

Complete Streets and Pavement Preservation



**Rocky Mountain West Pavement Preservation Partnership
Annual Meeting, Bozeman, MT 2015
Scott Gibson P.E.**



Mike's Talking Points

- What is the primary reason RTC attends the RMWPP annual meeting?
 - To share what a successful program looks like and what is possible



About Us

- RTC of Washoe County, NV
 - MPO (long range mobility)
 - Transit (mode split and trip reduction)
 - Street and Highway (Provides Opportunity)
- Member agencies are the Cities of Reno, Sparks, and Washoe County



Funding: Indexed Fuel Tax



- Passed Twice by Voter Initiative
 - CPI then PPI (Construction Inflation)
- Indexes County Fuel Tax to Inflation
- Also:
 - Indexes **State Fuel Tax** and Keeps that Increment,
 - Index **Federal Gas Tax** and Keeps that,
 - Indexes **Federal Diesel Fuel Tax** and Keeps that!

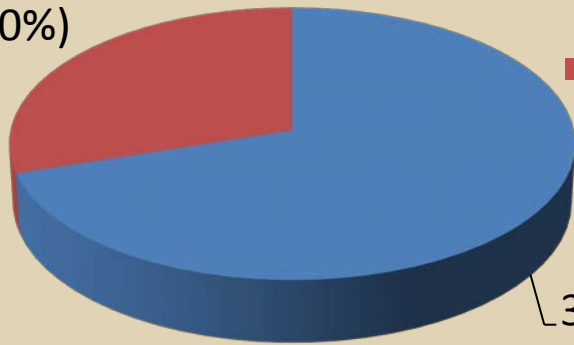


Local Regional Roads and RTP Roads



Regional and RTP Roads

1,500 Lane Miles (30%)

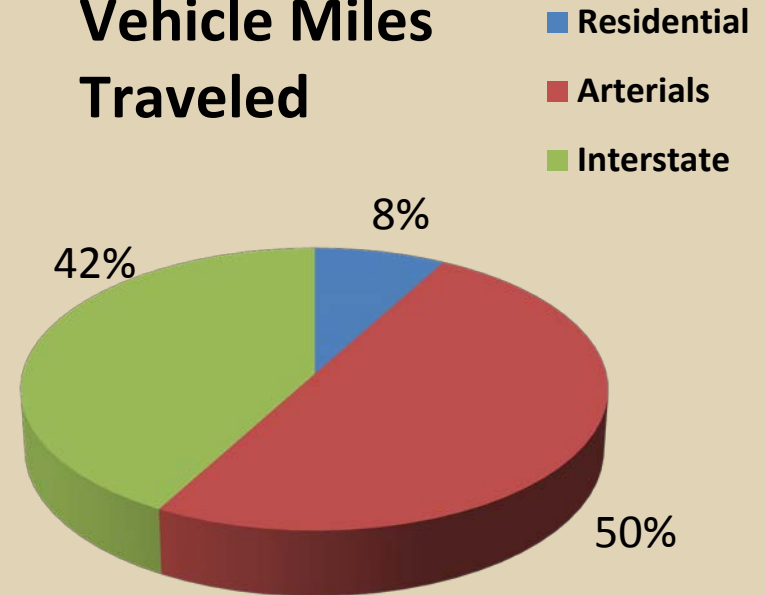


Local Regional Roads: Residential, Minor Collectors

RTP Roads: Arterials, Major Collectors, Industrial

3,500 Lane Miles (70%)

Vehicle Miles Traveled



Residential
Arterials
Interstate



Mike's Talking Points

- What is RTC trigger points and treatment selection process for preservation projects?

Project Selection Process (Blind to Jurisdiction)



Program Elements

- **Rehabilitation / Reconstruction**
 - PCI 0-50
 - Rank by Traffic
 - PCI 40-50 Rehabilitation
 - PCI 0-40 Reconstruction
- **Preventive Maintenance**
 - PCI 50-100
 - Structural Distress less than 5%
- **Corrective Maintenance**
 - Everything Else (\approx 40-60, $>$ 5% Patching)
 - Variety of Tools

