Welcome to the NRMCA Streets and Local Roads Webinar

Concrete Streets
The safe, durable and economical community investment.
Doug O’Neill  
Sr. NRD-NE Region, Rochester, NY

- All attendees will be muted
- If you have login problems call (585) 436-8310.
- You can submit your questions by using your Go-To-Webinar Dashboard
Today’s Topics

10:00 Overview, introductions, agenda
10:05 Introduce Brian Killingworth- Jon Hansen
10:10 Lessons learned in Iowa – John Cunningham and Gordon Smith
   Iowa has had a long and successful program for promoting concrete, with a market share today for SLR of over 60%. Gordon and John will share their experiences that will shorten the learning curve for others getting started in SLR promotion.

10:55 NRMCA Flipbook – Jon Hansen
   NRMCA has developed a new flip book on streets and local roads to help local promoters be more comfortable making these calls and to drive the many reasons why concrete is the best paving material.

11:10 Moving forward in Arkansas, Tactics, Resources – Vance Pool
   Arkansas is about to begin an SLR program. Their strategy is based on low market share, small towns with no mega cities. What they do have is a strong state association (ARMCA), a strong ACPA presence (OK AR Chapter) and good members who are allocating resources. This model may not work for your locale but the tools and strategies are available in total or as parts to help everyone move forward.

11:30 End

All Times CDST
The “Launch Team” For Today’s Streets and Local Roads Webinar

Gordon

John

Brian

Vance

Jon

Doug
Brian Killingsworth, P.E.
Sr. Director, Pavement Structures, San Antonio, TX

• 19 Years as Consulting Engineer in private sector
• Pavement Experience in:
  • Design, material selection, construction, and maintenance and rehabilitation
• NRMCA Duties:
  • Streets and Local Roads Technical Support
  • Parking Lots Technical Support
  • Codes and Standards Development
    • AASHTO, FHWA, ASCE, ACI and others
  • Pavement Sustainability Issues
    • GreenRoads, GreenLITE, Pervious Pavement
• Education and Technology Transfer
Brian Killingsworth, P.E.
1011 Parter Pond
San Antonio, Texas 78260

Phone: (830) 438-2690
Mobile: (210) 508-4923
bkillingsworth@nrmca.org

http://www.nrmca.org/about/Staff-Bio-BKillingsworth.asp
LESSONS LEARNED: IOWA’S SLR PROGRAM

NRMCA Streets and Local Roads Webinar
August 5, 2011
Gordon Smith & John Cunningham
BUILDING A MARKET

- Focus on long-term
- Build and maintain relationships
- Start the right way
- Concrete benefits
• Promoting pavements is a long-term process of building and maintaining trust with agency officials in you and in concrete
  • Agencies have lengthy programming processes
  • Their credibility is at stake
LONG TERM

- Appealing to elected officials is not a long-term approach
  - Their view of solutions is influenced by their view of election cycles
- Professional staff tend to look at approaches in longer terms
  - Hoping to build a career
LONG TERM

• Grow your relationship in the long term

• This could mean passing up work in the short term
  • Select projects that are likely to have success
RELATIONSHIPS

• Imbed a promoter within professional organizations
  • APWA
  • County Engineers Assn.
  • Engineering societies
    • CEC
    • ISAE
    • PSE

• Help the professional staff be successful

• Be honest
  • Your credibility is more of a commodity than concrete

• Provide technical support or resources
  • Traditional approach in Iowa

Tom Stoner, County Engineer
Robert Smith, County Supervisor
Ron Bell, Assistant to the County Engineer
RELATIONSHIPS

- Be a resource on which they can rely
  - Provide access to technical information
  - Offer in-field support
  - Act as clearing house for local jurisdictions
  - Conduct training for agency staff and consultants
START THE RIGHT WAY

- Help the agency evaluate needs
- Start small
- Use a mix of fixes
- Choose highly visible projects
- Choose locations where cement/concrete industry are important
HELP CITIES EVALUATE NEEDS

- “Paving the Way”

- Why should they want a paving program?
  - Avoid problems before they become problems
  - Optimize city dollars
    - Better return on infrastructure investments
    - Bring streets in line with overall city goals
    - Give citizens a formal process to reference.
EVALUATE NEEDS

• Streets are one of the most critical elements of city infrastructure and are possibly the most visible

• Attract business, industry, residents

• Improve safety, traffic flow, and aesthetics

• Reduce maintenance costs, accidents, drainage problems, complaints

• Provide cleaner appearance, easier and safer travel, community pride
EVALUATING NEEDS

