7 PERFORMANCE METRICS

Introduction

The Ventura County Transportation Commission (VCTC) is committed to improving the quality and viability of transit in Ventura County. As the regional transportation planning agency, VCTC is responsible for establishing policies, prioritizing investments, and ensuring coordination between transit operators, cities and the County. In addition, VCTC has the responsibility to plan, construct, and operate a regional multimodal transportation system, to set policy, and to administer regional transportation programs per its enabling legislation under the State of California's Public Utilities Code (PUC).

Ventura County has a diverse geography of urban, suburban, and rural development bounded by mountains, valleys, protected open space, agriculture, and coastline. The spatial distribution of cities and destinations emphasize the need for consistent, well-connected, and coordinated transit services. As a result of its unique geography, Ventura County is comprised of several transit operators with varying levels of service and ridership. Most transit operators do not share boundaries, resulting in physical separation of transit services. Each system is also unique in its service design and delivery due to distinct customer markets and land uses served.

Countywide Performance Metrics and Service Guidelines are a key element of the 2014 Ventura County Short-Range Transit Plan. In accordance with PUC Section 130303, VCTC must provide objective analysis of various options relative to plans and proposed projects of regional and local transportation agencies and then translate those options into a short-range transportation improvement program, pursuant to subdivision (b) of Section 130303. It is responsible for determination, on an annual basis, of the total amount of funds that could be available for transportation planning and development. It is also responsible for the development and approval of a short-range three- to five-year transportation improvement program with an annual updated element reflecting all transportation capital and service priorities to be developed with all appropriate coordination and cooperation between state and local transportation agencies and operators.

In addition to short range plans of three to five years, under PUC Section 130303.1, VCTC is also responsible for developing long range expenditure plans for transportation programs included in voter approved transaction and use tax measures that are consistent with the regional transportation plan and regional transportation improvement program.

Purpose

The primary purpose of this document is to establish a methodology by which to evaluate the performance of fixed-route bus service in Ventura County. This requires the development of a route classification system with corresponding performance metrics. Countywide performance metrics will maximize the effective use of limited resources by creating a rational and transparent evaluation process. This process will assist VCTC in determining priorities when allocating funds and programming future transit investments.

Applying such practices will enable VCTC to meet California Senate Bill 716 requirements of monitoring transit productivity within Ventura County. Consistent metrics also allow for improved reporting of performance across all transit programs, which will be useful for ongoing planning and service coordination efforts. The performance metrics described here are consistent with and build upon performance indicators required through the Triennial Transportation Development Act (TDA) Performance Audit process. They may also supplement existing FTA Title VI service standard requirements.

The secondary purpose of this document is to provide transit operators with a series of service guidelines to improve the effectiveness and attractiveness of fixed-route bus service. Service guidelines also create an opportunity to improve the consistency of transit services across Ventura County.

Figure 71 Fixed-Route Transit Operators in Ventura County

Transit Operator	Cities/Communities Served	Annual Revenue Hours[1]
Gold Coast Transit District	Oxnard, Ventura, Ojai, Port Hueneme, and unincorporated areas of Ventura County	196,596
VCTC Intercity	Oxnard, Ventura, Camarillo, Thousand Oaks, Moorpark, Simi Valley, Santa Paula, Fillmore, Piru, Santa Barbara, Goleta, Carpinteria, Woodland Hills, unincorporated areas of Ventura County	57,895
Simi Valley Transit	Simi Valley, Chatsworth (Los Angeles)	26,136
Thousand Oaks Transit	Thousand Oaks, Moorpark	20,284
Valley Transit	Santa Paula, Fillmore, unincorporated areas of Ventura County	14,000[2]
Ojai Trolley	Ojai	8,160
Moorpark City Transit	Moorpark	8,040
County of Ventura (Kanan Shuttle)	Oak Park	3,923
Camarillo Area Transit	Camarillo	2,062

[1] Annual revenue hours based on Fall 2014 fixed-route schedules

[2] Projected revenue hours for January 2015

[3] Projected revenue hours for January 2015

[3] Regional Express routes measured in boardings per revenue trip; all other route types measured in boardings per

Report Organization

This memorandum consists of four additional sections, which are summarized below.

