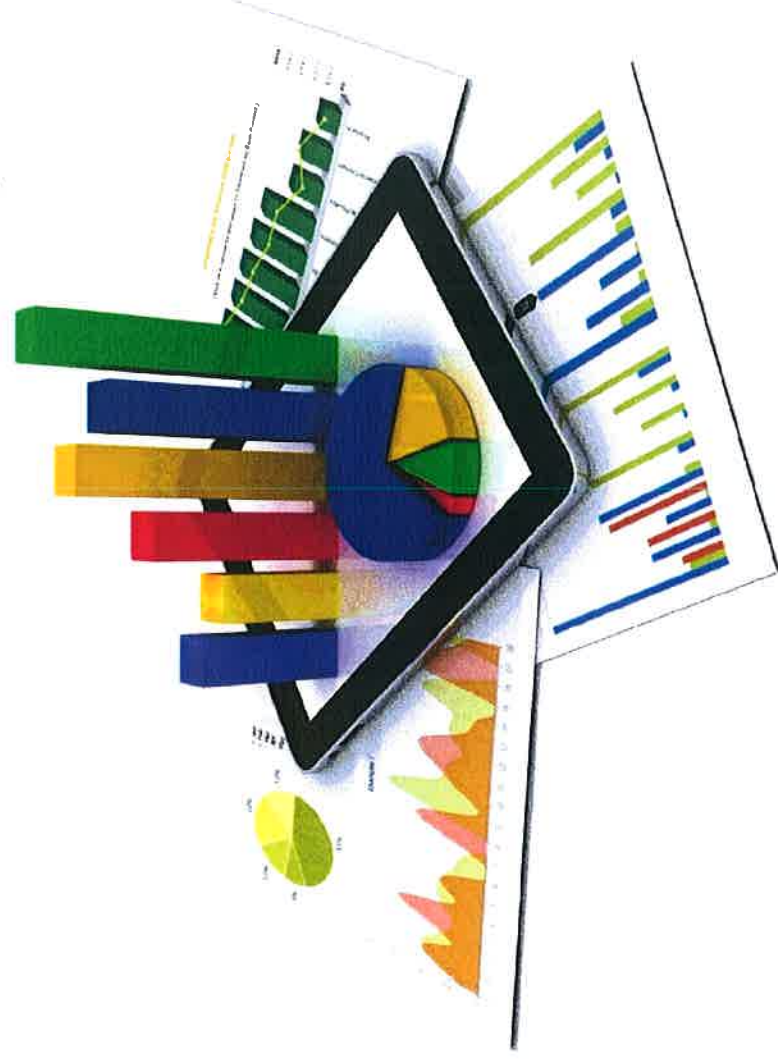




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# **Traffic Impact Analysis – North School**

**(Garland Associates)**

## **Executive Summary**

Presented by: Superintendent Pat Escalante  
Hermosa Beach School Board Meeting - May 11, 2016

## Introduction and Project Description:

- Previously an elementary school closed in 1987 due to declining enrollment
- Proposed 400 student school (3<sup>rd</sup> and 4<sup>th</sup> Graders)
- Current tenants are:

| Program                             | Children | Adults                  | Peak Drop-off           | Peak Pick-up               |
|-------------------------------------|----------|-------------------------|-------------------------|----------------------------|
| Children's Journey                  | 210      | 36                      | 7:45-8:30 am            | 5:00 – 6:00 pm             |
| South Bay Adult School<br>Preschool | +90      | 38 (T,Th)<br>36 (M,W,F) | 8:30-8:45 am            | 12:15, 12:30 or<br>1:00 pm |
| Commuter Traffic                    |          |                         | Coincides with K-5      | 5:00 – 6:00 pm             |
| K-5 School Traffic                  |          |                         | Coincides with Commuter | 2:00-2:30 pm               |

