


ALAMEDA COUNTY TRANSPORTATION COMMISSION

Countywide Multimodal Arterial Plan

Improving multimodal mobility for better economic, health and environmental outcomes



ACTAC April 9th, 2015 Meeting
Francisco Martin and Matthew Ridgway, Fehr & Peers
Phil Erickson, CD+A

Presentation Overview

- Arterial Plan Status Update
- Typology Framework and Modal Priorities
- Performance Objectives
- Requested Actions:
 - ✓ Provide Input on Typology Framework and Modal Priorities
 - ✓ Provide Input on Performance Objectives

Plan Progress Status Update

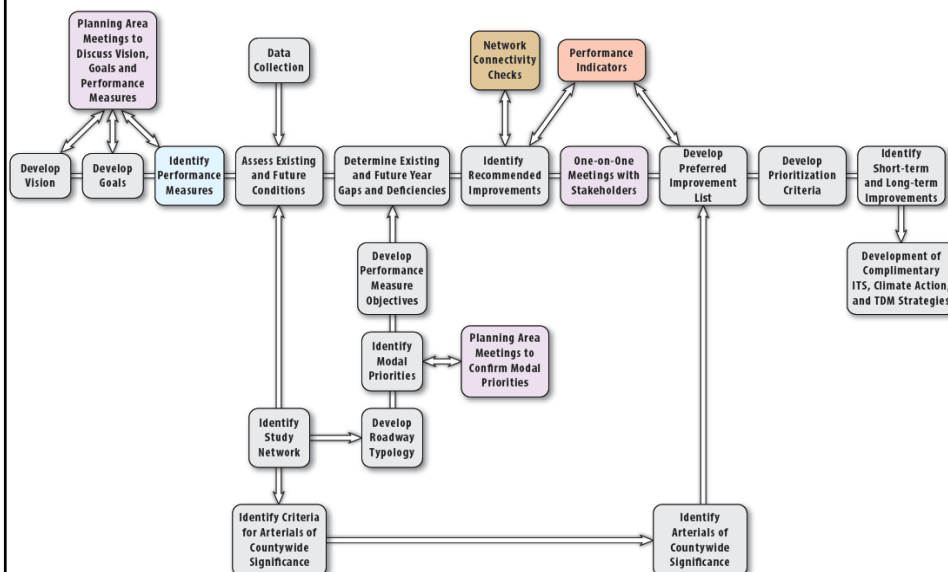
Arterial Plan Component	In Progress	Submitted	Approved	Notes
Vision and Goals		✓	✓	Approved by Commission 2/26/15
Performance Measures		✓	✓	Approved by Commission 2/26/15
Draft Typologies		✓		Requested approval – May 2015
Draft Performance Objectives		✓		Requested approval – May 2015
Draft Arterial Network Criteria and Maps	✓			Requested approval – June 2015
Planning Area Meetings	✓			Meetings scheduled: North – 4/20/15 South – 4/21/15 East and Central – 4/22/15
Non-Agency Stakeholder Meeting	✓			Meeting scheduled 4/20/15



COUNTYWIDE MULTIMODAL ARTERIAL PLAN

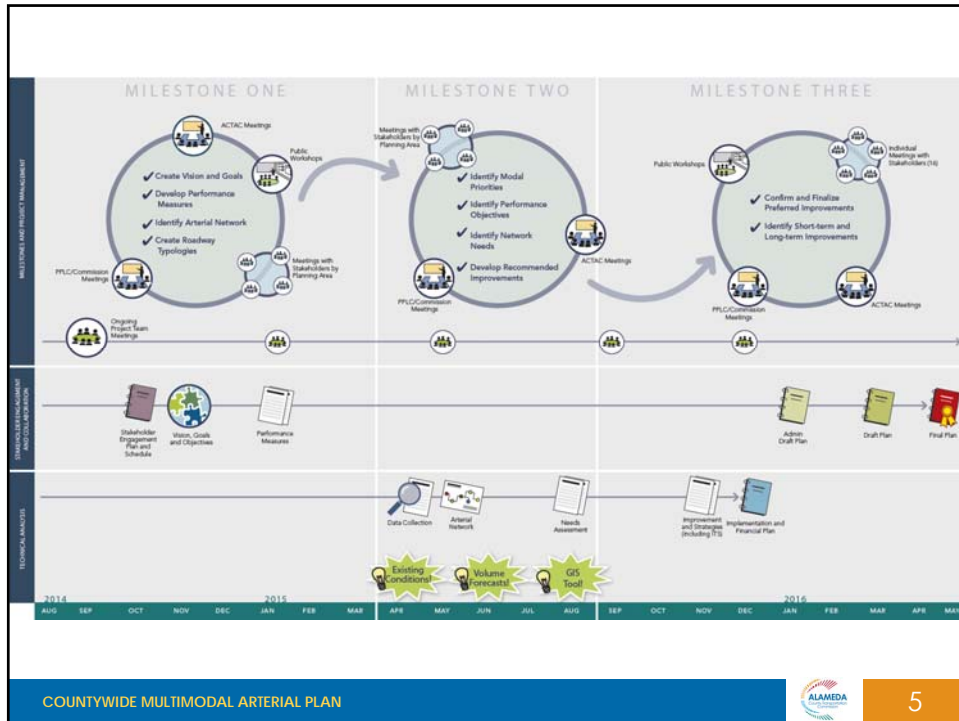


Arterial Plan Framework



COUNTYWIDE MULTIMODAL ARTERIAL PLAN





Summary Scope – Milestone #1



Streets Typology Development



Grand Avenue, Oakland



Railroad Avenue, Livermore



Logan Drive, Fremont

COUNTYWIDE MULTIMODAL ARTERIAL PLAN



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Why Streets Typology?