- **Recommended route classification system** which should be utilized to categorize each fixed-route in the Ventura County.
- **Recommended countywide route-level performance metrics** that should be calculated and reported on a consistent basis.
- **Recommended service design and allocation guidelines** based on the route classification system.
- **Recommended service-related practices and policies** to improve consistency, customer understanding, and ease of use.

ROUTE CLASSIFICATION SYSTEM

A route classification system has been developed to reflect the array of travel markets and customer needs within Ventura County. Route types are designed to permit a consistent means of evaluating service. This approach avoids the difficulty of comparing routes with fundamentally different designs, purposes, and operating characteristics.

Recommended fixed-route types are summarized in the table below. Complementary paratransit services must be designed in accordance with specific Federal Transit Administration (FTA) regulations and are not addressed in this document.

Figure 72 Route Classification Categories

Route Type	Description
Core Arterial	Frequent local bus service operating along primary arterials in urban areas.
Arterial	Local bus service mostly operating along arterials in urban areas.
Neighborhood Feeder	Local bus service connecting urban neighborhoods with core/arterial routes.
Community Circulator	Local bus service operating completely within suburban communities.
Intercity Connector	Limited stop service operating along arterials and highways and connecting communities within Ventura County.
Regional Express	Limited stop service operating mostly along highways and connecting to major destinations and transit hubs in Los Angeles and Santa Barbara counties.

This classification system is intended to encompass the full range of current and future fixed route bus services that will operate in Ventura County. Service changes such as significant route alignment modifications or major schedule adjustments may require routes to be reclassified. It is also recommended that VCTC review specific route classifications every five years. The following descriptions expand upon the characteristics that define each of the six route classes.

Route Type Descriptions

Core Arterial

Core arterials provide frequent local bus service on direct and intuitive route alignments. Core arterials operate along primary streets with higher transit demand than other pedestrian-accessible corridors. Core arterials should only operate on corridors with relatively high concentrations of population and employment or other major ridership generators.

Core arterial routes should operate every 15 minutes during peak periods and every 30 minutes during off peak periods on weekdays. Core arterial routes should operate every 30-60 minutes on weekends. Frequent bus service facilitates convenient transfers to/from other routes and allows customers to ride without depending upon a timetable. Core arterials also typically have a greater service span than regular arterial routes. As a result, core arterials are also expected to perform higher than other arterial routes on most, if not all performance metrics.

Arterial

Arterial routes make local stops and operate all day but offer less frequent service than core arterial routes. As their name suggests, they typically operate bi-directionally on arterial corridors with contiguous development. Arterial routes are intended to operate as direct as possible, yet may include route deviations when advantageous to customers and operationally feasible. Routes connecting multiple cities with frequent stops within each city should be classified as arterial routes rather than intercity connector routes.

Arterial routes should operate every 30-60 minutes on weekdays and at least every 60 minutes on weekends. Arterial routes with a low demand for weekend service due to dramatically decreased activity along their alignment may operate on weekdays only.

Neighborhood Feeder

Neighborhood feeders are similar to arterial routes in respect to service levels and customer markets. However, they are unique in their design, with a reduced focus on directness and an emphasis on coverage. Neighborhood feeders may operate on collector streets of neighborhoods with a high demand for transit. They may also operate within neighborhoods along the urban fringe or other areas in which the pedestrian accessibility is severely limited. The primary intent of neighborhood feeders is to connect riders to arterial routes or transit centers.

Neighborhood feeders should have a service span that aligns with arterial routes to facilitate transfers. Headways may vary based on ridership and passenger loads. The provision of weekend service may also vary due to customer characteristics and purpose trip purpose.

Community Circulator

Local routes operating in suburban or semi-urban cities should be classified as community circulators. These services are designed to adapt to the unique characteristics of the cities they serve. Community circulators may be designed with a focus on coverage rather than frequency, however, bi-directional service is recommended whenever possible. Important origins include residential areas in which a relatively high percentage of households do not have access to an automobile and senior housing. Major destinations may include schools, colleges, grocery stores, medical facilities, community centers, transit centers, and Metrolink rail stations.

Community circulators should operate from early morning until late evening to facilitate a range of transportation needs. Clockface headways of 30 or 60 minutes are recommended to provide timed transfers with other routes at transit centers. This suggests very careful attention to the length of the route to ensure there is a reasonable match between the schedule cycle time and the route length. Transit operators may offer Saturday service yet no Sunday service as a means of managing cost while still providing access to employment and shopping.

