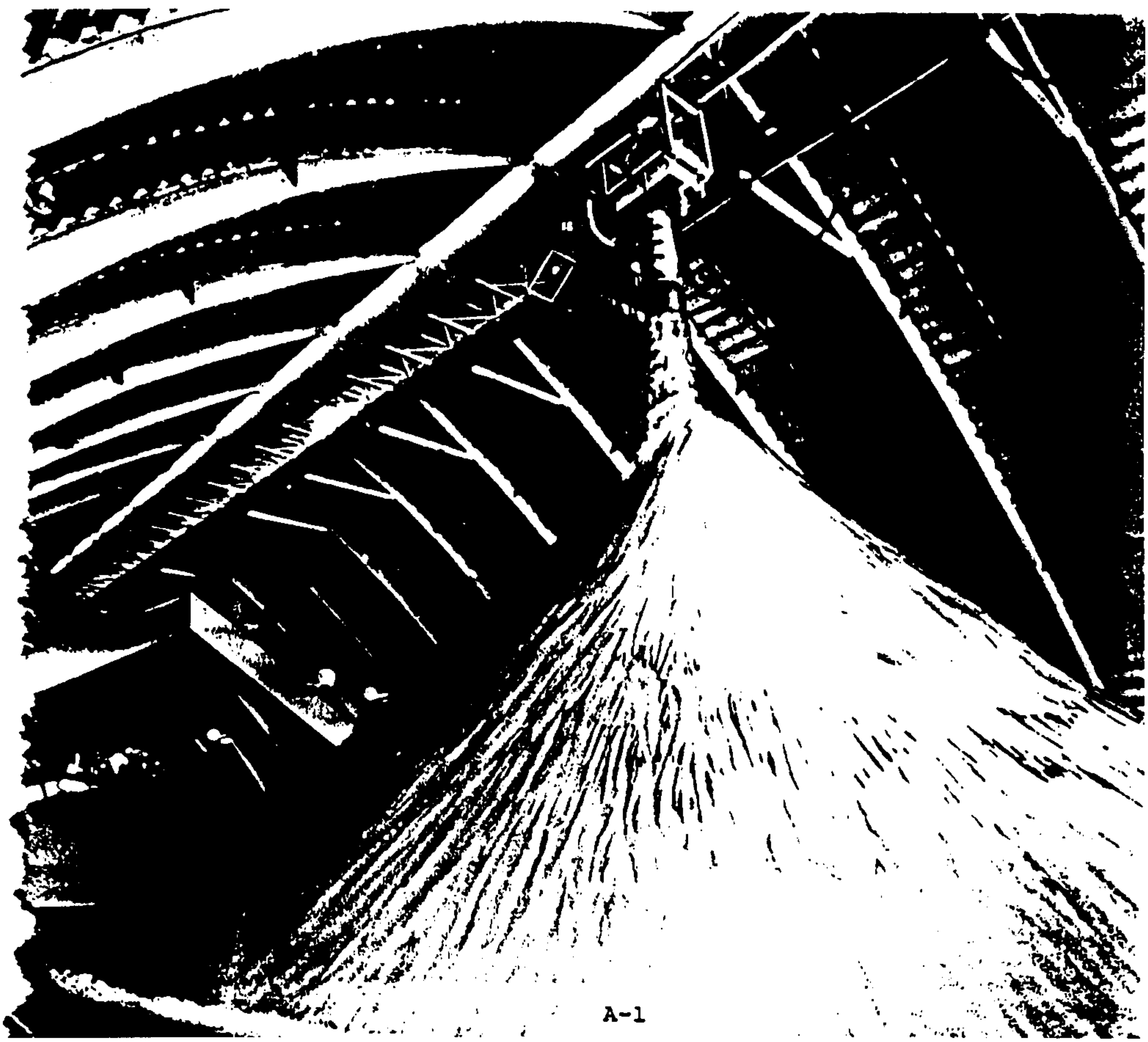
Interested? For a free copy of our informative and colorful brochure, contact our representative listed below.

