SACRAMENTO COUNTY

Joint Cordova and Vineyard Community Planning Advisory Council Workshops

Jackson Corridor Master Plans

Workshop #2 – Transportation

Department of Transportation
April 13, 2016

Agenda

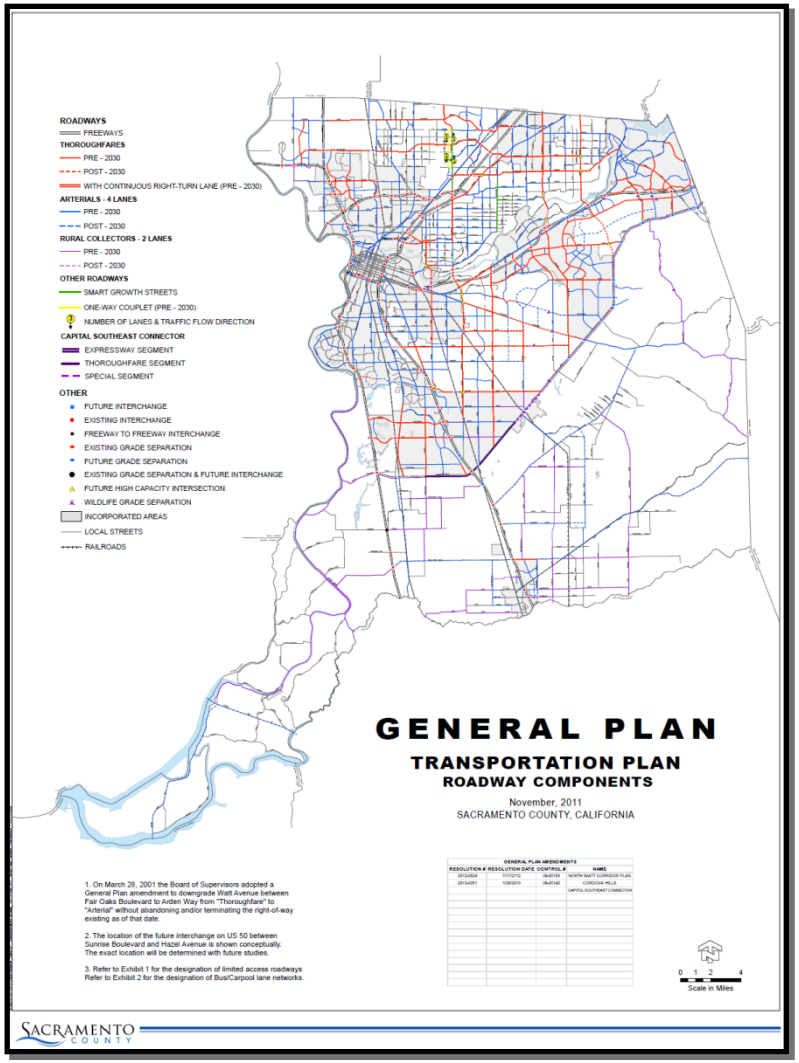
- The General Plan Circulation Element
- The EIR Traffic Analysis
- Rural Roadways
- Transit Network and Service
- Trail Network
- Mitigation Strategy

The Circulation Element

- Sacramento County General Plan was Amended in 2011
- Guide for growth & development over the next 20 years
- Composed of numerous Elements
- Each Element includes Goals, Policies, & Implementation measures

The Circulation Element

- **The Transportation Plan - Roadways**
  - Defines the transportation network and infrastructure to support the mobility needs of the existing and proposed land uses of the General Plan.
  - Roadway and Transit Functional Classification



The Circulation Element

- **Transportation Policies**
  - Mobility
  - Roadways
  - Transit
  - Bicycle & Pedestrian Facilities
  - Transportation Systems Management
  - Rail Transportation
  - Air Transportation
  - Scenic Highways
  - Smart Growth Streets

- **79 Policies**
  - Example Policy

  "CI-3 Travel modes shall be interconnected to form an integrated, coordinated and balanced multi-modal transportation system, planned and developed consistent with the land uses to be served."

The EIR Traffic Analysis

Objectives

- Describes the traffic and circulation within the project area and the affected vicinity.
- Evaluates the impacts of the project on the transportation network.
- Provides recommendations for mitigation measures to reduce or eliminate significant impacts as a result of the project.

