

# benchmark for the successful implementation of NGCS technology

*Indiana's North Split Modernized to Deliver Substantial Improvements over Traditional Road Surfaces*

NGCS delivers quieter, safer and smoother experience for those driving the Gateway to Indiana



**THE NORTH SPLIT PROJECT WAS INITIATED TO MODERNIZE** one of the state's most critical transportation corridors—the vital junction connecting interstates 65 and 70 in downtown Indianapolis—while minimizing disruptions to daily commutes and maintaining access to key urban areas. This area experiences significant traffic volumes, making maintaining a safe and efficient roadway essential.

Its primary goals included reducing noise pollution, enhancing roadway safety and ensuring a smoother driving experience. Additional goals were to improve bicycle and pedestrian connectivity through wider sidewalks and modern lighting, and promote neighborhood identity with visual enhancements and the planting of thousands of trees throughout the project area.

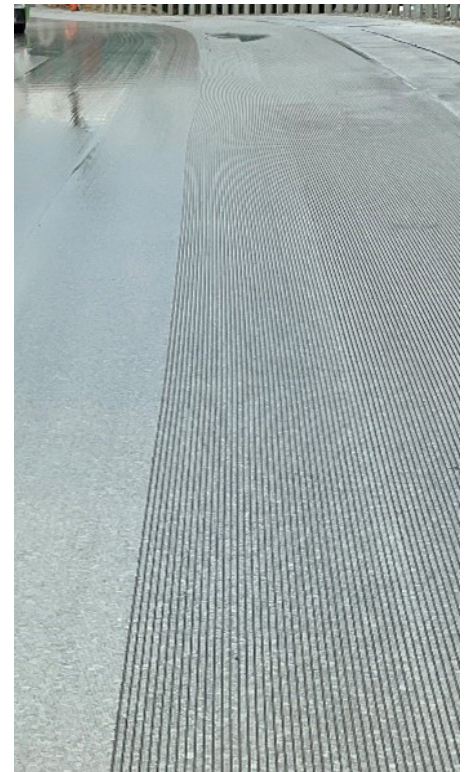
The ambitious North Split project showcases the implementation of Next Generation Concrete Surface (NGCS) technology, which promises to deliver substantial improvements over traditional road surfaces.

## » IMPLEMENTATION OF NGCS IN THE NORTH SPLIT PROJECT

The deployment of NGCS technology in the North Split project involved several key stages:

- **Planning and Design:** The initial phase focused on meticulous planning and design to ensure the successful application of NGCS. Collaboration was crucial in addressing the unique challenges posed by the intricate traffic patterns and the need to maintain uninterrupted access to the city's downtown.
- **Material and Construction:** The project's statistics highlight the scale of the endeavor:
  - » **Surface Area:** 315,000 square yards of NGCS were installed.
  - » **Concrete Pavement:** 230,000 square yards of 13" Continuously Reinforced Concrete Pavement (CRCP) were laid, supported by 10 million pounds of CRCP rebar.
  - » **Bridge Construction:** 47 new bridges were constructed, three existing bridges were widened and another three bridges were rehabilitated, requiring 59,000 linear feet of piling, 35,000 cubic yards of structural concrete and nine million pounds of structural rebar.
  - » **Earthwork:** Approximately one million cubic yards of earthwork were executed to prepare the site.

Conventional grinding was employed by subcontractor Diamond Coring Company, Inc. during the project, which included 53 bridges, to bring the pavement to a 70 International Roughness Index (IRI) specification. This was followed by the application of NGCS on top of the smooth surface.





## » BENEFITS OF NGCS TECHNOLOGY

NGCS technology provides several advantages over traditional road surfaces:

- **Noise Reduction:** NGCS significantly reduces tire-pavement noise, creating a quieter environment for nearby residents and businesses.
- **Improved Safety:** The technology enhances skid resistance, reducing the likelihood of accidents, especially during wet conditions.
- **Enhanced Smoothness:** NGCS delivers a smoother driving surface, which contributes to overall vehicle comfort and reduced wear and tear on vehicles.

The project was successfully completed due to the commitment to precision and teamwork, as explained by Diamond Coring President Anthony Cappello. “The successful execution is a testament to the seamless collaboration between our team, project designers, contractors and local stakeholders,” he said. “Our commitment to precision and coordination ensured that we delivered a quiet, smooth and safe roadway with Next Generation Concrete Surface (NGCS) technology, enhancing the driving experience for all who rely on this critical corridor.”

## » RESULTS AND IMPACT

- **Performance and Durability.** The implementation of NGCS technology on the North Split project has yielded impressive results:
  - » **Noise Reduction:** The quieter surface has benefited both drivers and the surrounding community.
  - » **Safety Enhancements:** Improved skid resistance has contributed to a reduction in accidents.
  - » **Smooth Driving Experience:** The enhanced smoothness of the roadway has been well-received by motorists.
- **Sustainability.** NGCS technology also aligns with sustainability goals:
  - » **Longevity:** The durable nature of NGCS reduces the need for frequent repairs, lowering maintenance costs and environmental impact.
  - » **Efficiency:** The smoother surface leads to improved fuel efficiency for vehicles, contributing to reduced emissions.

The North Split project in Indiana serves as a benchmark for the successful implementation of Next Generation Concrete Surface technology in large-scale infrastructure projects. By addressing noise pollution, enhancing safety, and providing a smoother driving experience, NGCS has demonstrated its potential to revolutionize roadway construction. The project’s success underscores the importance of meticulous planning, collaboration and commitment to innovation. As we look ahead, NGCS technology holds promise for future projects, paving the way for quieter, safer and smoother roadways across the nation.

## » PROJECT TEAM

- **Owner:** Indiana DOT
- **Lead Contractor:** Superior Construction
- **Lead Designer/Engineer:** Janssen & Spaans Engineering, Inc. (JSE)
- **Subcontractor:** Diamond Coring Company, Inc.



### ABOUT IGGA

The International Grooving & Grinding Association (IGGA) is a non-profit trade association founded in 1972 by a group of dedicated industry professionals committed to the development of the diamond grinding and grooving process for surfaces constructed with Portland cement concrete and asphalt. In 1995, the IGGA joined in affiliation with the American Concrete Pavement Association (ACPA) to form what is now referred to as the Concrete Pavement Preservation Partnership (IGGA/ACPA CP3). The IGGA/ACPA CP3 now serves as the lead industry representative and technical resource in the development and marketing of optimized pavement surfaces, concrete pavement restoration and pavement preservation around the world.