PROJECT OVERVIEW

The multi-million dollar Newark Downtown Revitalization project started as a sewer separation project, totaling nearly 10 city blocks, stemmed by a U.S. EPA mandate to separate the sewer systems from storm water runoff systems.

Nearly 4,000 feet of sewer—including 120-year-old brick combined sewers—topped the priority list as they were highly susceptible to collapses in the heart of the city. This innovative project capitalized on the underground infrastructure improvements and leveraged the opportunity to simultaneously improve the above ground and roadway infrastructure impacted by the sewer trench work. Prime consultant Arcadis led the sewer separation portion of the project, in close partnership with the OHM Advisors team, which led the roadway and streetscape design portion.

This project serves as a lesson in best practices for transforming a traditional infrastructure project into a unique placemaking and economic development strategy.

BENEFITS TO THE PUBLIC

The Newark Downtown Revitalization project is a public project with significant community impact. The City's holistic approach was to start by building a foundation, investing in the under- and above-ground infrastructure (sewer, water, street, public space and transportation system enhancements) totaling approximately $25 million dollars that would transform the downtown and encourage development.

The project yielded stormwater benefits through the integration of aesthetically pleasing green infrastructure. These sustainable infrastructure enhancements benefit benefit the community environment by increasing the green space, while reducing peak storm flows and providing water quality treatments.

Downtown Newark now offers expansive sidewalks, sustainable infrastructure, straightforward two-way traffic patterns and easy-to-navigate mini roundabouts at the corners of the courthouse square that help to calm traffic. These improvements directly reflect the City's goals and residents' visions to make downtown a more pedestrian friendly environment.

The project also boasts several related benefits, including increased retail values, additional commercial and retail interest, water and stormwater regulatory benefits, and improved safety.

Today, the original $25 million dollars of public investment has resulted in more than $60 million in private investment. This includes 60+ new downtown residential units, dozens of new retail and restaurant businesses, a new medical facility, and the renovation of the historic Crystal Ballroom – now Thirty One West, a large music and entertainment venue that promotes arts and culture in the downtown. Such growth not only benefits Newark's downtown core, but the entire city and broader metropolitan region.

INNOVATION AND UNIQUE FEATURES

CREATIVE FUNDING

This ambitious project would not have happened without the various entities working together to identify funding. The creative, complex approach ensured that the project was funded efficiently, and reduced the financial impact to the local base.

City leadership leveraged public investment from more than six different funding sources – including local, state and federal, green infrastructure funds, and grant monies – to demonstrate a commitment to bettering the community. Applying innovative design best practices served a dual purpose for the city. Incorporating sustainable design is not only environmentally advantageous, but it afforded the City opportunity to secure – and obtain – green infrastructure funding.

COMMUNITY ENGAGEMENT

OHM Advisors was hired to create a vision for downtown Newark with the goal of enhancing the

above ground infrastructure, image, and overall economic competiveness of the area. Through a series of stakeholder and public meetings, a downtown vision emerged, identifying a number of concerns: correcting the one-way traffic pattern around the square, improving pedestrian safety, creating new opportunities on the courthouse square for community activities, and implementing best practices in sustainable design.

It was also determined that one of the major barriers to growth and development in the downtown was the existing auto centric traffic pattern around the square. In response to this key finding, OHM Advisors performed a traffic study which considered multiple alternatives (including traffic signals and roundabouts) that would address the issues identified by the client and public. The selected scenario included four mini roundabouts at the corners of the courthouse square.

The roundabout design achieved all of the principles developed through the public process:

- Safer and easier pedestrian and vehicular traffic
- Improved urban aesthetic of the historic downtown square
- Conversion of the traffic around the square from one-way to two-way streets - providing easier access to downtown businesses and improving economic development opportunities.

TRANSPARENCY

The project team consistently and thoroughly kept the public informed throughout the planning and construction phases, instilling a sense of ownership and collaboration within the community. Weekly updates were personally delivered to local business owners. Open house events were held upon the completion of each section, affording residents and business owners access to City representatives and partner teams to learn, ask questions and voice feedback. Celebrating community success together, businesses located within the recently completed project quadrant were recognized at these frequent events.

COMPLEXITY

Complex construction scheduling and maintenance of traffic (MOT) needs warranted innovative solutions at every turn, most notably:

CONSTRUCTION SEQUENCING AND PLANNING

Significant time and attention was given to construction sequencing and scheduling of road closures to reduce the impact on local residents and businesses while coordinating a multitude of ongoing construction projects. The team planned construction segments that allowed sections of roads to be reopened immediately as the construction progressed.

