

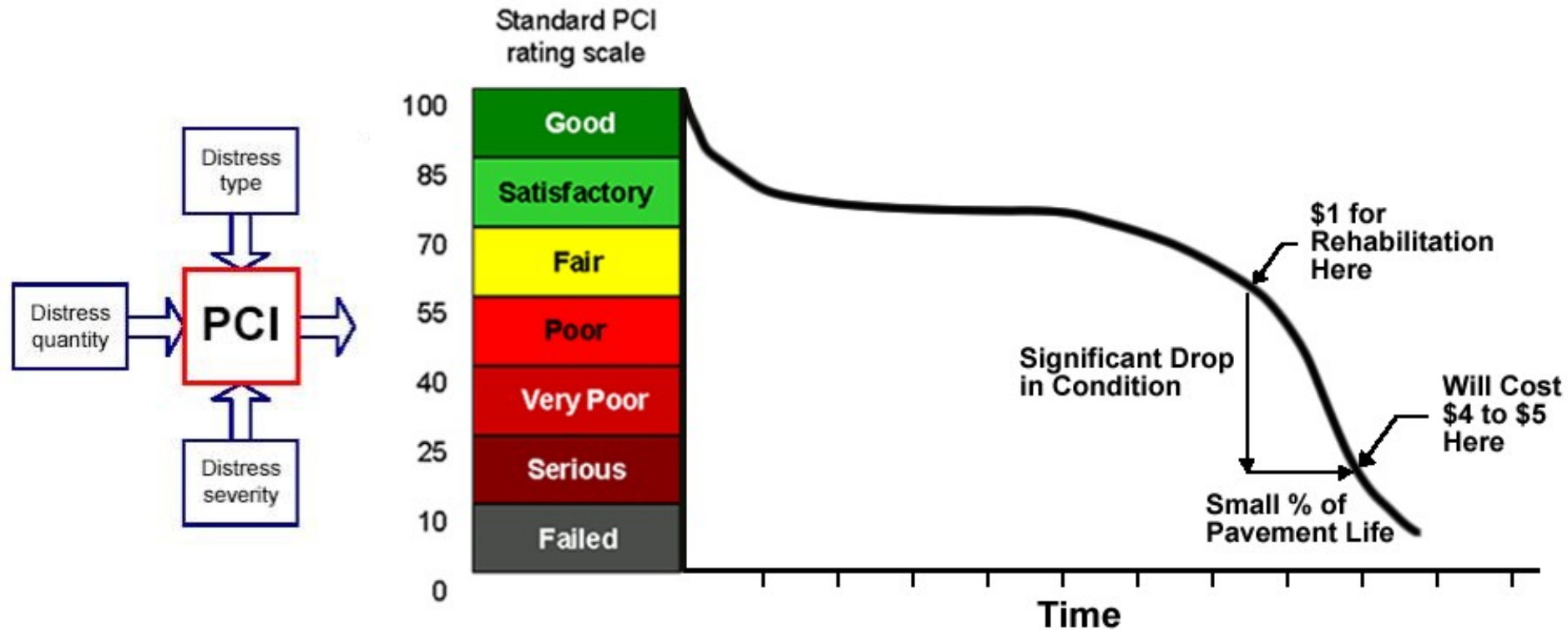
# 2018 SPAM Resurfacing Workshop

City Council Meeting  
December 9, 2020

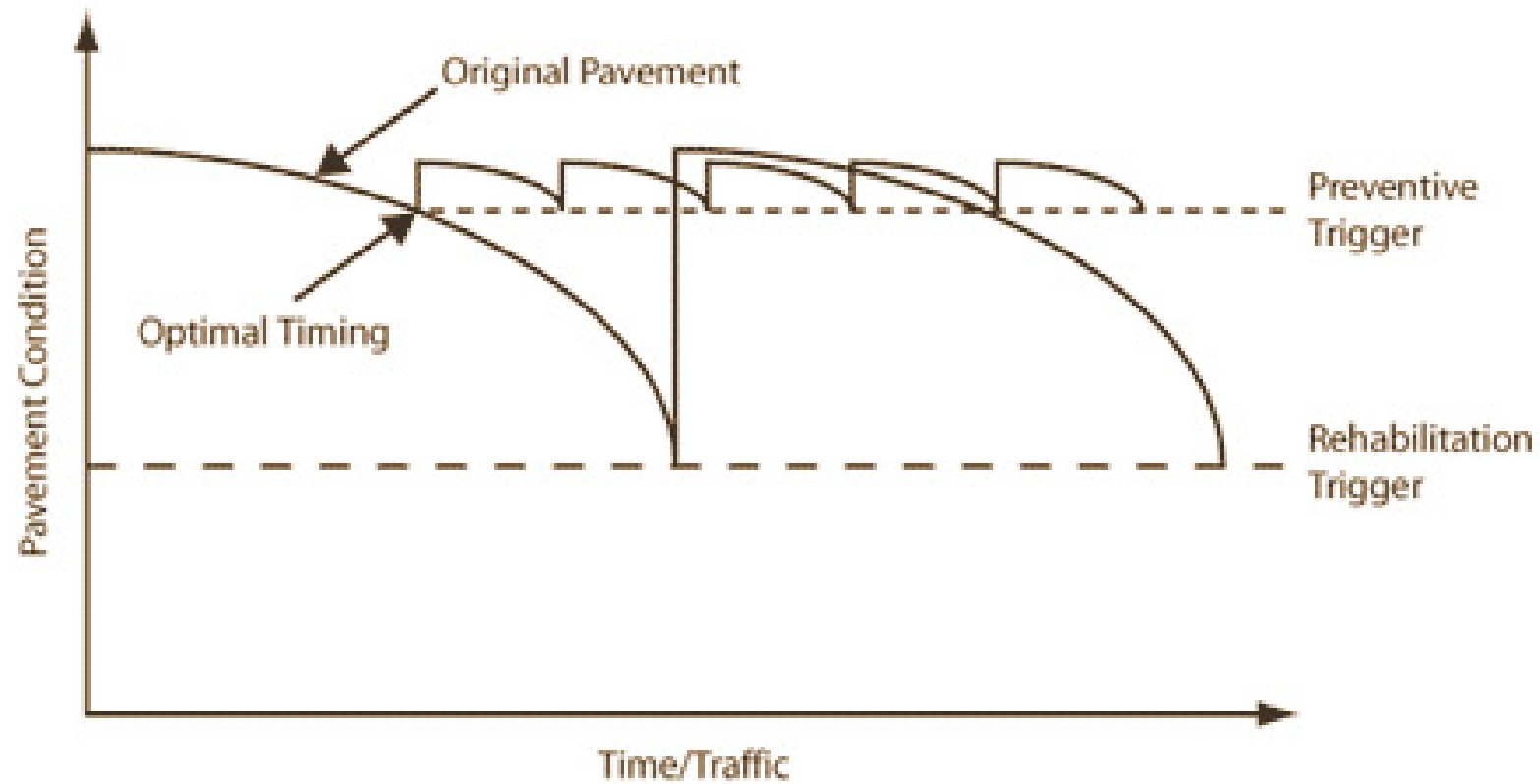
# Introduction

- SPAM – Street Preservation and Maintenance Program:
  - Our program to maintain and extend the life of our streets
- PCI – Pavement Condition Index
  - Study done about ever 5 years to:
    - assess the condition of approximately 171 miles of the City's roadways and will provide digital images documenting the pavement surface condition of the roadway; an evaluation of the the level of damage in the roadway; depth of any ruts; severity of cracking; and GPS coordinates and sizes of distresses.
- All this data will allow the City to update the City's PAVER database and begin to develop a plan for the next five-year SPAM cycle.

