

# Pavement Selection... A Municipal Perspective

*Association of Modified Asphalt  
Producers Annual Meeting*

*Councilman Tim Glanzman  
February 13, 2007*



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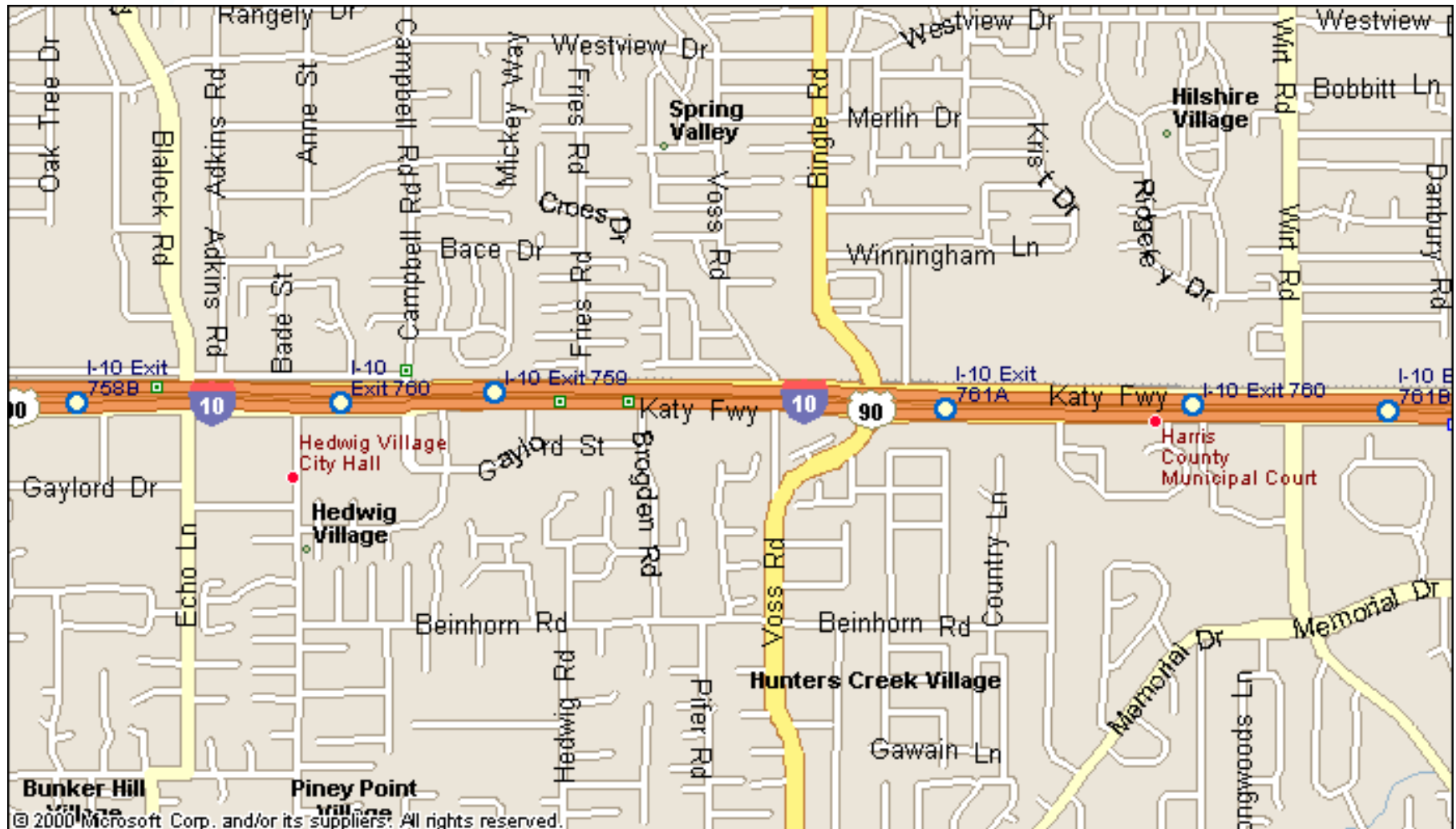
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# Where is Spring Valley, Texas?