SAVANNAH Richard Field
Director of Trade Development
Tel. 800-841-1107 • Tel. 800-342-8012 (in GA)
Tel. 912-964-3811 • FAX 912-966-3615 • Telex 804718

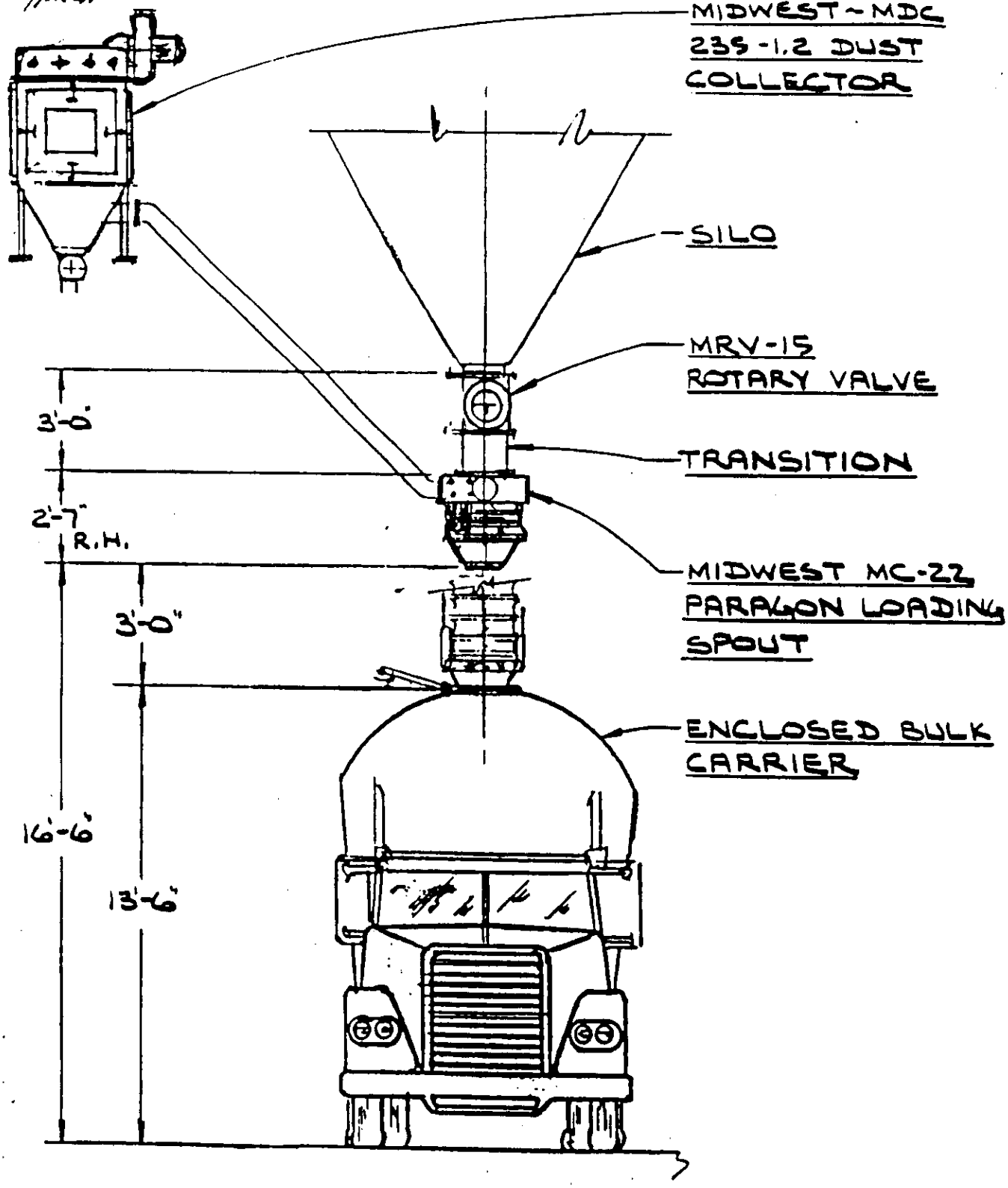
ATHENS Basil Grekousis
Director Mediterranean, Middle East, and Africa
Tel. 721-7675 • FAX (30-1) 724-9508
Telex 218344 IBS GR