Intercity Connector

Intercity connectors provide connectivity between two or more neighboring cities. Intercity connectors typically have few stops between destinations and span long distances at speeds comparable to automobiles. Intercity connectors typically traverse rural or undeveloped areas and may therefore operate on a combination of highways and arterial streets.

Intercity connectors may have local stop service within cities situated at each end of the route and limited or non-stop service in between cities. As a result, stop spacing may vary from one route to another. Intercity connectors should operate at simple, clockface headways of 20, 30, or 60 minutes and have a service span that takes into consideration potential early morning and late night commute patterns. The primary customer markets for most intercity connectors are employees and college/university students. Intercity connectors with a significant percentage of school-related ridership should have service levels that coincide with school calendars.

Regional Express

Regional express routes provide connectivity to regional destinations outside of Ventura County. Service should be fast and comparable to automobile and train speeds with limited stops that link common origins and destinations. Regional express routes are generally 25-50 miles in length and can offer schedules that range from peak-hour trips to all-day bi-directional service.

Most regional express routes have three distinct zones:

- Pick-up zones such as a park & ride or transit center where the majority of passengers originate their trip
- Express zones where the bus makes limited or no stops while in a closed door mode
- Drop-off zones where passengers complete their commute or connect to other routes

A map and table of recommended route classification for current Ventura County routes is depicted below. This map does not include proposed changes to VCTC Intercity routes.

Figure 73 Recommended Route Classification

Figure 74 Recommended Route Classification

Route Type	Provider	Route
Core Arterial	Gold Coast Transit District	1 Port Hueneme
	Gold Coast Transit District	6 Oxnard - Ventura - Main Street
Arterial	Gold Coast Transit District	4 North Oxnard
	Gold Coast Transit District	7 Oxnard College - Centerpoint Mall
	Gold Coast Transit District	8 OTC - Oxnard College - Centerpoint Mall
	Gold Coast Transit District	10 Pacific View Mall - Telegraph - Saticoy
	Gold Coast Transit District	11 Pacific View Mall - Telephone - Wells Ctr
	Gold Coast Transit District	17 Esplanade - Oxnard College
	Gold Coast Transit District	16 Downtown Ojai - Pacific View Mall
	Gold Coast Transit District	19/20 OTC - 5th - Gonzales Rd
	Gold Coast Transit District	21 Pacific View Mall - Victoria - C St Transfer Ctr
Neighborhood Feeder	Gold Coast Transit District	2 Colonia - Downtown Oxnard
	Gold Coast Transit District	3 J St - Centerpoint Mall - Naval Base
	Gold Coast Transit District	5 Hemlock - Seabridge - Wooley
	Gold Coast Transit District	9 Lemonwood - Channel Islands Blvd
	Gold Coast Transit District	14 Esplanade - St. John's - Nyeland Acres
	Gold Coast Transit District	15 Esplanade - El Rio - St. John's
Community Circulator	Valley Express	Santa Paula Circulator
	Valley Express	Fillmore Circulator
	Simi Valley Transit	Route A
	Simi Valley Transit	Route B
	Simi Valley Transit	Route D
	Thousand Oaks Transit	Route 1 (Gold)
	Thousand Oaks Transit	Route 2 (Green)
	Thousand Oaks Transit	Route 3 (Red)
	Thousand Oaks Transit	Route 4 (Blue)
	Ojai Trolley	Trolley A/B
	Moorpark City Transit	Route 1
	Moorpark City Transit	Route 2
	County of Ventura	Kanan Shuttle
	Camarillo Area Transit	Camarillo Circulator
	Camarillo Area Transit	Camarillo Trolley

Route Type	Provider	Route
Intercity Connecter	VCTC Intercity	Highway 101
	VCTC Intercity	Highway 126
	VCTC Intercity	East County
	VCTC Intercity	CSUCI - Oxnard
	VCTC Intercity	CSUCI - Camarillo
	Thousand Oaks Transit	Metrolink Commuter Shuttle
	Simi Valley Transit	Route C
Regional Express	VCTC Intercity	Coastal Express
	VCTC Intercity	Conejo Connection

Potential Future Route Types

As cities and transit systems grow in Ventura County, it may be necessary to design and implement new types of fixed-route transit. The following are several potential route types that could replace or supplement existing routes.

