STREET CLASSIFICATION SYSTEM

In Alameda, Street classification system is divided into three categories:

Street Types Land-use Classifications Transportation Mode Classification

Street Types:

Street types range from regional arterials to local streets. Each street type reflects the function of the street relative to the rest of the network. Streets in Alameda are classified as follows:

- Regional Arterial
- Island Arterial
- Transitional Arterial
- Island Collector
- Transitional Collector
- Local Street

Generally, Regional Arterials serve the major activity centers of a city and provide for the longest trip lengths, highest traffic volumes, and most through traffic. Regional Arterials connect to smaller Island Arterials, which due to the City of Alameda's extensive grid network and residential character, allow cross-island traffic to be channelized from the neighborhoods. Collectors, which serve as a funnel for local streets from specific neighborhoods, feed into the Island Arterials. Collectors are scaled down appropriately and are more common than arterials while local streets carry the least amount of traffic but are the most prevalent. These classifications are discussed in further detail below and a street classification map is presented in the figure below.

The land use and transportation mode classifications were developed to provide additional information about the context of each street. To apply this information to the City's street network, these classifications would be overlaid on the street type layer. The land use and modal overlays are then used to identify appropriate design treatments and modal preferences for each street. For example, a street that is classified as an island arterial, a primary transit street, but not a bicycle priority street could potentially include bus bulbs to facilitate transit access, even though this would preclude the installation of a bicycle lane.

Exhibit 2 Item 7-B, December 12, 2022 Planning Board Meeting



Regional Arterials

Regional Arterials carry the heaviest volumes of traffic on the longest trip lengths including intercity trips and regional through traffic. Connections to regional attractions such as state highways, shopping districts, colleges, and major recreational areas are a key attribute. Auto mobility is an important, but not the only feature of regional arterials as traffic is generally regional in nature and traveling a greater distance. Specific design features that foster livable streets and multi-modal access can be applied through the land use and modal overlay classifications.

Design and Operational Features:

Primary Functions

- Serve long distance, regional automobile and transit trips.
- Provide access to regional freeway network.
- Provide access to regional attractions such as shopping districts, colleges, employment centers, and major recreational areas

Number of Lanes

- 3 to 4 automobile lanes. This should be determined through the operational evaluation and should be tied to the thresholds (LOS), which are to be developed as part of the TMP, and weighed against neighborhood livability issues.
- May include exclusive transit lane in the future.
- May include bike lanes if along a bicycle priority street.

Congestion Tolerance

- Lowest degree of congestion tolerance among street types.
- Mitigation measures must be balanced against the needs of other modes and the surrounding land uses.
- Congestion should be reduced where possible in order to promote efficient person and good circulation as well as improve transit operations. The level of congestion that is acceptable should be determined through the thresholds (LOS) for different modes of transportation and balanced against neighborhood livability issues. These thresholds are to be developed as part of the TMP.

Traffic Calming Measures

• Non-intrusive measures may be applied to maintain the posted speed limit.

Island Arterials

Island Arterials serve to complement regional arterials by providing cross island access for local intra-island trips through generally residential neighborhoods. The street classification constraints of a residential, island community with a limited number of portals are addressed in the designation of Island Arterials. These streets generally carry shorter trip lengths, do not have regional destinations, and carry less traffic volume than regional arterials. Auto mobility is a feature emphasized on Island Arterials due to their crossisland connectivity but to a lesser extent than regional arterials because of the residential nature of the Island Arterials. The grid network in Alameda allows for the distribution of traffic along several Island Arterials rather than channel all the traffic to large Regional Arterials that would separate the neighborhoods. In general, Island Arterials will be narrower than their regional counterparts and more integrated into the surrounding neighborhoods.

Design and Operational Features:

Primary Functions

- Serve shorter distance, local trips that begin and end within the City.
- Connect traffic between local and collector street network, and regional arterial system.

Number of Lanes

- 2 to 3 automobile lanes. Although some Island Arterials currently have capacity for four lanes, the residential nature of these streets should be preserved while providing for the intra-island connection to Regional Arterials. An operational analysis should be used to determine the number of lanes and needed. The number of lanes should be based on the thresholds (LOS) for different modes of transportation and weighed against neighborhood livability issues.
- May include bike lanes if along a bicycle priority street.