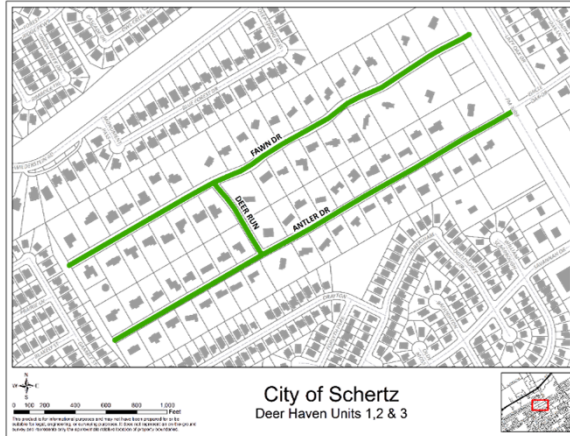
# Pavement Condition Index



# Pavement Preservation

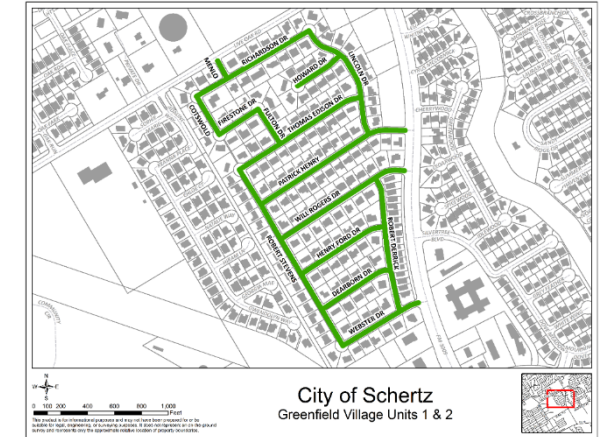


# Areas Chip Sealed

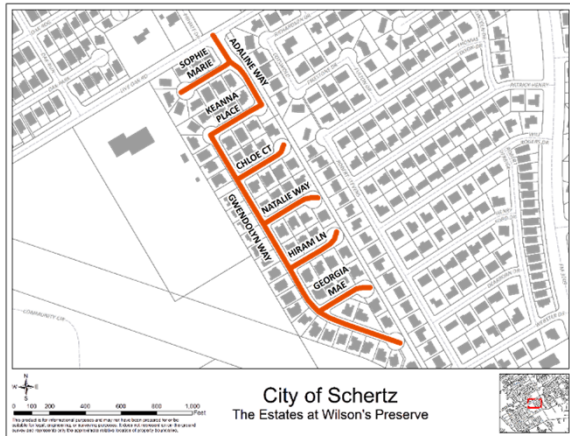


Deer Haven

Greenfield Village

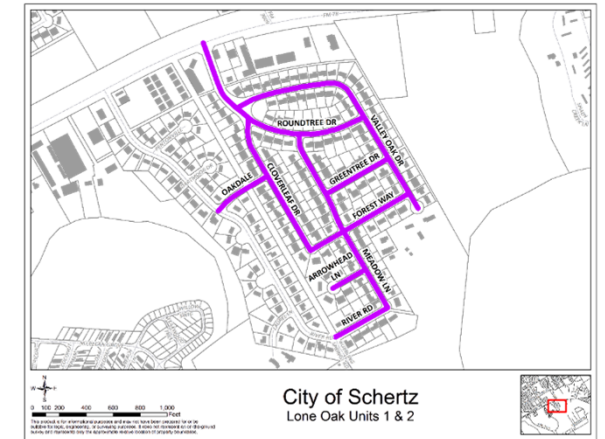


Randolph, Exchange to Rooster Run  
Curtiss, Lindbergh to Beacon  
E. Live Oak (not completed)



The Estates at Wilson's Preserve

Lone Oak



# Pros and Cons of Chip Seal

- Pros:
  - Seals and protects the street
  - Fast operation; can re-open to traffic quickly
  - Lower cost with about 8 years service life
- Cons:
  - Loose excess chips (rocks)
  - Rougher surface than new asphalt

## Other Resurfacing Options

- Fog Seal – sprays a thin layer of oil onto the surface
- Scrub Seal – essentially a chip seal, but is able to seal cracks as part of the process. Extra oil is applied and brooms are used to push the oil into the cracks.
- Slurry seal – applies a thin layer of oil and fine sand onto the surface
- Micro Paving/Micro Sealing – applies a thin layer of oil and aggregate onto the surface
- Cape Seal – chip seal with a fog seal, slurry seal, or micro paving/micro sealing on top of the chip seal
- In Place Recycling – grinds off a portion of the existing pavement, mixes the millings with new oils and aggregates, places the material back in a new layer on the street (“Hot” or “Cold” options)
- Mill and Overlay – grinds off a portion of the existing pavement and replaces the layer removed with a new layer of new asphalt

# 2018 SPAM Bid Costs

- Chip Seal:
  - \$2.80/SY; total \$340,280
- Slurry Seal:
  - \$7.30/SY; Total \$888,454 (2.61 times more)
- Mill and Overlay:
  - \$14.00/SY; total \$1,703,884 (5 times more) based on the Schertz Parkway Overlay project