- Creates Street classification system that reflects
 - ✓ Multimodal function of streets
 - ✓ Land use context fronting streets
- Offers more than the traditional street classification systems
 - ✓ Provides detail for balancing modes within existing space of urban streets
 - ✓ Defines an integrated modal network
 - ✓ Based on more than vehicular traffic volumes



Grand Avenue, Oakland



Railroad Avenue, Livermore



Logan Drive, Fremont

COUNTYWIDE MULTIMODAL ARTERIAL PLAN



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Typology Framework Components

- **Street Type** – based on travel and access characteristics of existing vehicle travel
- **Multimodal network overlays** – Emphasis given to goods movement, transit, bicycles, or pedestrians
- **Land use context** – The built and natural environments that the streets pass through

MMAP
Street
Typology
Framework



Base Street



Modes of Travel



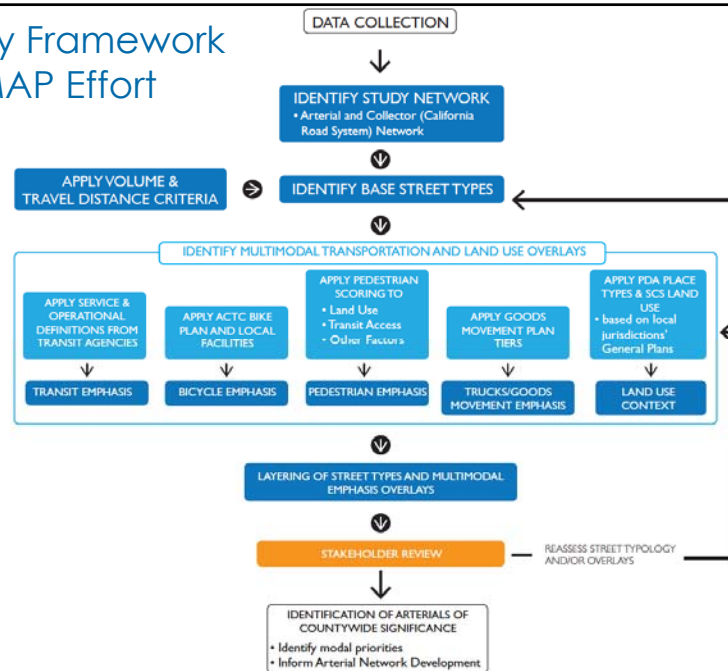
Land Use Context

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Typology Framework and MMAP Effort



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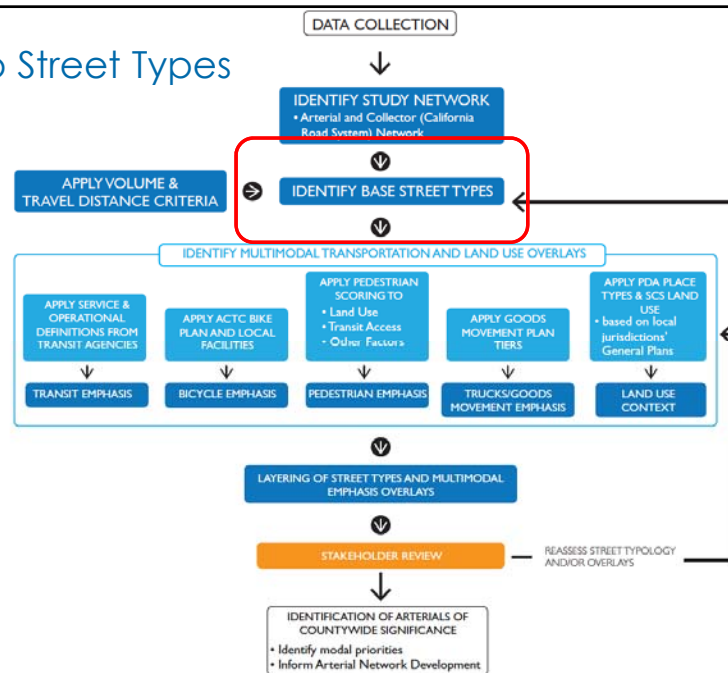
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Using Typology Framework in MMAP Effort

- Informs modal priorities and how to balance them within street right of ways
- Informs appropriate design of key elements
 - ✓ Example: Pedestrian priority street in PDA should have a wider sidewalk than a residential street



Develop Street Types



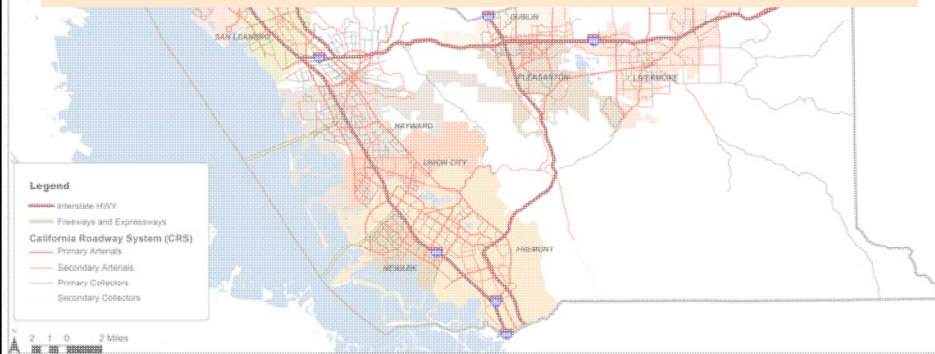
Base Street Type Characteristics and Criteria

Four Base Street Types considered:

- **Throughways** - Focused on carrying traffic through an area
- **County Connectors** – Focused on trips crossing between multiple cities
- **City/Community Connectors** – Focused on trips crossing a city or to an adjacent city
- **Neighborhood/District Connectors** – Focused on trips crossing a neighborhood or district or connecting adjacent ones

Base Street Type Characteristics and Criteria

A sensitivity analysis was applied to the Study Network using traffic volumes and trip length criteria to identify roads in each Base Street Type Category



Base Street Type Characteristics and Criteria

- **Throughways** - Focused on carrying traffic through an area
 - Countywide – at least 10,000 ADT
 - South & East County – at least 55% of volume travels 8+ miles
 - North & Central County – at least 50% of volume travels 8+ miles



Base Street Type Characteristics and Criteria

- **County Connectors** – Focused on trips crossing between multiple cities
 - Countywide – at least 10,000 ADT
 - South & East County – at least 50% of volume travels 6+ miles
 - North & Central County – at least 45% of volume travels 6+ miles



Base Street Type Characteristics and Criteria

- **City/Community Connectors** – Focused on trips crossing a city or to an adjacent city
 - Countywide – at least 50% of volume travels 4+ miles

