WORKSHOP ON:

- CAPITAL IMPROVEMENT PROGRAM, INCLUDING
  - PAVEMENT MANAGEMENT PROGRAM
  - ROAD MAINTENANCE PROGRAM
  - NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM
- TRAFFIC IMPACT MITIGATION FEE PROGRAM
- TRAVEL DEMAND MODEL

Presented to the Board of Supervisors
January 28, 2013

Legistar #12-1578

El Dorado County
Department of Transportation

Purpose of this Workshop

- Provide background on the Capital Improvement Program (CIP), Road Maintenance Program (RMP), Pavement Management Program (PMP) and National Pollutant Discharge Elimination System (NPDES) Program
- Provide background on Traffic Impact Mitigation (TIM) Fee Program
- Discuss the relationship between General Plan policies, the TIM Fee Program and the Capital Improvement Program (CIP)
- Discuss the Travel Demand Model (TDM)
- Examine strategies for adjusting TIM Fees
- Next steps and schedule

Staff is NOT asking the Board to take any action today

Capital Improvement Program (CIP):

Purpose:
- Provides strategic direction for capital projects over a current year, 5, 10, and 20 year horizon
- Used as a planning tool, and updated annually (as required by General Plan Policy TC-Xb)

Includes:
- West Slope Road/Bridge CIP
- Capital Overlay and Rehabilitation Program (CORP)
- Tahoe Environmental Improvement Program (EIP)
- Airport Capital Improvement Program (AICP)
- Road Maintenance Program (RMP)
- National Pollutant Discharge Elimination System (NPDES) Program

Process:
- The CIP is updated annually
- Updates include adjustments to: revenue estimates, project scopes, costs and schedules
- Project priorities are revised per Board direction

Road Maintenance Overview

On October 23, 2012, the Department presented the Board with a summary of the RMP and PMP. Within that presentation, staff explained that:

- The Department is responsible for maintenance of 1,079 centerline miles of roadway. The road miles by surface type are as follows:
  - 433 miles of AC surfaced
  - 586 miles of chip seal
  - 60 miles of unconstructed roads
  - 70 miles of sidewalks
- Maintenance activities include but are not limited to:
  - Brushing, Ditching, Grading, AC patching, Chip and Cape Seal, Crack Seal, Dura patching, Sweeping, Vegetation Control, Drainage, Traffic Signals, Sign Maintenance, Snow Removal.

Road Maintenance Overview (Cont'd)

On December 11, 2012, the Department returned to the Board with road system sustainability and investment options for the Board's consideration. Within that presentation, staff described how:

- The current maintenance budget is allocated over 17 categories where limited funding is used in the most efficient manner possible to maintain the County roadway system.
- Funding limitations and material cost increases have prevented the Department from performing certain maintenance tasks at targeted frequencies.

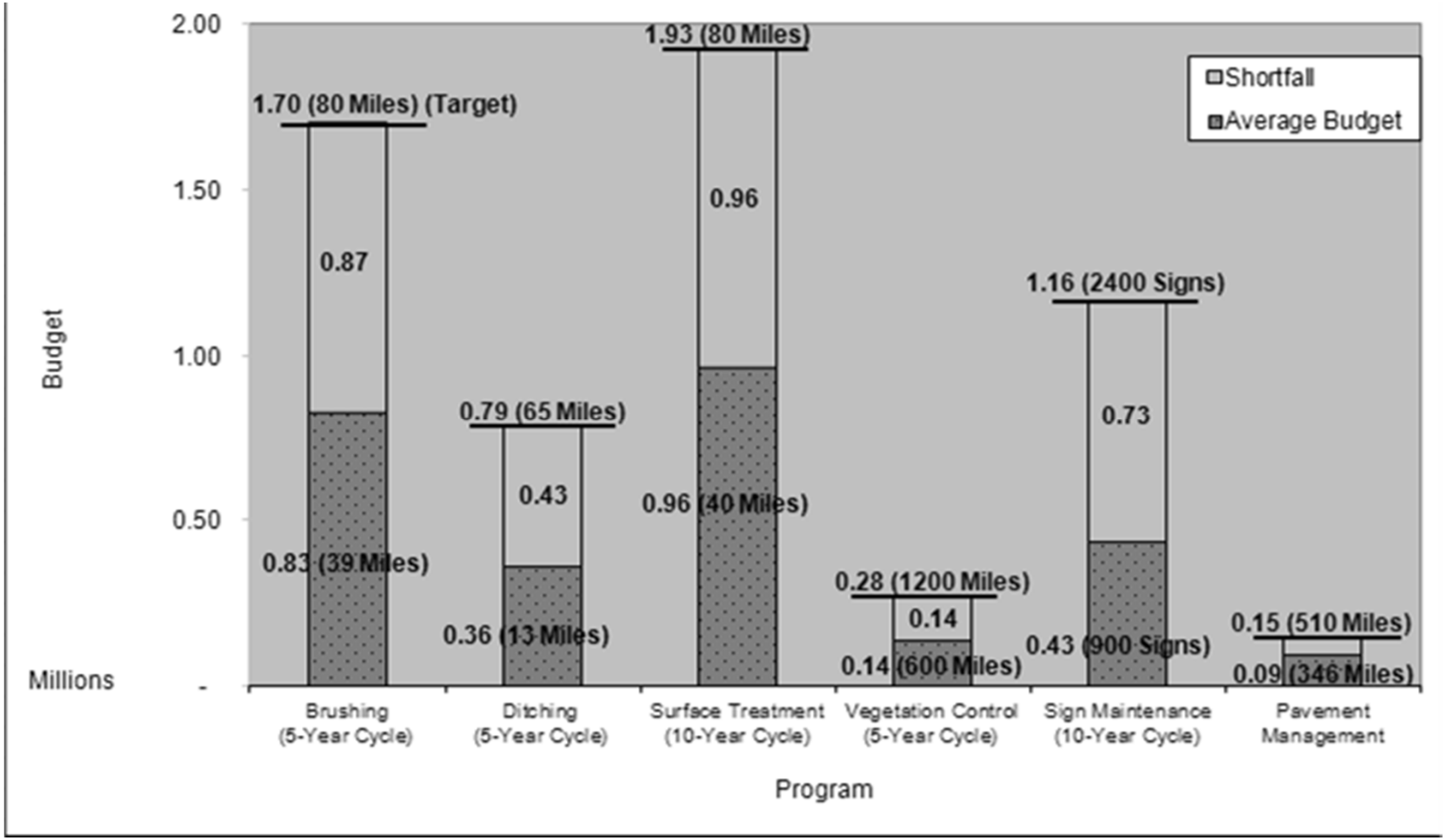
Maintenance Areas in Need of More Concentration:

- **Brushing and Ditching**
  - Brushing improves site distance and fire safety. Ditching provides drainage improvements and water quality
- **Surface Treatment**
  - Provides the prevention of deterioration of our infrastructure and improves ride ability
- **Vegetation Control**
  - Reduces vegetation in drainage structures, increases site distance and helps with fire prevention
- **Sign Maintenance**
  - Is required by the Federal and State Manual on Uniform Traffic Control Devices (MUTCD) to replace signage with new retro-reflective sheeting for improved visibility especially at night. With the current allocation of employees in Sign Maintenance, the Department will not be able to complete this requirement by 2015
- **Pavement Management Program**
  - Maintains an inventory and history of County infrastructure assets and the importance of the system to help plan for future maintenance work on County roadways

If Funding Remains Level…

- 28 miles of surface treatment will be completed this fiscal year with the money budgeted. This is 52 miles below the targeted production.
- PCIs will continue to deteriorate below the critical 70 index level.
- Costs to bring them back to standard will multiply by a factor of 4.
- Deterioration compounds each year.

Average Budget & Production vs. Targeted Budget & Production



Pavement Management Program (PMP):

Purpose:

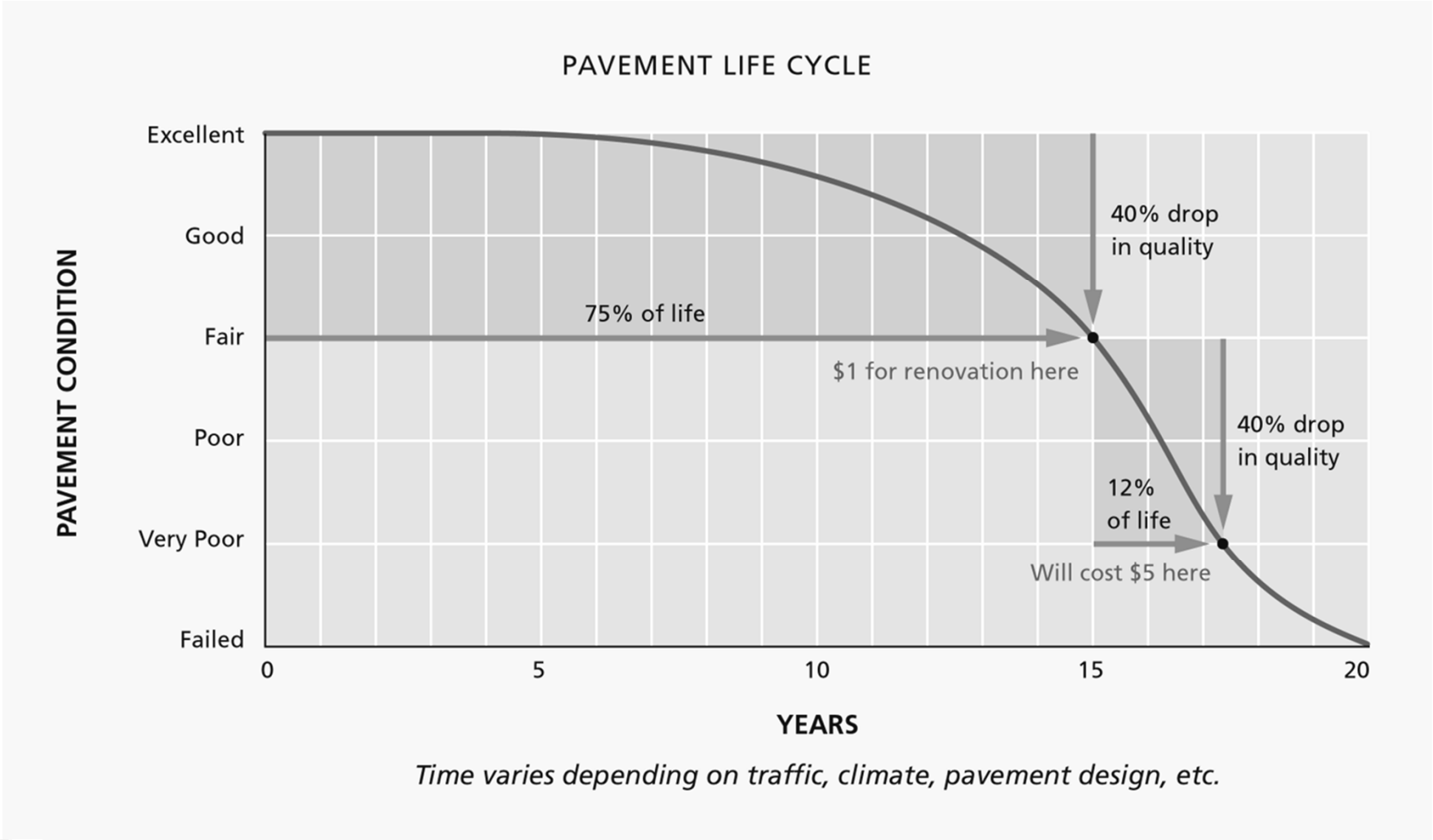
- Monitor condition of all paved roads under County jurisdiction.
- Maintain a history of surface treatment and overlay work performed on roads.
- Assist in funding procurement by demonstrating use of proper maintenance strategy with existing funds.

Process:

- Each road should be inspected every other year.
- Surface treatment and overlay data is entered upon completion of work.
- Data is utilized to prioritize maintenance and overlay work plans.

Cost Effectiveness of Timely Maintenance Work

PMP allows us to evaluate and monitor the condition of pavement so that we can use our limited resources in the most efficient manner possible.

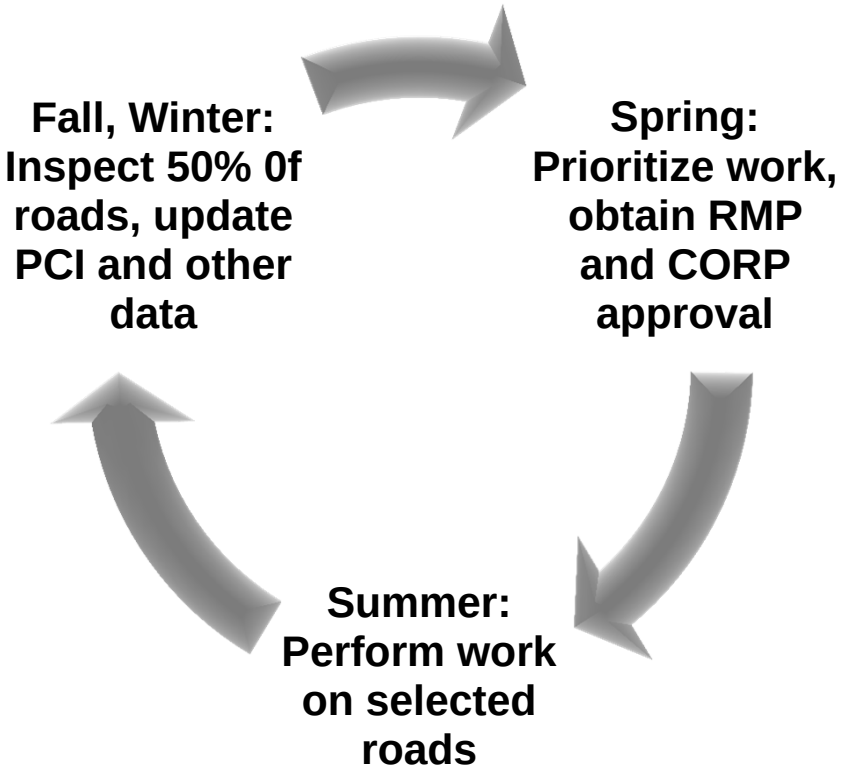


Pavement Condition Index (PCI) History of El Dorado County Roads

Condition	PCI	2005	2010	2012
Excellent	85-100	38%	27%	25%
Good	55-85	27%	40%	36%
Fair	25-40	24%	28%	32%
Poor				
Very Poor	0-25	11%	5%	7%
Failed				

Pavement Management Program Drives Maintenance and Overlay Priorities:

- October – February:
  - Perform pavement inspections (Tahoe inspections performed prior to snow season).
  - Update PMP database.
- February – April:
  - Use PMP data to set priorities for surface treatment and CORP for inclusion in CIP
- April – October:
  - Perform surface treatment and overlay work



Reminder: the CORP and RMP are updated every year.

PMP Inspections

In the Field:

- For every 1,000 feet of roadway, 100 feet are inspected on foot.
- Each inspection looks for 19 different potential deficiencies.
- Each deficiency encountered is measured and evaluated for severity.
  - Inspectors must be trained to identify deficiencies and properly evaluate severity.
- Inspection is quantitative and statistics-based.

In the Office:

- Data is entered into the Streetsaver program.
- Pavement Condition Index (PCI) is calculated and updated.
- Roads are prioritized for maintenance or overlay work.

PMP Inspections – Sample of Previous Inspection Form

COUNTY OF EL DORADO
DEPARTMENT OF TRANSPORTATION

PAVEMENT MANAGEMENT INSPECTION FORM

Date: 9-13-12 Zone: 5 Road #: 116 Road Name: Johnson Pass Rd
Section No: 1 Surveyed by: KS Total Samples: 4

1. Alligator Cracking	6. Depression	11. Patch/Util Cut Patch	16. Shoving
2. Bleeding	7. Edge Cracking	12. Polished Aggregate	17. Slippage Cracking
3. Block Cracking	8. Jt Reflection Cracking	13. Potholes	18. Swell
4. Bumps and Sags	9. Lane/Shoulder Drop-off	14. Railroad Crossing	19. Weathering/Raveling
5. Corrugation	10. Long & Trans Cracking	15. Rutting	

* All distresses are measured in sq. ft except distresses 4, 7, 8, 9, 10 which are measured in linear feet and 13 which is measured as a total number of potholes

Sample Unit: 0.03 Surface Type: AC Drainage Type: SHOULDER
Length: 100 Width: 24 Area of Sample: 2400

Type	1	3	10						
Quantity & Severity	495	108	159M						
			176H						
Total L	495								
Total M		108	159						
Total H			176						

Sample Unit: 0.3 Surface Type: AC Drainage Type: SHOULDER
Length: 100 Width: 22 Area of Sample: 2200

Type	1	3	6	13					
Quantity & Severity	1451	740	9	2					
Total L				2					
Total M	1451	740	9						
Total H									

Sample Unit: 0.50 Surface Type: AC Drainage Type: SHOULDER
Length: 100 Width: 20 Area of Sample: 2000

Type	1	3	7	10	13				
Quantity & Severity	30L	358	200	167	2				
	436M								
Total L	30		200		2				
Total M	436	358		167					
Total H									

Sample Unit: 0.70 Surface Type: AC Drainage Type: SHOULDER
Length: 100 Width: 17 Area of Sample: 1700

Type	1	3	7	13					
Quantity & Severity	1293	407	100M	6					
Total L									
Total M		407	100	6					
Total H	1293								

Benefits of PMP

- Over the past six years, the Department has spent $4.86 million on chip seal work and $9.87 million on asphalt concrete overlay projects.
  - PMP allows for informed decisions resulting in the most efficient use of limited resources (pavement life cycle curve).
  - Focused, common-sense preventative maintenance to maximize the useful life of the County's roadway infrastructure.
- Alternative funding streams will remain closed if the County cannot demonstrate that it is using its current resources in the most efficient manner possible.
  - Metropolitan Transportation Commission (Bay Area) has used their PMP to obtain millions in funding for maintenance and rehabilitation over the past several years.
  - The Division is working with EDCTC and the City of Placerville to investigate new maintenance funding sources through SACOG and Caltrans.

National Pollutant Discharge Elimination System (NPDES) Program:

- A provision of the Clean Water Act.
- A permitting mechanism that requires the implementation of controls designed to prevent harmful pollutants from being washed by storm water runoff into local water bodies.
- Both the Tahoe EIP and the West Slope CIP are facing increased NPDES requirements that come with more restrictions and with no identified funding sources.

