

L-6

1.

FISCAL SUSTAINABILITY/INFRASTRUCTURE



THE CITY OF
NOVATO
CALIFORNIA

KEY MESSAGES

- Discussion topics
 - Roadways
 - Pavement
 - Traffic Signals & Street Lights
 - Bridges
 - Retaining Walls
 - Multi-Use Paths (Class I)
 - Storm Drains – General
- Not being discussed
 - Storm Drains – Detailed (Storm Drain Master Plan)
 - Parks – (Facility Assessment)
- Some operating budgets are adequate
- City has been good steward of the infrastructure
- Citizens have been very strong supporters of infrastructure by passing Bond Measures F & B



KEY ISSUES AND TRENDS

Regulatory

- NPDES Phase II Permit mandates
- Established timelines for traffic safety upgrades (CA MUTCD)
- Electrical vehicle support infrastructure (not mandated)

Funding

- One Bay Area Grant (OBAG) linking transportation funding to land use planning
- Expiration of Measure B = \$1.0 - \$1.5 million per year
- Anticipated changes in gas tax revenues – currently = \$1.4 million per year
- Increased oil prices affect construction & maintenance costs

Utilities

- Increasing water and electricity costs
- Increasing use of reclaimed water
- Increased reliability of energy efficiency and solar products



INFRASTRUCTURE

- Roadway Network
 - 152 centerline miles
 - 2011 Pavement Condition Index = 72
 - Replacement Value = \$281 million

- Storm Drain Network
 - 3,110 drain inlets
 - 240,000 linear feet of storm drains
 - Replacement Value = \$24 million

- Traffic Signals
 - 31 City owned & maintained signals
 - Replacement Value = \$9 million

- Retaining Walls (roadway)
 - Total number unknown
 - Primarily wood construction
 - Most more than 20 years old
 - Typical in-kind replacement \$500-\$800 per lineal foot

2004 GASB 34 REPORT

		2004 Replacement Value
Roadway	Pavement	\$101,569,114
	Sidewalk, Curb & Gutter	\$95,668,532
	Traffic Signals	\$7,700,000
	Street Lights	\$15,260,000
	Bridges	\$15,520,000
	Medians	\$12,559,498
	Retaining Walls	N/A
	Other (i.e. street trees, regulatory signage, etc.)	\$5,909,400
Storm Drain	Pipelines	\$61,054,875
	Structures	\$11,864,280
	Culverts	\$1,020,000
	Ditches	\$2,617,780
Park & Rec	Turf	\$2,456,082
	Landscaping	\$2,989,478
	Specialty Features (i.e. play structures, bathrooms, etc.)	\$1,604,393

ROADWAY INFRASTRUCTURE

PAVEMENT, SIDEWALKS, CURBS & GUTTERS

PAVEMENT CONDITION

- 152 centerline miles of City maintained roadways
 - 318 lane miles
 - 27,536,000 square feet
- Average PCI = 72 (2011)
- Standard funding sources:
 - \$1.3M Gas Tax per year (fluctuates annually)
 - \$817K used for operating budget
 - \$483K used for CIP (fluctuates annually)
 - \$450K Measure A LSR
 - Total Annual Funds = \$933k
- MTC supports maintenance activities
 - PTAP reports every two years
 - Provides and supports StreetSaver program
 - Lobbies for additional maintenance funding