Congestion Tolerance

• Higher levels of congestion acceptable to improve multi-modal access and accommodate the needs of surrounding land uses. The level of congestion should be based upon the thresholds (LOS) for different modes of transportation and balanced against neighborhood livability issues.

Traffic Calming Measures

• More frequent use of non-intrusive traffic measures may be applied to maintain posted speed limit and address neighborhood livability issues.

Transitional Arterials

The classification of Transitional Arterial indicates a street that is currently classified as, and operates as an arterial but is desired to operate as an Island Collector. This is in contrast to the Island Collector classification, which already operates as such. Through a series of measures, either implemented today or in the future, the street's traffic volumes and/or trip characteristics will be altered to the point that a lower classification is warranted. Measures that can be taken along a transitional arterial include traffic calming, opening a new street, and other methods to move traffic away from the Transitional Arterials should only be classified as such when alternate routes are in close proximity.

Design and Operational Features:

Primary Functions

- Currently serves as a Regional or Island Arterial
- Desire is for the street to function as an Island Collector in the future.

Number of Lanes

- 2 to 3 automobile lanes.
- May include bike lanes if along a bicycle priority street.

Congestion Tolerance

• Higher levels of congestion acceptable to improve multi-modal access and accommodate the needs of surrounding land uses.

Traffic Calming Measures

• More advanced traffic calming measures such as street narrowing can be applied to divert through traffic to other streets (preferably other arterials), maintain posted speed limit, and improve general livability.

Island Collectors

Island Collectors serve to balance mobility and land access. Usually spaced more frequently than the arterials, Island Collectors carry less traffic volume but provide for more direct land access for vehicles. Island Collectors typically funnel all local traffic onto arterials for longer trips and disperse arterial traffic onto local streets for local traffic.

Collector streets are called Island Collectors in the City of Alameda. Island Collectors differ from traditional collector streets in that they form part of the City of Alameda's historical grid system. As part of this system, Island Collectors are expected to carry more traffic than what would be expected from a typical collector.

Design and Operational Features:

Primary Functions

- Funnel traffic between local streets and the arterial network
- Provide access to local attractions, where applicable, such as schools and parks

Number of Lanes

- 2 to 3 automobile lanes
- May include bike lanes if along a bicycle priority street

Congestion Tolerance

• Land access, neighborhood livability, and multi-modal access balanced equally with congestion reduction measures

Traffic Calming Measures

• More advanced traffic calming measures such as street narrowing (bulb-outs) can be applied to divert through traffic to other streets (preferably other arterials), maintain posted speed limit, and improve general livability

Transitional Collectors

Similar to Transitional Arterials, Transitional Collectors currently function as Island Collector streets but are desired to operate as Local Streets. This is in contrast to the Local Street classification, which already operates as such. Through a series of measures, either implemented today or in the future, the street's traffic volumes and/or trip characteristics will be altered to the point that a lower classification is warranted.

Measures that can be taken along a Transitional Collector include advanced traffic calming, opening a new street, and other methods to move traffic away from the Transitional Collector and onto a nearby street, preferably an arterial or collector. Transitional Collectors should only be classified as such when alternate routes are in close proximity.

Design and Operational Features:

Primary Functions

- Currently serves as an Island Collector.
- Desire is for the street to function as a Local Street in the future.

Number of Lanes

• 2 automobile lanes.

Congestion Tolerance

• Land access, neighborhood livability, and multi-modal access takes precedence over congestion reduction measures.

Traffic Calming Measures

• All available traffic calming measures may be applied to divert through traffic to other streets (preferably other arterials or collectors), maintain posted speed limit, and improve general livability.

Local Streets

Local streets make up the rest of the City's street network and provide for direct land access with auto mobility as a secondary feature. Local streets are the most common streets by mileage but carry the least amount of traffic over the smallest trip distances.

Design and Operational Features:

Primary Functions

- Serve abutting land uses
- Serve as an extension of neighborhood life

Number of Lanes

• 2 automobile lanes, usually unmarked

Congestion Tolerance

• Land access, neighborhood livability, and multi-modal access takes precedence over congestion reduction measures

Traffic Calming Measures

• All available traffic calming measures may be applied to divert through traffic to other streets (preferably other arterials or collectors), maintain posted speed limit, and improve general livability

Land Use Classification:

The land use overlay describes the interaction between the roadway and the surrounding area, as well as the design treatment examples.