2004 General Plan TIM Fee Program:

- Nov. 2005, Interim 10 Year TIM Fee program went into effect

Major Update:

- Aug. 2006, Board adopts 20 year 2004 TIM Fee program, which requires an annual review and adjustment

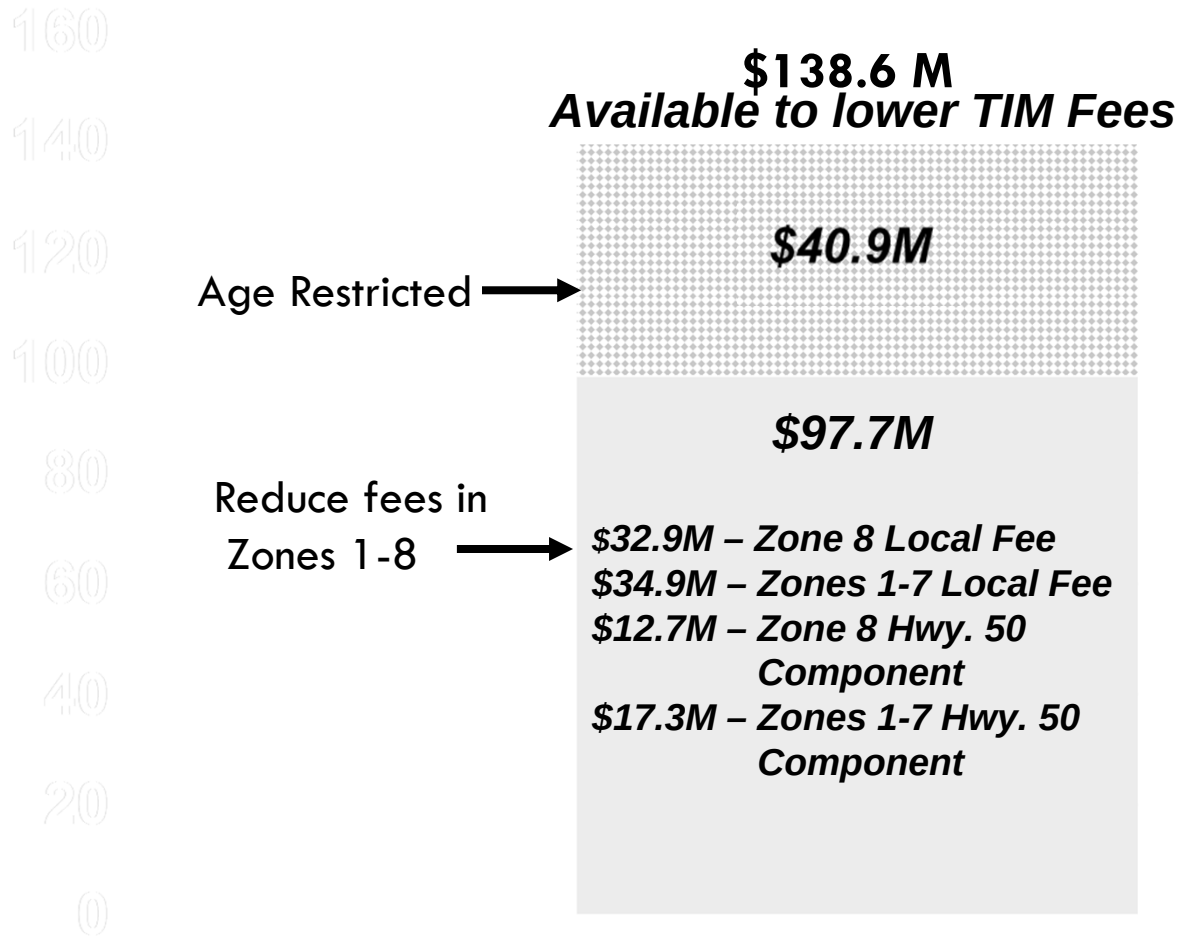
Minor Updates:

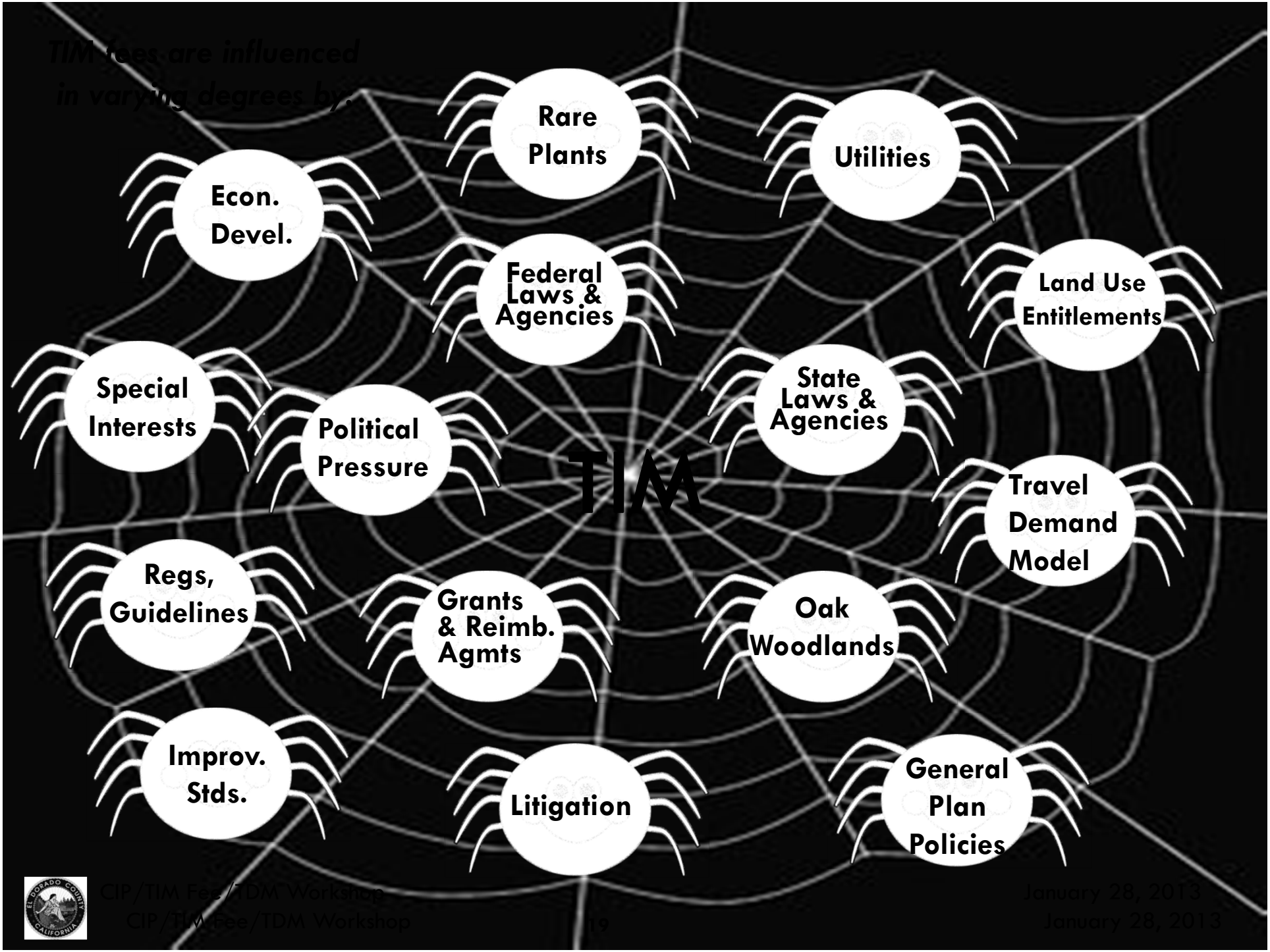
- Sept. 2007, Board adopts first annual adjustment to TIM Fees (14.16% increase)
- July 2008, Board adopts second annual adjustment to TIM Fees (1.73% decrease)
- June 2009 and June 2010, Board chose to leave fees unchanged, even though CIP costs increased
- February 2012, Board adopts fifth annual adjustment to TIM Fees
  - funded Age Restricted categories and reduced fees 11-22%, depending on zone and category

*As a reminder:

- November 2008, voters pass updated Measure Y
  - Allows for a 4/5 Board vote to permit road segments to go to Level of Service F
  - Policy TC-Xf: 20 Year–commercial/multifamily, 10 year - residential 5 lots or more