Bus Rapid Transit (BRT) Routes

Bus rapid transit (BRT) is a premium form of limited stop service that includes characteristics that are more attractive than those of typical local bus. BRT routes operate on primary streets in urban areas to provide a faster alternative to core arterial routes. BRT routes may overlay a local stop route to provide supplemental service that focuses on high ridership stops only. In some cases, BRT service may replace local bus service depending upon the spatial distribution of ridership activity.

Flex Routes

Flex routes are a hybrid service that combines the reliability of a fixed route with the flexibility of dial-a-ride or paratransit service. Flex routes provide the ability to deviate up to ¾ mile off their primary alignment to pick up or drop off passengers. Schedules are also flexible in that they have additional time recovery to absorb potential route deviations. This route type is most commonly implemented in areas of low fixed-route ridership as a means of reducing the paratransit costs.

PERFORMANCE METRICS

Countywide performance metrics will maximize the effective use of limited resources by creating a rational and transparent evaluation process. This process will assist VCTC in determining priorities when allocating funds and programming future transit investments. Performance metrics describe the methodology by which services are evaluated. Five metrics are proposed to measure each fixed-route in Ventura County. Transit operators are encouraged to evaluate route performance quarterly. Recommended performance metrics are detailed below.

Ridership Productivity

Ridership productivity measures route performance based on a unit of service. Core arterial, arterial, neighborhood feeders, and community circulators are evaluated based on passengers per revenue hour, which is calculated by dividing the total number of boardings by the total number of vehicle revenue hours. Intercity connectors and regional express routes are unique in that passengers typically ride for a longer period of time or a high percentage of the one-way route length. Ridership productivity for these services is based on passengers per revenue trip.

Local Stop Routes: Average Daily Boardings ÷ Daily Revenue Hours
Limited Stop Routes: Average Daily Boardings ÷ Daily Revenue Trips

Passenger Loads

While passengers per revenue hour and passengers per trip are the important measures of overall route performance, they do not provide insight into conditions along specific segments of the route. Managing passenger loads is crucial in maintaining customer satisfaction, schedule reliability, and safe operations.

Automated passenger counting systems (APC's) provide the capability to record the size of the maximum load on each trip in the system. When APC's are not present, driver logs can provide this information. Passenger load data can highlight where capacity issues are creating routine standing loads or pass-by situations, and where seating capacity is going unused. Depending upon individual circumstances, service level modifications or vehicle assignment modifications may be appropriate when the peak loads approach or exceed seating capacity. Similarly, routes or trips with minimal passenger loads may warrant a closer examination of the route alignment and/or schedule.

Load factors reflect the ratio of passengers to total seated capacity. Load factors vary by route type and time of day. Average peak load factor is the average of all peak loads divided by the average seated capacity of buses employed on a route. For example, if the average peak load of all trips is 30 and the average vehicle capacity is 40, the average peak load factor is 75%.

Average Peak Load ÷ Seating Capacity

Overcrowding on buses often indicates the need for improved headways or increased capacity. Appropriate load factors vary by time of day. During peak periods it is generally acceptable for some passengers to be expected to stand for part of the trip. Thus, during peak periods, routes operating primarily on local arterials may operate with load factors exceeding 100%. Regional express routes or intercity routes that operate on highways should be designed to provide a seat for all customers.

Cost-Effectiveness

Cost-effectiveness is typically expressed in terms of operating cost per passenger or subsidy per passenger. Operating cost per passenger is calculated by dividing all operating and administrative costs by total boardings. Subsidy per passenger is a further refinement of this measure and is calculated by subtracting revenue generated by fares from gross operating and administrative costs, and dividing by total passengers. Each transit agency should determine the appropriate cost effectiveness standard for their service.

Daily Administrative and Operating Costs ÷ Total Daily Boardings

Schedule Reliability

Schedule reliability is a measure of how well a particular route adheres to its schedule. It suggests whether a customer can count on a bus being there when the schedule says it will be. For most systems, buses are considered on-time if they depart a designated timepoint between zero and 5 minutes later than the scheduled departure time. Buses should never depart a timepoint ahead of schedule unless operators are given explicit permission to do so.

Each transit operator may have unique on-time performance standards due to their specific traffic conditions, operations policies, and goals. Potential impacts on on-time performance include inadequate running times, traffic conditions, or constructions. A high number of boardings on a particular trip or at a specific stop may also affect schedule reliability if recovery time is insufficient to absorb the added time.