Land use Classifications include:

- 1. Residential Corridor Street
- 2. Commercial Main Street
- 3. General Commercial and Industrial Street
- 4. School and Recreational Zone
- 5. Gateway Street



1. Residential Corridor Street

Most of the streets in the City of Alameda are fronted by residential land uses which contribute to the City's unique character and small town feel. Some of these streets, however, because of their location and cross-section function, serve as arterials or collectors and carry high volumes of motor vehicle traffic on the island. The result is that the residences along these streets experience noise and congestion. Residential Corridors are designated to enhance street livability (landscaping to reduce noise, providing a tree canopy, on-street parking, etc.) and provide access to the communities they serve while preserving mobility for all modes of travel.

Design and operational Features:

- Landscaped or painted medians at key locations if space allows
 - Encourage 25mph driving by reducing perceived street width
 - Improve aesthetics
 - Act as a pedestrian refuge island at crosswalks
 - Recommended only for arterials and other 3 to 4-lane streets

- Wider sidewalks

- Improve pedestrian comfort
- Create street as a place

- Landscaped sidewalk buffer

- Reduce street noise
- Improve pedestrian comfort
- Encourage 25mph driving by reducing perceived street width

- Curb extensions

- Improve pedestrian comfort and crosswalk safety
- Encourage 25mph driving by reducing perceived street width

- Bicycle markings on designated routes

- o Bike lanes
 - Single white line for flexibility
 - Avoid parked car door area
 - Proper intersection treatments including continuing lane through intersection
- Sharrow markings to indicate shared lanes
- Providing bicycle loop detectors

- On-street parking

- Provide for residential access
- Improve pedestrian comfort

- Adequate travel lanes

- Design and operations should allow for access to residential properties and minimize impacts to residential driveways
- Encourage 25mph driving

- Travel lane width

- Narrower travel lane width (or perceived width) through striping
- Encourage 25mph driving

- Block Length

- New developments should have block lengths of 400'-500'
- Maintain neighborhood connectivity
- Encourage walking and bicycling by providing multiple paths

2. Commercial Main Street

Commercial Main Streets are designed to serve adjacent, street facing, commercial land uses. Multi-modal access is emphasized through the placement of pedestrian amenities, bicycle facilities, transit access, and onstreet parking. The street itself is promoted as a place and destination through the use of wider sidewalks, landscaping, and special paving. Building frontages should maintain a common setback and entrances should be oriented facing the street.

Curb cuts and driveways are minimized to help promote a continuous street frontage and to enhance pedestrian safety and environment. On-street parking preservation is to be encouraged over other pedestrian or bicycle improvements if there is insufficient right-of-way. Marked pedestrian crosswalks are to be frequent but should be based upon pedestrian activity and activity generators.

Design and operational Features:

- Parking

- Provide adequate on-street and off street parking for commercial access
- Improve pedestrian comfort by having on-street parking
- Parallel parking or angle parking if sufficient right-of-way
 - Bicycle safety should be considered when implementing angle parking – back-in parking offers higher degree of safety
- Minimize driveway/intersections to increase parking, reduce vehicular conflicts, and improve pedestrian walkway

- Parking safe-zone

- Act as a buffer between parallel parking area and travel lanes
- Make use of special paving to mark safe-zone

- Bicycle facilities

- Encourage bicycle access
 - Bike racks on each block if space is available
 - Bike lanes or Bike Route (Class III) if sufficient width is available
 - Continue lanes through intersections, bicycle loop detectors
 - Bicycle facility and destination signage
- Maintain proper riding distance from parallel or angle parking

- Wide sidewalks

- Improve pedestrian comfort
- Promote street as a place and a destination

- Landscaped sidewalk buffer

- Reduce street noise
- Improve pedestrian comfort
- Encourage 25mph driving by reducing perceived street width. However, the width of the travel lane should be adequate to accommodate commercial vehicle traffic

- Special paving for crosswalks

- Improve pedestrian comfort and safety
- Alert motorists to pedestrian presence
- Highlight street as a retail district

- Curb extensions

- Improve pedestrian comfort and safety
- Encourage 25mph driving by reducing perceived street width