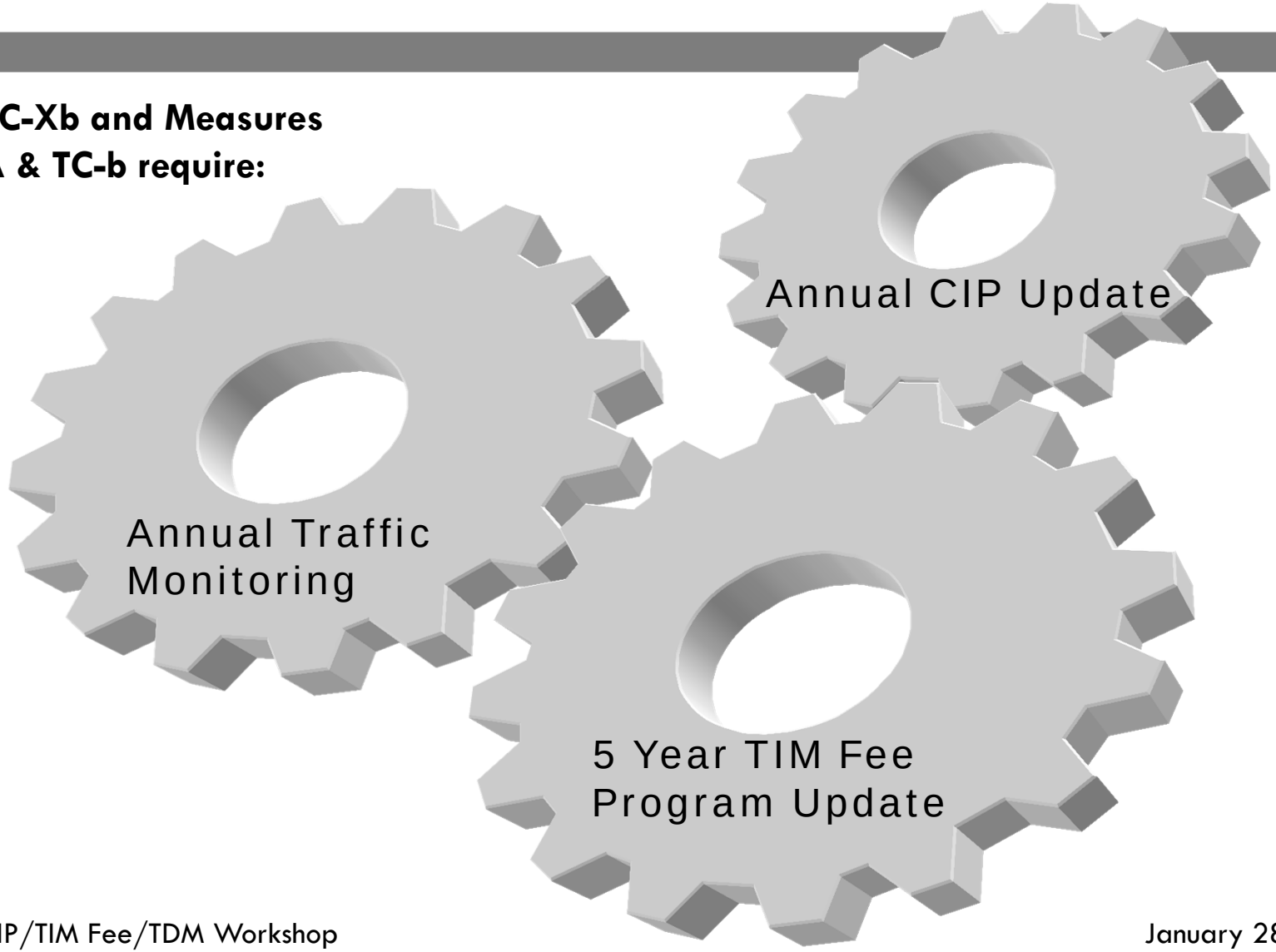
February 14, 2012 reductions to the TIM Fee Program:




TIM fees are influenced
in varying degrees by:
Rare Plants
Utilities
Econ. Devel.
Federal Laws & Agencies
Land Use Entitlements
Special Interests
Political Pressure
TIM
State Laws & Agencies
Travel Demand Model
Regs, Guidelines
Grants & Reimb. Agmts
Oak Woodlands
Improv. Stds.
Litigation
General Plan Policies

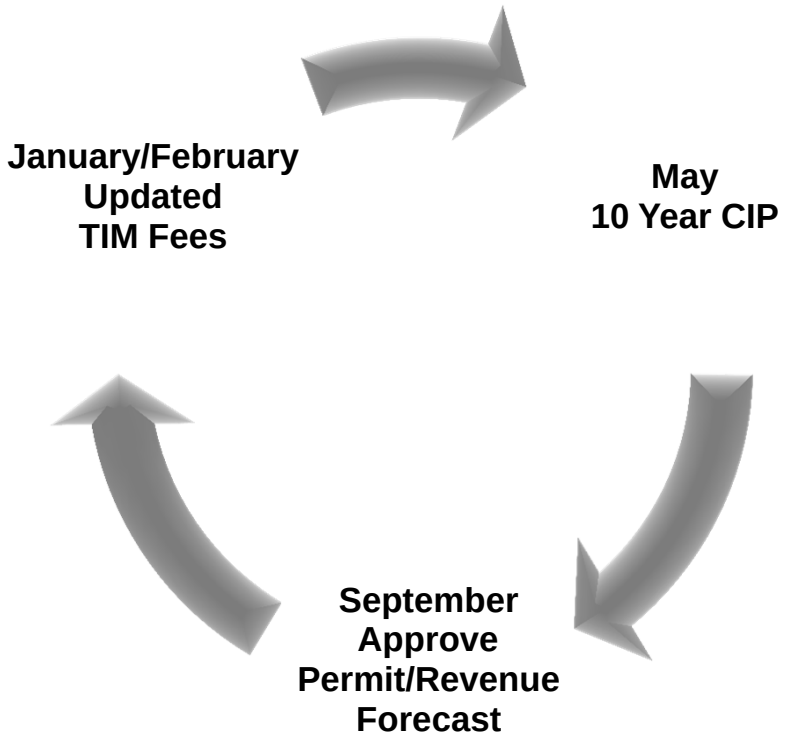
CIP & TIM Fee Update Requirements:

Policy TC-Xb and Measures TC-A & TC-b require:



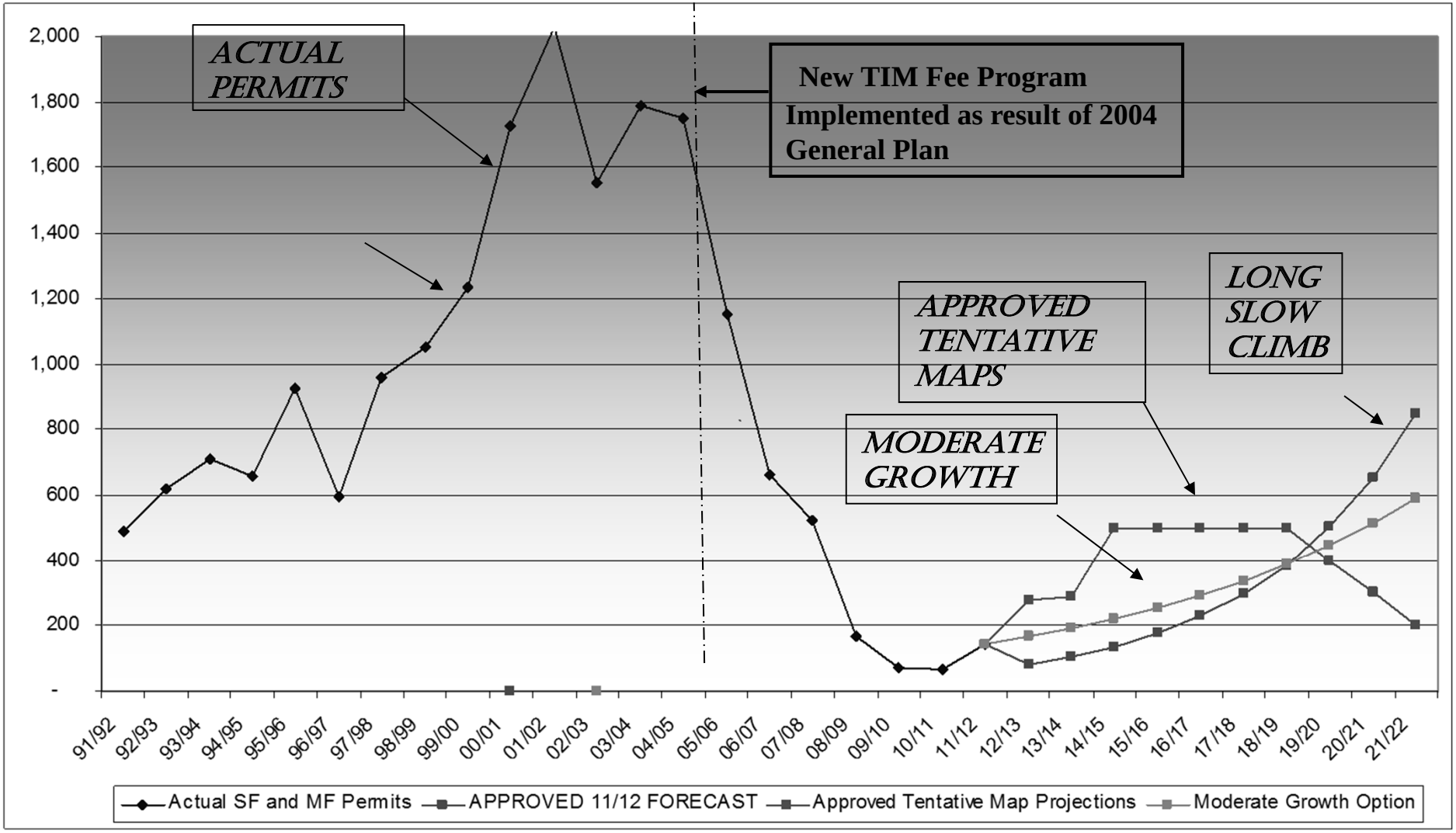
TIM Fee Program and CIP Annual Updating Process:

- May – Approve CIP
  - Updated costs and schedules
  - Updated revenue from approved revenue estimate
    - Establishes priorities for delivery
    - Determines workload for annual budget needs
- September – Approve Permit Forecast/Revenue Estimate
  - Approve revenue assumptions
    - External funding (Federal, State, other)
    - Development activity
- January – Updated TIM Fees Become Effective
  - Based on updated cost estimates (project specific or inflation adjusted)