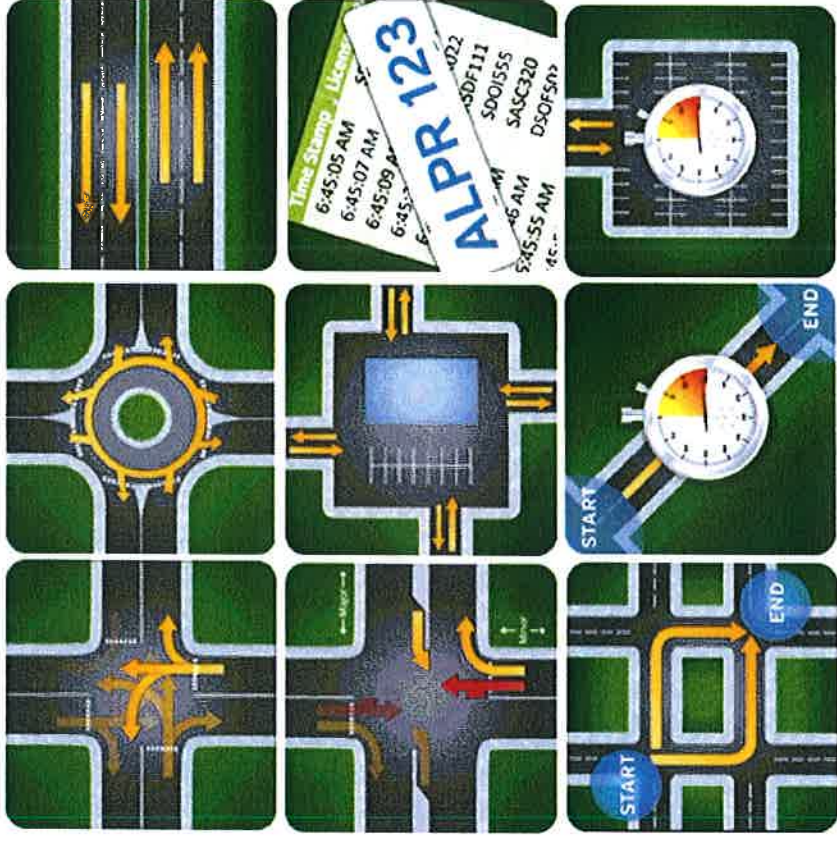


## **Methodology included:**

- Establish existing baseline traffic conditions
- Develop the projected future baseline conditions without the proposed project (considering cumulative effects of regional growth and traffic generated by other development projects proposed in the vicinity)
- Estimate increased levels of traffic that would be generated by a proposed North School project
- Conduct a comparison analysis of traffic conditions with and without the proposed school project
- Identify potential mitigation measures

## Areas of Study and Analysis:

- Intersections
- Traffic volume
- Vehicle Trips
- Street Segments
- Traffic controls
- Delay volumes
- Level of Service





## **Intersections Summary:**

- 14 intersections studied in the project vicinity
- Types of traffic control in place at each intersection
- All traffic under the jurisdiction of the City of Hermosa Beach
- Baseline conditions were analyzed to determine operating conditions during morning peak hour
- Existing intersection levels of service were determined for delay value and level of service during morning peak hour
  - 7 intersections at A level
  - 6 intersections at B level
  - 1 intersection at D level (Ardmore and Gould)



To get a sense of translated “Level of Service” letters

**RELATIONSHIP BETWEEN DELAY VALUES & LEVELS OF SERVICE –  
INTERSECTIONS**

| Level of Service | Delay Value (seconds)<br><u>Unsignalized Intersections</u> |
|------------------|------------------------------------------------------------|
| A                | 0.0 to 10.0                                                |
| B                | > 10.0 to 15.0                                             |
| C                | > 15.0 to 25.0                                             |
| D                | > 25.0 to 35.0                                             |
| E                | > 35.0 to 50.0                                             |
| F                | > 50.0                                                     |



## **Future baseline Traffic Conditions:**

- 2019 baseline conditions without the project
- Industry standard growth factor multiplier 1.04%
- Projection was rounded to 2% (conservatively high) to show “worst case scenario”
- Quantified traffic generated by other proposed city projects
- Based on AM peak hour – traffic volumes are unchanged



## Traffic Impact Analysis:

- Projected Generated Traffic
  - Quantify the net increase in traffic volumes
  - Based on current Land Use for 300 student population
  - Future project of 400 student population
- Multipliers used were at the high end of the scale (nearly double)
- Trip generation and traffic volumes
  - Staff vehicles
  - Drop-off/pick-up
  - Visitors
  - Deliveries
- Net decrease of vehicle trips per day
  - Increase of trips during the morning peak hour
  - Decrease of trips during the afternoon peak hour
  - Traffic volumes do not necessarily represent new traffic
  - Assumption for this study – new traffic represented



## Intersection Impact Analysis:

*Before project* and *after project* traffic impact scenarios were studied based on peak hour traffic volumes (standard approach).

### Existing Conditions as Baseline:

- 13 of 14 intersections would continue to operate at acceptable levels of service
- 13 intersections would not be significantly impacted according to significance criteria
- 1 intersection will continue to operate at unacceptable rate
  - With increase of 1.6 percent – still below threshold of 10 percent = intersection not significantly impacted

### Year 2019 as Baseline:

- None of the study area intersections would be significantly impacted by the proposed project.



## Intersection Impact Analysis (continued):

### Levels of Service:

- Schools generally experience intense period of traffic flow for 15 or 20 minutes within peak hour
- Likely short intervals of time at beginning and end of sessions may be worse than table values
- Typical of school operation and not considered a significant impact of service during peak hour
- Traffic flow would be at an acceptable level and/or below threshold of significance



### **Street Segment Analysis:**

- Analysis during AM peak hour traffic volumes
- Evaluated volume/capacity ratios and levels of service
- Proposed reopening of the elementary school would not have a significant impact on any street segments.