- What do we need from our streets in order to accomplish the city’s goals?
  - New streets to serve development?
  - Pave unpaved streets?
  - Reduce annual maintenance costs?
  - Reconstruct older streets?
  - Maintain what we have?
Subdivision standards can prevent shifting street costs from the developer to the taxpayers. Without proper standards, developers can build low initial-cost streets that soon require more than their fair share of the maintenance budget in order to sustain an adequate level of service.
EVALUATING NEEDS

• Four steps
  • Identify necessary improvements
  • Survey existing streets
  • Investigate funding/financing options
  • Program improvements
START SMALL

• Keep the approach manageable for the agency
  • Don’t ask for the world

• Keep things manageable for you
  • Make sure you have contractors that can perform
  • Make sure you can deliver

• The agency may choose to expand
  • Based on citizen reaction
SMALL EXAMPLES

- Cities in Iowa that began with projects less than 10 blocks in length and expanded greatly after completion of the first project
  - Sloan
  - Salix
  - Victor
  - Osage

- 10 blocks of paving
  - 31’ wide (10.33 yds)
  - 1 mile (1760 yds)
  - 6” thick (0.167 yds)
  - 3036 cubic yards
MIX OF FIXES

- An agencies goals require more than one solution
  - You can’t ignore current needs while focusing only on the future and you can’t ignore the future while focusing on the needs of today

- Take advantage of all options in order to meet agency needs

- Again, as concrete reps we may have to pass on some projects today in order to grow a future market
MIX OF FIXES

Short Term

- Patching
- Seal Coat

Long Term

- Thin Concrete Overlay
- Roller Compacted Concrete
- Full Depth Reclamation or Soil Cement
- Concrete Overlay
- Concrete Paving
- Diamond Grinding
- Long Term

- Seal Coat
- Patching
- Thin Concrete Overlay
- Roller Compacted Concrete
- Full Depth Reclamation or Soil Cement
- Concrete Overlay
- Concrete Paving
- Diamond Grinding
START WITH HIGH VISIBILITY

• Let citizens drive future projects
  • Builds small projects into larger future projects

• Give the agency a chance to be successful

• Examples
  • In front of school
  • Past shopping area
  • Near ball fields or parks
  • Do not have to be heavy truck routes
    • Ease the minds of professional staff
OUR INDUSTRY

- Cement/concrete plants provide
  - Jobs
  - Property tax revenue
  - Economic impact

- Where is the industry in your state?
  - Ready mix plants
  - Cement plants/terminals
  - Concrete contractors

- Could provide competition
  - Increase numbers of bidders
CONCRETE BENEFITS

For Pavements
BENEFITS

- Sustainability
- Safety
- Durability
- Lower costs
  - Two pavement system
  - Lower LCCA of concrete
Benefits

- Sustainability
  - Lower carbon footprint
  - Less material consumption
  - Recyclability
  - Durability
  - Local materials

- Safety
  - Reflectivity
  - Skid resistance
  - Fewer traffic zones
BENEFITS

• Durability
  • The benefit most associated with concrete pavements

• Low Cost
  • The most important benefit to most agencies

• We have to translate what durability really means
  • Low total cost

Eddyville’s Cemetery Road
$2,100 in 1907 ($21 per year)
BENEFITS

• Cost is, by far, the most important benefit

• Appeal to city officials that it is in their best interest to consider long-term solutions
  • Mix of fixes
Pavement lasts 40 years

Overlay lasts 25 years
BENEFITS

LCCA will help illustrate

Pavement lasts 15 years
Overlay lasts 12 years
WHY LCCA RATHER THAN INITIAL COST?

- Because future costs for maintaining the pavement and for keeping it in service may very easily cost more than “building in” quality right from the start.
Failing to Consider Long-Term

- Could end up costing the agency more money
- Would they want to go strictly by low-dollar on their fleet?
  - Buildings?
  - Rescue equipment?
The true cost to **buy and own** a pavement?