Type 3 Slurry Seal

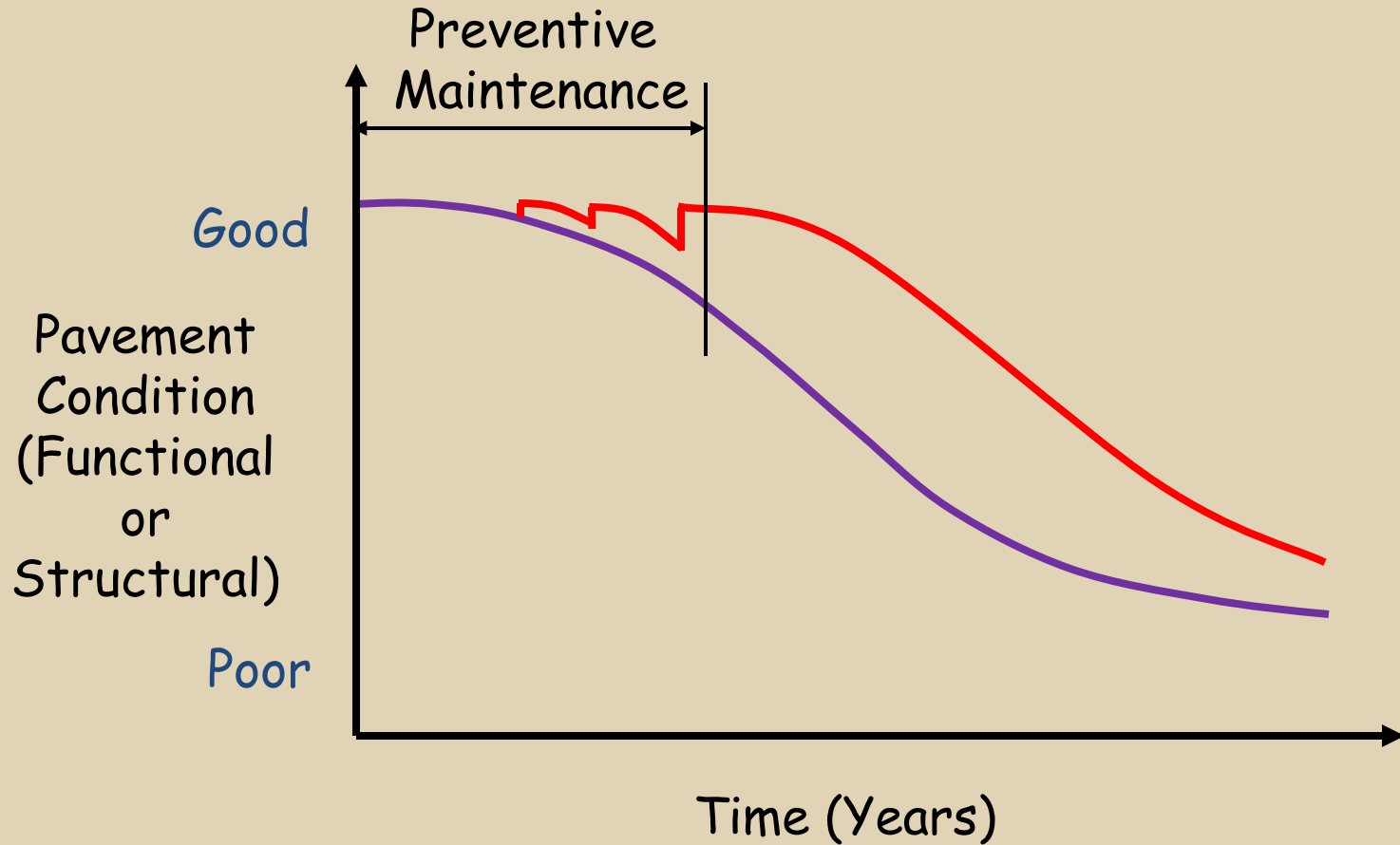


Mike's Talking Points

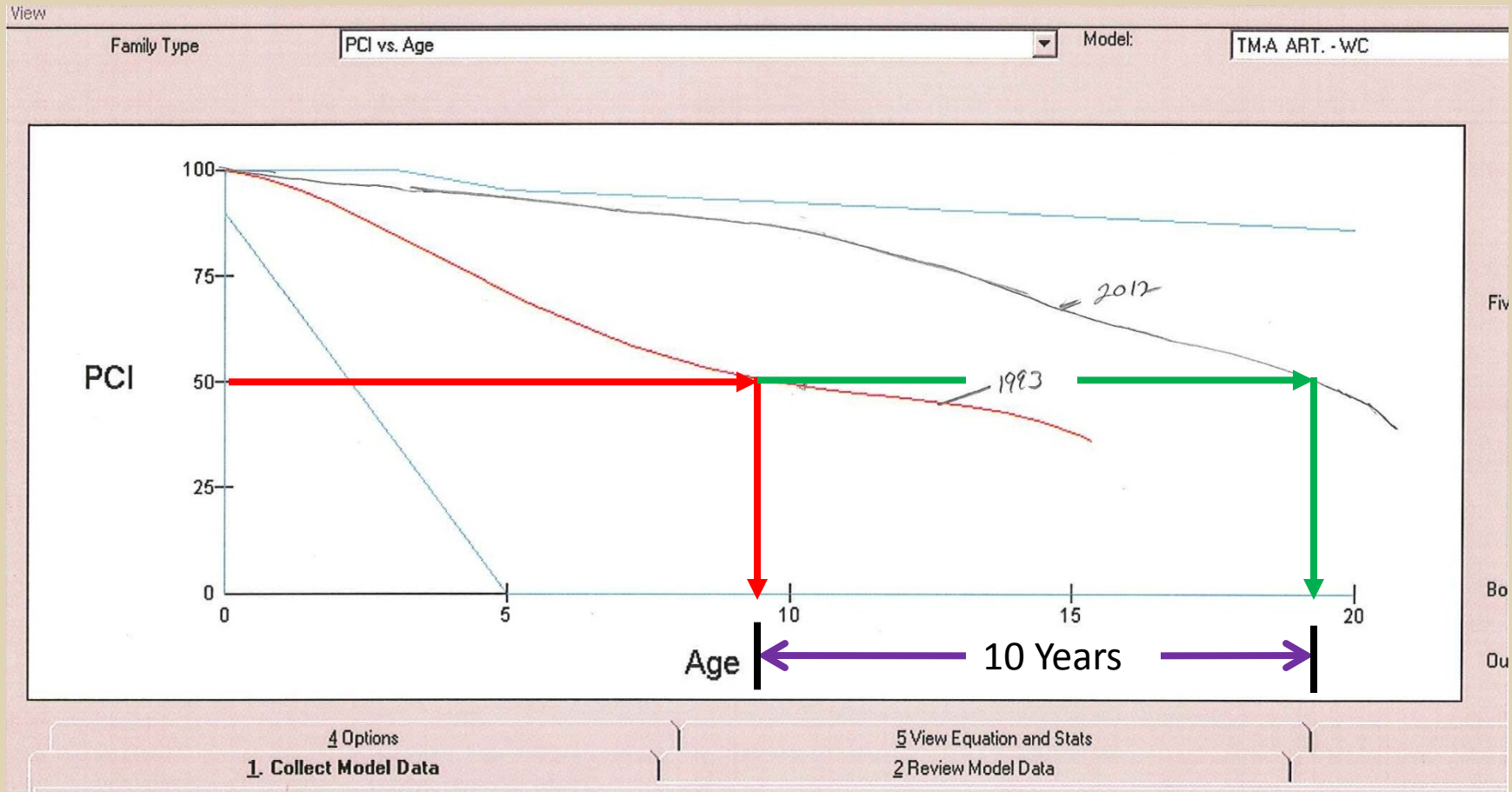


- What is used for evaluating cost-effectiveness of preservation treatments?
 - We have a research budget and coordinate with University of Nevada Reno for studies