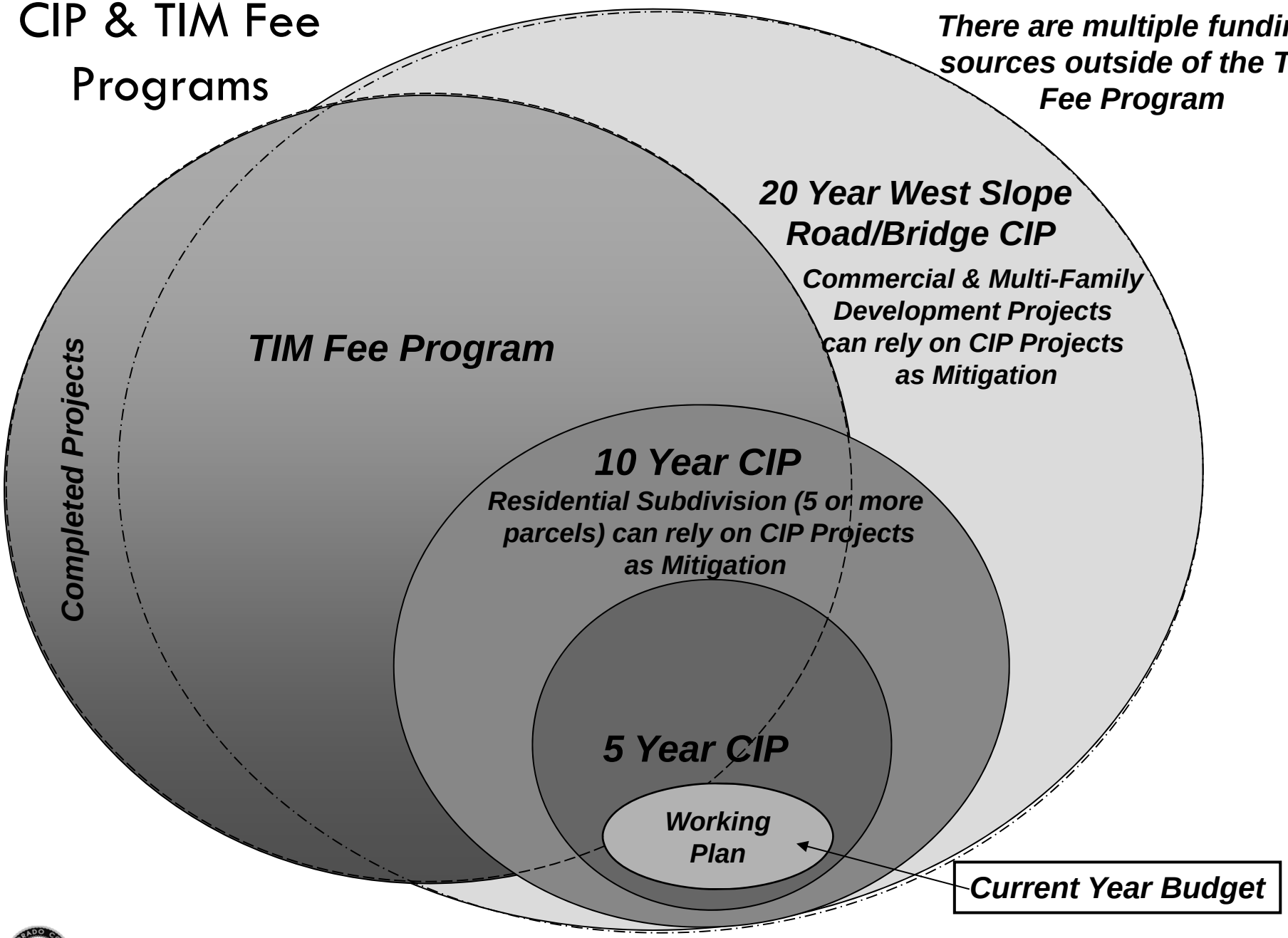


Reminder: the CIP and TIM Fee Programs are updated every year.

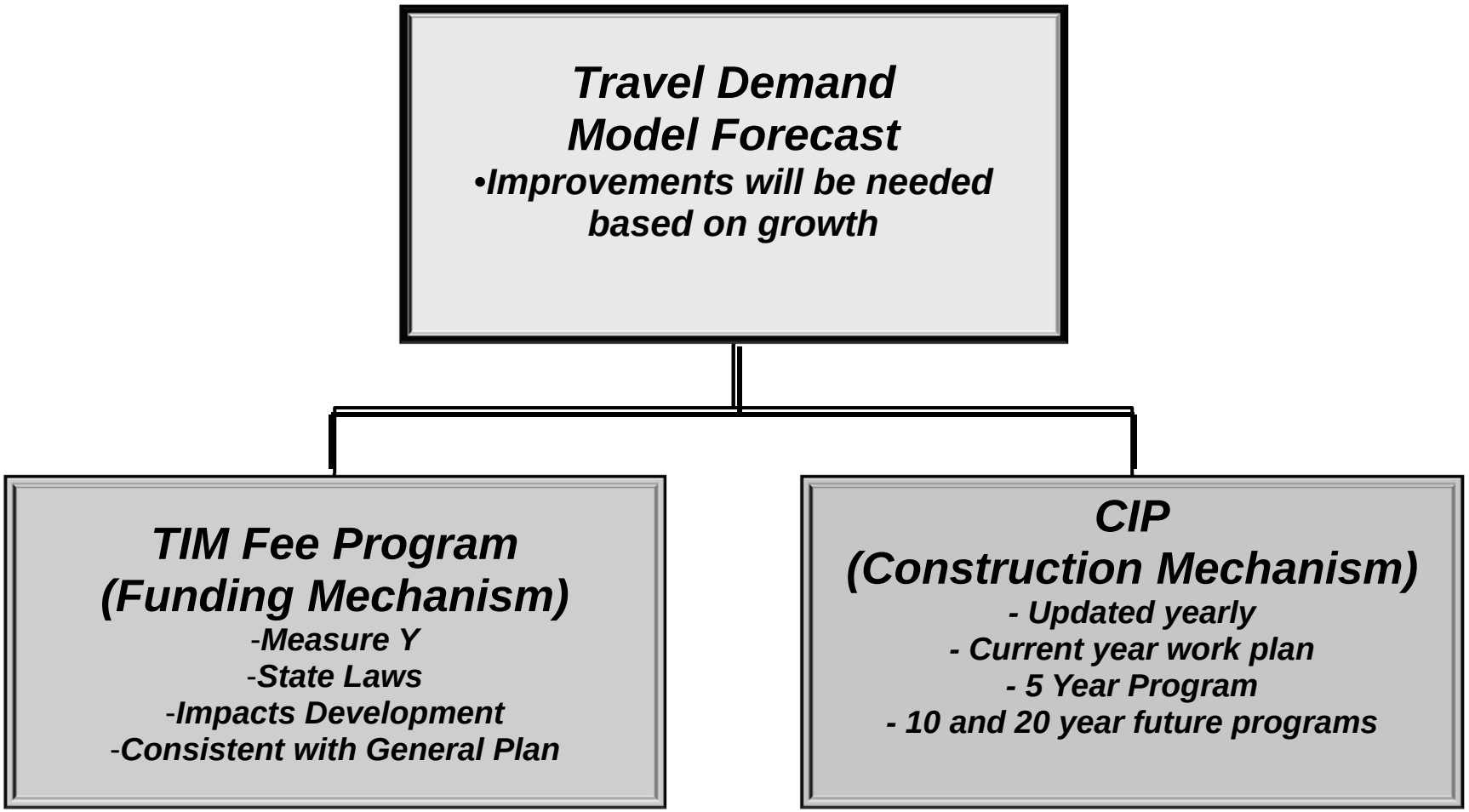
Historical Actuals and Permit Forecasts:



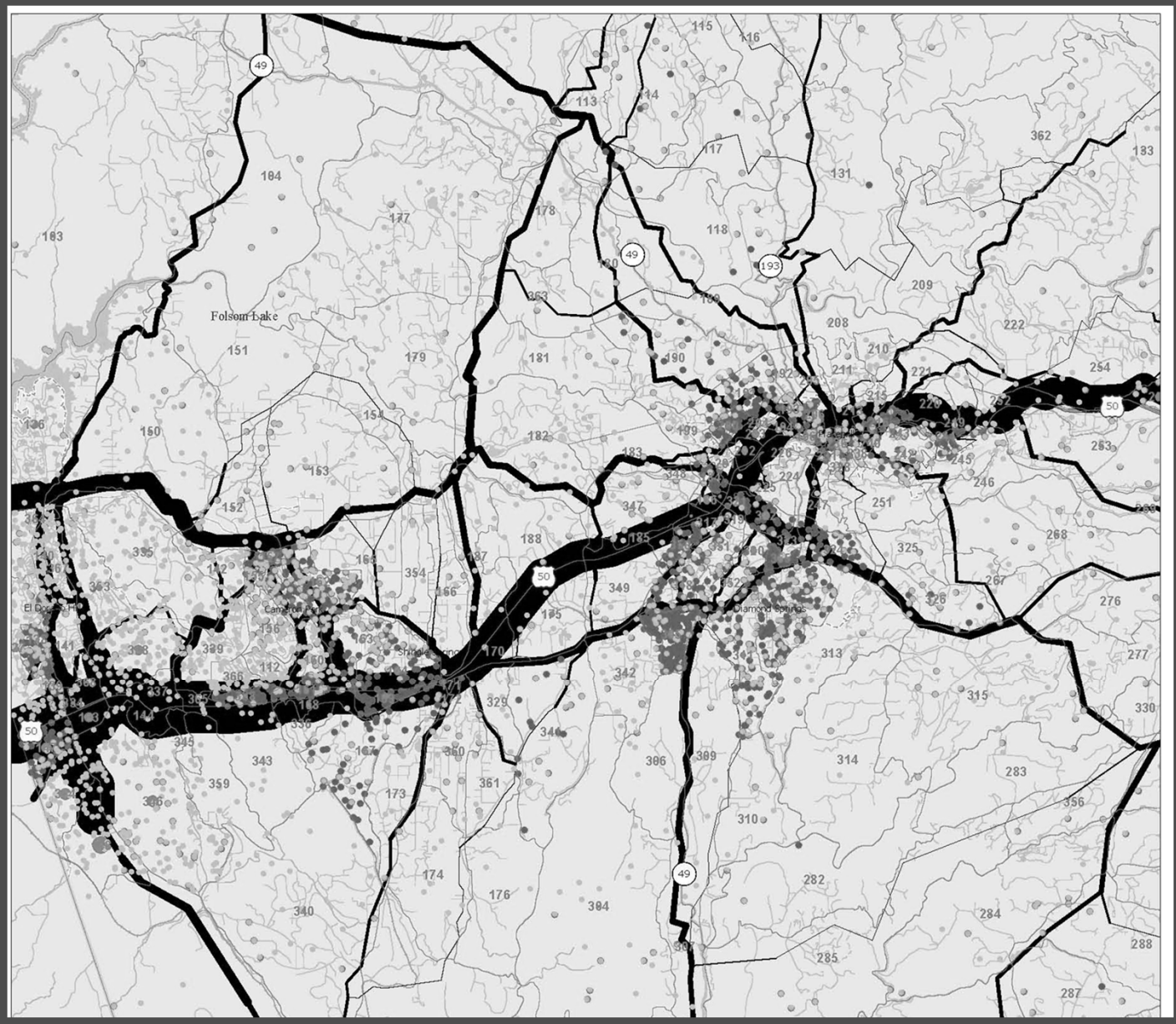
CIP & TIM Fee Programs



Travel Demand Model feeds the TIM Fee Program and the CIP:



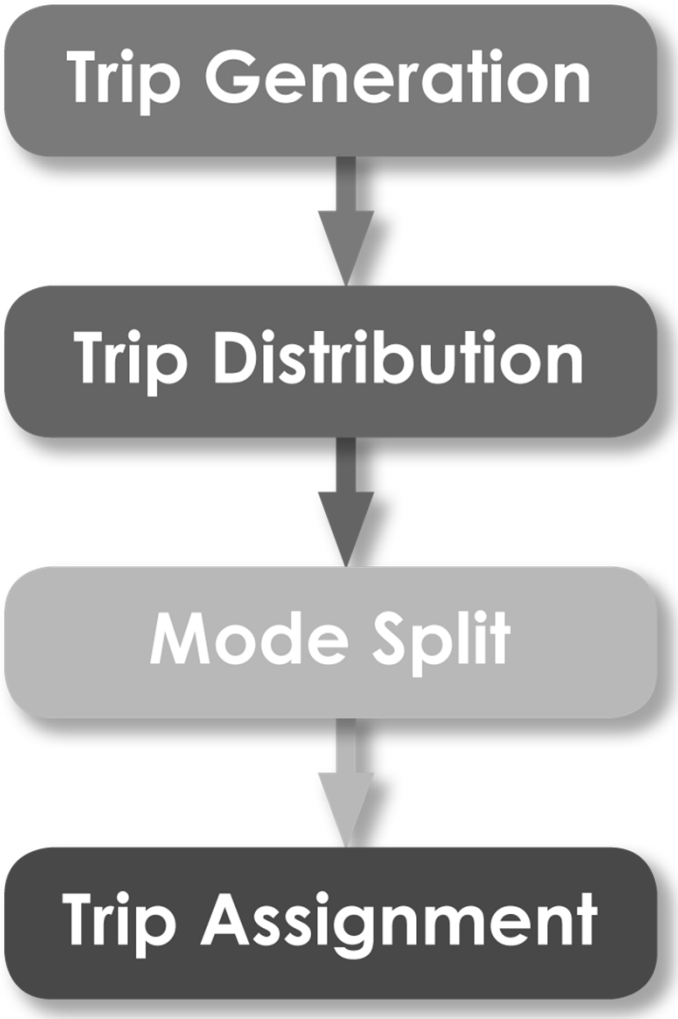
Micro vs. Macro

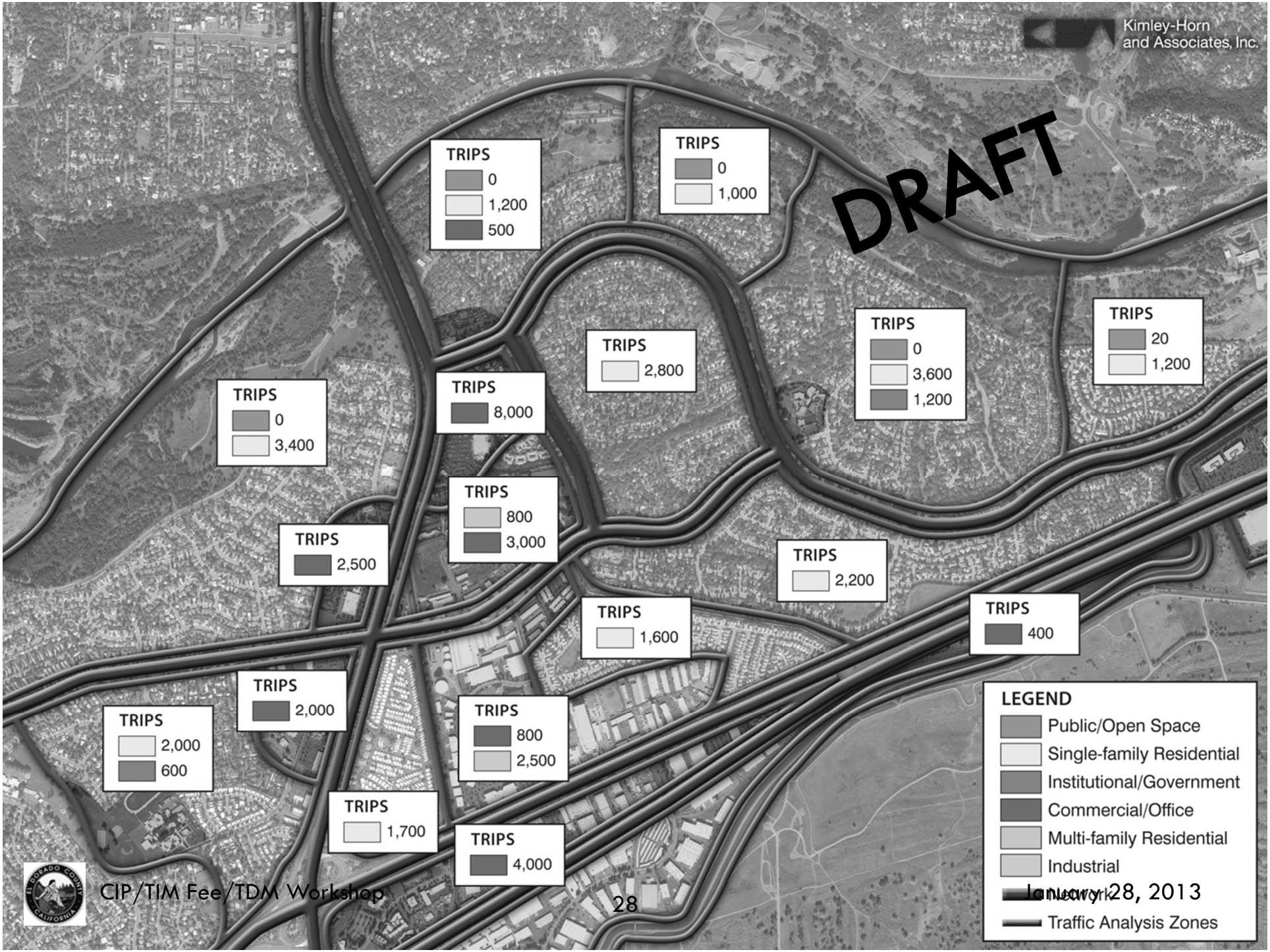


What the macro model can do

- Evaluate road widening and road additions
- Evaluate new interchanges
- Analyze the impacts of transportation plans
- Show impacts of large developments
- Forecast corridor volumes
- Form the basis of the micro model
- Test alternative land use plans
- Provide information for the Land Use Policy Programmatic Update (Targeted General Plan Amendment, Zoning Ordinance Update, and the 2013 Housing Element Update)