PAVEMENT CONDITION

Key Issues

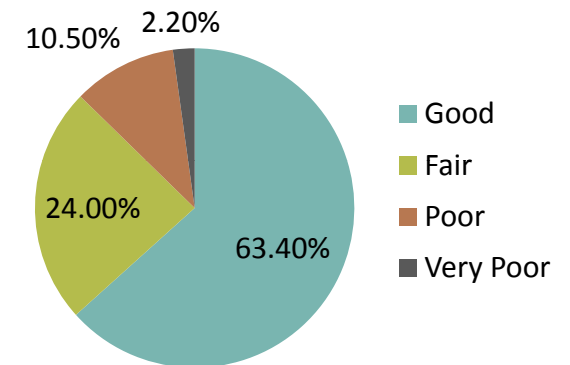
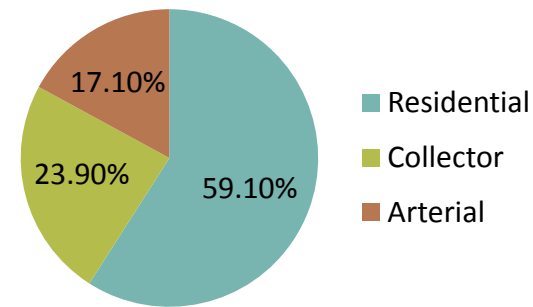
- “Fix Problems Now or Pay More Later,” League of California Cities, Western City, February 2013 Issue
 - “California cities and counties own and operate 81 percent of the state’s roads, and most Californians can attest to the fact that the condition of their local streets and roads system is becoming a crisis.” Jennifer Whiting
 - “The report shows that pavement conditions are deteriorating throughout California, and that while the costs are high for even the most basic repair and maintenance, the price tag for waiting is far higher, from both an economic and a public safety standpoint. Simply put: Pay now – or pay much more later.”



PTAP-12 NETWORK

Roadway Characteristics – Dec 2011

Roadway Type	Centerline Miles	Lane Miles	Average PCI
Residential	101	202	72
Collector	33	68	74
Arterial	18	48	71
Totals	152	318	72



Condition	PCI Range	Arterial	Collector	Residential	Total
Good	70-100	10.4%	14.5%	38.5%	63.4%
Fair	50-69	3.5%	7.4%	13.0%	24.0%
Poor	25-49	2.5%	1.7%	6.2%	10.5%
Very Poor	0-24	0.6%	0.2%	1.4%	2.2%
Total		17.1%	23.9%	59.1%	



