Hillsdale Boulevard & Alameda de las Pulgas Traffic Signal Project

DESIGN CONCEPT

PEDESTRIAN REFUGE ISLANDS



MEDIAN TO BE REBUILT AND PRESERVED.

W HILLSDALE BLVD



NEW TRAFFIC SIGNAL FOR THE INTERSECTION WITH PEDESTRIAN SIGNALS

HOW YOUR VOICE IMPACTED THE PROJECT	
WHAT WE HEARD	IMPACT TO DESIGN
PEDESTRIAN SAFETY WAS THE HIGHEST PRIORITY FOR THE COMMUNITY.	THE TRAFFIC SIGNAL WITH PROTECTED PEDESTRIAN MOVEMENTS AND PEDESTRIAN REFUGE ISLANDS WAS INCLUDED TO PROVIDE COMFORTABLE AND SAFE CROSSING CONDITIONS. THE CROSSWALKS ARE PROPOSED TO BE SHORTER (REDUCING THE AMOUNT OF TIME PEDESTRIANS SPEND IN THE ROAD), AND THE LEFT-TURN PHASING OF THE TRAFFIC SIGNALS ELIMINATE CONFLICTS BETWEEN LEFT-TURNING VEHICLES AND PEDESTRIANS (NOT ALLOWING THESE CONFLICTING MOVEMENTS TO GO AT THE SAME TIME).
THE HIGHEST CONCERN FOR ROADWAY USERS WAS CONFLICTS BETWEEN TURNING VEHICLES AND PEDESTRIANS.	A PROTECTED LEFT TURN SIGNAL (GREEN ARROW) WAS INCLUDED TO SEPARATE TURNING TRAFFIC FROM ALL OTHER CONFLICTS, INCLUDING PEDESTRIANS.
CONFLICTS FOR BICYCLISTS WERE ALSO A MAJOR CONCERN FOR THE COMMUNITY.	THE CORNER PROTECTION ISLANDS CREATE A COMFORTABLE AND SEPARATED SPACE FOR BICYCLISTS. THESE LEFT TURNS CAN BE COMFORTABLY MADE IN TWO STAGES WITHOUT HAVING TO MERGE INTO TRAFFIC.
CONGESTION CAUSED BY THE SIGNAL WAS A COMMONLY EXPRESSED CONCERN.	A SEPARATE LEFT TURN LANE WAS INCLUDED IN THE DESIGN TO PREVENT TURNING VEHICLES FROM BLOCKING THROUGH VEHICLES, AND A TRAFFIC ANALYSIS WAS PERFORMED TO SHOW THE SIGNAL WAS WARRANTED AND REDUCED CONGESTION.
SOME BICYCLISTS PREFER THE PROTECTED ISLANDS, OTHER PREFERRED TO MIX WITH TRAFFIC.	THE SIGNAL WAS DESIGNED TO ALLOW FOR AND DETECT BICYCLISTS USING EITHER THE PROTECTED CORNERS OR THE LEFT TURN LANES, BASED ON USER PREFERENCE.
DRIVERS TURN TOO QUICKLY AROUND THE CORNERS OF THE INTERSECTION.	SPEED WEDGES WERE INCLUDED IN THE DESIGN TO SLOW DOWN TURNING VEHICLES WHILE STILL ALLOWING FOR LARGER TRUCKS AND EMERGENCY VEHICLES TO USE THE INTERSECTION BY DRIVING OVER THEM.

0' 4' 10' 20' 40'
1 INCH = 20 FT

8' PARKING
11'
11'
6'
11'
11'
8' PARKING
63'
100'
15'
10'
2'
5'
6'
11'
ALAMEDA DE LAS PULGAS

DESIGN CHANGES SINCE THE JANUARY 2024 MEETING	
CHANGES MADE	REASON BEHIND THE CHANGE
LEFT TURN LANES WERE EXTENDED FURTHER	THE ORIGINAL DESIGN SAUGHT TO INSTALL MINIMUM LENGTH LEFT TURN POCKETS IN ORDER TO MINIMIZE THE IMPACTS TO TREES. THIS WAS BASED ON COMMUNITY DESIRES TO KEEP THE MEDIAN TREES. HOWEVER, THE CITY IDENTIFIED THAT THE TREES WERE DYING AND CANNOT BE REPLACED WITH CURRENT MAINTENCE BUDGETS. WITHOUT THE TREES REMAINING, THE DESIGN EXPANDED THE LEFT TURN POCKETS TO MEET THE LENGTH NEEDED FOR EXPECTED VOLUMES.
ONLY TWO CORNERS OF THE INTERSECTION HAVE PROTECTED CORNER ISLANDS	IF ALL CORNERS HAD PROTECTION ISLANDS IMPLEMENTED, IT WOULD MAKE IT TOO DIFFICULT FOR SOME VEHICLES TO TURN RIGHT ONTO HILLSDALE BOULEVARD, AND CREATE A SAFETY CONCERN. THE DESIGN SHOWN IS CALLED A 'SEMI-PROTECTED' INTERSECTION, AND PROVIDES BICYCLISTS WITH THE PROTECTION ISLANDS FOR THE MOST DIFFICULT-TO-MAKE LEFT TURNS (TURNING ONTO HILLSDALE BOULEVARD FROM ALAMEDA DE LAS PULGAS), WHILE STILL ALLOWING VEHICLES TO MAKE COMFORTABLE TURNING MOVEMENTS.

RUBBER BOLTED DOWN SPEED WEDGES

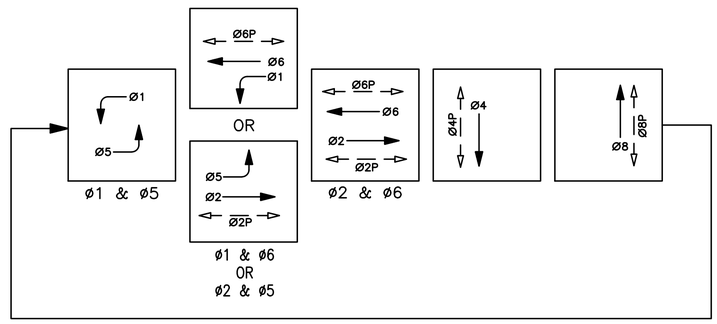


PROTECTED CORNER



PROPOSED SIGNAL PHASE DIAGRAM

STEADY DEMAND SEQUENCE



TIMING OF THE PEDESTRIAN SIGNALS IN COMBINATION WITH THE PROTECTED LEFT TURN PHASES ON ALAMEDA DE LAS PULGAS AND SPLIT PHASING ON HILLSDALE BOULEVARD WILL ELIMINATE CONFLICTS BETWEEN LEFT TURNING VEHICLES AND PEDESTRIAN MOVEMENTS AT THE INTERSECTION.