COORDINATION AND UTILITY SHUTDOWNS

Demolishing and reconstructing each portion of the street while maintaining utility service to businesses was a puzzle tackled by a multi-disciplinary team and significant upfront scheduling to minimize impacts to business operations.

The City, Arcadis, and the contractor – George J Igel & Co. – developed a plan to shut down portions of the sewer collection and water distribution system in each segment while keeping surrounding areas in-service. This required a deep understanding of the water and sewer systems, creative thinking, use of temporary bypasses and interconnections, and on-the-fly engineering.

TEAMWORK AND COLLABORATION

During the construction process, the project team facilitated frequent communication and strong teamwork. Weekly coordination meetings were held and attended by:

- City Engineering & Zoning staff
- City Water Department staff
- City Sewer Department staff
- OHM Advisors engineering team
- Arcadis engineering team
- George J. Igel & Co. contractor team

These meetings proved critical and served to discuss the weekly construction process, coordination needed with local businesses, and to address upcoming work – ensuring identification and mitigation of potential issues before they became an issue in the field.

MAINTENANCE OF TRAFFIC

Detailed pedestrian and vehicular MOT plans also had to be developed to maintain access to all business in the downtown. Closing local businesses – and threatening their survival – during construction was not an option. The project team recognized this reality and undertook extraordinarily measures, requiring complicated planning and coordination.

TURNING BACK TIME

Revitalizing infrastructure more than a century old brought its own set of challenges. A significant number of basements originally used as delivery access points for coal or other supplies – a use long since abandoned – were located under the existing sidewalks and extended into the City's right of way. The roof of these basements structures was the sidewalk itself, which was being replaced as part of this project.

Each basement had to be investigated and inspected on a case-by-case basis in order to develop detailed plans addressing method of treatment. Further complicating the task, some basements were closed off with mortar blocks and backfilled with 304 aggregate, while others had to replace the reinforced slabs because existing utilities were located below the sidewalk in the space.

With relatively deep trenches very close to building foundations, an extensive network of known elevations was established and monitored throughout the project. This ensured no unplanned settlement that could potentially result in structural damage to nearby buildings.

AESTHETICS AND SUSTAINABLE FEATURES

Sustainable design permeates the design, including 12,000 sq. ft. of bio-swales, 35,000 sq. ft. of low maintenance plantings, and more than 130 shade-bearing trees. The original brick street pavers and iron rails, salvaged from underneath the existing pavement and streetcar network, are used at the center of the roundabouts to maintain a historic feel while visually defined brick crosswalks further enhance pedestrian mobility.

The selected roundabout alternative previously consisted of a 90-foot wide pavement section with six traffic signals that had confusing signal timing, not considerate of pedestrian traffic around the square. This project resulted in a new, improved transportation network featuring two-way configuration allowing for a smaller roadway footprint and reduced pedestrian crossings. The downtown gained more than 20 feet of total sidewalk space, affording businesses café dining and entertainment space.

Reduced pavement width not only encourages pedestrian traffic, but also reduces the runoff that flows into the existing storm system. The wider sidewalks accommodate green infrastructure, where two different types of bioretention cells were installed.

Bioretention cells with tree plantings and decorative grates line the streets around the courthouse square. Around the intersections – especially around the roundabouts – bioretention cells with low growing plantings catch runoff while doubling as a traffic calming feature. Two type of grates were used to allow runoff from the roadway to enter the bioretention features, providing both water quality and quantity treatment.

Together, our team cost-effectively transformed this unique city space into a thriving district that the community will be proud to use and talk about for years to come.