# Where is Spring Valley, Texas?





# *Where is Spring Valley, Texas?*



# *Background information...*

- Incorporated in 1955
- Primarily residential with zoning restrictions
- Population 3,611
- Approx. 20 miles of streets
- Aging infrastructure
  - 2.25 miles of streets less than 10 years old
- Revenue Sources
  - property, sales, & franchise taxes
  - utility fees
  - fines, fees, & permits



# Aging infrastructure ...





# Aging infrastructure ...





# *Pavement project experience...*

City Council & residents frustrated with recent pavement projects.

- Are we getting superior quality and being cost effective?
- Project timelines not being met
- Negative impact on traffic patterns
- Residential impact on homeowners “living the project”

# *Residential pavement construction impacts residents where they live – not just their commute...*



# *The pavement design process...*

There had be a better way...

- Start with a clean slate – a willingness to construct projects differently
- Primary focus on pavement performance
- Secondary focus on speed of construction



# *Perception of pavement options...*

## Portland cement

- Higher initial cost
- Very long construction timeline
- Significant neighborhood disruption
- Perception of higher quality & longer service life
- Perception of low/no maintenance

## Asphalt

- Lower initial cost
- Shorter project duration
- Less neighborhood disruption
- Perception of lower quality & shorter service life
- Perception of higher maintenance

Asphalt had to overcome a perception of shorter life span. The perception did not match experience and documentation of asphalt performance.

# *The three most important factors...*

In real estate the three most important things are location, location, and location.

In paving the three most important factors are:

1. Performance
2. Performance
3. Performance

# *High performance asphalt pavements...*

Constructively challenging conventional wisdom and perception with facts

Find a decision maker who will champion the process

Utilize available resources to encourage education:

- AMAP, AI, APA, and State Associations
- Experience and support of State DOT
- SUPERPAVE and Performance Graded Asphalts

View asphalt as a portfolio of potential solutions for pavement rehabilitation and maintenance



# *High performance asphalt pavements...*

## Supporting project and process literature

- “Quantification of the Effects of Polymer Modified Asphalt in Reducing Pavement Distress” – AI Publication ER-215
- “Pavement Type Selection Process”
- Perpetual Pavements – Better Roads “The Quest for Long Life Pavements”, Perpetual Pavement: Structured for the Future”, and APA CD on perpetual pavements
- Maryland Intersection Contest Results
- “Open Graded Friction Courses – Smooth, Quiet, and More Durable Than Ever”
- Better Roads “How Asphalt Pavements Mitigate Tire Noise”
- Public Works “Managing Storm Water with Porous Asphalt”

Use literature and materials targeted to your audience.

# *Choosing a polymer modified surface course...*

## “Quantification of the Effects of Polymer Modified Asphalt in Reducing Pavement Distress” – AI Publication ER-215

- AMAP, AI, and industry sponsored project
- Utilized state project & evaluation data to quantify PMA performance
- **Findings**
  - **Enhanced Performance**
    - ✓ 3 to 10 years increase in service life
  - **Superior Pavement Distress Resistance**
    - ✓ Fatigue Resistance
    - ✓ Rut Resistance
    - ✓ Thermal Cracking

# Asphalt benefits & target audiences ...

Decision Makers



Asphalt Benefit	City Council	City Engineer	City Residents
Lower initial cost	High	?	?
<b>Good service life/performance</b>	<b>High</b>	<b>High</b>	<b>High</b>
Shorter project duration	High	?	High
Lower maintenance costs	High	?	?
Ease of maintenance	?	?	High
Reduced noise/quieter ride	?	?	High

Impact and value of any particular “benefit” will vary based upon the audience and its impact to them!