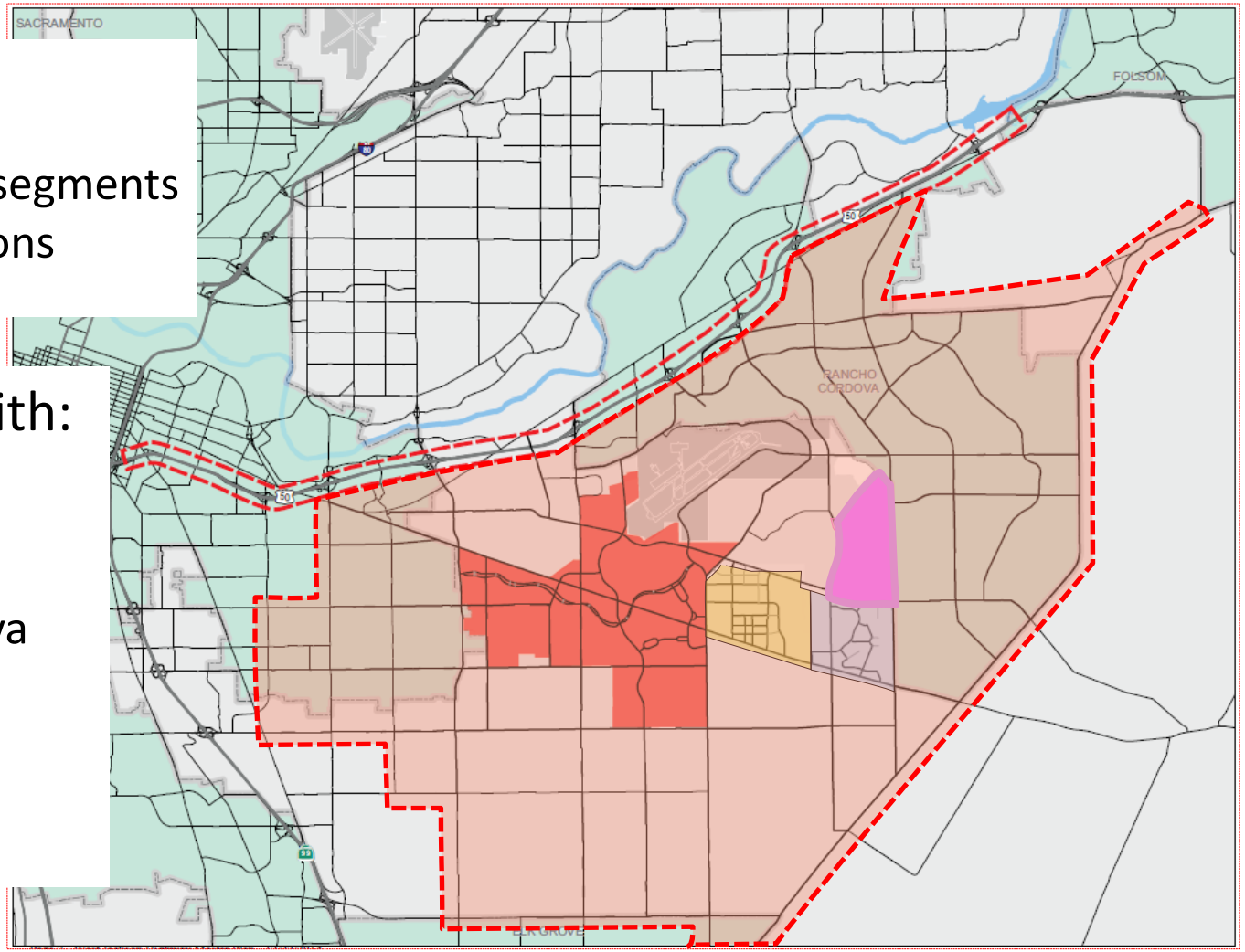
The EIR Traffic Analysis

The Study Area

- The study area encompasses the adjacent transportation network (roadways, intersections, freeways) that is likely to be impacted by the implementation of the project.
- The traffic consultant coordinates with County staff and other potentially affected jurisdictions.
- On large projects, the County will request an initial model run to verify the limits of the study area.

The Jackson Corridor Traffic Study

- The Study Area
  - 261 Roadway segments
  - 164 Intersections
- Coordination with:
  - Sacramento
  - Folsom
  - Rancho Cordova
  - Elk Grove
  - Caltrans
  - Connector JPA



The EIR Traffic Analysis

Project Trip Generation

- **Trip generation is a function of the specific land uses**
  - Residential land uses (single family, multi-family) generate trips
  - Non-residential land uses (commercial, employment, schools) attracts trips
- **Trip generation resources**
  - Institute of Transportation Engineers (ITE) Trip Generation Manual
  - Traffic simulation model

The EIR Traffic Analysis

Passenger Car Equivalents (PCE)

- **PCE represents the number of passenger cars that are equivalent to a heavy truck**
  - Accounts for the operational characteristics and larger size of trucks
  - Generally a PCE of 3.0 is used (range is 2.0 – 5.0)
  - Large number of Heavy trucks may require wider travel lanes, larger turning radius, and thicker roadway sections

The EIR Traffic Analysis

Project Trip Distribution

- **Connecting trip origins to their destinations**
  - On small projects, existing travel patterns and local knowledge are useful in assigning trip distribution
  - On large projects, a traffic simulation model will assign the trip distribution

The EIR Traffic Analysis

Trip Route Assignment

- **A trip will generally be made on the route that takes the least amount of time**