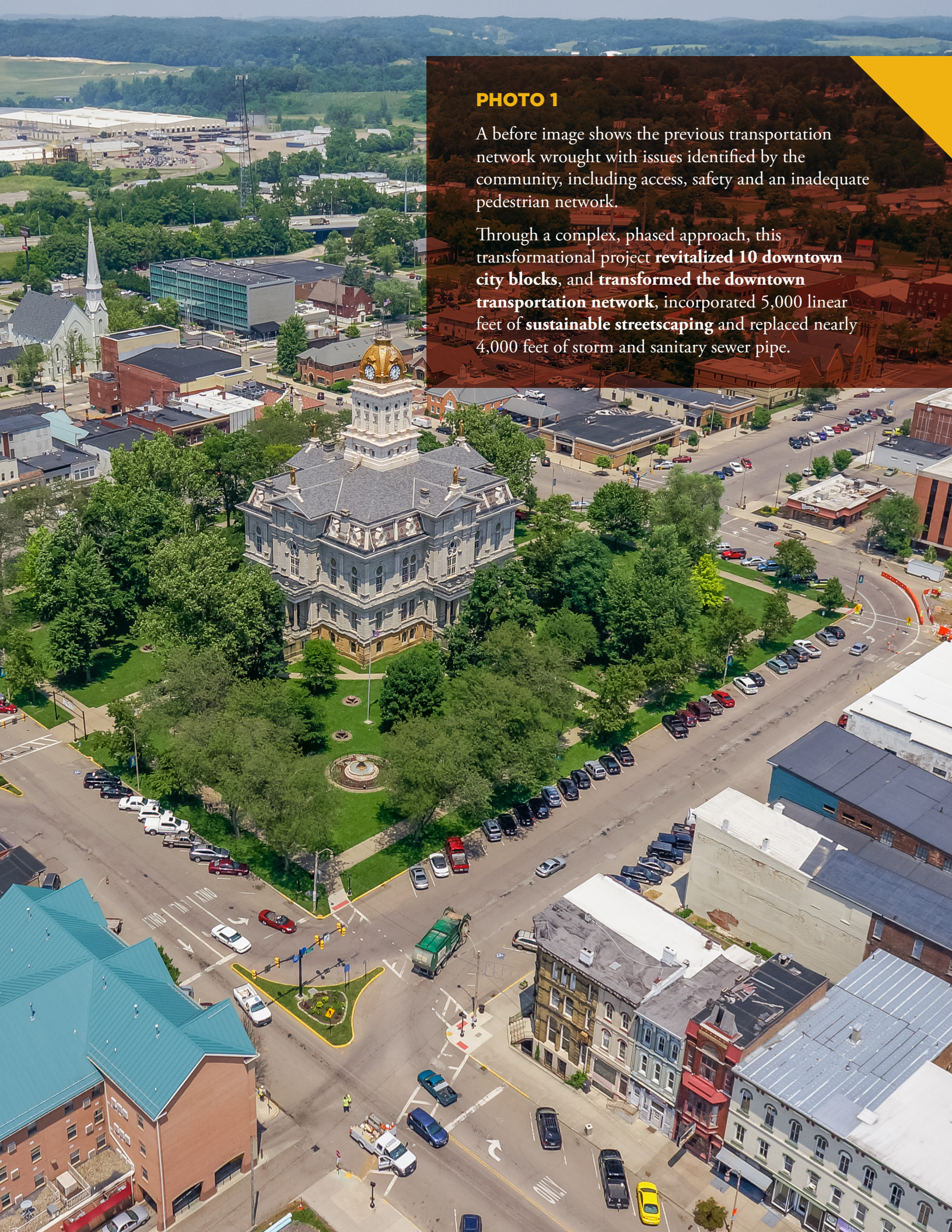

PHOTO 1

A before image shows the previous transportation network wrought with issues identified by the community, including access, safety and an inadequate pedestrian network.

Through a complex, phased approach, this transformational project **revitalized 10 downtown city blocks**, and **transformed the downtown transportation network**, incorporated 5,000 linear feet of **sustainable streetscaping** and replaced nearly 4,000 feet of storm and sanitary sewer pipe.

PHOTO 2

Innovative transportation solutions include complete **roadway network reconfiguration**, crosswalk articulation, plantings and distinct downtown gateways. Bike racks and wider sidewalks will further help to decrease auto emissions.

Reclaimed rail and the original brick street, salvaged from beneath the previous pavement, is used at the center of the roundabouts and incorporated into walkways to **maintain a historic feel** while brick crosswalks further **enhance pedestrian mobility**.

PHOTO 3

Extensive community engagement efforts identified opportunities with access and safety of the pedestrian network, in large part due to the auto-centric, one-way traffic pattern.

Four mini urban roundabouts at the corners of the historic Licking County courthouse square – converting the streets to two-way directional traffic – **resolve access and safety concerns** and **improve connectivity** in the downtown, while **improving the urban aesthetic** of this historic town square.

PHOTO 4

Green infrastructure elements of the project not only enhanced the urban downtown fabric, but afforded the City **access to sustainable design funding**.

Bioswales minimize stormwater runoff and c**apture 20% of stormwater**, reducing river pollutants by 30% - **improving infrastructure, water quality and quality of life** downtown.

PHOTO 5

Leveraging the multi-million dollar sewer separation project, which would demolish the streets around the courthouse square, the **entire downtown transportation network was transformed**.

This photo illustrates the results: a more **pedestrian and business-friendly downtown** characterized by an interactive square, a distinctive urban environment, outdoor dining and entertainment, and a **less auto-centric traffic pattern**.