

AN ASPHALT CASE STUDY FROM FLEXIBLE PAVEMENTS OF OHIO

Springboro Says Out with Concrete, In with Asphalt



Listed by Money magazine among the top 100 best places to live in the country in 2011, Springboro, Ohio in Warren County has tripled in size since 1990, because developers and home buyers have found it irresistible.

“It is a great place to live because location is everything in this fast paced world and our residents enjoy the I-75 access and the ability to reach Cincinnati and Dayton quickly,” says City Manager Christine A. Thompson.

She should know, as she has worked for the city for nearly a quarter century and has watched it grow and prosper. In July 1987, Springboro became a city, having a population of 5,487. Today it is nearing 20,000. Like

Mason, a neighbor to the south, Springboro was one of the fastest growing communities in the state for nearly 15 years running.

As real estate agents like to say, it was primarily location that vaulted Springboro into its present ranking. Just off Interstate 75, the city is an easy commute to both Cincinnati and Dayton, with Wright Patterson Air Force Base a mere stone’s throw away. With access to Interstate 70 and Interstate 71 as well, Springboro could hardly avoid development. It has become part of the growing Dayton-Cincinnati megalopolis, enjoying urban amenities nearby and an excellent quality of life at home.

The quality of Springboro's development surely has been affected by the city being home to a couple of top-notch golf courses, the private Sycamore Creek Country Club and the municipal Heatherwoode Golf Club, with their beautifully manicured acres. They set a high standard. It is not surprising that the city has attracted "quality residential developments," according to Thompson. She adds, "People could find the neighborhood they wanted." Thompson also ascribes Springboro's success to "a city council willing to take risks," a 1 1/2 percent income tax, great schools and a municipal government that "takes advantage of opportunities when we see them."

The result is a city population with a median income of more than \$100,000, median home values above \$190,000 and 10-year job growth (2000 to 2010) of

Springboro Maintains Its Standards

In 1980, when Springboro was still a village, David Morgan, the Village Engineer, signed off on a set of modified pavement standards that would have long-lasting ramifications. They were based on standards set by the Southwest Ohio Engineering Association.

According to these new standards, the first for Springboro, concrete pavement for a residential street required six inches of concrete on a compacted subgrade. For asphalt pavement the standard required layering two, 2 1/2-inch courses of asphalt base (301), a tack coat of 407, a 1 1/2-inch leveling course (403) and a 1 1/2-inch surface course (404) on a compacted subgrade (203). With current specifications that would be 5 inches of asphalt base (301), topped by a 1 1/2-inch 448 Type 1 intermediate course and a 1 1/2-inch 448 Type 1 surface course.

These standards were adopted for Springboro city streets and influenced (but didn't rule) the quality of the subdivision streets that were laid out and paved by developers. When the city made its momentous decision



The city operates and maintains six recreational parks, including Rotary Park pictured here.



to replace all of the city's concrete pavements in 2009, the reconstructed streets followed the 1980 standards.

Only about 1,000 feet of concrete pavement remains, which was planed 2 inches and has 2 inches of asphalt surface course (404). According to Springboro City Development Director Elmer Dudas, "We had ground it not long before we reconstructed streets in 2009, so we didn't redo it. It's fine. No complaints. Otherwise, all streets with exposed concrete have been redone."



With the average city street now 15 to 20 years old, the annual maintenance budget of \$600,000 to \$700,000 keeps residents happy year-round.



30.37 percent, according to Money Magazine. The city operates and maintains six recreational parks, including 137-acre Clear Creek Park, with eight ball diamonds, 10 soccer fields and two football/soccer fields. At the heart of this successful community is a seven-block historic district that preserves the feel of the Quaker settlement founded in 1815, a well-known stop for escaping slaves on the Underground Railroad.

Quality of life naturally is a high priority in a community with both affluence and deep roots. Springboro residents care about the details of city life as they do about their athletic fields and jogging paths. Take the condition of their streets. As the area's subdivisions were built, developers laid out and paved the streets. Some chose concrete pavement, and the city itself laid concrete until about 20 years ago. When newly laid, the concrete looked good, but longtime City Engineer Raj Sharma could see problems coming.

The problems were in regards to maintenance needing to be done throughout the city, which the City of Springboro assumed responsibility for street maintenance in the subdivisions after one year. So reducing maintenance costs to a manageable level was a big concern for the city, and it was apparent that the streets originally laid in concrete were not manageable.

"The blacktop we could go and maintain with city forces," Sharma says, but the concrete pavements required much more expensive rebuilding by contractors. "It's cheaper to maintain the asphalt than the concrete," he says. "That was the whole thing."

As city administrations everywhere know, when citizens call City Hall, they usually register a complaint. Development Director Elmer Dudas, notes that a few years ago, "We did get citizen complaints. The deteriorating concrete streets had that train track effect—joint, joint, joint."

"They were crumbling," Thompson says. "The residents were correct in not wanting to deal with that anymore."

The city might have followed a conservative course by slowly, over time, replacing the original concrete streets, incorporating replacement costs into the annual maintenance budget. For a time, that's what happened.

But replacing one or two older concrete pavements a year was not good enough for Springboro. "It was being piecemealed and piecemealed," Thompson said. After all, she says, how do you justify your priorities? "How do you tell one street they aren't as bad as the next?"

Her administration drafted a capital improvement program aimed at upgrading all the concrete pavements at once. With the alternatives clearly spelled out, City Council offered no resistance. In 2009, all the remaining concrete streets were replaced with full-depth asphalt. "The community really appreciated it. It worked out great. We're really pleased," says Thompson.

"This is a white collar community," says Sharma. "People are very, very sensitive to disruptions." When traffic was diverted through a subdivision while repairs were going on to a connecting artery, subdivision neighbors did complain. But as for the extensive work completed in 2009, he said, "I think they were happy that we did it because there was no bumping anymore."

With asphalt now covering 100 percent of the streets, the city no longer faces expensive maintenance. Its regular



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maintenance schedule now consists of planing off two inches, laying Stress Absorbing Membrane Interlayer (SAMI) and 1 3/4-inch top layer about every 15 years, depending on need. For routine maintenance, crack sealing and spray patching can be done economically by city workers.

With the average city street now 15 to 20 years old, the annual maintenance budget of \$600,000 to \$700,000 keeps residents happy year-round. As the subdivisions built in the mid 1990s age, of course, that number will have to rise, but in the meantime, says Raj Sharma, "Asphalt is the obvious choice. It's manageable."



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