- **Factors that can affect route assignment**
  - Congestion
  - Directness of path
  - Physical geometry and environment (class of facility, adjacent uses)
  - Potential delay (stop signs, traffic signals)

The EIR Traffic Analysis

Level of Service (LOS)

- LOS is a letter designation (A – F) that describes a range of operating conditions on a roadway or at an intersection.
- Perceived impacts on speed, travel time, freedom to maneuver, driving comfort, delay
- LOS A (free flow condition, no delay)
- LOS F (heavy congestion, stop and go, extensive delay)
- Sacramento County utilizes a LOS E standard (Urban)

The EIR Traffic Analysis

Roadway Segment Impact

- **Roadway segment capacity based on**
  - Roadway characteristics (access control, shoulders)
  - Number of travel lanes
- **LOS based on ADT (Average Daily Traffic) Volume**
  - For a 2-lane Arterial with moderate access control LOS F represents an ADT greater than 18,000 vehicles

The EIR Traffic Analysis

Intersections Impacts

- Methodology based on Highway Capacity Manual
- Utilizes an “operational analysis” method
- LOS is defined by total delay per vehicle in seconds
- For Signalized intersections: Delay greater than 80 seconds per vehicle is LOS F
- Stop Controlled Intersections: Delay greater than 50 seconds per vehicle is LOS F

The EIR Traffic Analysis

Other Impacts

- **Bicycle and Pedestrian Facilities**
- **Transit Facilities**
- **Safety**
  - Adversely affect an existing or planned facility
  - Result in unsafe conditions

The EIR Traffic Analysis

Scenarios Studied under CEQA

- **Existing Conditions**
  - Existing Conditions (based on traffic counts)
  - Existing Conditions plus Project (E+P)
- **Cumulative Conditions**
  - Cumulative Conditions
  - Cumulative Conditions plus Project (C+P)
- **Project Alternatives**
- **CEQA Alternatives**

The Jackson Corridor Traffic Study

- Existing – No Project
- Existing – Plus Project
- Existing – Plus Four Projects

Impact ⇨ Mitigation Measure

Impact ⇨ Mitigation Measure

- MTP Cumulative – No Project
- MTP Cumulative – Plus Four Projects

- CEQA Cumulative – No Project
- CEQA Cumulative – Plus Project
- CEQA Cumulative – Plus Four Projects

Impact ⇨ Mitigation Measure

Impact ⇨ Mitigation Measure

- Project Alternatives
- CEQA Alternatives

The EIR Traffic Analysis

Standards of Significance

- **An impact is significant if:**
  - A roadway or intersection is operating at an acceptable LOS and the addition of the project traffic degrades the LOS to unacceptable LOS
  - A roadway or intersection is already operating at an unacceptable LOS and the addition of the project traffic increases the LOS by 0.05

The EIR Traffic Analysis

Mitigation Measures

- **CEQA Guidelines §15126.4(a) requires lead agencies to consider feasible mitigation measures to avoid or substantially reduce a project's significant environmental impacts**
  - Widening roadways up to their General Plan Designation
  - Installing a new traffic signal or modifying an existing traffic signal

The EIR Traffic Analysis

Mitigation Measures in another Jurisdiction

- **County Policy - Cross Jurisdictional Impacts shall be mitigated provided that a Reciprocal Funding Agreement is entered into with that Jurisdiction**
  - Sacramento County will mitigate impacts in another jurisdiction provided that it is agreed that the other jurisdiction mitigates for their impacts in Sacramento County

The EIR Traffic Analysis

Smart Growth Principles

- **Smart Growth** advocates for compact, transit-oriented, walkable, bicycle-friendly land use, including neighborhood schools, complete streets, and mixed-use development with a range of housing choices.

- Reduces dependence on the automobile for many trips
- Reduces VMT
- Improves air quality

The EIR Traffic Analysis

Vehicle Miles Traveled (VMT)

- VMT is the total vehicle miles driven within a timeframe and geographic area.
- VMT is typically expressed as VMT/household or VMT/capita
- VMT is used when calculating Air Quality & Greenhouse Gas impacts
- The higher the VMT – the greater the impact on air quality

The EIR Traffic Analysis

Senate Bill 743 (Steinberg, 2013)

- Amends the CEQA Guidelines to provide an alternative to LOS for evaluating transportation impacts.
- New criteria will require a VMT based analysis.
- Intent is to focus on GHG emissions rather than roadway capacity.
- Local jurisdictions can still condition land development projects through the entitlement process to make roadway capacity improvements.
- Guidelines in development, likely will be in effect in 2017.