Trips Departing Between Zero and Five Minutes of Scheduled Time ÷ Total Daily Trips

Schedule Efficiency

Schedule efficiency can sometimes by improved by reducing layover at the end of a route or deadhead (time spent traveling to/from the garage or another route), thereby allowing a larger percentage of total service hours to be devoted to revenue time.

Schedule efficiency is measured by calculating the ratio of revenue hours to total platform hours (deadhead, layover, and revenue hours). Schedule efficiency ratios that are higher than those of peer services may point to operating issues such as schedules that cannot be cost-effectively broken into vehicle assignments or routes with distant or inefficient terminal points. Typical schedule efficiency ratio targets for non-regional express service are within 85-90%.

While schedule efficiency does not consider actual ridership, it is suggested because it so often points to major inefficiencies in current scheduling practices. Schedules with a high percentage of non-service time are expensive. If that ratio can be improved, cost savings can be achieved, often with minimal impact on riders.

Total Revenue Hours ÷ Total Platform Hours

Recommended Performance Standards

While each respective transit operator is responsible for defining standards for each metric, recommended performance standards are detailed in the table below. Standards are based on recent ridership performance trends and best practices for similar services.

Figure 75 Recommended Performance Standards

Route Type	Ridership Productivity	Passenger Loads	Schedule Reliability	Schedule Efficiency
Core Arterial	30 (M-F) 20 (Sat/Sun)	125%	90%	85%
Arterial	20 (M-F) 15 (Sat/Sun)	125%	90%	85%
Neighborhood Feeder	15 (M-F) 10 (Sat/Sun)	125%	90%	85%
Community Circulator	15 (M-F) 10 (Sat/Sun)	100%	90%	90%
Intercity Connecter	15 (M-F) 10 (Sat/Sun)	100%	90%	75%
Regional Express[3]	20 (M-F)* 15 (Sat/Sun)	100%	90%	60%

[3] Regional Express routes measured in boardings per revenue trip; all other route types measured in boardings per revenue hour

SERVICE DESIGN GUIDELINES

Service design guidelines are planning tools that are used expand service to new areas or modify existing routes. Transit operators in Ventura County strive to serve as many local area residents, students, workers, and visitors as it can with its available resources. Service features that attract one type of rider to transit can deter other riders, and transit operators must balance these types of competing demands. However, there are certain service design principles that will improve service for nearly all riders. This section describes practices that will attract the most riders and balance competing demands.

Service Planning Principles

Service should be simple

For people to use transit, service should be designed so that it is easy to understand. In this way, current and potential riders can grasp and use the transportation options available to take them where and when they want to go with ease. Most of the guidelines in this section are aimed at making service intuitive, logical, and easy to understand. Most transit networks are very complicated, and simplification is a key value in creating networks that people can navigate easily to make many kinds of trips.

Service should be fast and direct

Passengers and potential passengers alike prefer faster, more direct transit services. In order to remain competitive with the automobile, special attention should be placed on designing routes to operate as directly as possible to maximize average speed for the bus and minimize travel time for passengers while maintaining access to service.

Fast and direct routes tend to be useful to more people than circuitous routes. Even if a trip requires transferring between two routes, it is likely to be faster than a trip using a circuitous route. Community circulators and neighborhood feeders may require slower and less direct service to adequately serve its respective market.

Travel times and directness of service can be affected by a series of factors that are a function of the environment in which service operates. Some of these factors include:

- Traffic congestion
- Street geometry and turning movements
- Presence and operations of traffic signals
- Accessibility of streets from adjacent areas

Route deviations should be minimized

Routes should not deviate from the most direct alignment unless there is a compelling reason. Potential destinations to deviate service include major shopping centers, employment sites, schools, etc.

In these cases, the benefits of operating the route off of the main route must be weighed against the inconvenience caused to passengers already on board. Additional considerations include the impact on overall route productivity, the increase time added as a result of the deviation, and the

schedule coordination with connecting services. In most cases, where route deviations are provided, they should be provided on an all day basis. Exceptions include early morning or late night trips to schools or employment centers with limited hours.