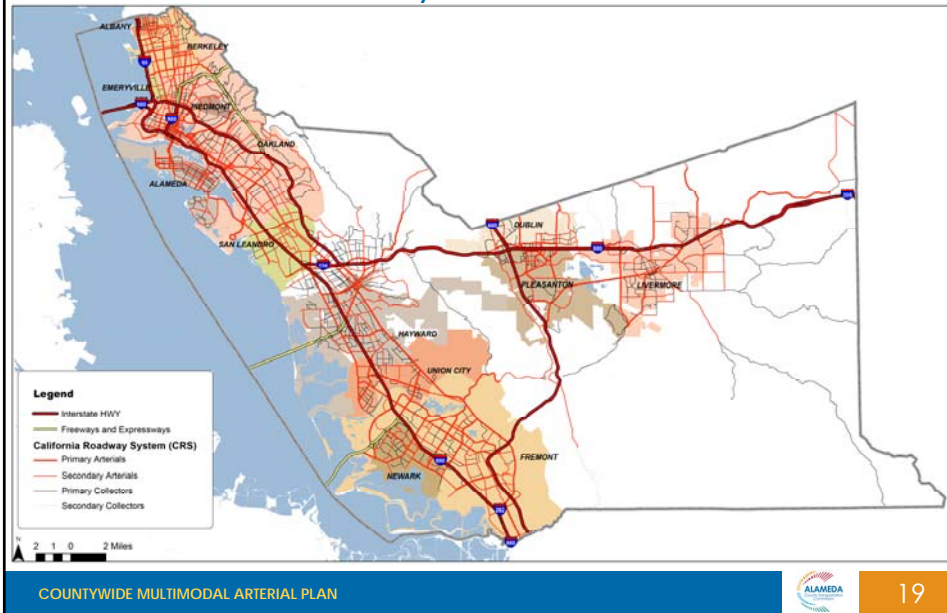


Base Street Type Characteristics and Criteria

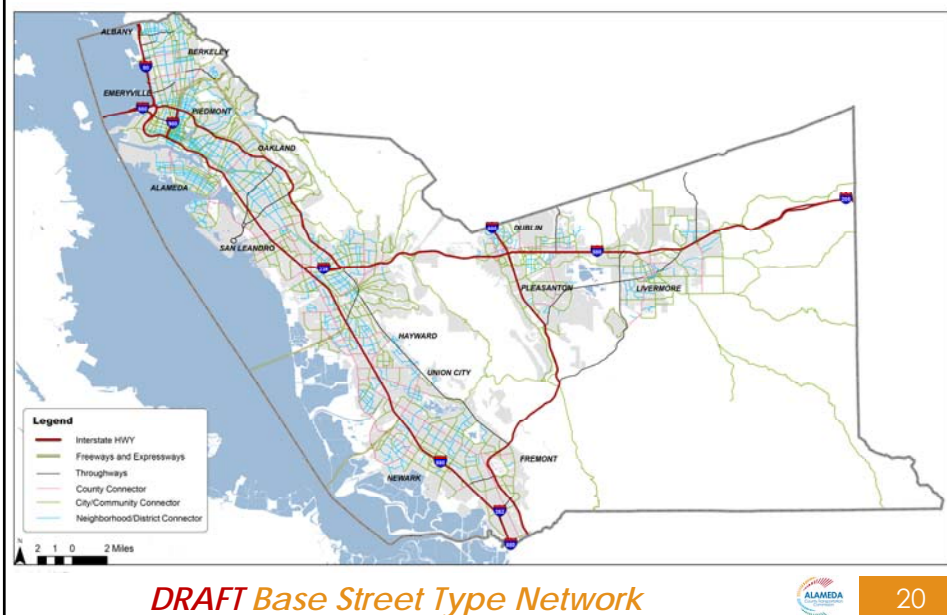
- **Neighborhood/District Connectors** – Focused on trips crossing a neighborhood or district or connecting adjacent ones
 - Countywide – at least 50% of volume travels less than 4 miles