Rural Roadways

- The existing roadway network in the eastern portion of the County consists of rural roadways with narrow travel lanes and no shoulders

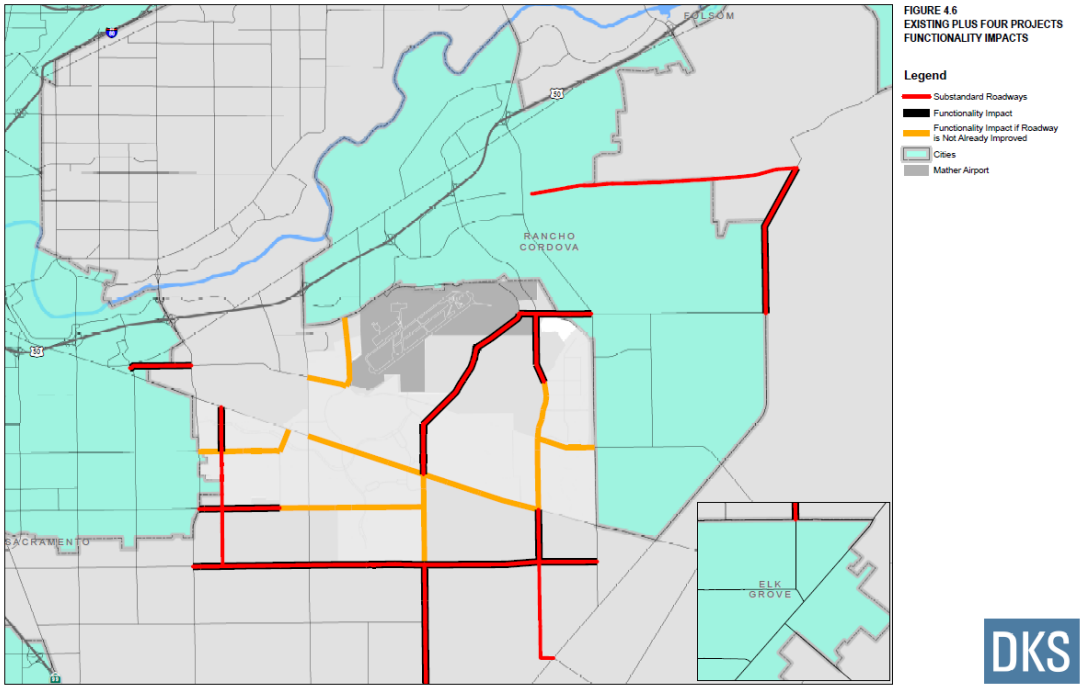
Image Courtesy of Google Maps

Rural Roadways

- The proposed urban development changes the functionality of these rural roadways and introduces:
  - Increases in traffic volumes and speeds
  - Introduction of transit, pedestrians, and bicyclists
  - Increased conflicts between these varying travel modes
  - Greater roadway maintenance needs
  - Challenges for local residents

Rural Roadways

- Fourteen rural roadways affected by development in the Jackson Corridor
  - Douglas Rd
  - Eagles Nest Rd
  - Elder Creek Rd
  - Excelsior Rd
  - Florin Rd
  - Fruitridge Rd
  - Grant Line Rd
  - Happy Ln
  - Hedge Ave
  - Jackson Rd
  - Kiefer Blvd
  - Mather Blvd
  - Mayhew Rd
  - White Rock Rd



Rural Roadways

- Traditional practice: *Widen roadway when traffic exceeds 2-lane roadway capacity of 18,000 ADT*

- Proposed practice: *Establish a 6,000 ADT threshold for improvement to County Standard 12-foot traffic lanes with 6-foot paved shoulders*

  - Threshold based on studies conducted by staff on Sacramento County rural roadways and by national transportation associations.
  - Improvements would be phased to be widened in the future to minimize throw away costs.
  - Staff would monitor use of widened rural roadways to minimize secondary impacts to local residents.

Transit Network & Service

- General Plan policies for new development provide guidance to integrate land use and transportation to encourage alternative modes of travel.
- Existing transit service in the Jackson Corridor is very limited.
- The Regional Transit's Transit Action Plan proposes three future Hi-Bus lines (contingent on additional funding):
  - Jackson Road (west of Excelsior Rd)
  - South Watt Avenue
  - Florin Road (west of Bradshaw Rd)
- Even if implemented, would not meet the General Plan policy