- Adequate travel lanes

- Provide sufficient lanes for adequate capacity to minimize queuing and impacts to residential and commercial driveways and to maintain arterial functionality
- Encourage 25mph driving

- Travel lane width

- Narrow travel lane width (or perceived width) through striping
- Encourage 25mph driving

- Block Length

- New developments should have block lengths of 400'
- Maintain commercial main street connectivity
- Encourage walking and bicycling by providing multiple paths

3. General Commercial and Industrial Street

Serving the industrial, shopping, and office areas of Alameda, General Commercial and Industrial Streets are designed to handle a significant amount of truck and heavy vehicle traffic. Truck access to the adjacent industrial land uses is provided through wider travel lanes and turning radii at intersections. On-street parking is restricted where necessary. Pedestrian and bicycle access should still be maintained but with fewer amenities than the Residential Corridor or Commercial Main Streets.

Design and operational Features

- Wider travel lanes
 - Safely accommodate truck traffic

- Larger turning radii

• Safely accommodate truck traffic

- Parking

- Provide for loading and unloading areas off street loading and unloading areas should be encouraged
- Sufficient off-street parking is provided in accordance with the General Plan parking requirements
- Accommodate wider travel lanes
- Minimize driveways and intersections to provide on-street parking where needed and to reduce vehicular conflicts

- Sidewalks

- Provide for safe pedestrian access
- Can be narrower than Residential Corridor or Commercial Main Streets, except on designated trail corridors, and should be in accordance with ADA guidelines

- Bicycle Facilities

 Bike Lanes (Class II) or Bike Routes (Class III) on designated bicycle routes

4. School and Recreational Zone

Along streets in a designated School and Recreational Zone, pedestrian and bicycle accommodations are to be evaluated in conjunction with other street functions. Many of the schools in the City are found along Regional and Island Arterials and Island Collectors and therefore the features in this overlay need to be balanced against other features such as the number of travel lanes and lane width. School and Recreational Zones are identified within the 2 block radius around each school, public and private.

Streets that serve parks, libraries, beaches, and other high pedestrian traffic generators are also be included in the School and Recreational Zone classification. Along these streets, pedestrian comfort and safety will receive the highest priority in street design while maintaining the multimodal characteristics of the street. Curb extensions, wider sidewalks, and landscaped medians along with other treatments will be used to enhance the pedestrian environment.

Design and Operational Features

- Crosswalks

- Special paving, marking, and lighting for designated crosswalks to alert motorists of school zone
- Marked at each intersection along Safe Route to School
- Mid-block for longer blocks or where significant crossings occur
- Provision of in-street pedestrian signs or in-pavement lights where appropriate

- Curb extensions

- Improve pedestrian comfort and safety
- Encourage School Zone speed limit by reducing perceived street width

- Landscaped medians

- Encourage School Zone speed limit by reducing perceived street width
- Improve aesthetics
- Act as a pedestrian refuge island at crosswalks

- Narrower travel lanes

- Encourage School Zone speed limit by reducing perceived street width
- Reduce crosswalk traffic exposure

- Wide Sidewalks

• Improve safety and comfort of pedestrians

- Bicycle Facilities

- Wider bicycle lanes for children on designated routes
- Proper intersection treatment such as signage and lane markings through intersection to improve safety
- Bike Lanes (Class II) or Bike Routes (Class III) on designated bicycle routes

- On-street parking

- Provide for adjacent land use access
- Improve pedestrian comfort

- Landscaped sidewalk buffer

- Reduce street noise
- Improve pedestrian comfort
- Encourage School Zone speed limit by reducing perceived street width

5. Gateway Street

As an island city, Alameda has a limited number of entryways and points of egress, or "gateways" into the city. The gateways are designed to provide a sense of arrival to residents and visitors coming into the city and to eventually distribute them onto the arterials and other city streets. Proper signage and street design elements should be present to welcome arrivals as well as to set the tone for lower driving speeds in the city. Motorists and other traffic moving between the Main Island and Harbor Bay Isle should keep a sense of continuity between the two parts of the city.

Gateways also serve those who wish to leave the city by channeling traffic from city arterials to the rest of the regional network. Egress traffic should be multi-modal and seamless with the connecting networks.