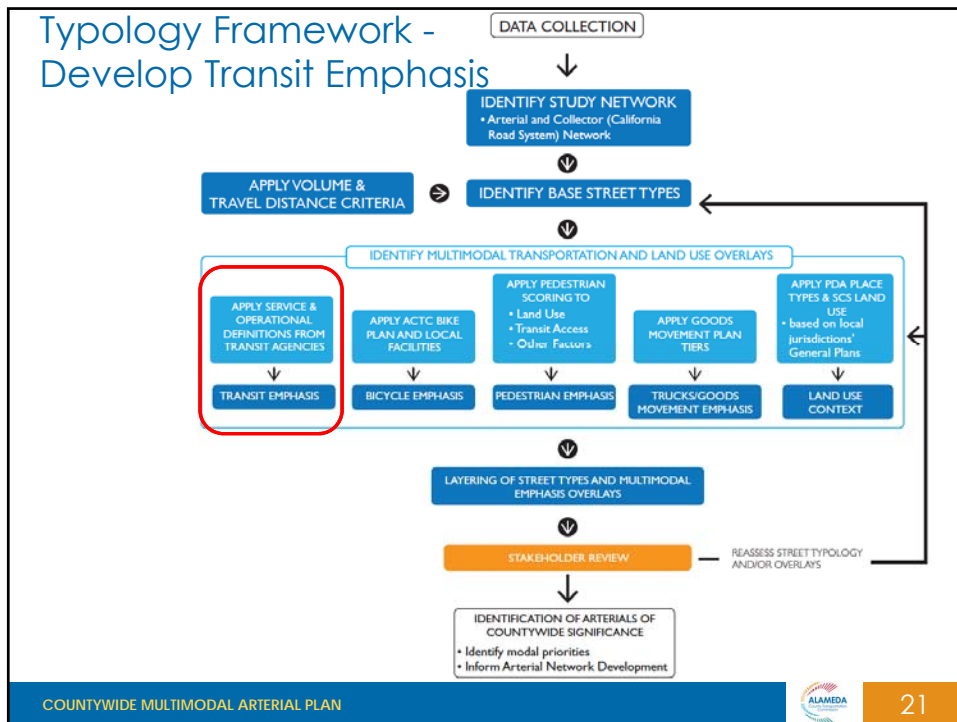
Study Network – California Road System



Base Street Types Network

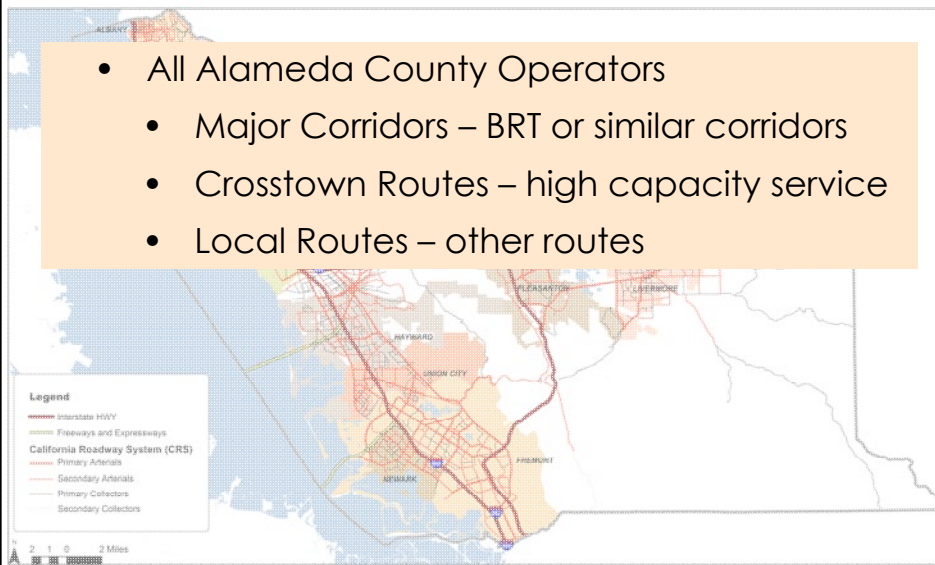


Typology Framework - Develop Transit Emphasis



Multimodal Overlays - *Transit*

- All Alameda County Operators
 - Major Corridors – BRT or similar corridors
 - Crosstown Routes – high capacity service
 - Local Routes – other routes

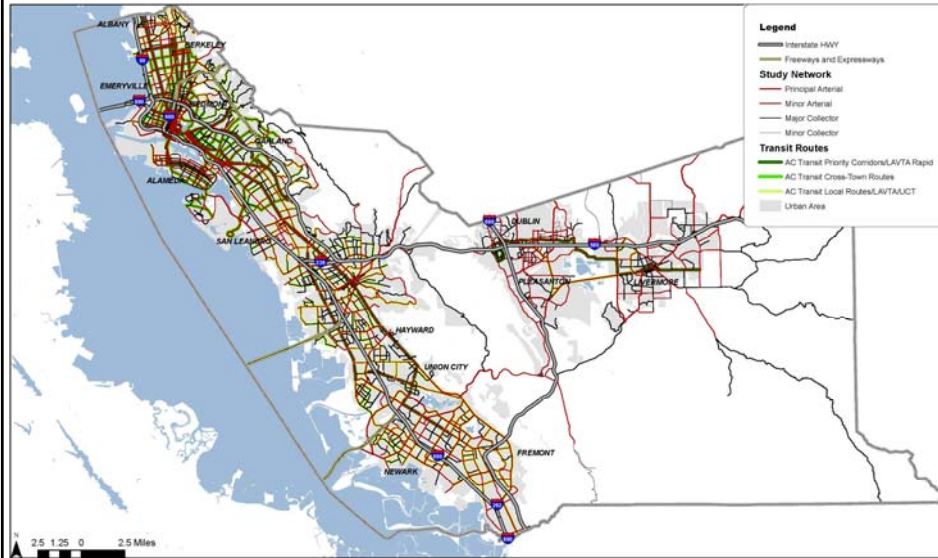


Transit Emphasis



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Multimodal Overlays - *Transit*

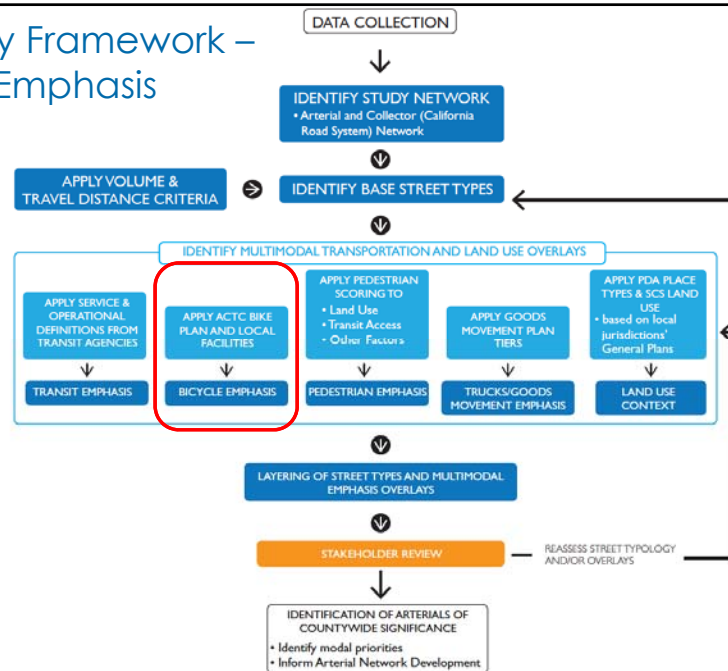


DRAFT Transit Emphasis



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Typology Framework – Bicycle Emphasis



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Multimodal Overlays - *Bicycle*

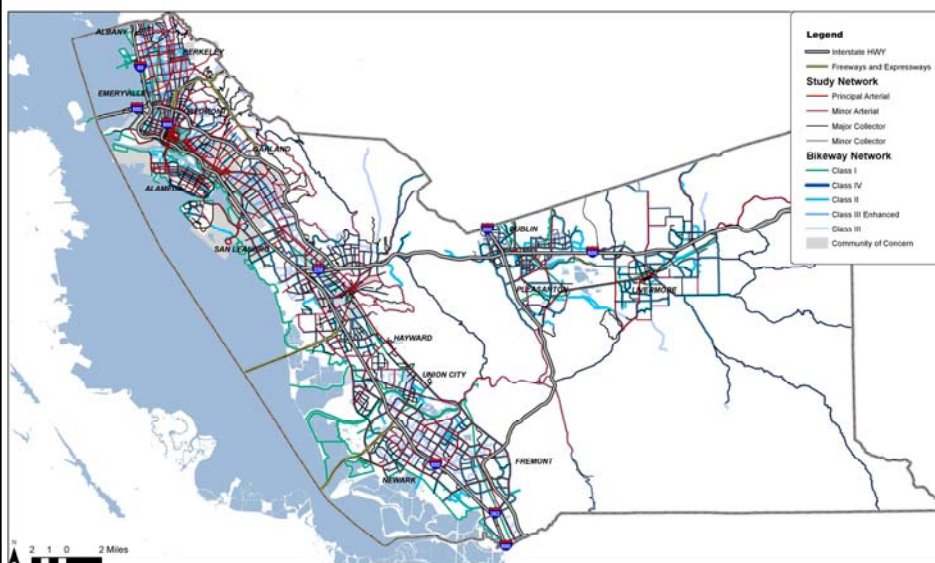
- 2012 Countywide Bicycle Plan Vision Network
- 4 Regional Trails
- Other Existing Bicycle Facilities
- Total of five facility classes:
 - ✓ Class I – bicycle and multiuse paths
 - ✓ Class IV – cycle tracks and similar protected facilities
 - ✓ Class II – bicycle lanes, buffered bicycle lanes, and green bicycle lanes
 - ✓ Class III Enhanced – bike boulevards and similar enhanced bike routes
 - ✓ Class III – bike routes, sharrows, shoulders, and curb lanes