Transit Network & Service

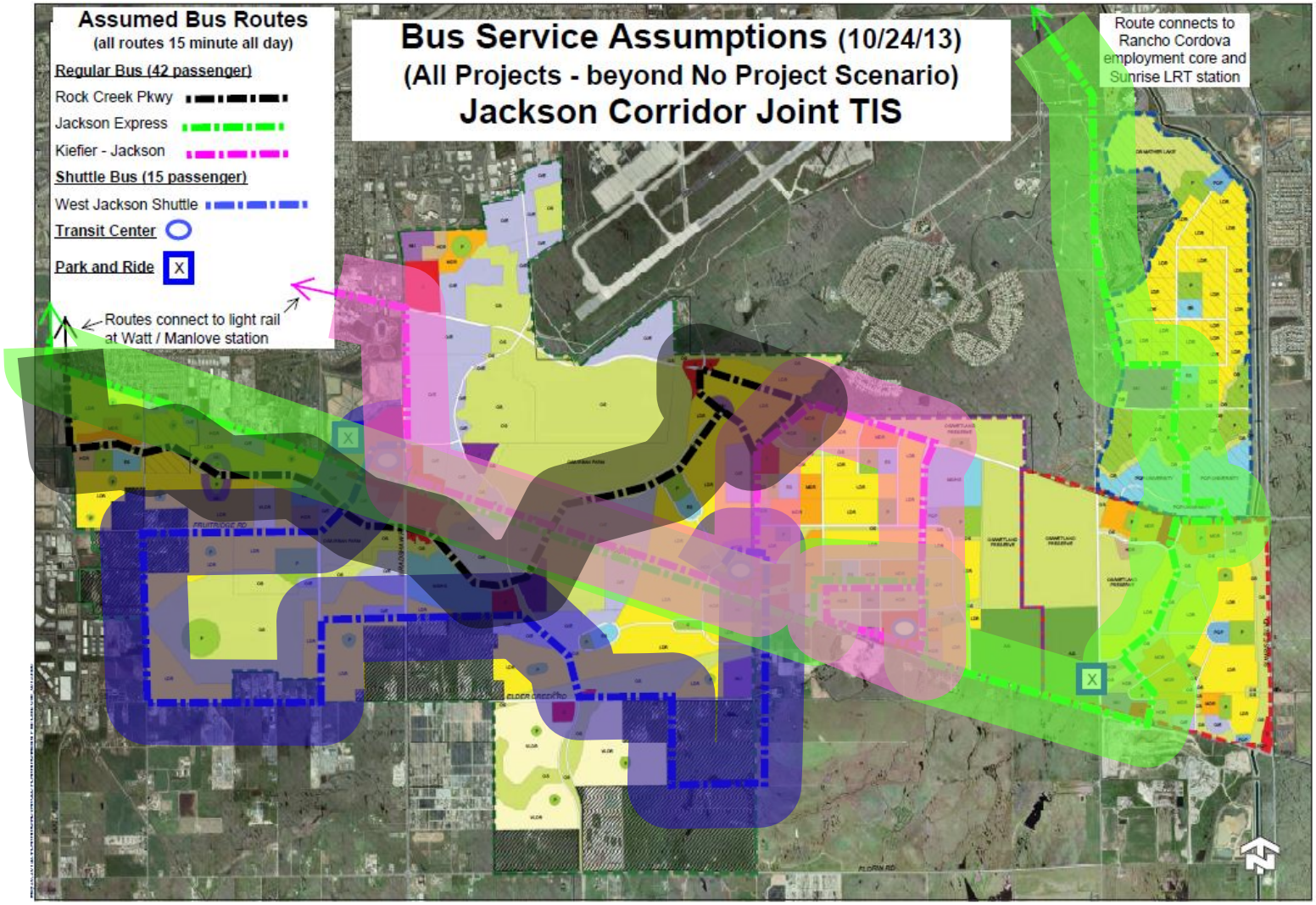
- An iterative process to develop a transit network and service to connect the proposed land uses and provide connections to the Light Rail Transit (LRT) network.

- Participants included:
  - County staff
  - Regional Transit
  - Jackson Corridor project applicants
  - DKS Associates