- Too easy to forget how much it costs to maintain a pavement
  - No “moving” parts
  - No direct cost to users
  - Like the water in your tap

- Really emphasize that there is a cost to own
  - It’s critical that they truly understand this point
The total cost of the pavement includes initial cost and maintenance costs over its expected service life.
THE TOOL TO ESTIMATE TOTAL PAVEMENT COST

Life-Cycle Cost Analysis – The total cost of the pavement including initial cost and maintenance costs over its expected service life.
IN OTHER WORDS…

- Initial Cost (IC)
  - Construction cost
- Maintenance Cost (MC)
  - Annual costs to keep pavement in use
- Service Life (SL)
  - The number of years the pavement is expected to stay above a predetermined minimum (acceptable) level of service

Life-Cycle Cost = \( \frac{IC + MC}{SL} \)
## Example of LCCA (Cedar Falls)

<table>
<thead>
<tr>
<th>Year</th>
<th>Concrete</th>
<th>Asphalt</th>
<th>Present Cost Concrete</th>
<th>Present Cost Asphalt</th>
<th>Present Worth Concrete</th>
<th>Present Worth Asphalt</th>
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<td>Reconstruction</td>
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## EXAMPLE OF LCCA (MASON CITY)

<table>
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<tr>
<th>Year</th>
<th>Concrete Operation</th>
<th>Asphalt Operation</th>
<th>Present Cost Concrete</th>
<th>Present Cost Asphalt</th>
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<th>Present Worth Asphalt</th>
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<td>$215,000</td>
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CAUTION

- Factors in LCCA that can manipulate results
  - Discount Rate (Real Interest Rate)
    - High rate is better for short term fixes
      - Shifting costs further out in future
      - Over 3% should be a red flag
  - LCCA term that does not match design life of concrete
    - 20 year analysis with 30 year pavement
    - 40 year analysis with 30 year pavement
  - Salvage value
    - Red flags
      - High value for asphalt
      - Little or no value for concrete
  - User costs
    - Asphalt industry will try to argue higher costs for concrete
      - Have potential to completely dominate LCCA
Building a Market

- Focus on long-term
- Build and maintain relationships
- Start the right way
- Concrete benefits
  - Cost is most important
THANK YOU
RELATIONSHIPS

- Imbed a promoter within professional organizations
  - APWA
  - County Engineers Assn.
  - Engineering societies
    - CEC
    - ISAE
    - PSE

- Help the professional staff be successful

- Be honest
  - Your credibility is more of a commodity than concrete

- Provide technical support or resources
  - Traditional approach in Iowa

Tom Stoner, County Engineer
Robert Smith, County Supervisor
Ron Bell, Assistant to the County Engineer
Concrete Streets

The safe, durable and economical community investment.
Is your street program beyond your control?

Workers remove old asphalt Tuesday, Oct. 28, 2008, at a Tacoma Public Works paving project in Tacoma, Wash. An asphalt shortage is hindering the ability of communities nationwide to maintain their roads as petroleum refiners overhaul their equipment to maximize the production of more-profitable diesel and gasoline instead of asphalt. (AP Photo/Ted S. Warren)

Asphalt shortage delays road repairs nationwide
Some things you can control
Now you get all the benefits of concrete streets at affordable first cost

- Concrete streets last longer with less maintenance
- Concrete streets have a lower cost of ownership - *LifeCycle Cost*
- Concrete streets reduce *Heat Island Effect*
- Concrete streets are safer at night: lighter color surface reflects more light
- Concrete is used for both new streets, rehabilitating existing ones and storm water management
- Concrete is locally produced so you can buy at home and can be recycled at the end of its life
Concrete streets last longer with less maintenance

Perpetual asphalt maintenance cost time, money and manpower
Concrete will lower ownership cost

FDOT maintains over 42,400 lane-miles of roads & highways.

- Total System = 42,400 Lane Miles
  - 960 Lane Miles Concrete (2.3%)
  - 41,440 Lane Miles Asphalt (97.7%)

- Florida Interstate/Turnpike Highways = 9,500 Miles
  - 600 (6.3%) Lane Miles Concrete
  - 8,900 (93.7%) Lane Miles Asphalt

- Florida State Roads = 32,800 Lane Miles
  - 362 (1.1%) Lane Miles Concrete
  - 32,441 (98.9%) Lane Miles Asphalt

Summary:
The majority of roads in Florida are asphalt and require perpetual repair and maintenance
Concrete streets reduce heat **aka Heat Island Effect**

These side by side photos, the right taken with an infrared camera, the left with a regular camera, show the asphalt street to be approximately 18° hotter than the adjacent concrete parking lot.
In residential areas, concrete pavements make for “cool communities”
Concrete streets are safer at night because lighter color surface reflects more light.
Concrete Overlays: New life for existing streets without reconstruction
Concrete Streets + Landscaping = StreetScaping
Control stormwater with pervious concrete streets
Concrete paving is fast, allowing streets to remain open during construction and return to fully open sooner.
The possibilities are endless
Where do you go for help?
Design software makes work easy

**StreetPave-SLR**
- Utilizes new engineering analyses to produce optimized concrete pavement thicknesses for city, municipal, county and state roadways.