PAVEMENT CONDITION EXAMPLES

StreetSaver Output

Printed: 10/11/2011





Street ID	Section ID	Street Name	From	To	Length	Width	Area	Functional Class	Surface Type	Current PCI	Remaining Life
RIDGEH	20	RIDGEVIEW HEIGHTS	MIDWAY BLVD	NORTH END	334	30	11,886	R - Residential/Local	A - AC	71	20.52
RIPLEY	10	RIPLEY LANE	MAYBECK ST	WEST END	157	18	2,826	R - Residential/Local	A - AC	80	28.78
RITA	10	RITA COURT	OLIVE AVE	END	187	26	6,888	R - Residential/Local	O - AC/AC	79	28.8
RIVERV	10	RIVER VISTA COURT	ALBATROSS DR	END	650	24	16,986	R - Residential/Local	O - AC/AC	80	28.33
ROBINH	10	ROBINHOOD DRIVE	OLIVE AVE	2000 FT NORTH OF OLIVE AVE	2,000	23	46,000	R - Residential/Local	A - AC	57	13.65
ROBLAR	10	ROBLAR DRIVE	NAVE DR	NORTH END	600	40	24,000	R - Residential/Local	A - AC	47	7.88
ROCA	10	ROCA COURT	BLANCA DR	END	200	24	6,186	R - Residential/Local	A - AC	76	23.59
ROCKRO	10	ROCKROSE WAY	NORTH END	SOUTH END	1,182	32	40,736	R - Residential/Local	A - AC	88	39.87
ROMERO	10	ROMERO COURT	SAN LUIS WAY	END	260	24	8,406	R - Residential/Local	O - AC/AC	81	34.53
ROSA	10	ROSA DRIVE	OLIVE AVE	S END	688	36	24,487	R - Residential/Local	A - AC	78	24.18
ROSEST	10	ROSE STREET	RAILROAD AVE	EAST END	177	20	3,540	R - Residential/Local	A - AC	0	0
ROSEWO	10	ROSEWOOD DRIVE	(N) REDWOOD BLVD	(S) REDWOOD BLVD	792	33	26,136	R - Residential/Local	A - AC	67	18.18
ROWERA	10	ROWE RANCH DRIVE	PALMER DR	END	764	28	23,136	R - Residential/Local	A - AC	92	33.01
ROWERW	10	ROWE RANCH WAY	PALMER DR	END	870	32	30,065	R - Residential/Local	A - AC	92	33.01
ROWLAN	10	ROWLAND BOULEVARD	WEST END	240 FT EAST OF SAVANNA CT	1,500	36	55,038	R - Residential/Local	A - AC	82	27.41
ROWLAN	20	ROWLAND BOULEVARD	240 FT EAST OF SAVANNA CT	WASHINGTON ST	1,000	24	24,000	C - Collector	A - AC	67	10.54
ROWLAN	30	ROWLAND BOULEVARD	S NOVATO BLVD	WASHINGTON ST	2,200	34	74,800	R - Residential/Local	O - AC/AC	40	6.16
ROWLAN	40	ROWLAND BOULEVARD	REDWOOD BLVD	S NOVATO BLVD	1,300	72	93,600	A - Arterial	O - AC/AC	77	20.42
ROWLAN	45	ROWLAND BOULEVARD	REDWOOD BLVD	US 101	400	68	27,200	A - Arterial	O - AC/AC	30	1.21
ROWLAN	50	ROWLAND BOULEVARD	END OF PCC of 101 OVERCROSS	VINTAGE WAY(N)	878	68	59,704	C - Collector	A - AC	68	11.44
ROWLAN	60	ROWLAND BOULEVARD	VINTAGE WAY (N)	VINTAGE WAY (S)	2,855	68	194,140	C - Collector	O - AC/AC	78	21.91
ROWLAC	10	ROWLAND COURT	ROWLAND BLVD	END	190	26	6,966	R - Residential/Local	O - AC/AC	44	8
ROWLAW	10	ROWLAND WAY	ROWLAND BLVD	NOVATO CREEK	1,080	60	64,800	C - Collector	A - AC	70	11.62
ROWLAW	20	ROWLAND WAY	NOVATO CREEK	NORTH END	672	40	34,958	C - Collector	A - AC	75	13.57
ROYCOU	10	ROY COURT	CENTER RD	WEST END	159	26	6,989	R - Residential/Local	A - AC	54	11.32
RUBENC	10	RUBEN COURT	STASIA DR	SOUTH END	620	30	21,431	R - Residential/Local	A - AC	42	6.43
RUDNI	10	RUDNICK AVENUE	OLIVE AVE	SUMMERS AVE	759	26	19,734	R - Residential/Local	O - AC/AC	50	9.72

Criteria:

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PAVEMENT CONDITION EXAMPLES

Condition	Road	Segment	2011 PCI	
Good	Rowe Ranch Drive	Palmer to terminus	92	
Fair	Robinhood Drive	Olive north 2,000 ft	57	
Poor	Roblar Drive	Nave to terminus	47	
Very Poor	Rose Street	Railroad to terminus	0	

PAVEMENT CONDITION (CONT.)