Routes should be bi-directional

Routes should operate along the same alignment in both directions to make it easy for riders to know how to return to their trip origin location. Exceptions can be made in cases where such operation is not possible due to one-way streets, turn restrictions, or near the end of a route where the bus must turn around. In those cases, routes should be designed so that the opposite directions parallel each other as closely as possible.

While routes that include large loops or several deviations maximize transit coverage, they also result in out-of-direction travel that is not intuitive or attractive to potential customers.

Major routes should operate along arterials

All core arterial and arterial routes should operate on major roadways. The operation of bus service along arterials makes transit service faster and easier for riders to understand and use. Current and potential riders typically have a general knowledge of an area's arterial road system and use that knowledge for geographic points of reference.

Routes should be the appropriate length to maximize ridership potential and minimize operational issues. Two routes serving different parts of the service area with a shared terminus, such as a transit center or major destination may be combined as one route or interlined in order to operate more cost-effectively. However, excessively long local routes (cycle times greater than 180 minutes) should be avoided to minimize potential schedule adherence issues.

Service should be consistent

A consistent pattern to the schedule is strongly recommended. While headways may vary during the day according to demand, it should not vary with apparent randomness from one trip to the next. Whenever possible, routes should also have clockface headways that divide evenly into an hour, such as every 15, 20, 30, or 60 minutes.

Clockface headways are easier for passengers to remember and can help facilitate better transfer connections between routes. Whenever possible, headways should be set at regular clock-face intervals. However, there are two key exceptions:

- Where individual trips must be adjusted away from clock-face intervals to meet shift times, work times, transfer connections, or other special circumstances
- Where the desired headway of service causes round trip recovery time to exceed 20% of the total round trip vehicle time, leading to inefficient service

Clockface headways also offer greater ease in scheduling timed connections between routes that occur consistently in each hour.

Service Allocation

Service allocation guidelines are used to determine appropriate service levels for fixed-route service and are tailored to each specific route type. Transit operators should strive to meet the minimum service span and headways guidelines. Additional service guidelines are based on transit best practices.

Service Span

The number of hours per day that a route operates plays a role in determining the effectiveness of transit service for potential users. Transit service must be available near the time a trip needs to be made in order for transit to be a viable travel option. Weekday routes should permit workers and students to make their morning start times, and should end late enough to provide return trips home for second shift workers. Service oriented to non-work travel can start later and end sooner.

Headways

Service headways are one of the most important determinants of ridership. More frequent service attracts more passengers assuming a market is present. At the same time, headways have a significant impact on operating costs, and service requirements increase significantly with improvements in headways.

Because of the expense of frequent service, headways are normally scheduled based upon existing or potential demand. This may translate into variations in headways throughout the day, with higher headways in peak periods, and less frequent service outside of the peak.

For core arterial routes, provision of service that operates every 15 minutes is an important psychological breakpoint. At headways of 15 minutes or better, many riders will not need to refer to the schedule, because wait time is minimal.

Arterial and suburban circulator routes often have consistent headways throughout the day to minimize the need for additional peak vehicles. However, passenger loads should be monitored to determine if there is a need to provide improved headways during peak or midday time periods.

Stop Spacing

The distance between stops is a key element in balancing transit access and service efficiency. More closely spaced stops provide customers with more convenient access as they are likely to experience a shorter walk to the nearest bus stop.

However, transit stops are also the major reason that transit service is slower than automobile trips, since each additional stop with activity requires the bus to decelerate, come a complete stop, load and unload riders, and then accelerate and re-merge into traffic. Since most riders want service that balances convenience and speed, the number and location of stops is a key component of determining that balance.

Stop Placement

Bus stop placement involves a balance of customer safety, accessibility, and operations. All stops should be fully accessible with a concrete landing and access to sidewalk or pathway. Bus stops

should be compatible with adjacent land use and minimize adverse impacts on the built and natural environment.

Near-side and far-side stops allow passengers to board and alight closer to intersection crosswalks and are generally preferred over mid-block stops. Far-side stops allow bus operators to use intersection as a deceleration lane and are preferred at intersections in which buses make left turns and intersections with a high volume of right turning vehicles. Mid-block stops should only be considered if pedestrian crosswalks are present. Mid-block stops may be the only option at major intersections with dedicated turn lanes.

Specific ridership generators may determine the placement of a bus stop. Infrastructure consideration for bus stop placement includes lighting, topography, and roadside constraints such as driveways, trees, poles, fire hydrants, etc.