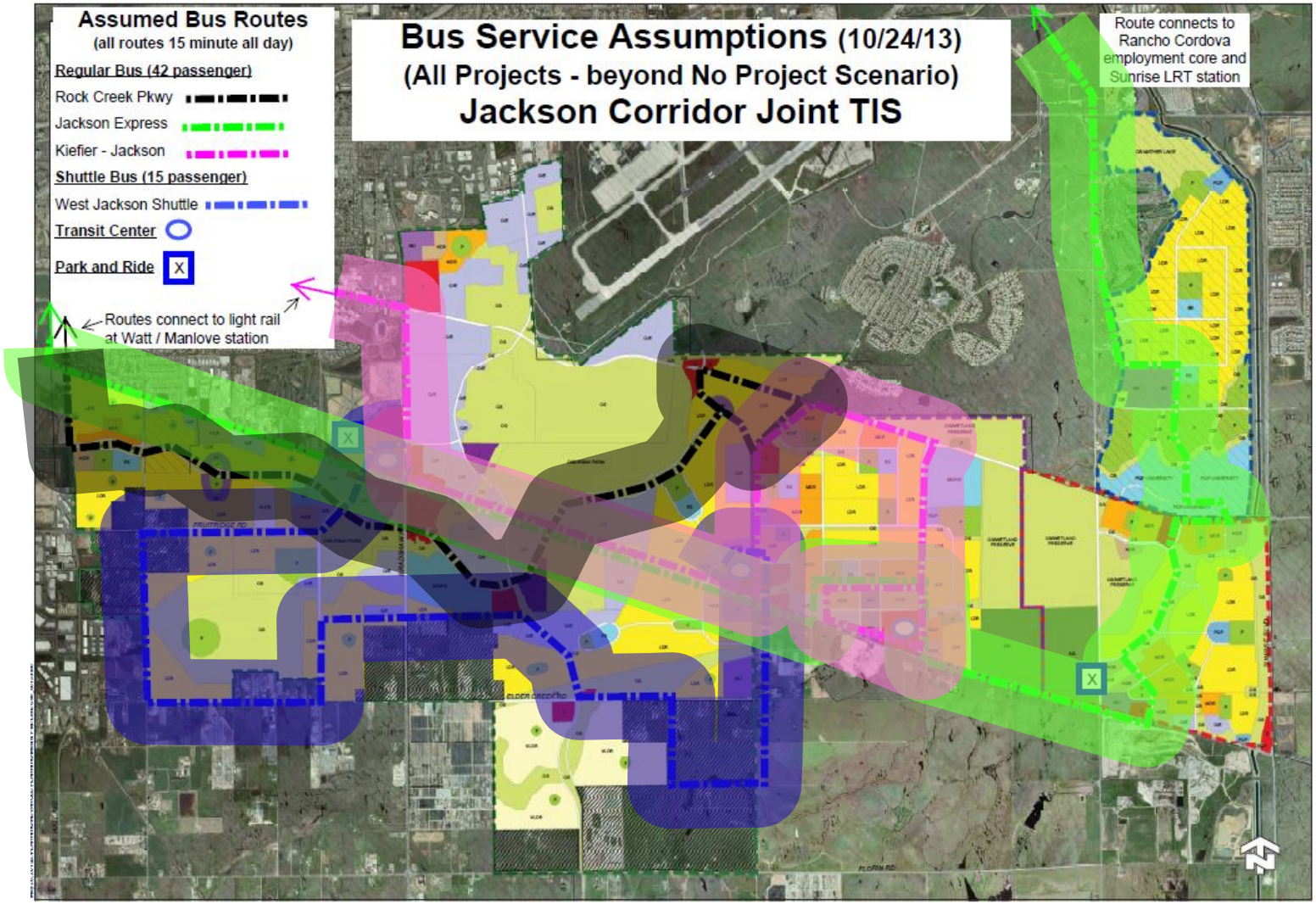
- Separate transit networks developed to support each stand-alone project that when combined serve cohesively together.

- Service standard goal of 15-minute headways.

Transit Network & Service



Transit Network & Service



Transit Network & Service

- **Transit Performance - 2035 MTP plus four projects**

  - Rock Creek Parkway – 3,000 (daily boardings)
  - Jackson Express – 11, 531
  - Kiefer Jackson – 4,991
  - West Jackson shuttle – 1,489

    21,400

- RT's Route 51 bus line – 4,800
- RT's LRT Gold Line – 21,800

- Work trip mode split – 4.1 %

Transit Network & Service

- **Cost to provide the transit service - 2035 MTP plus four projects**

– Capital costs	$1,100,000	
– Operational/Maintenance costs	$8,500,000	
	$9,600,000	(per year)
— Dwelling Unit Equivalent (DUE)	50,700	
— Average annual cost per DUE	$189	(per year)

- **Costs could be reduced by:**

  — Charging a fee to ride
  — Additional revenue from RT revenue sources and programs

Transit Network & Service

- **Transit performance and costs for various transit headways:**

Headways	Boardings	Yearly Costs	Reduction in Boardings
15-minute	21,400	$9,600,000	
30-minute	14,500	$4,800,000	32%
60-minute	10,500	$2,500,000	51%

Trail Network

Signed Routes (No Pavement Markings)

A roadway designated as a preferred route for bicycles.

Shared Lane Markings

A shared roadway with pavement markings providing wayfinding guidance to bicyclists and alerting drivers that bicyclists are likely to be operating in mixed traffic.

Trail Network

On-Street Bike Lanes

An on-road bicycle facility designated by striping, signing, and pavement markings.

On-Street Buffered Bike Lanes

Bike lanes with a painted buffer increase lateral separation between bicyclists and motor vehicles.

Trail Network

Separated Bike Lanes

A separated bike lane is an exclusive facility for bicyclists that is located within or directly adjacent to the roadway and that is physically separated from motor vehicle traffic with a vertical element.

Off Street Trails / Sidepaths

Bicycle facilities physically separated from traffic, but intended for shared use by a variety of groups, including pedestrians, bicyclists, and joggers.