## What Do Other Cities Do?

- Georgetown – “High performance surface seal”; chip seal (two-course chip seal with “sealant layer” on top); mill and overlay
- San Marcos – slurry seal and mill and overlay
- New Braunfels – blade level up; mill and overlay; chip seal with limited overlay (thin layer of asphalt on top of chip seal)
- Austin – chip seal; slurry seal; micro sealing in cul-de-sacs; mill and overlay

# Current Chip Seal Status

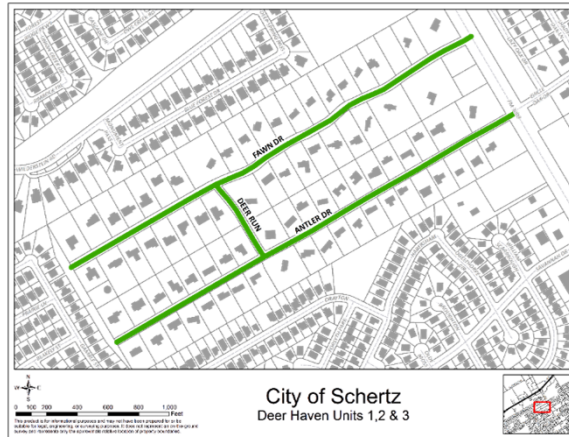
- Some areas have not adhered properly
  - Predominantly in hand-applied areas
  - Oil thickness less than needed
  - Possibly a few areas had something detrimental on existing surface
  - Excess chips – current sweeping efforts have not been sufficient in removing excess
  - Not uncommon with new chip seals
- Surface roughness is typical for a chip seal at this stage
  - Using a finer grade of chip would result in a slightly smoother surface, but still would be significantly rougher than new asphalt
- Still in “Warranty Period”

# Current Chip Seal Complaints

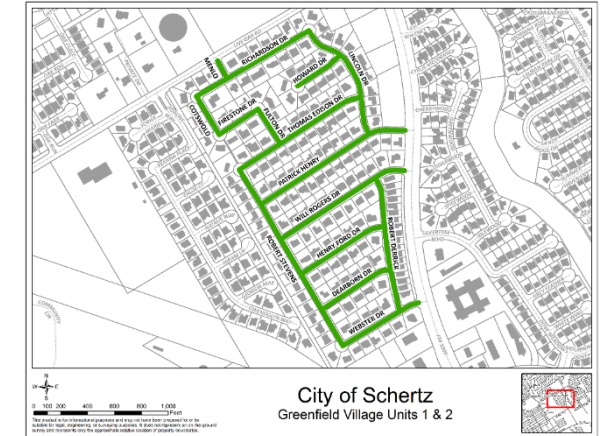
- High level of complaints in some areas – Estates at Wilson's Preserve
  - Lots of loose rock
  - Patches where chip seal has not adhered at all
  - Rough surface
- Some very few or no complaints and minimal issues. – Randolph Blvd.
- A few complaints in Deer Haven, Greenfield Village and Lone Oak
  - Mostly loose rock in areas – cul-de-sacs and turns, an few areas bare at turns
- Same contractor on all projects
- Two reports – LAN on projects and Kimley-Horn on pavement preservation methods