Design and Operational Features:

- Landscaped medians towards end of gateway

- Reduce visual broadness of roadway to encourage slower speeds
- Enhance aesthetic appeal of gateway
- Narrowed travel lanes and/or right of way towards end of gateway
 - Reduce visual broadness of roadway to encourage slower speeds

- Welcome signage

- Provide a sense of arrival
- Encourage motorists to "Drive 25" in Alameda
- Encourage multi-modal travel in Alameda

- Bicycle and Pedestrian facilities where applicable

- Connect all modes to the rest of the region
- Enhance pedestrian and bicycle comfort and safety

- Seamless connection with outside network

- Collaborate with Oakland, Caltrans, AC Transit, and Alameda County to provide multi-modal connectivity
- Further collaboration to address tube and bridge connectivity to Oakland and regional network

Modal Classifications:

Modal classifications are used to denote the preferred mode of travel on a particular street segment, as well as appropriate design treatments. All streets have a limited amount of right of way available and the modal network connectivity should be preserved within these constraints.

Modal overlays include:

- 1. Transit Priority
- 2. Bicycle Priority
- 3. Truck Route







1. Transit Priority

The Transit Priority street classification is broken down into three groups, each with its own set of design and operational features. The Transit Priority street classification does not imply that a specific type of transit or level of service will run on the street; it refers to the preference of transit on the street and the type of design features that would be prioritized. For all Transit Priority street classifications, the pedestrian environment needs to be incorporated into plans, as this is the primary mode of transit access.

Streets not classified as Transit Priority streets could nevertheless be used by such non-traditional transit services as neighborhood shuttles, paratransit, electric buses, etc. Non-classification does not preclude the use of full size school buses on specialized "School Routes" as necessary.

Design and Operational Features

Primary Transit Street:

Provide for high volume and frequent, regional, and city wide transit service. Provide frequent, moderate speed, high capacity service between major regional and city ridership generators. Primary transit streets are candidates for transit priority treatments such as queue jump lanes, limited/local stop service and traffic signal priority/pre-emption. Primary Transit Streets are candidates for Bus Rapid Transit, Streetcars, and other fixed guideway projects.

- Bus bulb-outs

- Improve transit operations
- Clearly designate bus stop location
- Lane widths and curb returns
 - Wider lane widths or wider curb lanes to minimize conflicts with bicyclists
 - Wider radii, and lane widths or wider curb lanes to accommodate transit vehicles

- Enhanced bus stops

- Shelters, benches, and other amenities to improve transit service experience and encourage transit use
- Clearly designate bus stop location
- Far side bus stops at intersections to improve bus operations and safety

- Passenger information

- Provide up-to-date schedule and routing information
- Provide surrounding neighborhood map
- Provide real-time bus arrival information as available
- Enhance transit service experience
- Encourage transit use

- Signal priority, right-of-way priority

- Examples include, queue jump lanes, and signal pre-emption
- Improve transit operations
- Useful for longer, congested corridors and frequent service areas

- Pedestrian amenities

- Wide sidewalks
- Curb extensions
- Crosswalk paving, markings
- Landscaped sidewalk buffer

Secondary Transit Street:

Provide for local and neighborhood transit service without physical priority treatments.

- Bus bulb-outs

- Improve transit operations
- Clearly designate bus stop location
- Lower priority than Primary Transit Streets

- Bus stops

- Shelters, benches, and other amenities to improve transit service experience and encourage transit use
- Clearly designate bus stop location
- Lower priority than Primary Transit Streets

- Pedestrian amenities

- Wide sidewalks
- Curb extensions
- Crosswalk paving, markings
- Landscaped sidewalk buffer
- Lower priority than Primary Transit Streets

Exclusive Transit Right of Way:

Identify future dedicated right of way routes for bus rapid transit or light rail service. Possible candidates include Lincoln Avenue which is a centrally located Island Arterial with numerous residential areas surrounding. Connects to main commercial areas on Webster Street and Park Street.