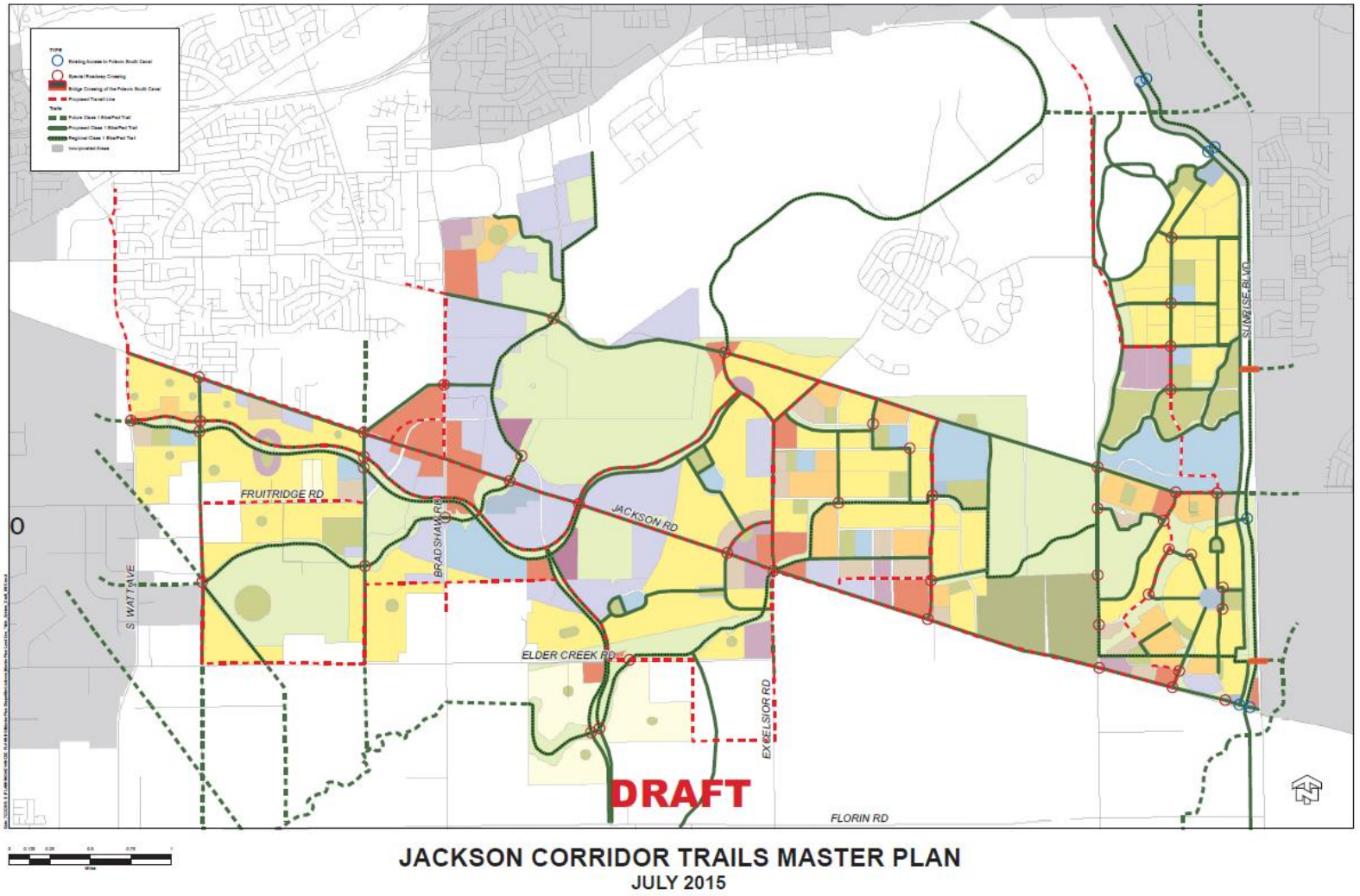
Trail Network

- A community that includes a network of off-roadway trails for walking and bicycling encourages travel by an alternative mode and provides for health-oriented forms of travel and recreation

- County staff and the applicants developed an integrated trail network to link future residential communities with:
  - Schools
  - Parks
  - Transit centers
  - Employment and Commercial areas

- Connectivity to existing and future regional trails

Trail Network



Trail Network

- Hierarchy of trail cross sections:

Regional Trail	Conventional Trail	Local Trail
Connectivity between projects and to other Regional trails	Feeder trail network to Regional trails and primary destinations within each project	Finer trail network connecting various land uses within each project
40-foot wide corridor	30-foot wide corridor	24-foot wide corridor
12-foot paved trail	10-foot paved trail	8-foot paved trail
2-foot DG shoulders	2-foot DG shoulders	2-foot DG shoulder (one side only)

Trail Network

- Enhanced crossings of major roadways
- Two bridge crossings of the Folsom South Canal
- Inclusion of Regional Trails and major enhanced crossings and bridges in the finance plan
  - Spread costs for regional trails and facilities to all users
  - Allows for implementation for entire trail segments without gaps
  - Allows for implementation when needed by the community

Trail Network

Completed section of the downtown Cultural Trail in Indianapolis, IN. (Source: Mark H. Zwoyer)

Mitigation Strategy

- Traditional practice: *"You break it, you fix it"*
  - General Plan Level of Service (LOS) policy
  - Each individual project treated independently
  - A single vehicle can result in funding or not funding a major improvement
  - No cost for using up existing roadway capacity
  - Unfair appropriation of funding obligation between multiple projects
- Proposed practice: *"We break it, we fix it"*
  - Total transportation improvements needed to support proposed projects
  - Each individual project responsible for funding their fair share based on their portion of the traffic
  - Treats each project fairly