Before
PCI = 47



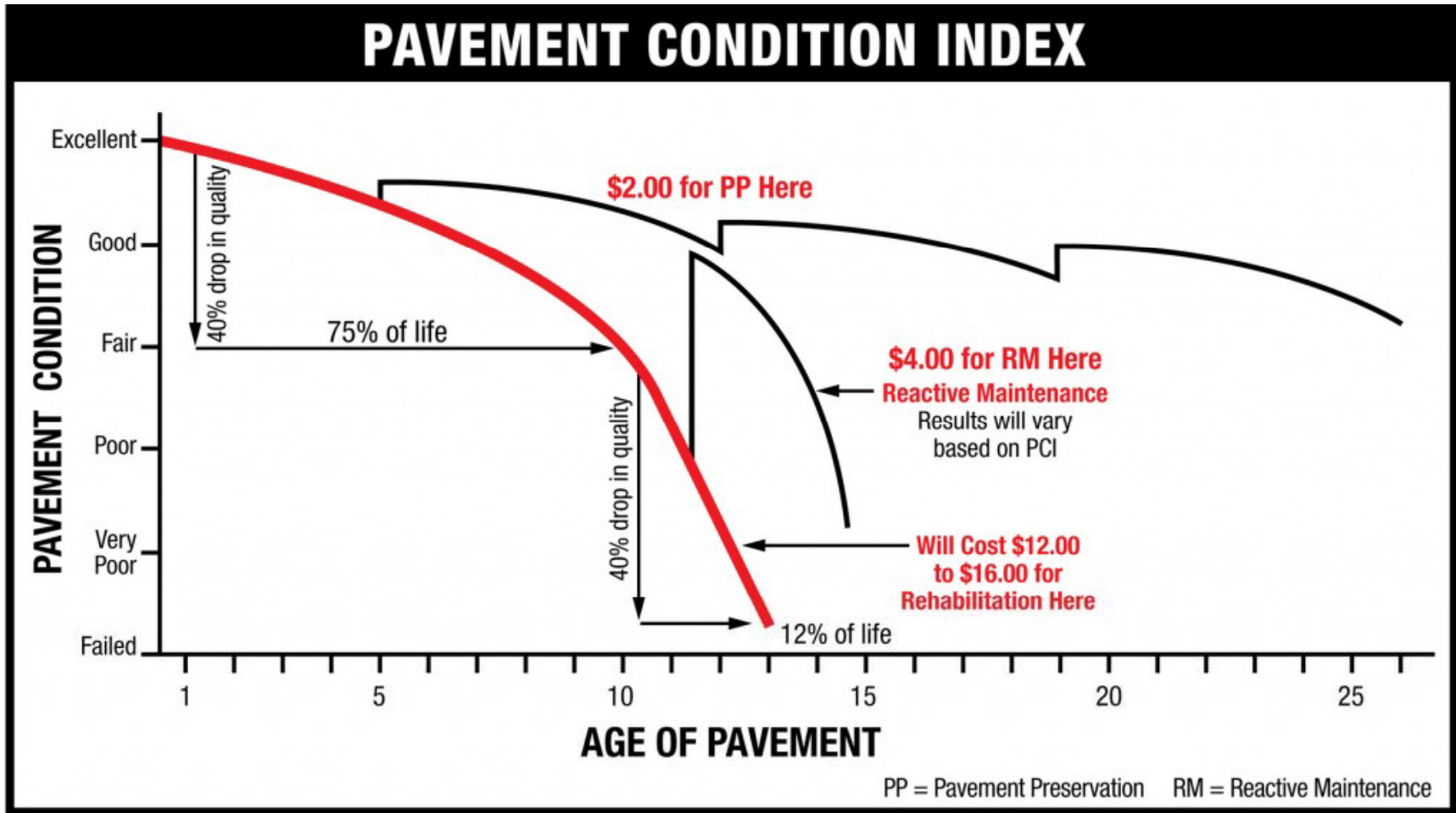
After
PCI = 91



PAVEMENT CONDITION

	PCI	PCI	REPRESENTATIVE PAVEMENT SURFACE	REPAIR ALTERNATIVE
ROUTINE MAINTENANCE	86 - 100	90		Pavements with PCIs above 85 will benefit from routine maintenance actions, such as periodic crack sealing, periodic joint resealing, or patching
PAVEMENT PRESERVATION	56-85	65		Pavements with a PCI of 56 (65 for PCC pavements) to 85 may require pavement preservation, such as a surface treatment, thin overlay, or PCC joint resealing.
MAJOR REHABILITATION	0 - 55	25		Pavement allowed to deteriorate below a PCI of 55 (65 for PCC) will require costly reconstruction to restore it to operational condition.

