Peoria’s Design Standards are 40 years old

• Newer subdivision streets showing distress in 5-10 years
• Considering thicker section and improved inspection
• Preventative maintenance program eliminated
• Little capacity to do repairs
Repair Costs

• Cost to patch and oil & chip  $500,000
• Cost to replace  $10,000,000
• Budget  $0
Pavement Design

- Lower initial cost for developers
- Higher maintenance and lifecycle costs for citizens
- Stricter standards in peer communities
Pavement Design

• Critical Success Factor: “Invest in Infrastructure & Transportation”
• Require thicker pavements
• Higher initial cost for developers $750/lot (concrete), $2,200/lot (asphalt)
• Lower lifecycle cost for taxpayers ($10,627/lot over 60 year life)
• Higher quality, longer-lasting streets
Proposed Street
Design Process

• IDOT Bureau of Local Roads Manual – Ch 37 (New Ch 44)
• Soils/Subgrade
• Drainage
• Traffic
• Life
• Materials
• Methods
Soils/Subgrade

• Trenches
  • Sewer
  • Water
  • Storm Sewers
  • Utilities

• Subgrade Stabilization
  • Compaction
  • Remove Unsuitable
  • Lime Modification
Drainage

Figure 8  Conceptual road drainage system
Traffic

- Construction: 33 Trucks/House
  80 ESAL/House
- Post Construction: Cars, Garbage Trucks, Buses, Moving Vans, Snow Plows, Utility Service vehicles
- CLASS III Roads with 400-2,000 ADT:
  88% Passenger Vehicle (PU)
  7% Single Units (SU) Trucks & buses w/ 2 or more axles
  5% Multiple Unites (MU) Semi Tractor/Trailer
Design Period

This is the period for which the pavement is designed to handle the anticipated traffic. At the end of this period a reasonable person would expect the pavement to be replaced.

20 years minimum
30 years recommended
Pavement Types

• Conventional Asphalt

• Full Depth Asphalt

• Portland Cement Concrete

• Composite – Asphalt Over Concrete
Materials & Methods

Materials

- Cement Type, Sand, Aggregate, Air-Entrained, Water
- Asphalt Type, Sand, Aggregate, Polymer modification

Methods

- Mixing/Proportioning
- Temperature, Compacting, Cutting Joints
Inspection & Testing

- Coring
- Compacting
- Air Meter
Questions

For more information, contact Jeffrey Smith, City of Peoria Interim Director of Public Works at (309) 494-8800