Mitigation Strategy

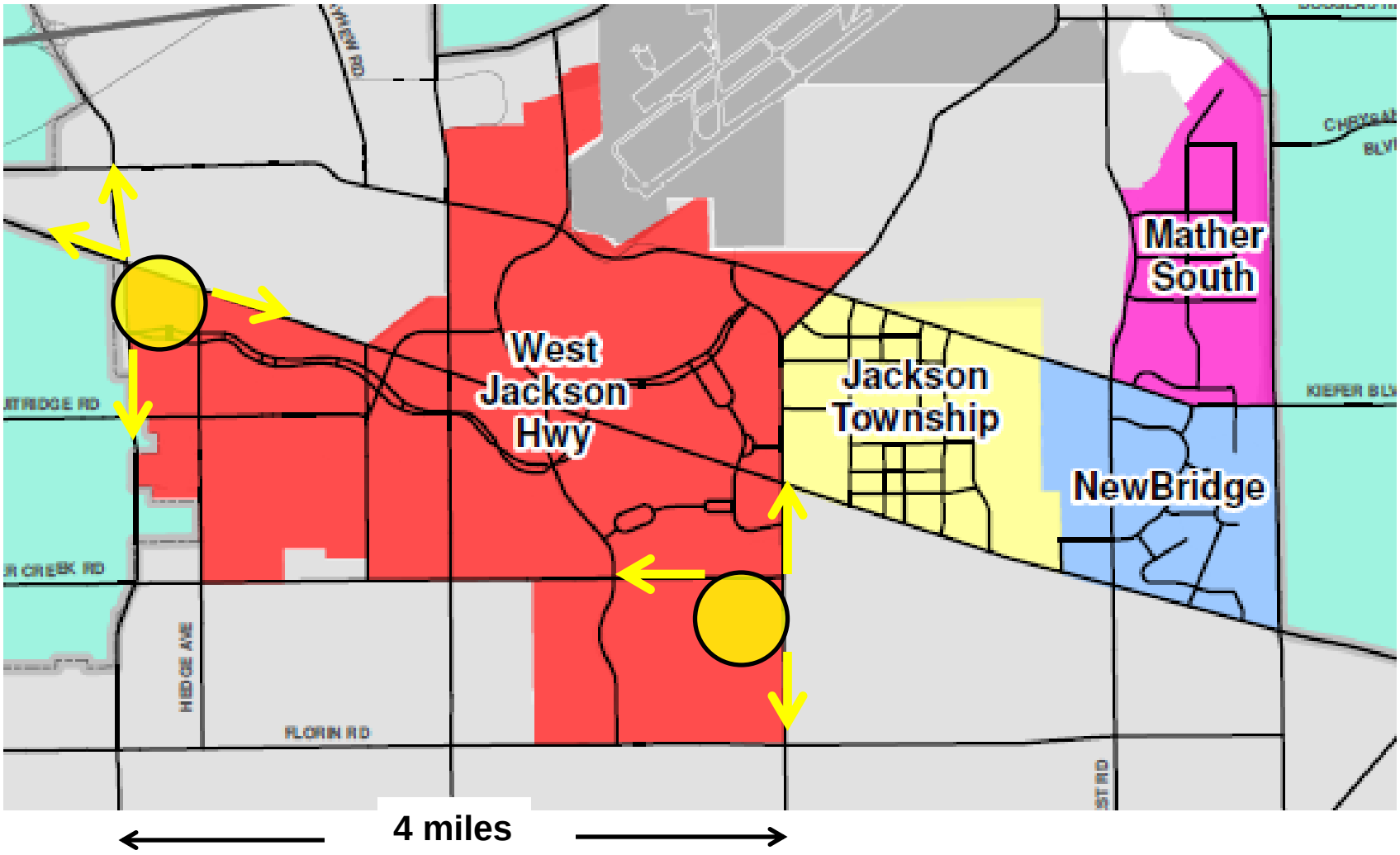
- Improvement costs may be offset by other funding sources and programs:
  - SCTDF
  - Measure A Sales Tax
  - State & Federal funding programs
  - Cordova Hills SPA
  - North Vineyard SPA
  - Florin Vineyard Gap SPA
  - Cross Jurisdictional Impact fees
- Anticipates the sequencing of multiple projects approved over time

Mitigation Strategy

- Goal: Roadway improvements implemented in a timely manner to support the growth in land uses

- Traditional practice: *Roadway improvements triggered on the number of residential dwelling units (DU)*
  - Sequence of implementation pre-determined
  - No flexibility to restructure
  - May not be responsive to where actual growth occurs

Mitigation Strategy



Mitigation Strategy

- Proposed practice: *Roadway improvements triggered based on a Dynamic Implementation Tool*
  - Sequence of implementation based on actual development
  - Very responsive to changing conditions
  - Efficient use of transportation funding
  - Allows for better management of transportation funds
  - Can anticipate the future needs for improvements
  - Tool can be updated to reflect changing conditions

Questions?