DRAFT Bicycle Emphasis



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Multimodal Overlays - *Bicycle*

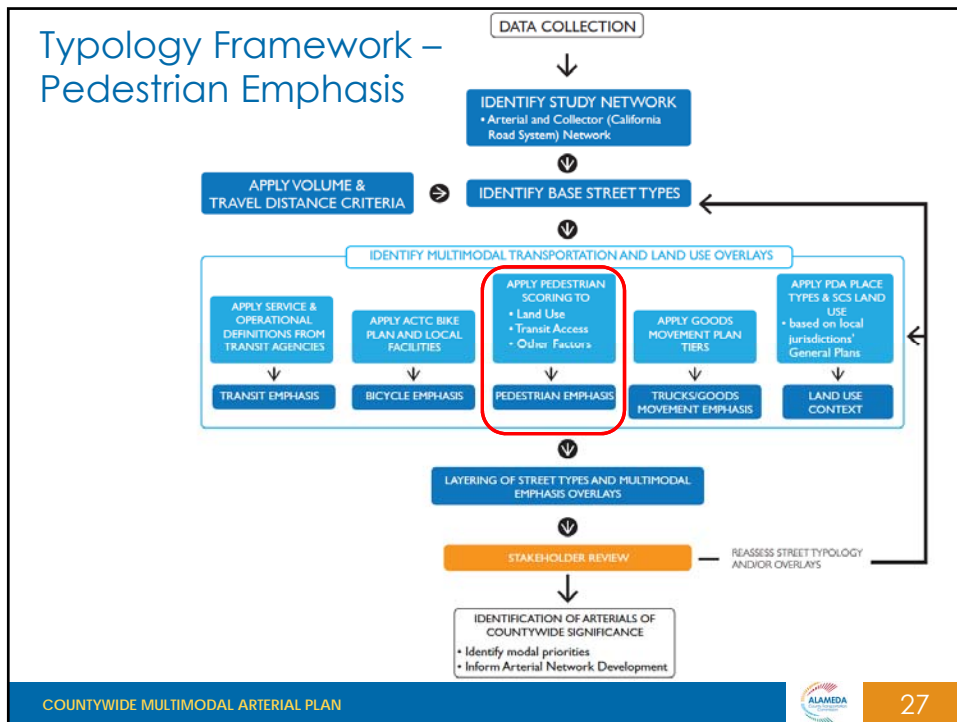


DRAFT Bicycle Emphasis



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Typology Framework – Pedestrian Emphasis



Multimodal Overlays - *Pedestrian*

- **Area Based instead of Network**
- **Aggregate “scoring” of key characteristics**
 - Land Use/Demographic
 - ABAG PDA Place Types
 - Commercial and Mixed Use Areas
 - MTC Communities of Concern
 - ACTC 2012 CTP Employment Growth Opportunity Areas
 - Proximity to activity & education centers, and parks
 - Proximity to Transit Stations and Stops
 - BART
 - AC Transit Priority Corridor/LAVTA Rapid Route
 - Local Bus Stops

DRAFT Pedestrian Emphasis



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Multimodal Overlays - *Pedestrian*

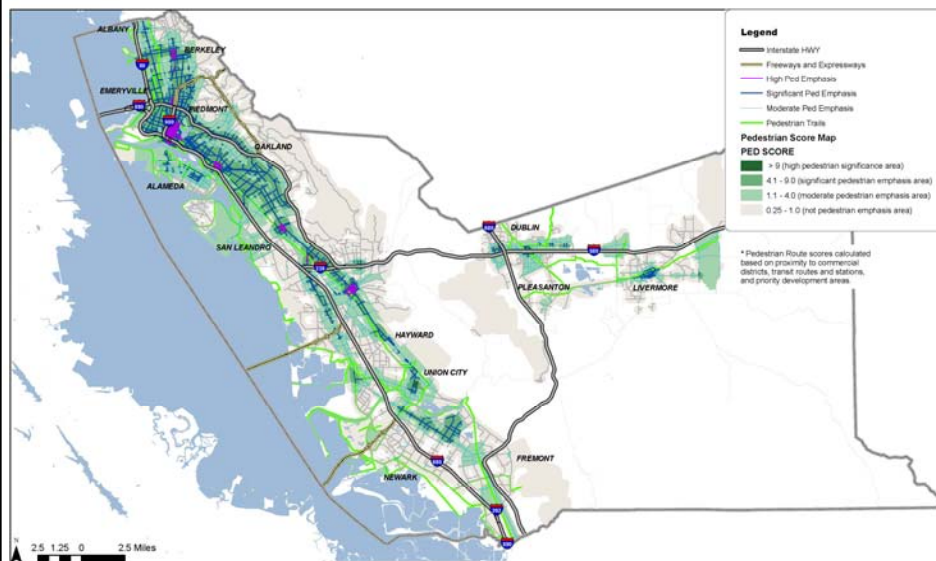
- **Score assignment and emphasis identification**
 - Land use scores vary by intensity
 - ✓ Regional PDA Type scores higher than Sub-urban type
 - ✓ Downtown Mixed Use score higher than neighborhood commercial
 - Transit proximity score based on distance
 - ✓ Area within quarter-mile radius score higher than area within half-mile
 - Overlaid all scoring categories and estimated cumulative scores indicate areas of **High, Significant** and **Moderate** Pedestrian Emphasis.