*For residential neighborhood road construction, which area has the longest timeline and is most disruptive to residents?*

A. Underground utilities

B. Asphalt pavement courses

C. Concrete curbs & driveway details

# *Curb & driveway construction details ...*

1950's streets

Current standard

“Lay down” curb  
for pilot project



Choosing the “wrong” curb & driveway details would have wiped out the shortened project duration benefit of the asphalt pavement choice!

# *Asphalt Pilot Project...*

## Raylin Drive & Cam Court Rehabilitation

- Original concrete streets from the 1950's
- High priority street due to condition and number of residents served
- Replacement of water line with minimal sanitary sewer & storm sewer upgrades
- Pavement specifications
  - First performance graded asphalt for Spring Valley (PG 70-22 polymer modified asphalt)
  - 2.5 inches of asphalt surface course (PG 70-22 PMA), 8 inches of asphalt base course (PG 64-22)
  - First polymer modified asphalt project in Spring Valley
- Concrete curbs & gutters with asphalt pavement – another first

Thanks to Gary Fitts & the Asphalt Institute for their consulting & support!



# *Pilot project condition before rehabilitation ...*

Raylin Drive



Cam Court



Construction begins



Concrete street and cul de sac heavily cracked, beyond cost effective maintenance methods, and in need of complete full depth reconstruction.

# *Pilot project after rehabilitation ...*

Raylin Drive



Cam Court



Total project cost of \$429K with \$258K of paving. Project duration of 121 days.

# *Asphalt Pilot Project...*

## Short Term Benefits of Asphalt

- Lower initial pavement cost – estimates range from a 7% to 20% reduction on materials alone
- Estimated project construction days shortened by 39 days – 25% savings
- Less neighborhood disruption
  - Drive on base material temporarily
  - Residents have ability to park in front of their house during driveway construction
  - Limited inaccessible driveways to less than a week
  - Reduced “cut-through” traffic due to shortened project timeline



# *Asphalt Pilot Project...*

## Longer Term Benefits of Asphalt

- **City Engineer estimate of asphalt pavement life has changed from 12 years to 40 years**
- Low level and “easy” maintenance expected
- Perpetual pavement concept – mill and replace the surface course and essentially we have a new road
- City Council and Residents overwhelming view the project as successful
- Initial proof of high quality pavement and shortened project timeline – continued long term monitoring of maintenance & life cycle costs

*And if you remember nothing else  
from my presentation – I'd humbly  
suggest three points...*

1. Performance
2. Performance
3. Performance

# Thank you for your attention - Any questions?

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# Supplemental Slides



# Comparing pavement construction process steps...

Portland cement	Asphalt - Conventional	Asphalt – Fast Track
Saw cut street centerline	Saw cut street centerline	Pavement demolition & removal – full section
Remove one lane of pavement	Remove one lane of pavement	Install temporary driving surface – crushed concrete
Install temporary driveway crossings	Install temporary driveway crossings	Install temporary driveway crossings
Lime stabilized subgrade	Lime stabilized subgrade	Lime stabilized subgrade
Place concrete forms; block-out for driveways – 1 <sup>st</sup> pour	Install base course – 1 <sup>st</sup> pass	Install base course – 1 <sup>st</sup> pass
Place reinforcing & pour concrete – 1 <sup>st</sup> pour	Slip form curbs	Slip form curbs
Cure concrete; strip forms – one week minimum	Install base course – 2 <sup>nd</sup> pass	Install base course – 2 <sup>nd</sup> pass
Remove Temporary driveway crossings	Construct surface course – 1 pass	Construct surface course – 1 pass – full section
Place concrete forms & reinforcing for driveway block-outs	Repeat above steps for remaining traffic lane	
Cure concrete; strip forms – one week min. – driveway block-outs		
Place concrete forms & reinforcing for driveways		
Cure concrete; strip forms – 3 days min. – driveways		
Place curbs		
Repeat above steps for remaining traffic lane		