PAVEMENT CONDITION (CONT.)



PTAP-12 BUDGET SCENARIO SUMMARIES

Base Year = 2011

Scenario Name	5 Year Budget	Rough Annual Budget	2016 PCI	2016 Deferred Maintenance
Unconstrained	\$36.2M	\$3.5M	81 (+9)	\$0
2011 Investment	\$19.5M	\$3.9M*	78 (+6)	\$16.7M
2011 PCI	\$13.5M	\$2.7M	72 (+0)	\$22.5M
Increase PCI 5 Points	\$23.0M	\$4.6M	77 (+5)	\$14.7M

Current investments FY 12/13:

- ~\$1.4M/year – CIP Projects LSR
- ~\$1.0M/year – PW Maintenance (potholing, crack sealing, patching, etc)

*Included \$1.5M/year of Bond Measure B

Note: These tables do not take into consideration regional program funds, such as Novato Boulevard. This \$13M project will be completed within the study window and therefore contributes to the overall budget.

ROADWAY INFRASTRUCTURE

TRAFFIC SIGNAL & STREET LIGHTS



TRAFFIC SIGNALS & STREET LIGHTS

Traffic Signals

- Traffic Signal Infrastructure
 - 31 City owned traffic signals
 - 1 pedestrian activated flashing beacon (Galli Drive)
 - 5 radar feedback signs (Olive Ave, Main Gate Rd, Center Rd)
- Current contract (2005) – 22 signals included
 - Siemens (formerly Republic Electric)
 - Annual budget of \$120,000
 - Based on estimate of \$473/signal/month
 - Painting 3 signals per year (poles, cabinets & backplates)
- Proposed contract (2013) – Full City infrastructure
 - Recommending Siemens – Contract approval to Council in April
 - Proposed annual budget = \$107,000
 - \$140/signal/month + \$70/other device/month = \$57,000/year
 - Out-of-Scope (T&M) Service = \$50,000 per year
 - Painting included as out-of-scope service



TRAFFIC SIGNALS & STREET LIGHTS (cont.)

Street Lights

- MGSA owns streetlights and manages maintenance contract
 - Local agencies are responsible for paying all maintenance costs
 - Annual operating budget of \$111k
 - Siemens is contractor
- 3,900 streetlights (cobra-head, shoe box, post-top, others)
- Phase 1 & 2 projects converted 1,400 streetlights from HPS to LED
- Phase 3 will convert remaining lights to LED
- ~\$200,000 annual electrical savings after capital loan paid off
- City has been very proactive at reducing energy costs and greenhouse gas emissions caused by streetlights
- Annual budget is adequate to maintain primary system
- Wood pole replacement program is currently unfunded and will require an investment soon
 - ~1,500 streetlights on wood poles (~38%)



ROADWAY INFRASTRUCTURE

BRIDGES

BRIDGES

- 18 on-system bridges (many other pedestrian facilities)
- Average bridge in Novato is 53 years old
- City has been diligent at chasing and receiving funds to retrofit and replace bridges
 - \$2M+ invested in past 10 years
 - Simmons Lane Bridge
 - Center Road Bridge
 - \$1M+ improvement for Grant Avenue Bridge in design. Construction in FY 14/15.
- Caltrans submits annual bridge reports
 - Comprehensive evaluation: structural and longevity
 - Most comments are minor
- No current routine maintenance budget
- Responsible for surfacing of Atherton Ave/San Marin Dr interchange over Highway 101 per Cooperative Agreement with Caltrans

ROADWAY INFRASTRUCTURE

RETAINING WALLS

RETAINING WALLS

- Number, height and length of retaining walls unknown
- Most are wood construction and nearing end of life
- Beginning to see spot failures
- Typical longevity range depends on construction type, site conditions, exposure and location
- Example: Pacheco Valle
 - 10 retaining walls of varying height and length
 - Several cross into & out of City right-of-way making ownership and maintenance responsibility cumbersome
 - At least 2 walls are showing signs of preliminary failure
- Recommend performing an inventory and condition analysis
- Case study on recent investigation: 101 Indian Hills Road



RETAINING WALLS (cont.)