OSLO Arthur Rodan, European Director
Tel. 425926 • Telex 78416 ESOBEN

Port of Brunswick
Georgia's port of opportunity



For Cement load out
Typical



MC-22 SERIES FOR ENCLOSED VEHICLE LOADING

Midwest International

GENERAL ARRANGEMENT

ENCLOSED VEHICLE LOADING

J PM 11-1-89

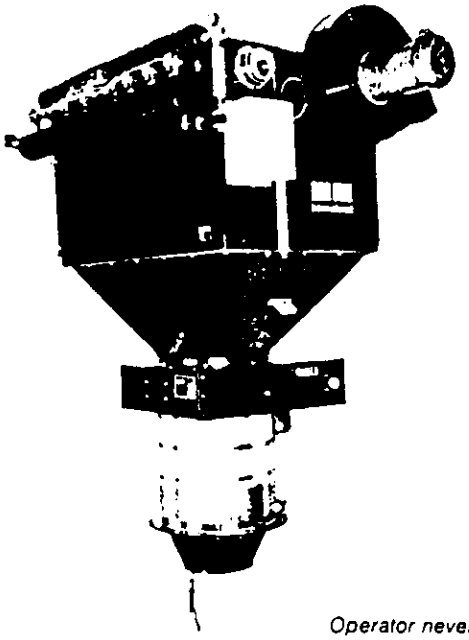
VAALER AWARDS

MATERIAL HANDLING

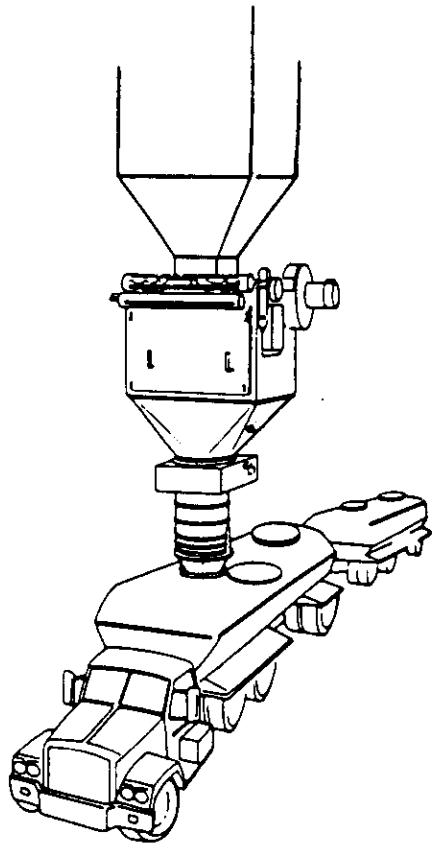
For cement load out
Typical

Bulk material loading system needs no dust collection

TOP HONORS



Operator never needs to contact raw material



"There is no question that this equipment represents the state-of-the-art in bulk material handling," a chief judge comments about a loading system that has achieved *Top Honors* status. He adds: "The loader represents a development which has been long needed in the handling of granular, dusty raw materials. This self-contained unit eliminates the need to be concerned with external dust collection equipment. While using this filler, the operator never needs to come into contact with the raw material that he is handling."

The award-winning development is an integral dust filter and retractable bulk loading spout complete with fan and pulse air cleaning mechanism. It is designed to be attached directly to a silo hopper bottom, grain feed chute, screw conveyor, airslide, or belt conveyor discharge chute.

The loader does not collect dust. It places the vehicle, container, or vessel being loaded under a negative pressure or vacuum during the loading process, eliminating airborne particulate emissions. Dust particles contained within the unit during the loading are deposited back into the container, vehicle, or vessel.

Dust piping is not required due to the design of the equipment. A normal installation would include a separate dust collector valve, screw conveyor, or other method of disposing of collected dust, and a retractable bulk loading spout. This equipment can now be replaced by one inexpensive loader, the manufacturer claims.

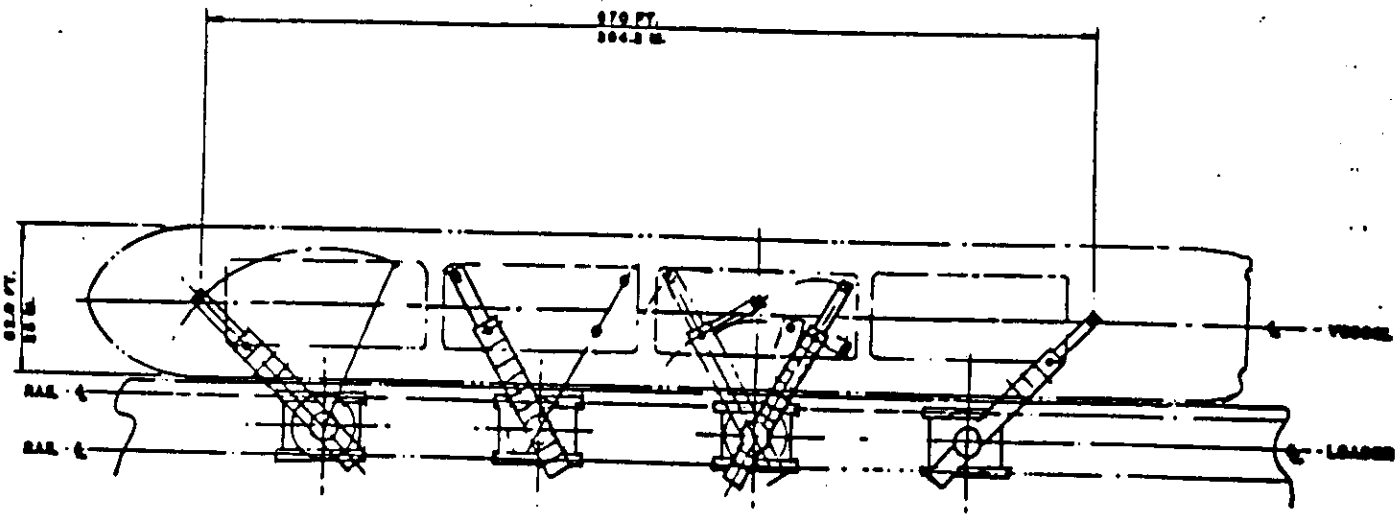
The equipment is shipped semi-assembled and prewired and is available in an agricultural series, as well as in the heavy-duty industrial series. A new adjustable venturi is designed to handle a wide variety of materials and flow rates.