“Four Step” Model




Kimley-Horn and Associates, Inc.
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TRIPS 0 3,400
TRIPS 8,000
TRIPS 800 3,000
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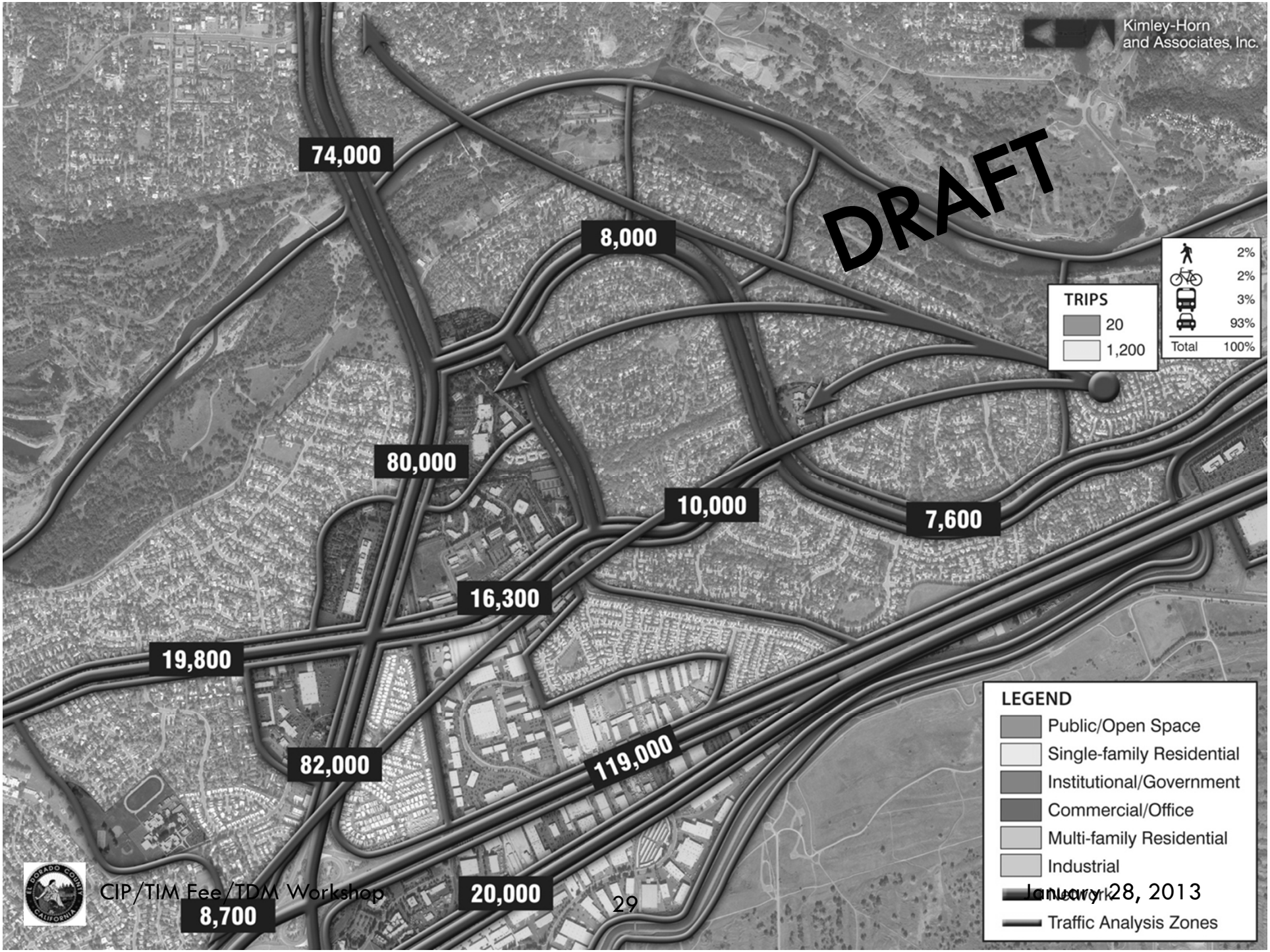
TRIPS 2,000 600
TRIPS 800 2,500
TRIPS 1,700
TRIPS 4,000
LEGEND
Public/Open Space
Single-family Residential
Institutional/Government
Commercial/Office
Multi-family Residential
Industrial
Network
Traffic Analysis Zones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20
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2%
2%
3%
93%
Total 100%
LEGEND
Public/Open Space
Single-family Residential
Institutional/Government
Commercial/Office
Multi-family Residential
Industrial
Freeway
Traffic Analysis Zones

Benefits of the Travel Demand Model:

Helps determine potential improvements needed based on growth projections
- Will there be impacts or not?
- Will the impacts be earlier or later?

Forms the basis of the CIP and TIM Fee Program

Allows the Department to run "what if" scenarios

Evaluates whether refinements to the TDM will result in trip reductions (e.g. land use)

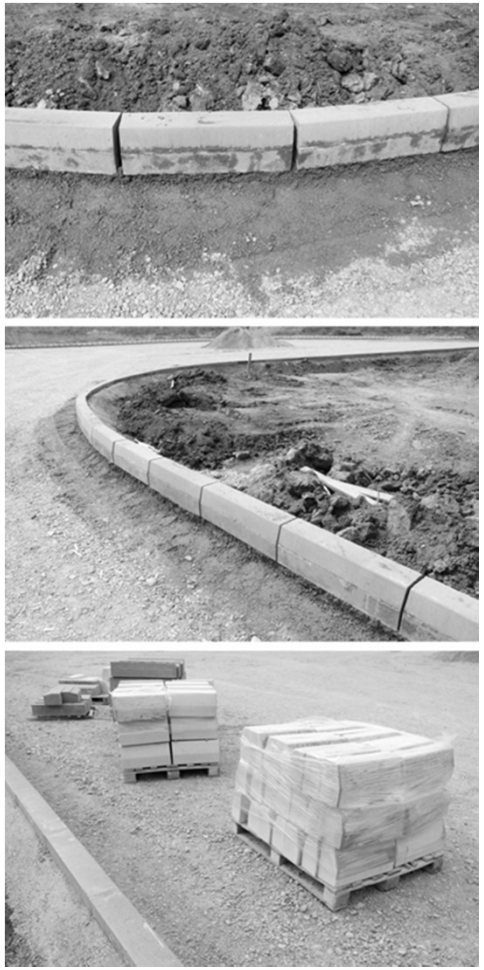
Determines whether projects can be removed/reduced as a result

Anticipates changes (if any) in where new development will be, compared to the current General Plan

Realizes what the Level of Service (LOS) effects would be if CIP projects are removed from the TIM Fee Program

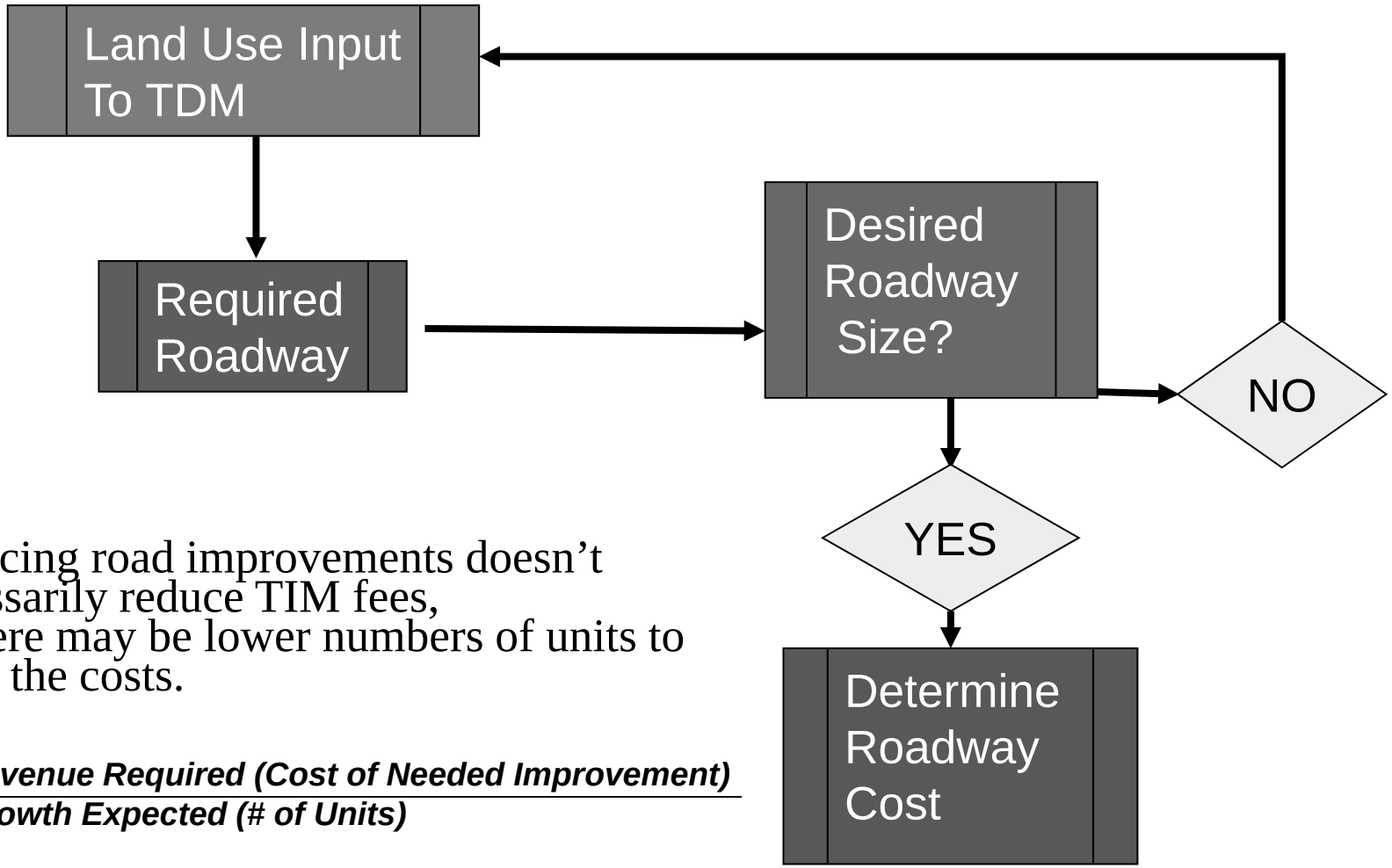
Provides information for the Land Use Policy Programmatic Update (Targeted General Plan Amendment, Zoning Ordinance Update, & 2013 Housing Element Update)