# Areas Chip Sealed

## Deer Haven

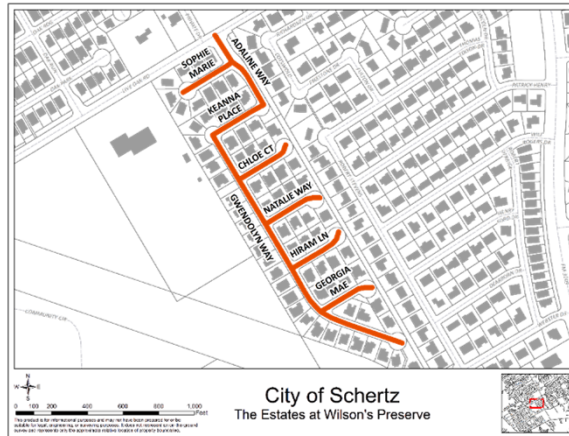


## Greenfield Village

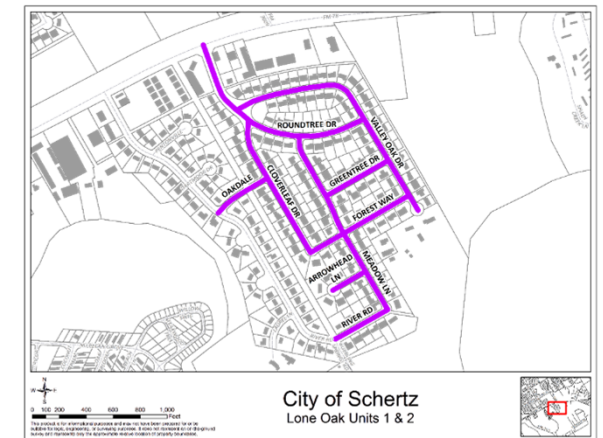


Randolph, Exchange to Rooster Run  
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## The Estates at Wilson's Preserve



## Lone Oak



# “Remedies” For The Chip Seal

- All chip seal areas we do additional, improved sweeping
  - Remove excess chips and identify and other improperly bonded areas
  - Contractor re-apply chip seal in unbonded areas
- Increase smoothness of surface
  - No “one size fits all” solution.
  - At a minimum, apply a fog seal to the surface in all areas. [Fog Seal Video](#)
  - Additional surface product dependent on factors unique to each area (traffic volumes; straight segments versus cul-de-sacs; turning movements; etc.)
    - Will come back to Council with an analysis and recommendation for each area in January.
    - The Estates at Wilson’s Preserve this point recommended to get a micro-seal additional surface due to the larger number of cul-de-sacs, lower traffic volumes, and higher turning movements.

# Future Resurfacing Efforts

- Use a “modified” chip seal in very select locations (lower volume “collector” streets having straight runs and no homes fronting the street, ie: Randolph, E. Live Oak, Boenig)
  - User finer grade aggregate,
  - Increase sweeping effort (have additional sweeping be part of the contract)
- Switch to a different resurfacing material in residential areas
  - Slurry seal
  - Micro paving/micro seal
- Mill and overlay on arterial and high volume collector streets

# Pros and Cons of Fog Seal Alone

- Pros:
  - Seals and “rejuvenates” the street surface
  - Fast application
  - Lower cost
- Cons:
  - Needs at least one hour cure time before reopening to traffic
  - Short service life – about 2 years
  - Most often used in conjunction with other efforts

# Pros and Cons of Scrub Seal

- Pros:
  - Seals and protects the street
  - Fast operation; can re-open to traffic quickly
  - Does not typically require separate crack sealing effort
  - Lower cost with about 8 years service life
- Cons:
  - Loose excess chips (rocks)
  - Rougher surface than new asphalt

# Pros and Cons of Slurry Seal

- Pros:
  - Seals and protects the street
  - Fast application
  - Medium cost with 6 to 8 years service life
- Cons:
  - Requires at least an hour to cure before re-opening to traffic
  - Slightly rougher surface than new asphalt (some products)
  - Can have a “streaky” appearance

# Pros and Cons of Micro Paving/Micro Sealing

- Pros:
  - Seals and protects the street
  - Fast application
  - Surface is much more smooth (near new asphalt)
- Cons:
  - Needs at least a couple hours to cure before reopening to traffic
  - More expensive than other options
  - Not as long service life – 5 to 8 years

# Pros and Cons of Cape Seal

- Pros:
  - Seals and protects the street
  - Fast application of layers
- Cons:
  - Takes longer to complete: chip seal done first, then have to apply another layer on top
  - Rougher surface than new asphalt, but not as rough as a chip seal
  - Higher cost but not a comparable increase in service life

# Pros and Cons of In Place Recycling

- Pros:
  - Provides a new pavement surface
  - Doesn't require a lot of new material being brought to the site or removal of material from the site
  - Typically costs less than a mill and overlay
  - Similar service life as an overlay
- Cons:
  - Requires long equipment "train"; does not handle sharp curves, cul-de-sacs, etc. well
  - More suited for long, straight sections of roadways (highways in particular)
  - May be considered "new construction" by Federal rules – ADA upgrades required

# Pros and Cons of Mill and Overlay

- Pros:
  - Smooth surface – new asphalt
  - In some cases can add structural capacity to the street
  - Longer service life about 12 years
- Cons:
  - High cost – most expensive option
  - Considered “new construction” by Federal rules – ADA upgrades required

# Questions?