"The breadth of application is limitless within the realm of dry materials handling, if the loader is sized properly for a given application," one of the chief judges states.

(Vaculoader® — Midwest International, a Division of Ron Pair Enterprises, Inc., Midwest Plaza, 105 Stover Road, Charlevoix, MI 49720.)

Reprinted from CHEMICAL PROCESSING

Typical bulk grain loadout



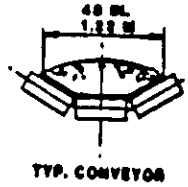
PLAN VIEW

TYP. 4 LOADERS

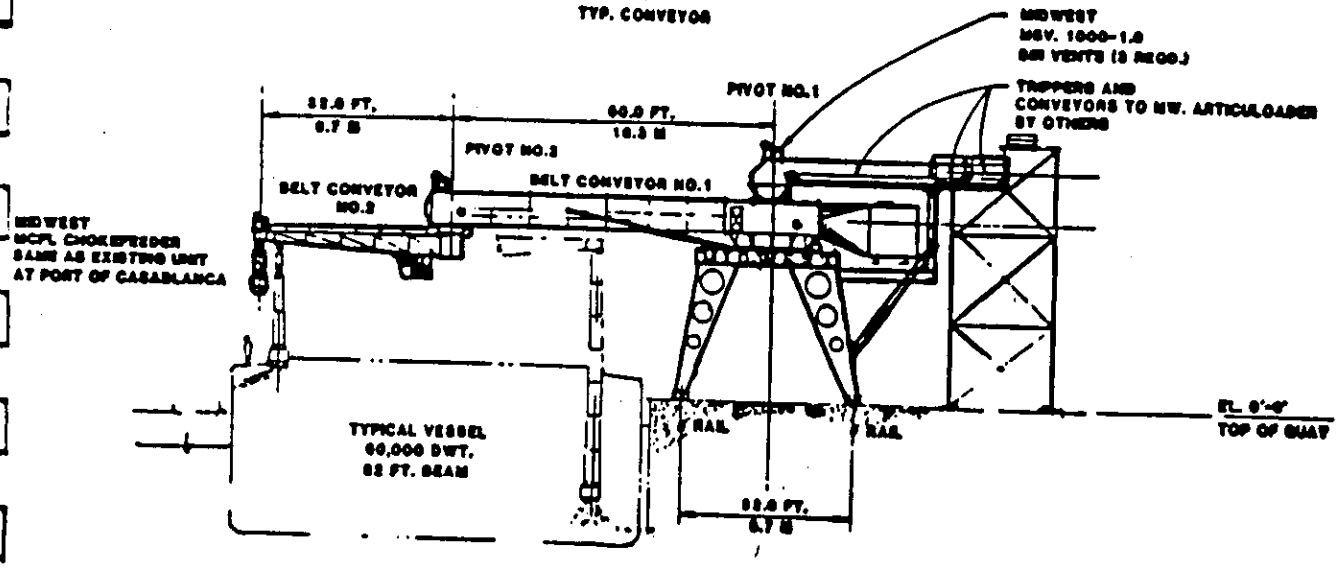
SPECIFICATIONS:

PRODUCT: PHOSPHATE

LOAD RATE: 1500 STPH /LOADER



TYP. CONVEYOR



ELEVATION

MIDWEST MRMA-60-75 RAIL ARTICULOADER
proposed for
PORT OF CASABLANCA

Midwest International

06-1677

PORT OF CASABLANCA

MRMA-60-75 SHIP LOADER

1977

APPENDIX B

LETTER FROM CHARLES M SALTER ASSOCIATES, INC. (ACOUSTIC CONSULTANTS), NOVEMBER 12, 1990

Charles M Salter Associates Inc

November 12, 1990

Douglas Duncan
Duncan and Jones
2161 Shattuck Avenue
Berkeley, CA 94704

Subject: Han Li International Marine Terminal EIR --
Ship Docking Noise
CSA Project No: 89-271

Dear Douglas:

This letter addresses the issue of ship-docking noise from the subject project affecting nearby residents. We have made noise measurements of a ship docking at Diablo Services, another shipping facility in the study area. We understand residents of the Bay Harbor Park Condominiums have complained about this activity in the past. We have used our measurement results to predict project-generated noise and to assess its impacts.

FINDINGS

Noise from ship activity due to the project would only be noticeable as the ships pass by the condominiums on their way to the dock. The noise of the ship idling at the dock and ship to shore conversations are not expected to be noticeable at the condominiums. Idling engines and voices were noticeable from the Diablo Services facility, but the increased distance to the Han Li project site will result in docking noise levels that are comparable to the existing background noise levels at the condominiums.

Currently, three to four ships per day use the New York Slough to access ports in Pittsburg, Antioch, and Stockton.[1] The Han Li project will add approximately one ship movement every two days. The noise impact from this added ship activity would be less than significant.

---

[1] Telecon Nov 1990 with Lieutenant Tazelaar, Coast Guard Vessel Traffic Service, San Francisco.

MEASUREMENTS OF SHIP NOISE FROM DIABLO SERVICES

Noise measurements were made between 5:30 am and 7:00 am on the morning of October 26, 1990 at two positions in the Bay Harbor Pack Condominiums: 1) on the shoreline pathway behind units at the end of the Point Way, approximately 72 feet from the Pittsburg Harbor and 2) at the end of Edgewater Place in front of the unit closest to Diablo Services. The ship docking that morning had a load capacity of approximately 20,000 metric tons and a main engine rated at 14,400 horsepower. It was assisted to the dock by two tug boats, each with 4,000 horsepower engines. Typical noise levels as the ship passed the measurement locations and docked are shown in Table 1.

The engine noise was continuous during the passby and docking operations. The maximum noise level measured during the passby was a "clanking" noise which could have been caused by the anchor chains. Once the ship reached the dock, unamplified voices could be heard but did not affect the measured sound levels. The maximum noise level measured while the ship was at dock was caused by an engine. Before the ship arrived, the ambient noise level[2] was about 45 dB, due to the PG&E power plant to the west.

PREDICTIONS OF SHIP NOISE FROM HAN LI TERMINAL

The passby noise levels at the Bay Harbor Park Condominiums due to ships approaching the Han Li dock will be the same as those for ships approaching Diablo Services. Assuming that 84 ships per year use the terminal, the Day-Night Average Sound Level (DNL)[3] produced by the new ships will be approximately 39 dB. This will not increase the existing DNL which is about 60 dB.

---

[2] Noise Level (Sound Pressure Level)--All noise data in this report are A-weighted. A-weighting is a standard frequency weighting which is commonly employed to measure the loudness or "noisiness" of sounds. A-weighting filters the microphone signal in a manner which correlates better with the sensation of the human ear. A-weighting is required by regulation promulgated by the U.S. EPA, the California Department of Aeronautics, Caltrans, and others.

[3] Day-Night Average Sound Level (DNL)--A descriptor established by the U.S. Environmental Protection Agency to describe the average day-night level with a penalty applied to noise occurring during the nighttime hours (10 pm - 7 am) to account for the increased sensitivity of people during

TABLE 1

MEASURED AND PREDICTED SHIP DOCKING NOISE LEVELS
AT THE BAY HARBOR PARK CONDOMINIUMS
MEASURED 26 OCTOBER, 1990

	A-WEIGHTED NOISE LEVELS, dB			
	SHIP PASSING		SHIP DOCKING	
	Typical	Maximum	Typical	Maximum
MEASURED LEVELS FROM DIABLO SERVICES	50 - 60	64	53 - 58	66
PREDICTED LEVELS DUE TO HAN LI	50 - 60	64	38 - 49	57

NOTE:
AMBIENT LEVEL DUE TO PG&E POWER PLANT: 45 - 50 dB