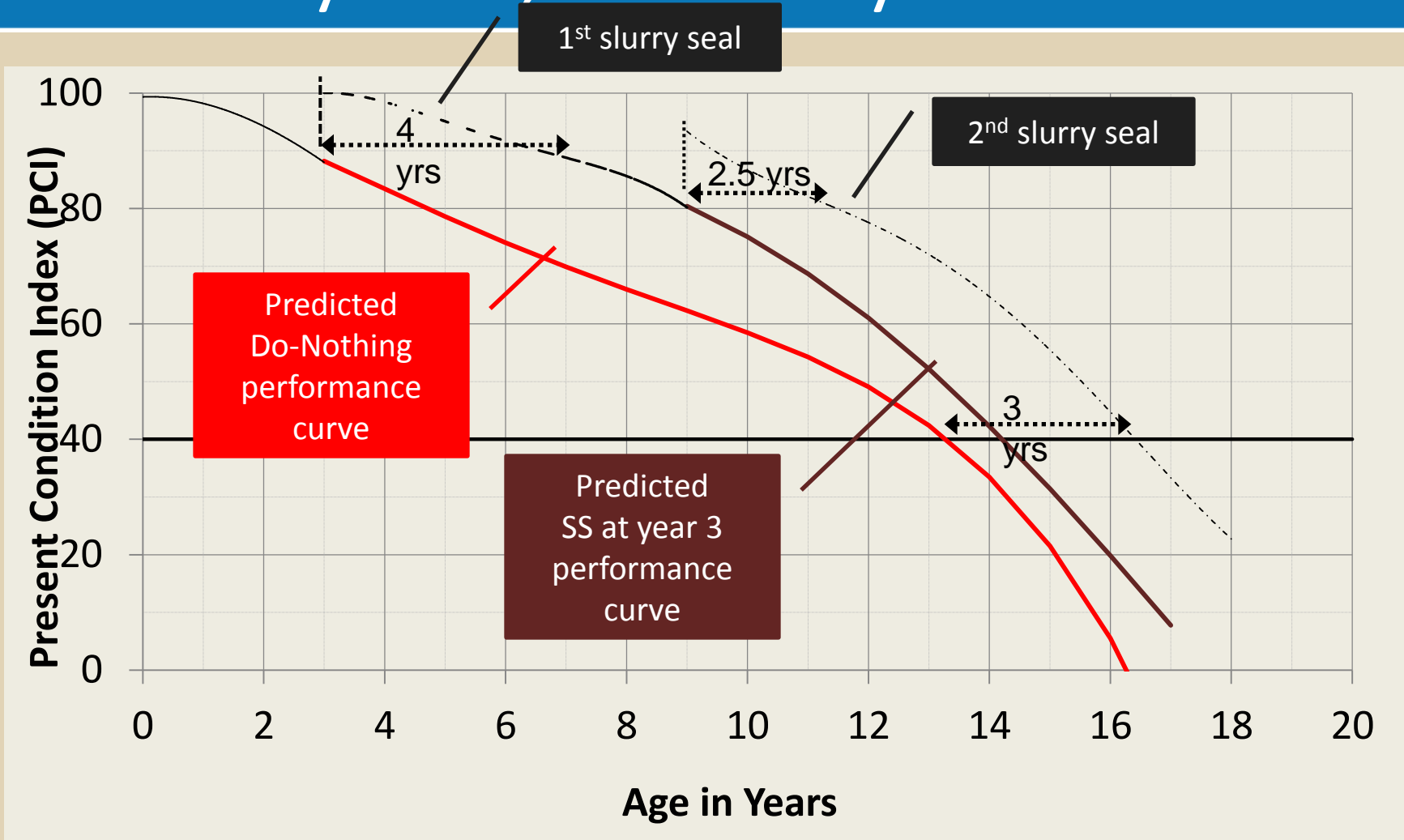
When should preventive maintenance be applied?



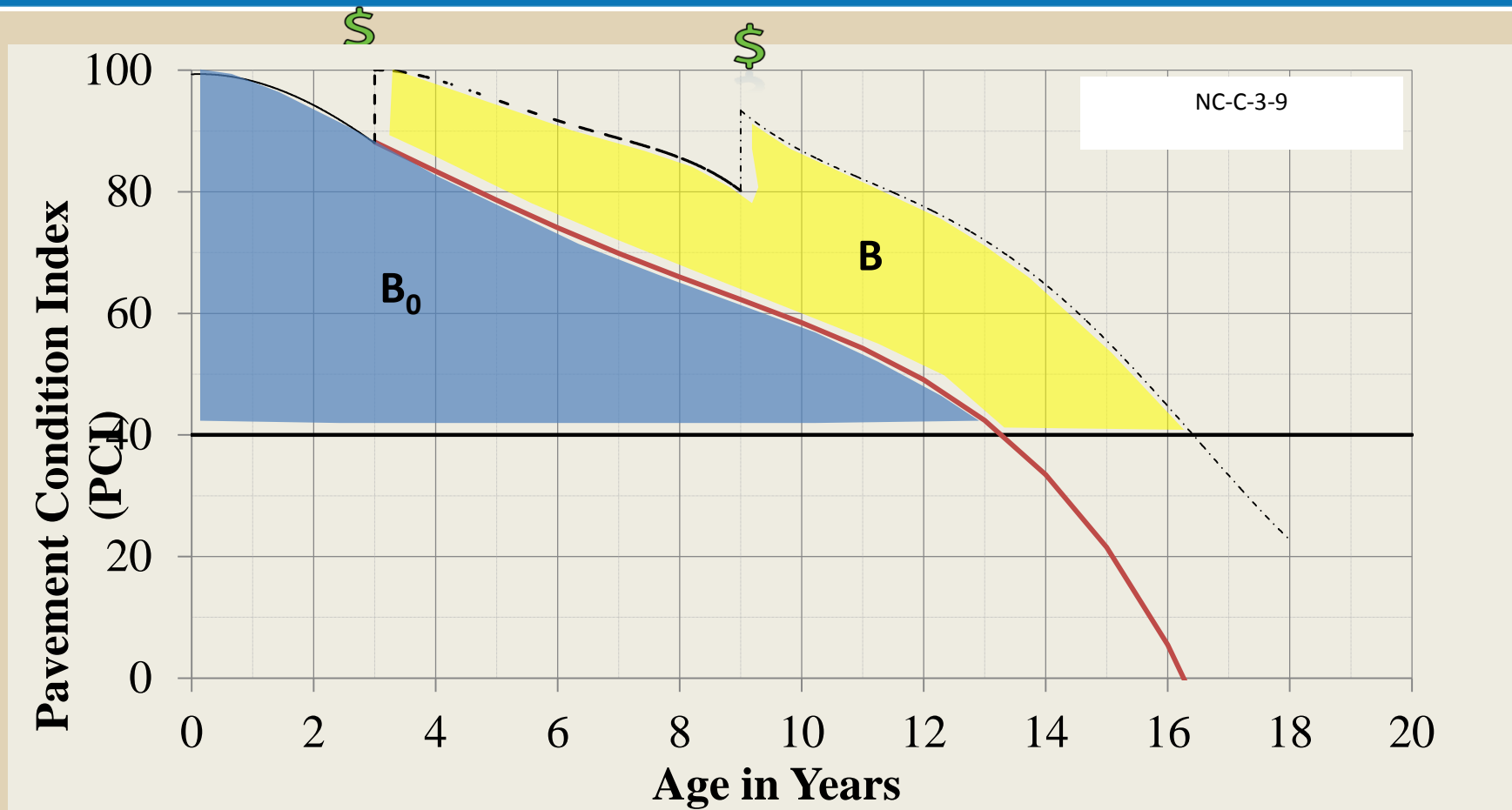
Network Performance Life after Preventive Maintenance