DRAFT Pedestrian Emphasis



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Multimodal Overlays - *Pedestrian*

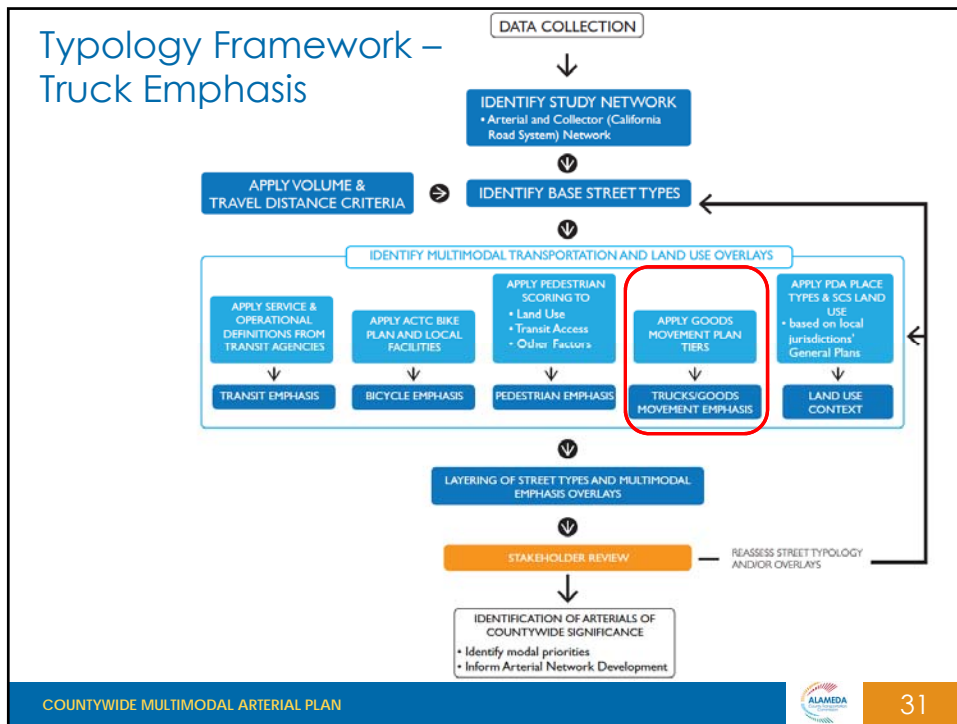


DRAFT Pedestrian Emphasis



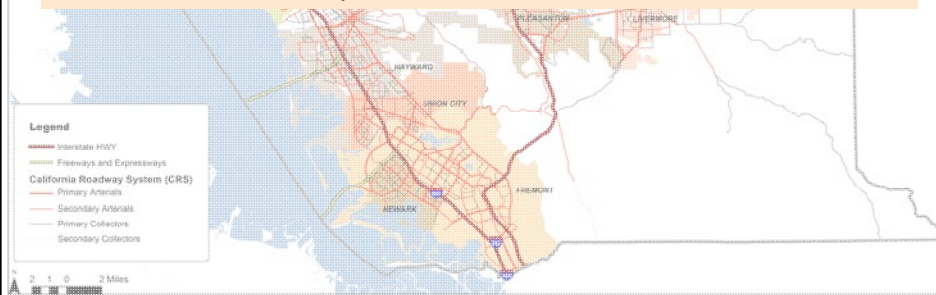
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Typology Framework – Truck Emphasis

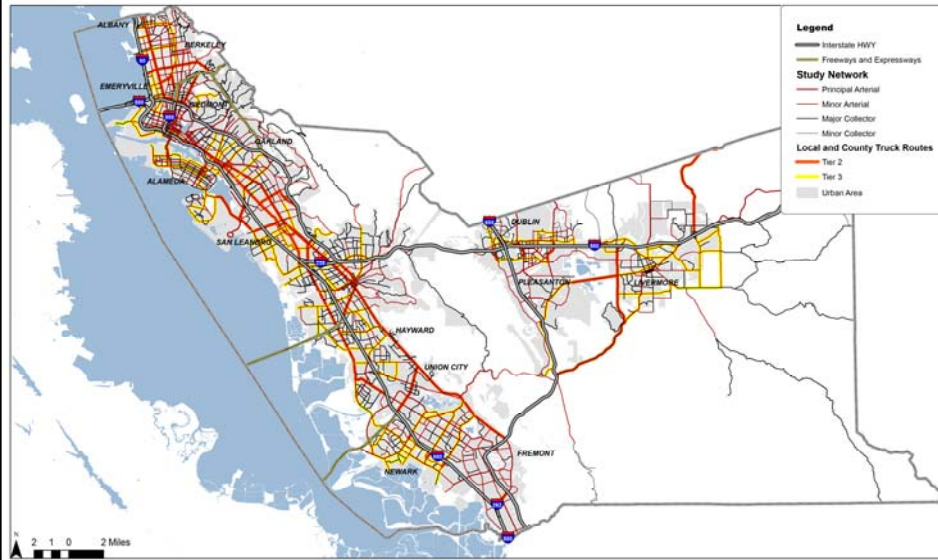


Multimodal Overlays – Truck Routes

- Tier 1 – all on freeways and not part of Study Network
- Tier 2 – intra-county and intercity connectivity
- Tier 3 – designated routes for local pickup and delivery



Multimodal Overlays – *Truck Routes*

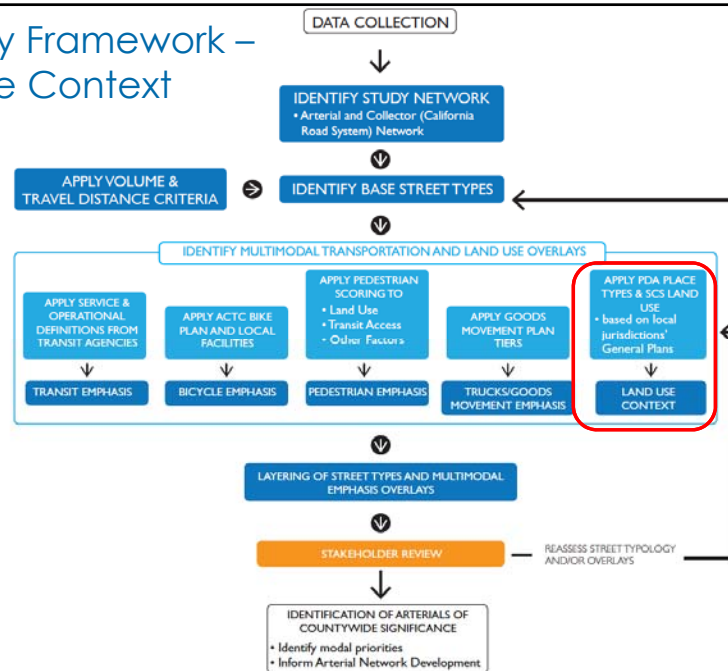


DRAFT Truck Routes/Goods Movement Emphasis



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Typology Framework – Land Use Context



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Land Use Overlay

- Land use overlay informs appropriate contextual design of key elements in street cross section
 - ✓ Example: *Pedestrian priority street in PDA should have a wider sidewalk than a residential street.*

ABAG PDA Place Types

- Regional Center
- City Center
- Suburban Center
- Transit Town Center
- Urban Neighborhood
- Transit Neighborhood