Operating Speed

Operating speeds is a function of posted speed limits, turning movements, stop spacing, and ridership activity. As a result, unique route types often have varying average operating speeds. Regional express routes are expected to be designed and operate at speeds comparable with personal automobiles. At the opposite end of the spectrum, neighborhood feeders are afforded more time for navigating through neighborhoods and therefore, slower operating speeds. Transit priority should be pursued on busy, core arterials routes as a means of maintaining a desirable operating speed. The following table details the minimum design and operating guidelines applicable to each fixed route type.

Figure 76 Recommended Fixed Route Design Guidelines

Route Type	Service Span	Headways (Peak/Off-Peak)	Stop Spacing[4]	Target Operating Speed
Core Arterial	5:00a-10:00p (M-F) 6:00a-9:00p (Sat/Sun)	15/30 (M-F) 30/60 (Sat/Sun)	> ¼ mile	>12 mph
Arterial	5:00a-10:00p (M-F) 6:00a-9:00p (Sat/Sun)	30/60 (M-F) 30/60 (Sat/Sun)	> ¼ mile	>12 mph
Neighborhood Feeder	6:00a-9:00p (M-F) 7:00a-8:00p (Sat/Sun)	30/60 (M-F) 60 (Sat/Sun)	> ¼ mile	>10 mph
Community Circulator	6:00a-8:00p (M-F) 8:00a-6:00p (Sat/Sun)	30/60 (M-F) 60 (Sat/Sun)	> ¼ mile	>15 mph
Intercity Connector	6:00a-8:00p (M-F) 8:00a-6:00p (Sat/Sun)	30-60 (M-F) 60 (Sat/Sun)	> 1 mile	> 20 mph
Regional Express	Peak hours or all-day Sat/Sun if warranted	30-60 (M-F) 60 (Sat/Sun)	> 2 miles	> 30 mph

[4] Intercity Connector and Regional Express may have frequent stops in high-density areas; recommended stop spacing is based on the route average

SERVICE CONSISTENCY

The Ventura County Transportation Commission Transit Committee (Transcom) is an excellent example of ongoing coordination and collaboration by transit operators in Ventura County. Similarly, the East County Transit Alliance provides an opportunity for enhanced connectivity and coordination in the communities of Camarillo, Thousand Oaks, Moorpark, Simi Valley, and unincorporated areas of East Ventura County. The following recommendations aim to further improve the consistency and coordination of transit services across Ventura County to simplify service for customers.

Holiday Schedule

Consistent holiday schedules for all transit providers in Ventura County may improve job access and first/last mile connectivity, while requiring a relatively minor increase in cost. Transit operators may also jointly consider operating at a reduced or weekend service level on minor holidays that occur during the week. Current holiday schedules are depicted in Figure 77.

Figure 77 Holiday Schedules

Transit Operator	New Year's Day	President's Day	Easter	Memorial Day	Independence Day	Labor Day	Thanks-giving Day	Christmas Day
Gold Coast Transit	No service			No service	No service	No service	No service	No service
VCTC Intericty	No service			No service	No service	No service	No service	No service
Thousand Oaks Transit	No service			No service	No service	No service	No service	No service
Simi Valley Transit	No service			No service	No service	No service	No service	No service
Moorpark Transit	No service			No service	No service	No service	No service	No service
Camarillo Area Transit	No service	No service		No service	No service	No service	No service	No service
Ojai Trolley	No service		No service	No service	No service	No service	No service	No service
Kanan Shuttle	No service			No service	No service	No service	No service	No service

Weekend Service

It is recommended that all routes maintain similar route alignments on weekdays and weekends. Potential exceptions include deviations serving destinations that are closed on the weekends and short-turns due to reduced service demand.

It is also recommended that all transit providers provide Saturday service on all core arterial, arterial, neighborhood feeder, and community circulator routes. Regional express or intercity connector routes may operate on weekends should sufficient demand exist to generate approximately 70% of weekday ridership productivity.

Ideally, Saturday and Sunday schedules should be identical during the majority of the day.

Service Changes

Establishing specific service change dates for each upcoming fiscal year would be an additional consistency improvement for countywide transit operations. Consistent service change dates when minimize potential impacts on customers who ride multiple systems. Implementing major route or schedule adjustments in August is recommended to coincide with school calendars. Similarly, late January or early February is an ideal time to implement minor service changes.