Newly Constructed Pavements: 1st SS at year 3, 2nd SS at year 9



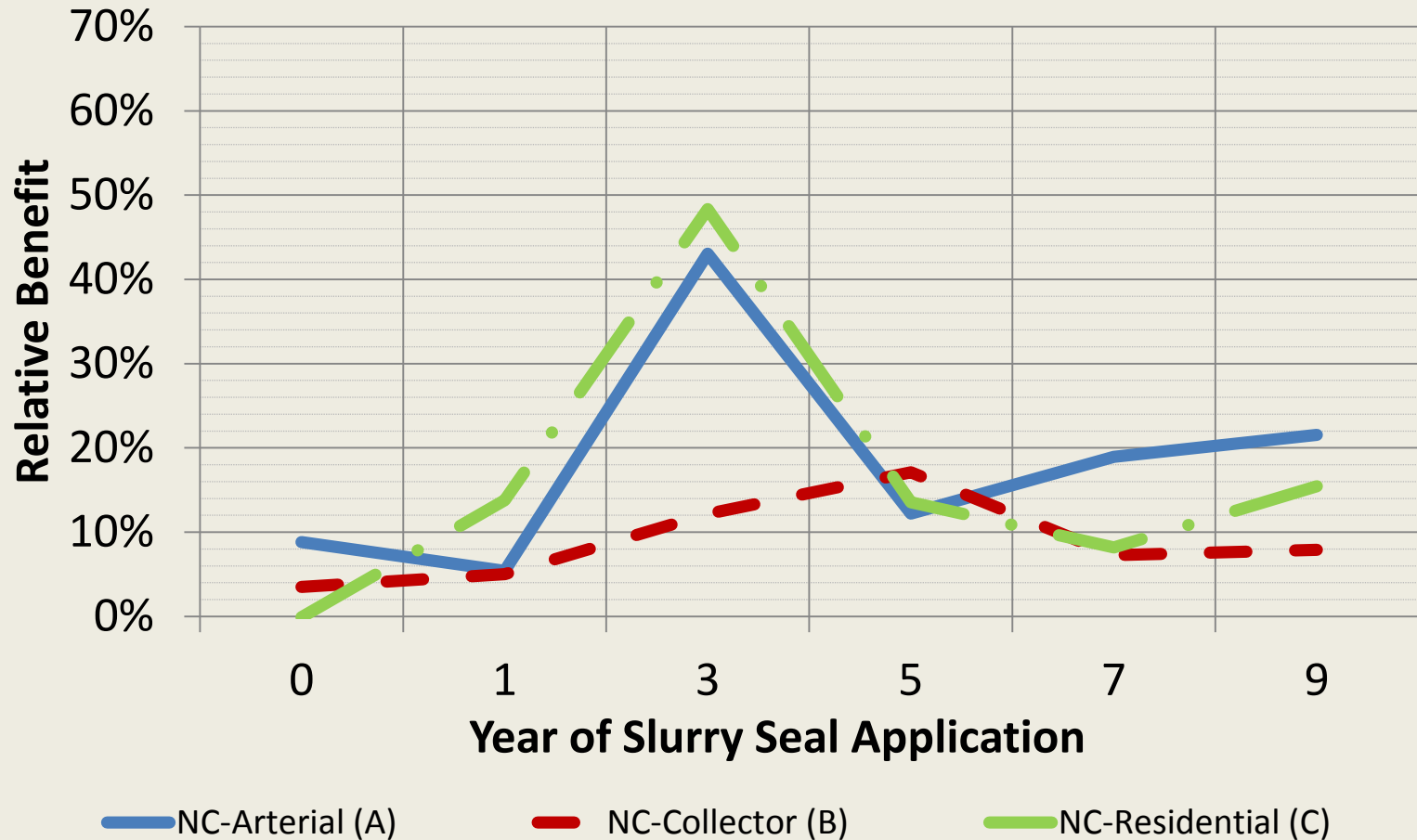
Phase II: Slurry Seal Effectiveness



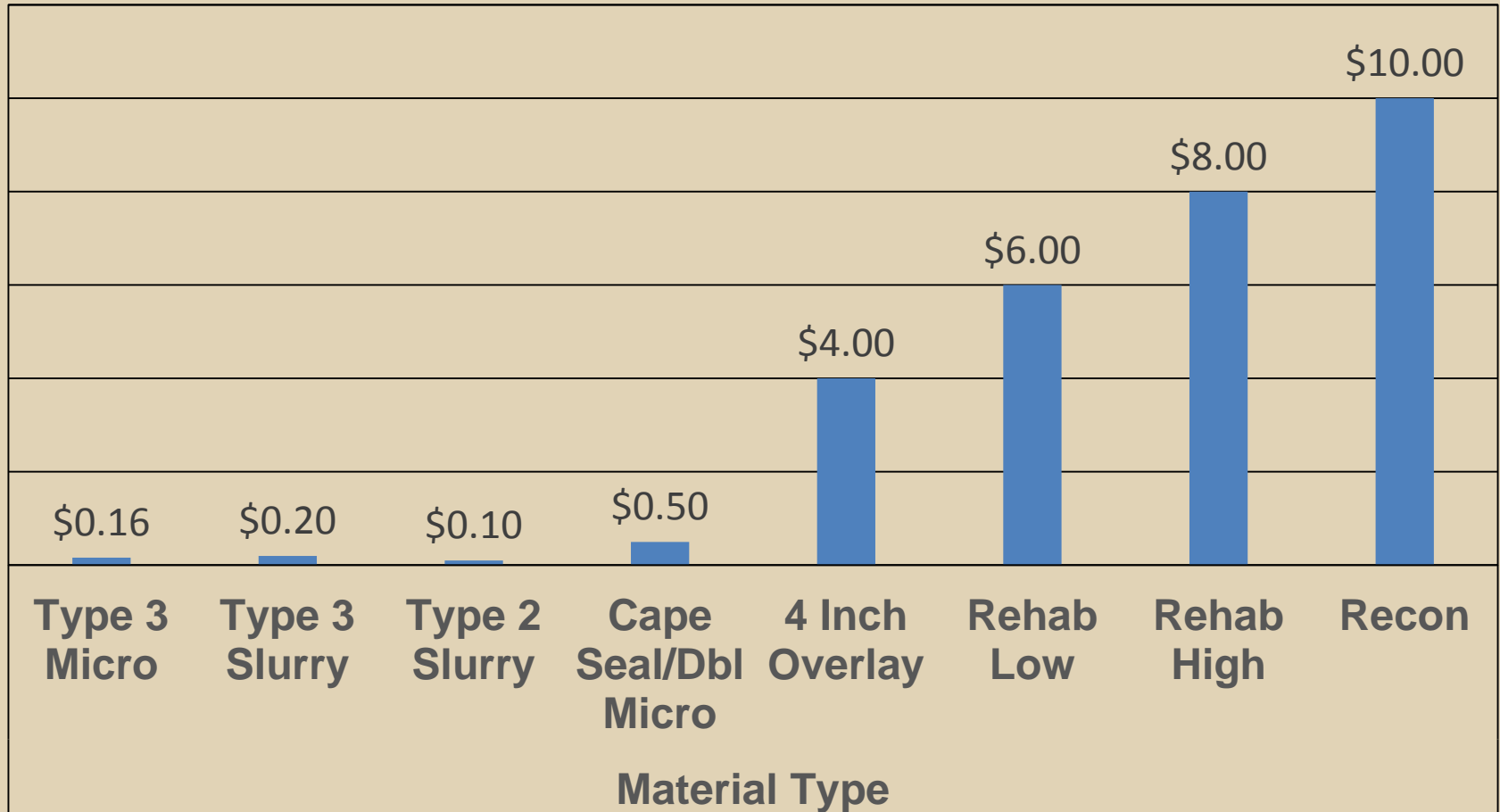
$$\text{Relative Benefit} = 100 \times B / B_0$$