**Hydrological Design Software-Pervious Concrete**
- Analysis for pavement thickness & related base materials for stormwater management paving systems

**Concrete Pavement Analyst-Parking Lot**
- Analysis for paving material comparison for parking lot applications. ACI 330 based.
“How To” do concrete overlays on existing streets
A one stop Web site for concrete streets

CONCRETE STREETS
The Durable, Safe and Economical Community Investment

The Right Choice Beneath Your Tires

Welcome to ConcreteStreets.org. This site contains facts about the cost, performance, and sustainability of concrete pavements for streets and roads. Also on this site, we take a look at the civic pride that’s being strengthened or even restored in communities that are using concrete pavements as part of their “cityscape” strategies. We also take a look at some of the innovations that are making this versatile material different and better than ever.

Whether you are responsible for constructing, preserving, or repairing streets and roads, or are someone who relies on roadways for safe and efficient travel, we hope you will enjoy our site.
At the end of its life, concrete is easily recycled.
Starting a Streets and Local Roads Program

A. Vance Pool
Sr. Director, National Resources
Houston, TX

TX High 5- Dallas
What have we learned so far...

• NRMCA’s new pavement engineer, Brian Killingsworth, is here to help
• Iowa has a successful SLR program
• The new NRMCA SLR flipbook is another tool in your toolbox
• Have you seen this piece of literature?
An Introduction to Streets & Local Roads Promotion Planning

• Provides a great starting point for the discussion...
An Introduction to Streets & Local Roads Promotion Planning

• Where will technical support for SLR promotion come from in your area?
• What contractors in your area are willing to assist in developing a concrete SLR market?
An Introduction to Streets & Local Roads Promotion Planning

• Is the state DOT, county or local municipality responsible for making decisions on local roads?

• Who owns the asset?
An Introduction to Streets & Local Roads Promotion Planning

• What policies are in place about SLR project bidding and awards?
• What design guidelines are in place for local roads?
An Introduction to Streets & Local Roads Promotion Planning

• What is the decision-making hierarchy?
• What existing SLR projects can help demonstrate the competitive benefits of concrete?
• To what extent is the concrete industry an important sector in the state or local economy?
Arkansas is about to begin...

- Every state and market is different
  - Arkansas- No mega cities, low market share, members who are committing resources
- Local planning and execution are key
The process for Arkansas

• Align resources based on number and geography
• ID Decision Makers
• Set goal of number of calls per month
• Make initial call at a small city to practice
• Send call reports to ARMCA
The process for Arkansas

• More calls
• ARMCA keeps list of call info on spreadsheet
• Second calls based on likelihood of success
• Plan next phase
What’s in your SLR toolbox?

- ACPA Print-on-demand flyers
- ACPA’s StreetPave for economic comparison with asphalt
- Presentation templates—executive, specifier
- [www.ConcreteStreets.org](http://www.ConcreteStreets.org)
- [www.concretepromotion.org](http://www.concretepromotion.org)
- NRCMA Intro to SLR Literature
- New NRMCA Flipbook
- NEW call tracking sheets
Collateral—Print on Demand

Sustainability Considerations for Streets and Roads

Summary
Although going green may be a recent thing for many industries, concrete pavements have a long history of exceptional environmental performance.

Sustainability, or reaching the right balance of environmental requirements with societal needs and economic considerations, is one of the most important issues of our time. There are just a few examples of how concrete pavements contribute to sustainability goals:

Recyclability and Reuse—Concrete is the most recycled construction material in the United States, according to the Construction Materials Recycling Association. Concrete is 100% recyclable and reusable, and can be used as aggregate in new concrete pavements, base materials for new roadways, or for other uses, including erosion control and flood prevention.

Local Supplies—Concrete pavements are typically produced from abundant supplies of locally available resources, such as rock, sand, cement, and water. Concrete diverts large volumes of materials away from waste streams; examples include slag, which comes from iron manufacturing, and fly ash, a byproduct of energy production.

Light Reflectance—Concrete is naturally light-reflective, which reduces street lighting requirements (and saves energy). Scientists call this "albedo," and this feature in concrete enhances safety and helps reduce urban air temperature, reducing heat island effects. Darker colored paving materials cannot provide these benefits.