Case Study: 101 Indian Hills Drive



Project No. 396.36

March 2013

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Site 1	101 Indian Hills Drive	Lat. 38.0769	Lon. -122.5730	Category: Retaining Wall	Area: Ignacio Valley
<p>SITE DESCRIPTION: Approximately 165 LF timber-lagging retaining wall, ranges from 2 to 5-feet high, retains weathered sandstone slope ranging from 2:1 (H:V) at north to 3:1 at center and south. Wall consists of 4x4 timber posts and 2x12 lagging with 2x10 cap boards.</p>					
<p>MARCH 2013 CONDITION: Northernmost 30-feet of 5-foot high section appears recently replaced. Approximate 50 LF section at center of 5-foot high wall failed, posts leaning and rotted, no apparent slide above. Wall has no freeboard and no ditch behind, note existing V-ditch from higher on slope discharges through base of wall at south end to roadway gutter pan.</p>					
<p>CONDITION: 7 1=GOOD, 10=POOR</p>		<p>DAMAGE POTENTIAL: 2 1=LOW, 10=HIGH</p>		<p>PRIORITY RATING: 14</p>	



View to north, note failed section at center and apparently new section at far north.



Close-up of failed center section, note lack of freeboard or drainage provisions.

<p>REPAIR OPTION 1: Replace failed center section with 50 LF new posts and lagging. Excavate soil debris from behind top and back of wall to create 6" freeboard and wall drainage layer.</p>	<p>REPAIR OPTION 2: Replace entire wall (165 LF) with new steel soldier-pile and timber lagging wall and drainage.</p>	<p>REPAIR OPTION 3: Replace entire wall (165 LF) with new reinforced concrete wall. Construct 165LF perforated backdrain and 165 LF concrete v-ditch, discharge both to (E) ditch at south end.</p>
<p>ESTIMATED COST: \$25,000</p>	<p>ESTIMATED COST: \$71,300</p>	<p>ESTIMATED COST: \$112,725</p>



CITY OF
ATASCADERO
CALIFORNIA

RETAINING WALLS (cont.)

Case Study: 101 Indian Hills Drive – Repair Options

1. Replace failing 50 foot section with in-kind materials; freeboard and drainage improvements for entire length
 - Cost = ~\$25,000 or \$500/foot
 - Life = 10-15 years
2. Replace entire 165 foot wall with steel soldier piles and timber lagging; freeboard and drainage improvements included
 - Cost = ~\$71,300 or \$432/foot
 - Life = 30-40 years (the timber lagging has a 20 year life)
3. Replace entire 165 foot wall with reinforced concrete; freeboard and drainage improvements included
 - Cost = ~\$125,000 or \$758/foot
 - Life = 40-50 years
4. Replace failing 50 foot section with in-kind materials with maintenance staff
 - Cost = ~\$14,000
 - Life = 10-15 years