$$\text{Benefit-Cost Ratio} = B / C$$

Effectiveness Analysis – New Construction



Treatment Costs (\$/sf)

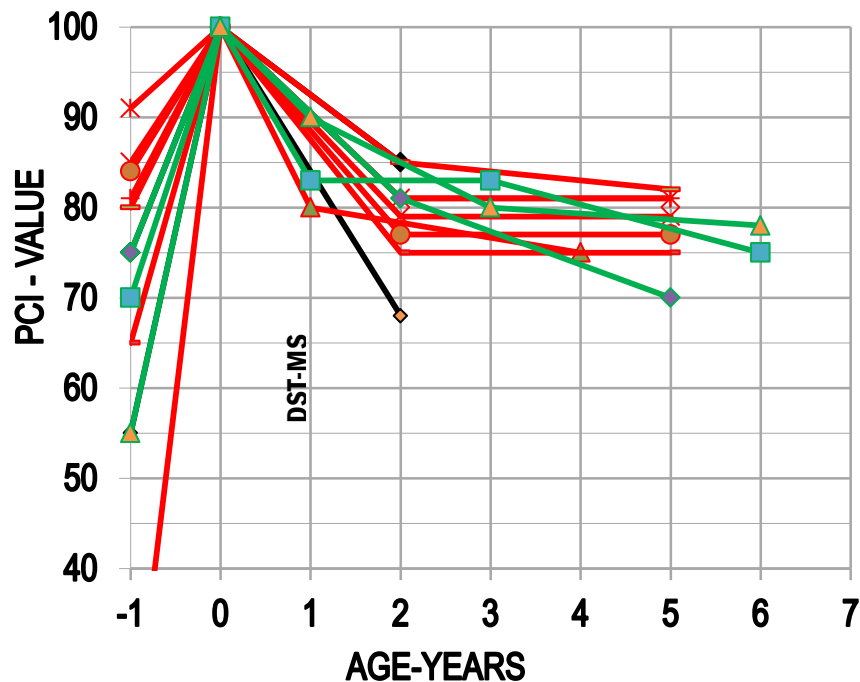


Current Projects: Overall Progress

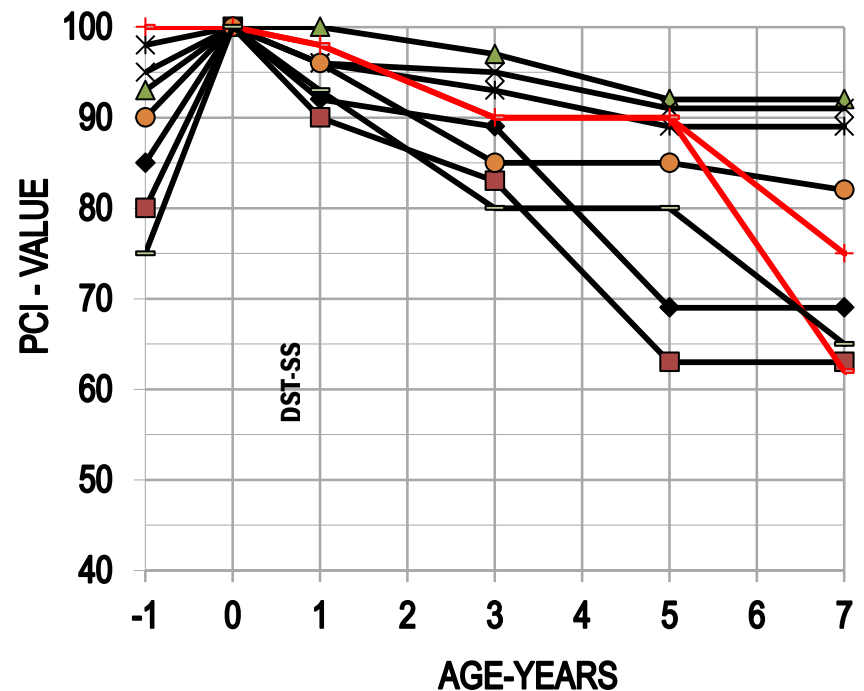
Effectiveness of Cape Seal Pavement Preservation

- Collected pavement information and performance data.
- Working on data processing and analysis.