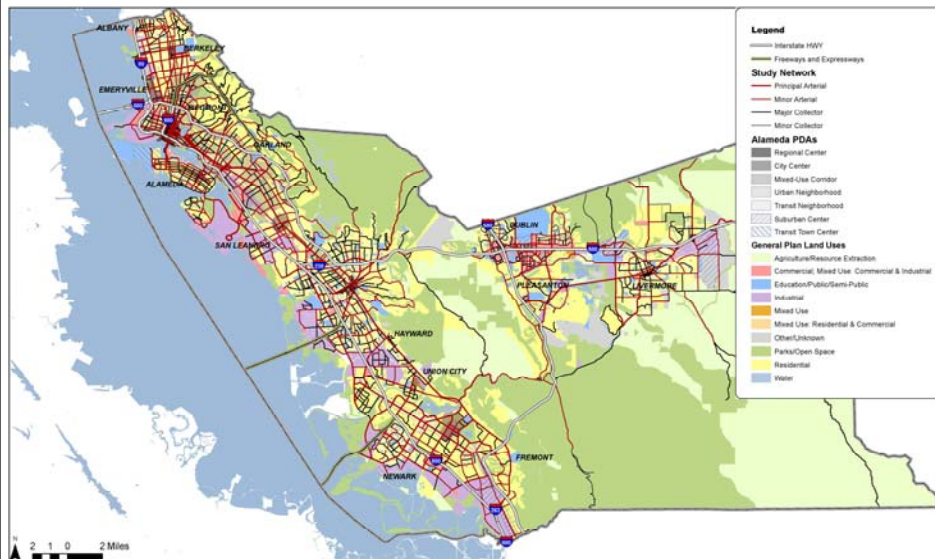
Alameda Countywide Transportation Plan SCS

- Mixed Use
- Commercial
- Business Park/Industrial
- Industrial
- Education/Public/Semi-Public
- Residential
- Rural Residential & Open Space
- Parks/Open Space
- Agriculture/Resource Extraction
- Other/Unknown

March 25, 2015

ACTC Multimodal Arterial Study Network
Land Use and Priority Development Area Overlays

Land Use Overlay

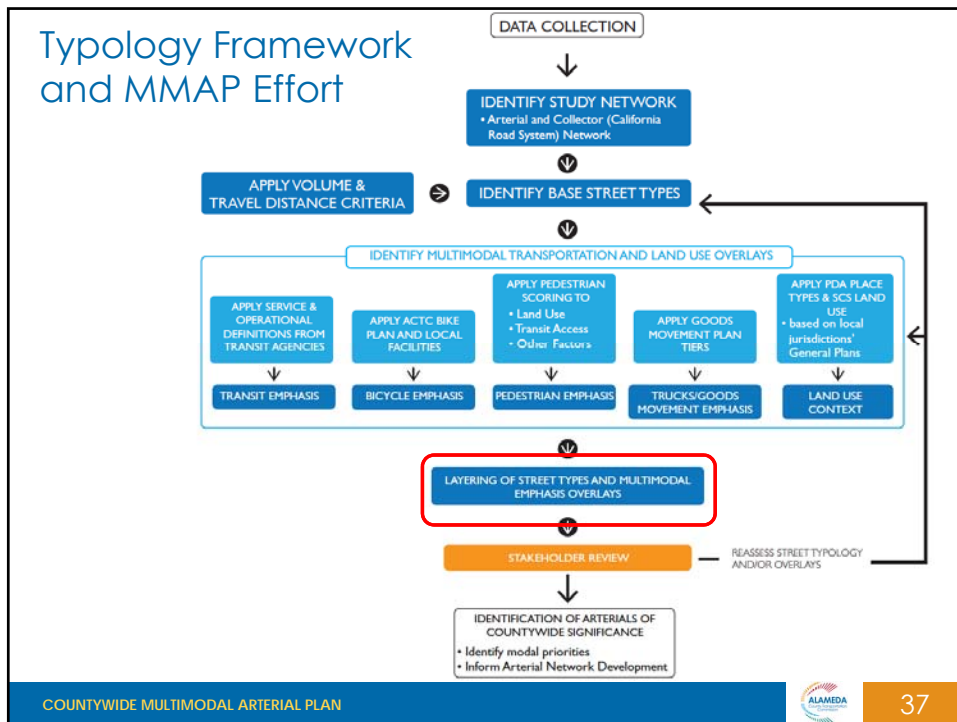


Land Use and PDA Type Overlay



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Typology Framework and MMAP Effort

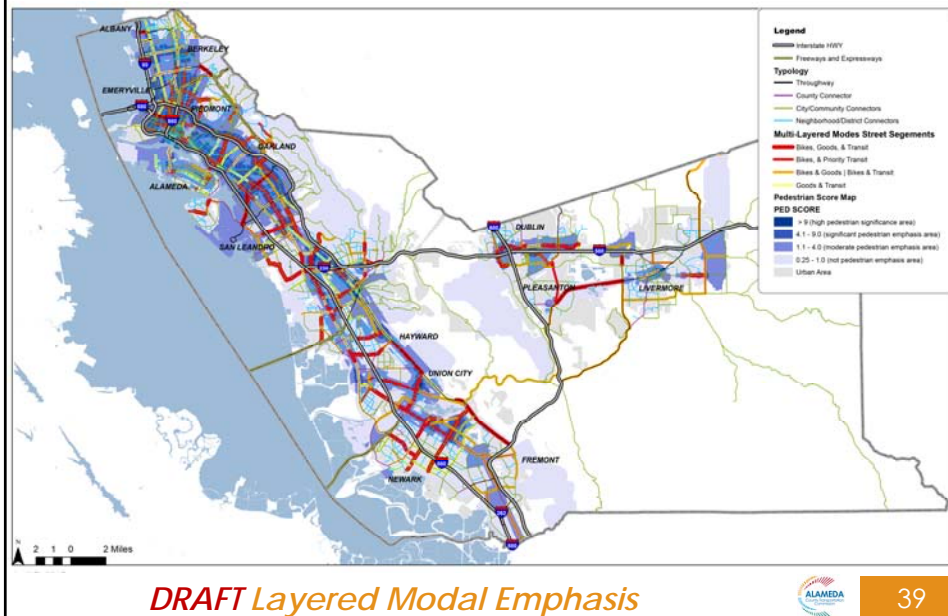


Layered Modal Emphasis

- Layering Base Street Types and all other modal layers identifies streets segments with multiple modal emphases
- These streets will require further evaluation to determine modal priorities for street segments with multiple modal designations



Layered Modal Emphasis



Typology Framework Next Steps

- Discussion at Planning Area and non-agency stakeholder meetings scheduled for April 20 – 22nd.
 - Identify modal priorities
 - Inform Arterial Network development
- All typology, modal emphases and modal overlays are available online for review and comment.
 - <http://gis.fehrandpeers.com/AlamedaCTC/ModalPriorities>
 - Username: AlamedaCMAP
 - Password: fpgis_Alameda

Questions?