Durability—Because concrete pavements last longer than other pavement materials, they don’t waste additional resources, including the fuel consumed in frequent maintenance and repair of pavements made from less durable materials. This also means that there is less traffic congestion with concrete pavement which, in turn, saves fuel that would be used by cars and trucks waiting in traffic, and lowers pollution emitted from vehicles idling in long construction work zones.

Fossil Fuel Savings—Vehicles traveling on concrete roadways use less fuel because the "rolling resistance" is much lower than on other paving materials. A study published by the National Research Council of Canada in 2006 shows that trucks get an average of almost 4 percent better fuel efficiency on concrete pavements. A recent study published by the University of Texas at Austin suggests similar fuel economic advantages for cars on concrete pavements during city driving.

Concrete pavements also require less fuel to construct than roads built in many thin layers, like asphalt. In fact, Federal Highway Administration data concludes an asphalt roadway requires about 3.5 times more diesel fuel to construct than a comparable concrete road designed for the same traffic.

For today and tomorrow, concrete pavements are the most cost-effective, most sustainable choice for streets and roads.

For questions or assistance with a comparable pavement performance and lifecycle cost analysis in your area, please visit our website at http://www.ConcreteStreets.org to find a local technical representative.

www.ConcreteStreets.org

Prepared by the American Concrete Pavement Association and National Ready Mixed Concrete Association
StreetPave

• Software tool primarily for streets and roads
• Allows life cycle cost analysis (LCCA) to compare “hard costs” (if local cost & performance data available).
• Direct comparisons of concrete and asphalt designs
Streets & Local Roads – *Presentations for Municipal Decision-Makers & Specifiers*

- **Life Cycle Cost Analysis (LCCA) Train-the-Trainer Presentation** (PPT)
  StreetPave software and LCCA training, primarily intended for NRMCA & ACPA field forces.

- **Life Cycle Cost Analysis Template for Specifier Audiences** (PPT)
  For more technical specifier audiences, including engineers. The presentation is a template that requires configuration by local promoters.

- **Executive-Level PowerPoint Presentation** (PPT)
  For general specifier audiences and non-technical decision-makers. This is an overview presentation covering basic features and benefits of concrete.
Welcome to ConcreteStreets.org. This site contains facts about the cost, performance, and sustainability of concrete pavements for streets and roads. Also on this site, we take a look at the civic pride that's being strengthened or even restored in communities that are using concrete pavements as part of their “cityscape” strategies. We also take a look at some of the innovations that are making this versatile material different and better than ever!

Whether you are responsible for constructing, preserving, or repairing streets and roads, or are someone who relies on roadways for safe and efficient travel, we hope you will enjoy our site.
• Concrete Promoters Resource Center
  – www.concretepromotion.org Overview
  • Parking Lot Strategic Plan
    – Documents
    – Buildings Under Design (BUD Program)
    – Design Assistance Program
  • Photos
  • Downloads
  • Pervious Project Directory
  • Success Stories
  • Promoter Directory
  • Resource Center Partners
  • Promotion News
## Streets and Local Roads Call Report

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- Call Report
- v 1.0
- NRMCA Logo

- My name
- Company
- Pre call goal
- Fallback goal
- Contact
- Title
- Organization
- Address
- City
- State
- Zip
- Best Next Step?
- Notes
## Market Tracking Sheet

### Streets and Local Roads Call Tracking and Status Sheet

<table>
<thead>
<tr>
<th>Call Date</th>
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Don’t forget about rehabilitating existing SLR & PL
Key Promotion Elements

- Concrete can compete on initial cost!
- Concrete’s lower cost of ownership
- Appropriate concrete design: Mechanistic-Empirical Pavement Design Guide (MEPDG), not traditional AASHTO
- Concrete sustainability benefits
Strategy & Tactics

• Local decision as to what fits market best:
  – Test Project
  – Competitive Alternate
  – Approved Equal
  – Concrete only!

• Each strategy has long term implications and should be weighed before proceeding
The Bottom Line

• Success is driven at the local level
• NRMCA, ACPA and PCA are here to help!
• The sooner you start, the sooner yards will come!
Questions?

Thank you!

A. Vance Pool
Sr. Director, National Resources
Houston, TX

TX High 5- Dallas
Thank You for attending NRMCA Streets and Local Roads Webinar

Concrete Streets
The safe, durable and economical community investment.

Concrete Delivers
Engineered solutions for sustainability, durability and value.