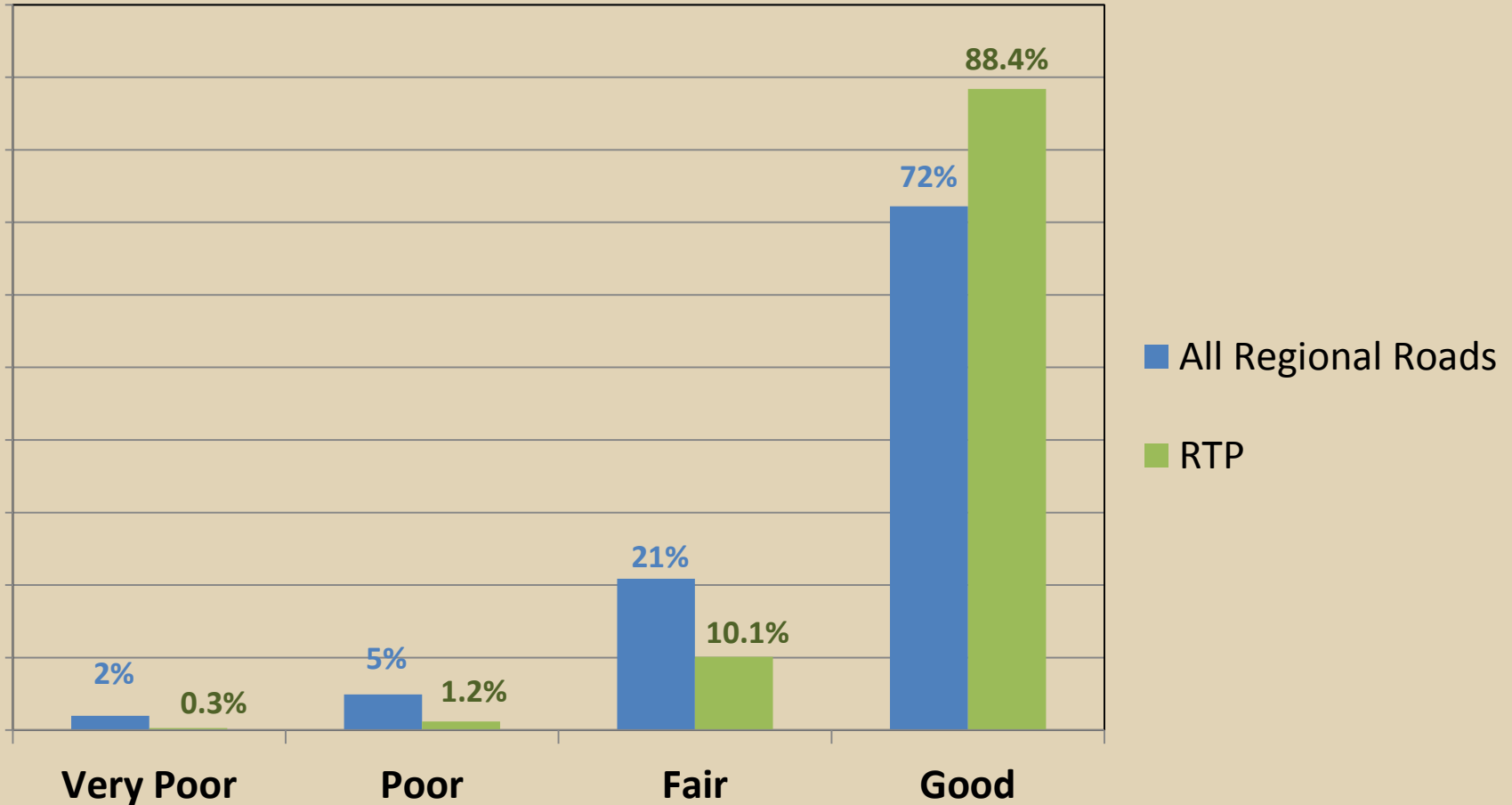
MICROSURFACING
5-5.5 INCH THICKNESS



SLURRY SEAL
5-5.5 INCH THICKNESS



Network Condition Comparison



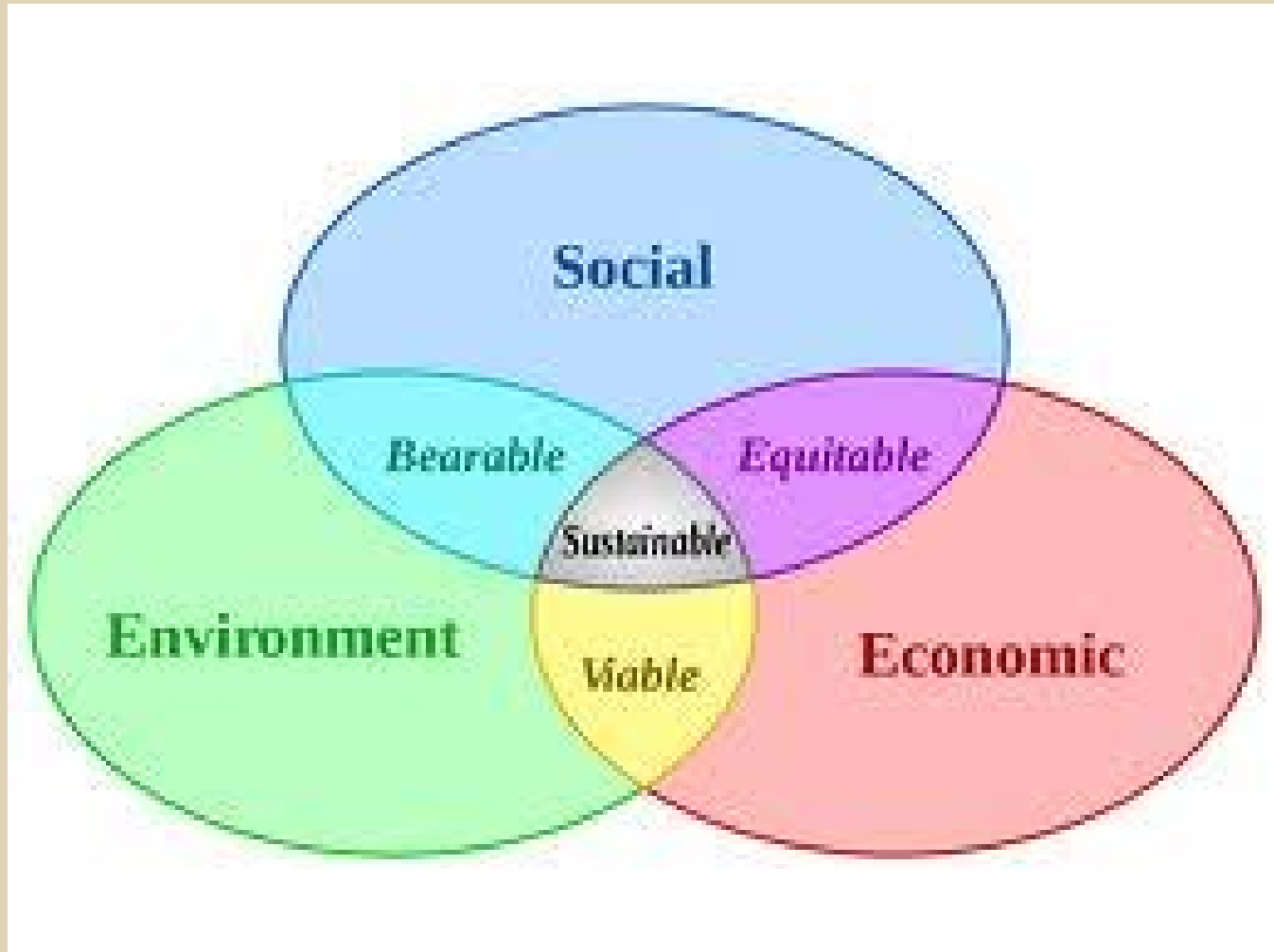
Mike's Talking Points



- What challenges do you face with their decision makers for preservation projects?
 - Continuous engagement - we have engaged the entire community on different levels

“My favorite subject:
watching asphalt
congeal.”