ROADWAY INFRASTRUCTURE

MULTI-USE (CLASS I) PATHWAYS

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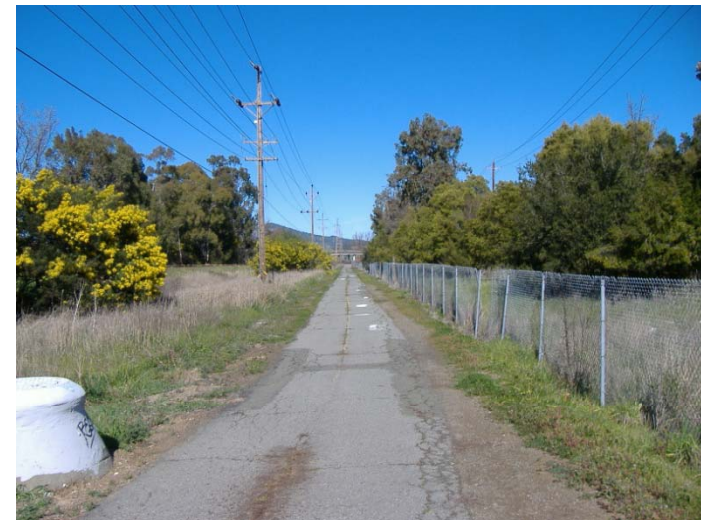
- 5.62 miles of multi-use path (~237,000 SF)
- PCIs range all over the board
- Not included in PTAP analysis
- Limited maintenance funds available:
 - TDA Article III
 - Gas Tax
 - Measure B (TAM)
- Successful obtaining funding to construct new pathways:
 - Commuter Bike Connection (\$1.9M)
 - SMART – 3 segments in IOS-1
- Received \$127k of TDA Article III to resurface/reconstruct Bel Marin Keys pathway
 - Scheduled for FY 13/14
- No dedicated funding for maintenance



MULTI-USE (CLASS I) PATHWAYS

Case Study: Bel Marin Keys (Frosty Lane) Multi-Use Path

- Approximately 3,300 lineal feet (0.6 mile)
- Hanna Ranch Road south to Hamilton Drive
- Constructed in 70s following Highway 101 Freeway project
- Minor pavement maintenance since construction
- Daytime use only due to lack of lighting
- January 2012 - Received \$127k of TDA Article III in to resurface/reconstruct
- Roughly \$4.50 per SF to rehabilitate
- Scheduled for FY 13/14
- **At 237,000 SF system maintenance is approximately \$1.1M with a 20 year life**
- **~\$50,000 per year**



STORM DRAIN INFRASTRUCTURE

STORM DRAIN NETWORK

Key Messages

- Reactionary improvement program (failure mode)
- New NPDES Permit Phase II
 - New storm drain maintenance and discharge requirements
 - System modification and Low-Impact-Development requirements
 - Unknown fiscal impact
- Unknown impact from private storm drain network
- Storm Drain Master Plan has been unfunded in CIP for several years
 - Establishes protection level
 - Identified protection deficiencies
 - Outlines capital needs
 - Recommends maintenance program



STORM DRAIN NETWORK (cont.)

Existing Funding Sources

- *Runoff Fee* = \$15 /parcel/year = \$357,000 /year
 - Primarily used for:
 - MCSTOPPP
 - Clean Storm Water Capital Improvement (321) Fund
 - NPDES Maintenance Operations
- *Bond Measure B*
 - Included specific storm drain and flood control improvement projects, such as the Rush Creek Drainage Improvements
- *Clean Storm Water Capital Improvement Program (Fund 321)* – Accounts for revenue and expenditures used for ongoing street and storm drain needs. The General Fund contributes \$45,000 per year.
- *Street and Storm Drain Maintenance (Fund 322)* – Established in FY 96/97 using year-end general fund balance, anticipating that interest revenue would provide an ongoing funding source.
- *Development Impact Fees (Fund 327) – Drainage* – Developer fees used in conjunction with other City funds to complete projects identified in the initial Development Impact Fee report.

CONCLUSION



OPTIONS

Category	Service Level	Annual Cost	Above Current Investment
Pavement Condition	Maintain 2011 Funding	\$3.9M	\$1.5M
	Maintain 2011 PCI	\$2.7M	\$0.3M
	Increase 2011 PCI by 5 points	\$4.6M	\$2.1M
Traffic Signals & Streetlights	Maintain status quo	\$107k	-\$13k
		\$111k	\$0
Bridges	Maintain status quo (grant funding)	\$0	\$0
Retaining Walls	Perform inventory FY 13/14 (\$50k)	Unk	Unk
Multi-Use Paths	Maintain Status quo (grant funds)	\$0	\$0
	Maintenance program	\$50k	\$50k
Storm Drains	Perform Storm Drain Master Plan (\$300k)	Unk	Unk