- Bus Rapid Transit or Light Rail

• High capacity, frequent transit service for intra-city and regional transportation

- Lane widths and curb returns

- Wider lane widths or wider curb lanes to minimize conflicts with bicyclists
- Wider radii, and lane widths or wider curb lanes to accommodate transit vehicles

- Bus bulb-outs

- Improve transit operations
- Clearly designate bus stop location

- Enhanced bus stops/stations

- Raised platform for level boarding
- Platform length shelters and seating areas
- Off-vehicle fare payment
- Clearly designate transit corridor / transit way
- Improve transit service experience and encourage transit use

- Passenger information

- Provide up-to-date schedule and routing information
- Provide surrounding neighborhood map
- Provide real-time bus arrival information as available
- Enhance transit service experience
- Encourage transit use

- Signal priority/pre-emption, right-of-way priority

- Improve transit operations
- Useful for longer, congested corridors and frequent service areas

- Pedestrian amenities

- Wide sidewalks
- Curb extensions
- Crosswalk paving, markings
- o Landscaped sidewalk buffer

- o Equal priority as Primary Transit Streets
- Connectivity to other modes, adjacent neighborhoods and destinations

2. Bicycle Priority

Streets identified on the bicycle network map are candidates for class I (off road path), class II (bike lanes), and class III (shared lanes) bike routes. These streets are identified in order to provide a network of streets that give cross-island access to bikers of all abilities. These streets should be prioritized for the implementation of bicycle loop detectors at all traffic lights and directional signage for cyclists, as well as safety improvements such as bike lanes and sharrows to increase the use of these facilities. The identified bicycle network does not preclude the use of bicycles on any streets. Additionally, bicycle loop detectors should be provided at all new signalized intersections regardless of street class.

Design and Operational Features

- Bike lanes (Class II)
 - Single white line for flexibility or dual white line to mark designated lane
 - Keep bicyclists away from car doors, transit stops, and other hazards

- On-street Bike Routes (Class III)

- Sharrows or white edge line to remind motorists and bicyclists that a right of way is always shared
- Keep bicyclists away from car doors, transit stops, and other hazards
- Only use if there is enough room for vehicles to safely pass

- Network signage

- Direct bicyclists to safest routes across city
- Remind motorists of bicycle presence

- Intersection treatments

- Higher priority for bike-actuated loop detector upgrades at existing auto-actuated traffic signals
 - All new auto-actuated traffic signals shall receive bike actuators regardless of classification
- o Markings to discourage right turn conflicts
- Bicycle facilities

• Require new developments to provide Bike racks and parking areas to access adjacent land uses

3. Truck Route

The Truck Route Network is designed to maintain a limited number of streets on which through truck traffic is allowed. Truck traffic is allowed to use nontruck route streets when it is necessary in order to reach their destination. Truck drivers must use the truck route for as much of their trip as possible. This network was created in order to give a useful network of streets that will not require excessive off-route driving.

Design and Operational Features

- Route signage
 - Alert trucks of truck route locations
- Intersection design
 - Sufficient turning radii at intersections frequented by heavy trucks
 - May conflict with transit, pedestrian, and bicycle design goals

- Roadway design

• Sufficient travel lane width (up to 14 feet) to accommodate trucks

In general, trucks have vastly different design needs than those of pedestrians, bicyclists, transit users, or even motorists. Accommodating trucks with bicyclists could be challenging if travel lanes are not wide enough. The street design process will have to balance all of these needs depending on the frequency of truck use and the overall goals of the specific street segment.

Improvement	From	То	Description
Clement (West)	Grand Street	Hibbard Street	
Clement (West)	Ohlone St.	Sherman Street	
Clement (East)	Broadway	Tilden Way	
Wilver "Willie" Stargell Avenue	Main Street	Fifth Street	
Wilver "Willie" Stargell Avenue	Fifth Street	Webster Street	
Mitchell-Moseley Extension	Mariner Square Loop	A new intersection on Main Street north of Singleton Avenue	
Fifth Street	Wilver "Willie" Stargell Avenue	Mitchell-Moseley	
Mariner Square Drive extension	Mariner Square Loop (east side)	Marina Village Parkway intersection with Constitution	Proposal includes a Park and Ride facility and a direct transit access on to Constitution using the current Mariner Square Drive access.
Alameda Point Dev	New Streets		Various locations
West Alameda Point Ferry Terminal	Sea Plane Lagoon		Relocate Main Street Terminal to Alameda Point
Light Rail Corridor	Fruitvale Avenue Railroad Bridge	Alameda Point	This route uses the Alameda Belt Line Property along Clement to Marina Village to Constitution to old railway property along Atlantic to Alameda Point

List of Future new Streets and Transit Corridors in the City of Alameda