### **Construction Traffic Impacts:**

- Absence of existing traffic volume/trips
- Staging area for construction equipment would be onsite
- Construction traffic would not result in a significant traffic impact
- May require temporary detours, roadway or sidewalk closures
- Recommended to create a construction work site traffic control plan – submit to City of Hermosa Beach



## **Congestion Management Program: (CMP)**

- Proposition 111 requires that traffic impact of individual development projects with regional significance be analyzed
- PCH and Artesia intersection – closest CMP intersection
- Estimated 10% of project traffic will travel through this intersection = 12 vehicles during morning peak hour
- This is below threshold level of 50 trips per hour
- Detailed CMP intersection analysis is not required
- No significant impact
- Commuter peak hour not impacted



## **Vehicular and Pedestrian Safety:**

- Increased levels of traffic, pedestrians, bicycles, and vehicle turning movements would result in increased number of traffic conflicts and corresponding probability of accident occurring.
- Recommended mitigation actions (subject to approval of City of Hermosa Beach)
  - Crosswalks
  - Signage
  - School route plan





## **Site Access and Circulation:**

- Primary vehicular access would be a proposed driveway at 25<sup>th</sup> and Myrtle Ave.
- Primary pedestrian traffic would be proposed on 25<sup>th</sup> Street entrance.
- Existing network of sidewalks will accommodate pedestrian circulation
- Vehicular circulation would be on the network of side streets
- Challenged by narrow streets – width of streets are inadequate
- Circulation would be constrained during peak arrival and departure times
- Street network can accommodate the anticipated traffic volumes
  - Acceptable levels of service
  - Existing schools have operated without unreasonable traffic issues
  - Facility previously operated as an elementary school
  - Observed sufficient pull-out opportunities allowing vehicles to pass



## **Student Drop-off and Pick-up:**

- Existing zones are inadequate
- Suggested mitigating measures – subject to approval of City of Hermosa Beach
  - Curb painting (white zones for drop-off or pick-up)
  - Widening of street at white curb locations
  - Utilization of Rotary/Kiwanis parking lots  
(not in traffic impact assessment report)





## Summary of Impacts and Recommendations:

- 400 student elementary school = 980 vehicle trips per day
- Replacement of existing private preschool programs eliminates existing site generated traffic and results in net decrease of 170 vehicle trips per day after project.
- Additional traffic would not result in significant impact on 14 intersections in school vicinity per City of Hermosa Beach significance criteria.
- Additional traffic would not result in significant impact on street segments in school vicinity.
- Even with conservatively high assumptions regarding growth rate for traffic volumes and trip generated rates, there are no intersections or street segments “even close to having a significant impact according to significance criteria.”



## **Summary of Impacts and Recommendations (continued):**

- CMP is well below thresholds, a detailed analysis is not required, no significant impact on freeway segment or CMP intersection.
- streets providing access are inadequate width – vehicular traffic would be constrained during peak hours
- Narrow streets are an inconvenience, inefficient traffic flow but the network can accommodate anticipated traffic volumes because levels of service are acceptable
- Existing program has functioned without unreasonable traffic issues, formerly operated as an elementary school.



## **Actions to Minimize Traffic, Pedestrian, and Safety Impacts During Construction**

- Submit construction work site traffic control plan to City of HB

## **Actions to Alleviate Vehicle, Pedestrian, and Safety Impacts**

- Installation of school warning signs
- Installation of yellow school cross walks
- Prepare School Route Plan

## **Actions to Maximize the Number of Drop-off and Pick-up Spaces**

- Addition of white curb – Loading and Unloading passengers zone
- Widening of street at the white curb locations to increase separation from travel lane

(Note: All actions subject to City of Hermosa Beach approval.)

**Full detailed report available at  
hbcasd.org**



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- Proposed 400 student school (3<sup>rd</sup> and 4<sup>th</sup> Graders)
- Current tenants are:

| Program                             | Children | Adults                  | Peak Drop-off              | Peak Pick-up               |
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## Methodology

- Establish existing baseline traffic conditions
- Develop the projected future baseline conditions without the proposed project (considering the cumulative effects of regional growth and traffic generated by other development projects proposed in the vicinity)
- Estimate the increased levels of traffic that would be generated by a proposed school
- Conduct a comparison analysis of traffic conditions with and without the proposed school
- Identify potential mitigation measures.

## Areas of Study

- Intersections
- Traffic volume
- Vehicle Trips
- Street Segments
- Traffic controls
- Delay volumes

## Intersections

- 14 intersections in the project vicinity
- Types of traffic control in place at each intersection
- All under the jurisdiction of the City
- Baseline conditions were analyzed to determine operating conditions during morning peak hour
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- 2019 baseline conditions without the project
- Industry standard growth factor multiplier 1.04%
- This projection was rounded to 2% = worst case scenario, conservatively high
- Quantify traffic generated by other proposed projects
- Based on am peak hour traffic volumes are unchanged

## Traffic Impact Analysis

- Projected Generated Traffic
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Before project and after project traffic impact scenarios  
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### Existing Conditions as Baseline

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### Street Segment Analysis

- Analysis during am peak hour traffic volumes
- Evaluated volume/capacity ratios and levels of service
- Capacity values source is EIR done by E & B (City of HB 2014)
- Proposed reopening of the elementary school would not have a significant impact on any street segments.

### Construction Traffic Impacts:

- Absence of existing 300 student traffic volume/trips
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