The Triple Bottom Line



Complete Street Policies

Why?

- Increase safety
- **Provide for users of all ages, modes and mobility's**
- Improve livability and quality of life
- Economic development
- Improved traffic flow
- More on-street parking
- Connectivity



Towards a Complete Street

Checklist:

- ✓ Road conversion (Road Diet)
- ✓ Wide sidewalks
- ✓ Bike lanes
- ✓ Special bus lanes
- ✓ Accessible transit stops
- ✓ Frequent crossing opportunities
- ✓ Median islands
- ✓ Accessible pedestrian signals
- ✓ Curb extensions
- ✓ Narrower lanes, 10' OK
- ✓ Tight curb radii



Striping Modifications



Complete Streets /Road Diets



Before: incomplete urban street

- ✓ 4-lane undivided
- ✓ No center turn lane
- ✓ No bike facilities
- ✓ Numerous driveways
- ✓ Pedestrian unfriendly
- ✓ Wide lanes
- ✓ No designated parking



Complete Streets / Road Diets



After: More complete urban street

- ✓ 3-lane divided
- ✓ Center turn lane
- ✓ Bike facilities
- ✓ Pedestrian Friendlier
- ✓ Narrow lanes
- ✓ More Parking
- ✓ Free!
- ✓ Neighborhood Building

Safer Streets



Recent Road Conversions Reduce – Annualized Crash Rates

| Location | Before | After | % Reduction |
|---------------------|--------|-------|-------------|
| Wells Ave | | | -31% |
| California/Mayberry | 33.4 | 19.4 | -42% |
| Arlington | 18.6 | 10.0 | -46% |
| Mill Street | 7.7 | 4.4 | -43% |

Sources: UNR Center for Advanced Transportation Education and Research and Nevada Department of Transportation

Complete Street/Road Conversions



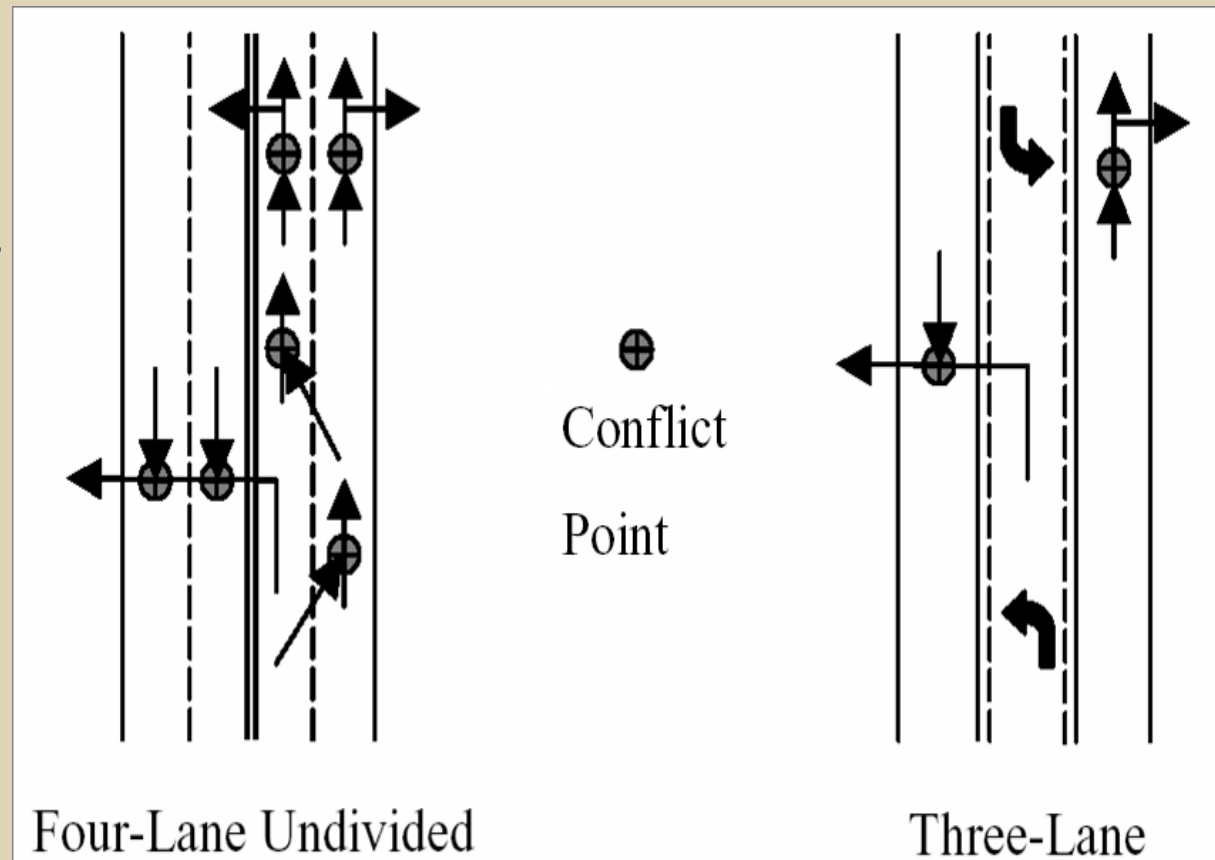
Significant safety benefits:

- **Lower** speeds,
- **Reduced** conflict points and crashes,
- **Better** sight distance,
- **Refuge** for pedestrians,
- **Space** for bicycles (and others)

6 conflict points

Vs.