Potential Strategies for Adjusting TIM Fees:



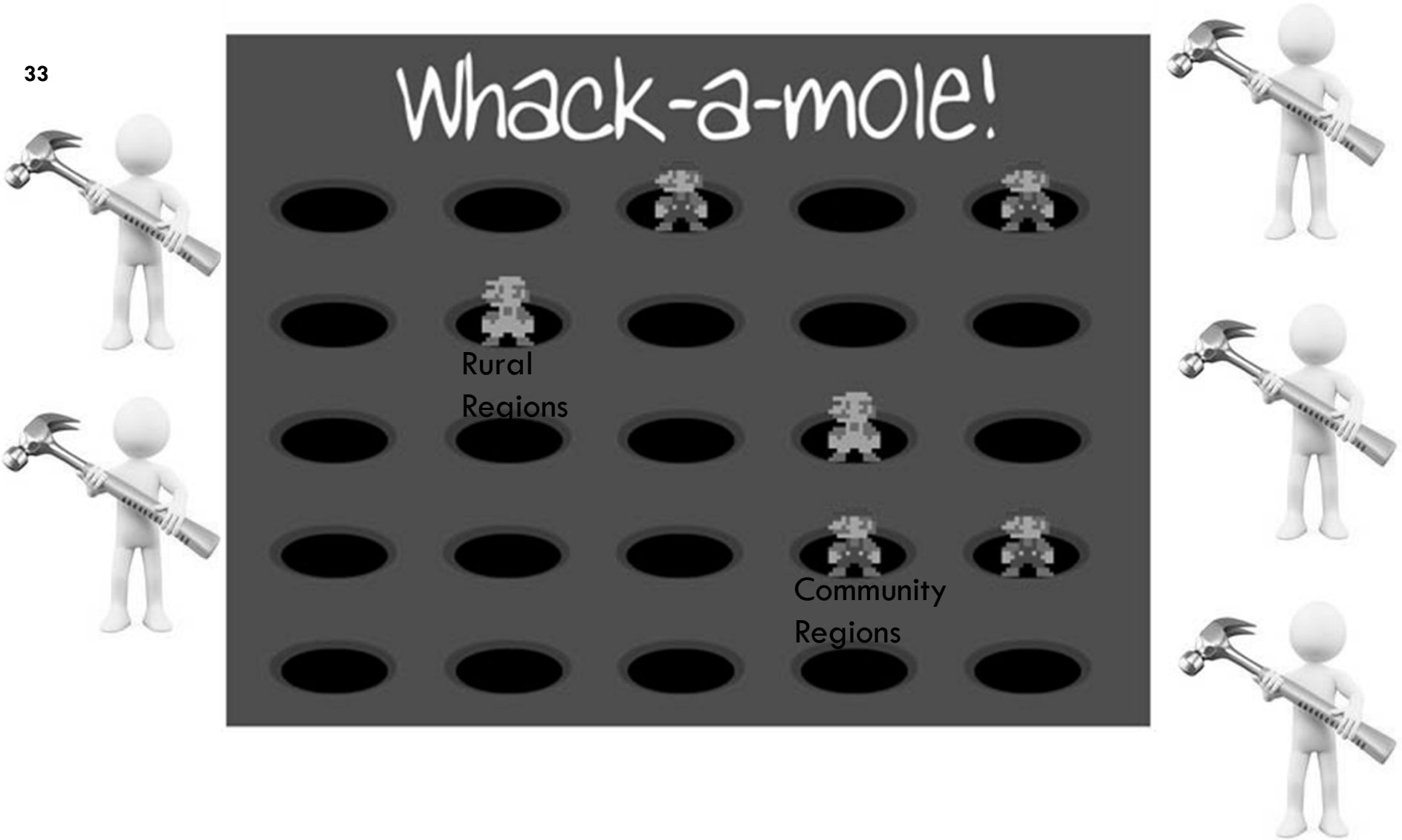
- Road Constrained Alternative
- Removing Projects
  - Interchange
  - Intersection/Safety line item
  - Bridge line item
  - Other
- Reviewing soft costs
- Revising road standards
- Altering LOS and Concurrency Policies
  - TC-Xa, TC-Xb, TC-Xd, TC-Xe, TC-Xf

Road Constrained Alternative:



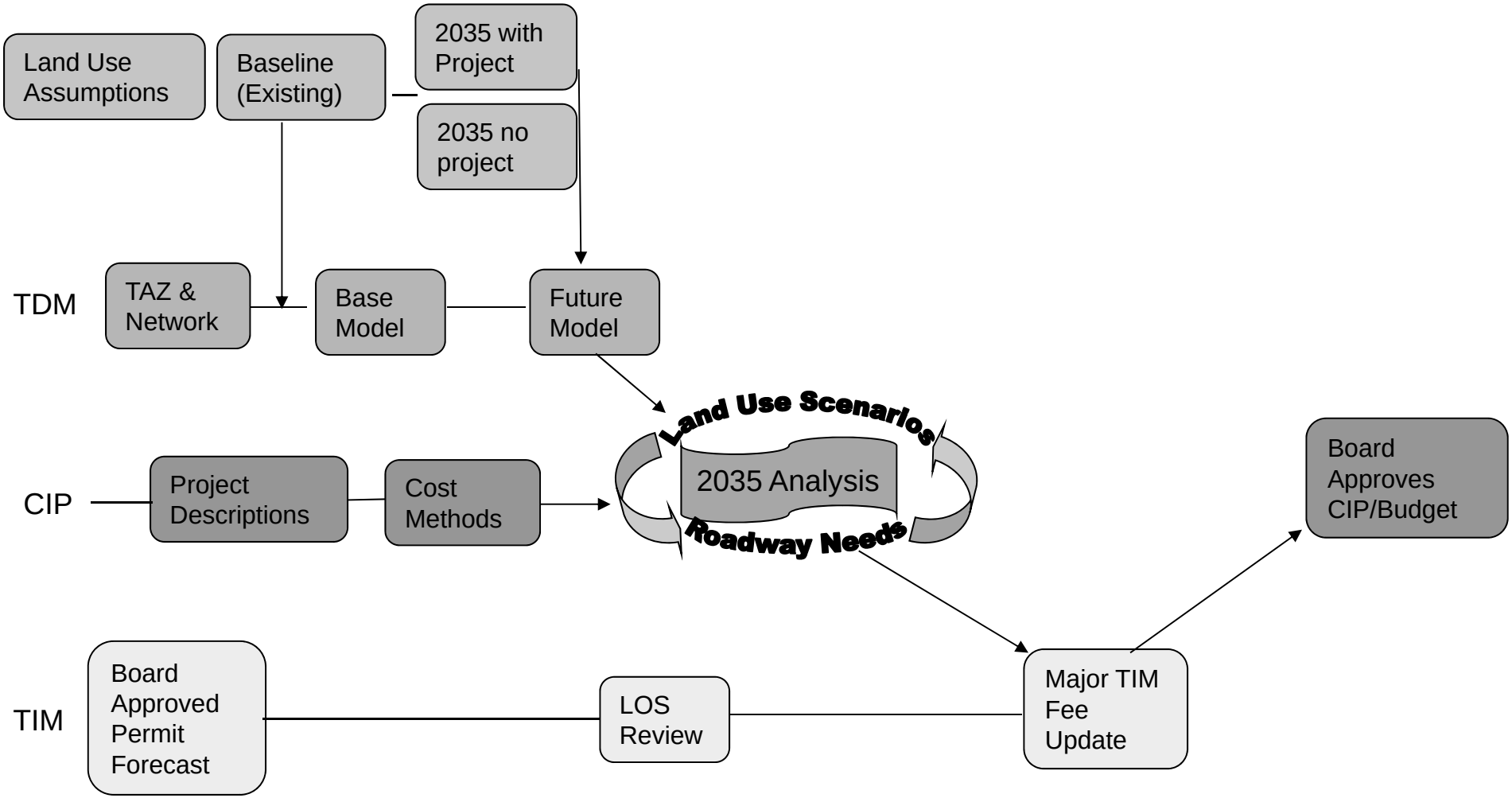
Reducing road improvements doesn't necessarily reduce TIM fees, as there may be lower numbers of units to share the costs.

$$Fee = \frac{\textit{Revenue Required (Cost of Needed Improvement)}}{\textit{Growth Expected (\# of Units)}}$$


Whack-a-mole!
Rural
Regions
Community
Regions

3rd Q 2012	4th Q 2012	1st Q 2013	2nd Q 2013	TBD

Land Use



Next Steps:

- Update design standards
- Signal Priority & Intersection Mitigation list
- Review project soft costs
- Targeted General Plan Amendment is analyzing County's LOS Policies
- Discuss roadway scenarios at future Board workshops after completion of the TDM
- Return to Board on February 5th with 2013 CIP Workshop
- Return to the Board in February with a discussion regarding the 2013 TIM Fee Program