Grand Avenue, Oakland



Railroad Avenue, Livermore



Logan Drive, Fremont

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Performance Objectives



Grand Avenue, Oakland



Railroad Avenue, Livermore



Logan Drive, Fremont

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Plan Components Overview – Role and Utility

Plan Development Components	Utility	Approval Status
Vision and Goals	<ul style="list-style-type: none"> Vision lays out the strategic direction for the Plan Goals describe the desired outcome of the Plan. 	Approved
Performance Measures	Assess the existing and future transportation conditions of the Study Network against the identified goals. Three types of measures. <ul style="list-style-type: none"> Performance Measures – Measures that directly assess the segment built environment and planning level operations Performance Indicators – Area-wide measures applied on recommended improvements to assess achieving vision and goals. Network Connectivity Checks - Checks performed to evaluate consistency across the respective modal networks. 	Approved
Performance Objectives	Thresholds identified for the performance measures that directly assess the built environment and planning level operations at facility level	Being Discussed
Typologies	<ul style="list-style-type: none"> Classify the Study Network roads based on their transportation and access functions, and land use characteristics. Help identify the modal priorities along each Study Network segment. 	Being Discussed

Performance Measures Overview

• Performance Measures:



- ✓ Facility-specific, assess existing and future year transportation conditions

• Performance Indicators:

- ✓ Area-wide, evaluation to ensure that short- and long-term improvements meet the Plan's vision and goals



• Network Connectivity Checks:



- ✓ Mapping exercise that evaluates transit, pedestrian, bicycle and truck network connectivity and continuity

Performance Objectives

- Thresholds applied to existing and future transportation conditions *to identify Study Network multimodal needs*
- Provide guidance in identifying short-term (year 2020) and long-term (year 2040) improvements
- Vary by modal priority
- Not applicable to performance indicators and network connectivity checks



Performance Objectives

Performance Measure	Application	Modal Objectives					Rationale
		Autos	Transit	Pedestrian	Bicycle	Trucks	
1.1A – Congested Speed	Facility-Specific Measure, Existing and Future Conditions	> 40% of Posted Speed	> 40% of Posted Speed	N/A	N/A	> 40% of Posted Speed	Similar to LOS D threshold – HCM 2000 Arterial LOS Method
1.1B – Reliability	Facility-Specific Measure, Existing and Future Conditions	Reliable	N/A	N/A	N/A	Reliable	Similar to LOS D threshold – HCM 1994 Arterial V/C Method
1.7 – Pavement Condition Index	Facility-Specific Measure, Existing Conditions	Good or Very Good	Good or Very Good	Good or Very Good	Good or Very Good	Good or Very Good	Based on MTC's PCI objectives



Performance Objectives

Performance Measure	Application	Modal Objectives					Rationale
		Autos	Transit	Pedestrian	Bicycle	Trucks	
1.2A – Transit Travel Speed	Facility-Specific Measure, Existing and Future Conditions	N/A	> 50% of Auto Speed	N/A	N/A	N/A	Based on average CMP network PM peak hour vehicle speeds and average bus operating speeds
1.2B – Transit Reliability	Facility-Specific Measure, Existing and Future Conditions	N/A	> 0.4 (PM peak hour-to-non-peak hour transit speed ratio)	N/A	N/A	N/A	Based on performance objective for Auto Speed (measure 1.1A)
1.2C – Transit Infrastructure Index	Facility-Specific Measure, Existing and Future Conditions	N/A	Good or Very Good	N/A	N/A	N/A	Based on similar applications on other planning studies (e.g. ACBD Specific Plan, San Pablo Avenue Specific Plan)



Performance Objectives

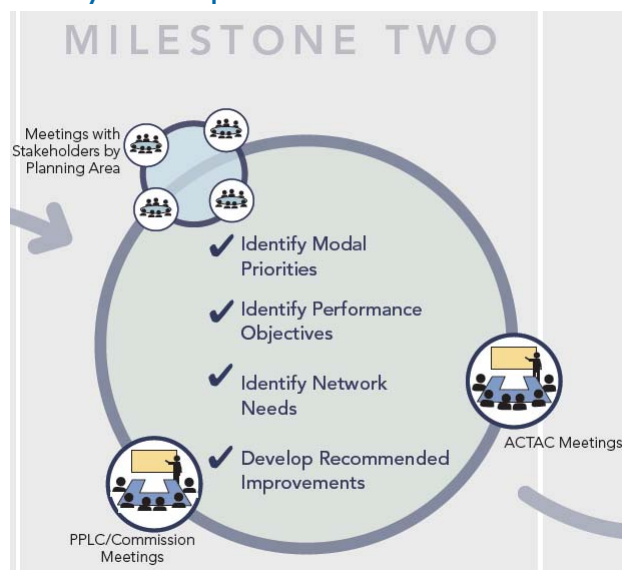
Performance Measure	Application	Modal Objectives					Rationale
		Autos	Transit	Pedestrian	Bicycle	Trucks	
1.3 – Pedestrian Comfort Index	Facility-Specific Measure, Existing and Future Conditions	N/A	Fair, Good or Very Good	Good or Very Good	N/A	N/A	Based on similar applications on other planning studies (e.g. ACBD Specific Plan, San Pablo Avenue Specific Plan)
1.4 – Bicycle Comfort Index	Facility-Specific Measure, Existing and Future Conditions	N/A	N/A	N/A	Good or Very Good	N/A	Based on similar applications on other planning studies (e.g. ACBD Specific Plan, San Pablo Avenue Specific Plan)
1.5 – Truck Route Accommodation Index	Facility-Specific Measure, Existing and Future Conditions	N/A	N/A	N/A	N/A	Very Good	Based on AASHTO Green Book recommendations for minimizing truck off-tracking into adjacent lane



Next Steps

- Objectives will be presented at the Planning Area and non-agency stakeholder meetings for input
- Based on input the Objectives will be finalized and taken for approval in June
- The approved objectives in combination with the modal priority (from typology) will later inform the modal needs on the Study Network

Summary Scope – Milestone #2



Summary Scope – Milestone #3



Questions?