2 conflict points

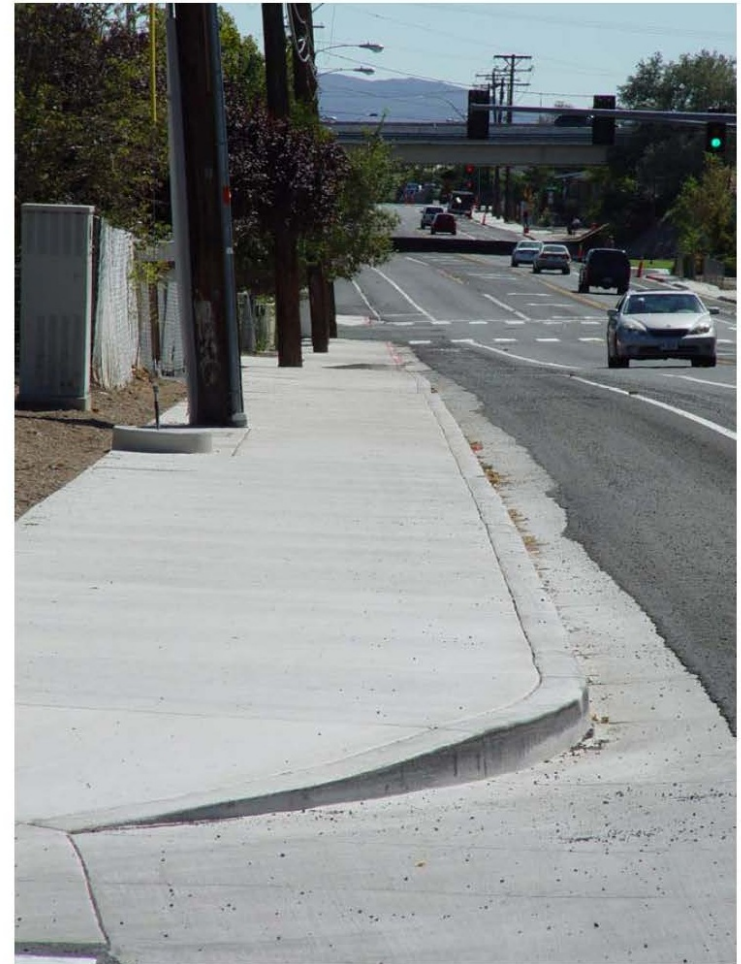


Making Adjustments/Costs



- Striping design
- Lane reconfiguration
- Signal Head placement
- Signal timing
- Loop detection
- Continued evaluation
- Added maintenance costs
- Honey Dos

Other Opportunities – TCSP Grant – Sutro Complete Street



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System Equity Provides for Major Opportunity



4th Street/Prater Way RTC RAPID Transit Project

Located in Reno & Sparks, Nevada
Nevada's Second Congressional District

Type of Application: Capital Project
Applicant Organization: Regional Transportation Commission
of Washoe County (RTC)
Type of Applicant: Metropolitan Planning Organization (MPO)
TIGER Grant Amount Applied For: \$22.47 million
RTC has already committed \$30.1 million to this \$52.57 million project



BELIEVE, by artists Jeff Schemberg and Laura Rampton, was developed for Burning Man and is currently displayed on 4th Street in Reno, Nevada. It reflects the Iron working heritage of the corridor as well as its emerging industrial arts activities. BELIEVE is shown with a zero-emission RTC electric bus.



A community collaboration strengthening mobility between Reno and Sparks, Nevada.

Chip Seals

And Roll.



UC Davis Surface Effects Study



Research Report – UCD-ITS-RR-13-30

Surface Treatment Macrotexture and Bicycle Ride Quality

December 2013

Hui Li
John Harvey
Calvin Thigpen
Rongzong Wu



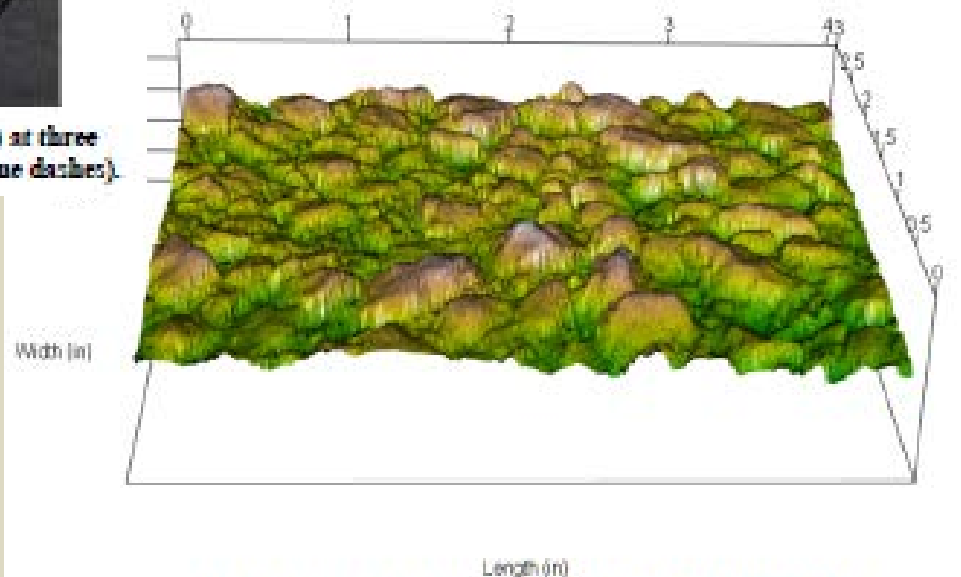
UC Davis Surface Effects Study



Figure 3.6: Bicycle instrumented with accelerometers (solid red circles) at three typical mounting locations and a GPS unit on the handle bar (circle of blue dashes).

Correlated to Laser
Surface texture
Measurements

Bike Mounted
Accelerometers
and GPS



(d) Coarser 3/8" gradation chip seal on Mon-198 EB PM 10.05 placed in 2012

UC Davis Surface Effects Study



Figure 4.7: Instrumented vehicle with an inertial profiler (IP).

And to sand patch
Measurements

Also Correlated to
Inertial Profiler...



(a) SLO-1 PM 60.16 coarse 3/8" gradation chip seal

Urban Surface Study





Mike's Talking Points

- Challenges and Successes for Local Agencies when designing Pavement Preservation Projects?
 - Timidity – need to be aggressive and robust and commit significant percentages of budget to the program.

NV LTAP Training Courses



- **Complete Streets and Pavement Preservation:** Linking Public Works and Planning for Better Infrastructure and Better Communities
- **Slurry Seals and Microsurfacing:** Design, Construction, and Inspection.

Mike's Talking Points

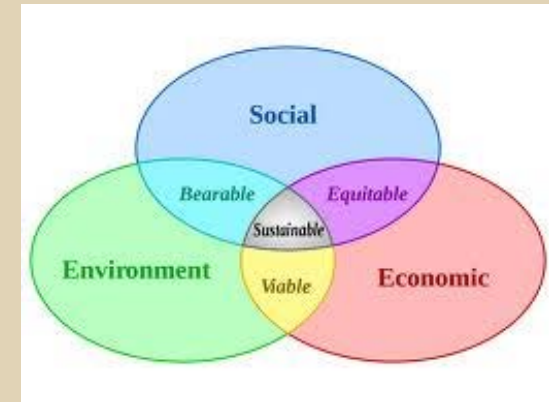


- How can RMWPP attract more local agencies?
 - Good question – Use a model program – show them to possibilities for meeting a variety of community initiatives.

Parting Thoughts



- Make your pavement program part of a bigger conversation: safety, Complete Streets, and stronger communities and neighborhoods.
- Making roads safer and more complete for more users makes the road safer for **all** users.
- Do Something! Do it early and do it often!



Thank You!



Questions?

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