Public Information

Development of an interactive countywide transit map is recommended to provide existing and potential customers with a visual representation of the complete transit network in Ventura County. The interactive map should be hosted on the VCTC website, which currently provides website and contact information for each service provider in the county, and at a minimum, include route alignments color-coded by service provider and an address search function.

Route Naming and Numbering

Assigning a unique number for each fixed-route in Ventura County would create a greater sense of continuity and coordination. A unique countywide naming and numbering system will be better for customers as it make trip planning on customer-driven services such as Google Transit more convenient. Additionally, it is a low-cost initiative that the county phased in over a few years. A conceptual route naming and numbering system for all transit providers in Ventura County is provided in Figure 78.

Figure 78 Conceptual Route Naming and Numbering System

Current Route Name	Recommended Route Name
Core Arterial Routes	
1 - Port Hueneme	1 - Port Hueneme
6 - Oxnard/Ventura/Main Street	6 - Oxnard/Ventura/Main Street
Arterial Routes	
4 - North Oxnard	4 - North Oxnard
7 - Oxnard College/Centerpoint Mall	7 - Oxnard College/Centerpoint Mall
8 - OTC - Oxnard College/Centerpoint Mall	8 - OTC - Oxnard College/Centerpoint Mall
10 - Pacific View Mall/Telegraph/Saticoy	10 - Pacific View Mall/Telegraph/Saticoy
11 - Pacific View Mall/Telephone/Wells Ctr	11 - Pacific View Mall/Telephone/Wells Ctr
17 - Esplanade/Oxnard College	17 - Esplanade/Oxnard College
19/20 - OTC/5th/Gonzales Rd	19/20 - OTC/5th/Gonzales Rd
21 - Pacific View Mall/Victoria/C St Transfer Ctr	21 - Pacific View Mall/Victoria/C St Transfer Ctr
Neighborhood Feeder	
2 - Colonia/Downtown Oxnard	52 - Colonia/Downtown Oxnard
3 - J St - Centerpoint Mall - Naval Base	53 - J St - Centerpoint Mall - Naval Base
5 - Hemlock/Seabridge/Wooley	55 - Hemlock/Seabridge/Wooley
9 - Lemonwood/Channel Islands Blvd	59 - Lemonwood/Channel Islands Blvd
14 - Esplanade/St. John's/Nyeland Acres	54 - Esplanade/St. John's/Nyeland Acres
15 - Esplanade/El Rio/St. John's	51 - Esplanade/El Rio/St. John's

Intercity Connector	
Highway 101	101 - Ventura/Thousand Oaks
Metrolink Commuter Shuttle	110 - Thousand Oaks/Moorpark
16 - Downtown Ojai/Pacific View Mall	116 - Ojai/Ventura
East County	120 - Thousand Oaks/ Simi Valley
Highway 126	126 – Fillmore/Fillmore
CSUCI – Camarillo	134 - Oxnard/ Camarillo
CSUCI – Oxnard	
Community Circulator	
Simi Valley Transit Route A	201 - Simi Valley A
Simi Valley Transit Route B	202 - Simi Valley B
Simi Valley Transit Route D	203 - Simi Valley/Ronald Reagan
Thousand Oaks Transit Route 1 (Gold)	210 - Thousand Oaks/Newbury Park
Thousand Oaks Transit Route 2 (Green)	211 - Thousand Oaks/Moorpark Rd
Thousand Oaks Transit Route 3 (Red)	212 - Thousand Oaks/Hillcrest A
Thousand Oaks Transit Route 4 (Blue)	213 - Thousand Oaks/Hillcrest B
Moorpark Transit Route 1	220 - Moorpark A
Moorpark Transit Route 2	221 - Moorpark B
Camarillo Area Transit	230 - Camarillo Circulator
Camarillo Trolley	231 - Camarillo Trolley
N/A	240 - Santa Paula Circulator
N/A	250 - Fillmore Circulator
Kanan Shuttle	260 - Kanan Shuttle
Ojai Trolley	270 - Ojai Trolley A
Ojai Trolley	270 - Ojai Trolley B
Regional Express	
Coastal Express	300 - Ventura/Santa Barbara 301 - Ventura/Goleta
Conejo Connection	302 - Ventura/Warner Center
Route C	310 - Simi Valley/Chatsworth Express