

# BIA ANNUAL

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## A LETTER FROM RAJ RAVILLA

Like so many of us, I like to reflect upon the previous year as we transition to a new one. The word “unprecedented” is frequently ascribed to the past year, and I believe it is quite a fitting description indeed. For many of us, everything is drastically different now than it was this time last year.

Sometimes it can be hard to find positives during tougher times, especially during a uniquely difficult event such as the COVID-19 Pandemic. However, it is very important to remain mindful of that which we are thankful for, especially during times like these. For me, I am very thankful to have such a talented and hard-working staff across all departments and levels of the company.

Due to the dedication and expertise of KC employees, all of KC’s projects continue to advance successfully and at the highest level of quality. Even as KC moved mostly remote during the middle part of last year, KC staff continued to give their all to all KC projects, from smaller, local projects all the way up to some of the largest design-build projects that New York State has ever implemented.

Additionally, as KC employees returned to the office from remote work, our safety protocols have been rigorously maintained, allowing us to remain healthy, productive, and effective in our work. This dedication is reflected in our delivery of consistently excellent results, even under tight deadlines.

*Due to the dedication and expertise of KC employees, all of KC’s projects continue to advance successfully and at the highest level of quality.*

The quality of KC’s work continues to be unmatched, and I have you all to thank.

I am also grateful that our company continues to expand, with the addition of new employees, as well as the consolidation of KC Hudson Valley (HV) staff to a larger, better-equipped office in Newburgh. This new location gives KC more room for growth, allows our HV team to collaborate more fluidly, and provides our clients with a more convenient and accessible HV location. The move was successful by every measure and HV staff quickly acclimated to the new space, as explored in detail in this Newsletter’s main feature.

I want to also congratulate our employees who recently received their Professional Engineer or Engineer-In-Training certifications, including Saroj Napit, P.E., Chaitanya Balla, P.E., Nate Havener, P.E., and Tilo Krülle, E.I.T. As KC employees expand their capabilities and expertise, as does KC in turn.

I look forward to a successful 2021 for KC, our employees, and our clients.

**-RAJ**



# MILESTONES

This January, we celebrate several employees who have made KC their home for several years and welcome new employees to KC. The KC family is always growing, and we are especially happy for one of our employees for a very special addition to his own family.



**SR. ENGINEERING AUDITOR  
CHAITANYA BALLA, P.E.**

Chaitanya celebrates his 10<sup>th</sup> year with KC this quarter. Since joining KC in 2011, Chaitanya has worn many hats, having served in positions at KC including Senior Engineering Auditor, Assistant Resident Engineer, and Senior Inspector. He has extensive experience with the design and construction inspection of highways and pavement management systems and has worked with numerous New York State agencies.

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**RESIDENT ENGINEER  
JERRY BASHUALDO, P.E.**

In March 2021, Jerry will have been with KC for 10 years. During his tenure with KC, he has applied his diverse experience in civil engineering, inspection, and engineering auditing to great success on KC projects for a wide variety of projects for New York City agencies, including green infrastructure, pedestrian ramp, roadway, and pavement improvement projects as well as in his position as Senior Engineering Auditor at NYCDEP.

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KC would like to **congratulate** our employees who recently earned their **P.E. license**, including **Saroj Napit, P.E., Chaitanya Balla, P.E., and Nate Havener, P.E.**; as well as **Tilo Krülle, E.I.T.** who recently passed the **FE exam**.

**Great job, team!**



**SURVEY INSTRUMENT PERSON  
MARK EUBANKS**

Mark celebrates five years with KC in April 2021. As a crucial member of the Land Surveying group at KC, he has provided his services on a wide variety of KC survey projects, including surveys for municipalities, on-call contracts, and large-scale projects such the Kew Gardens Interchange and Cashless Tolling design-build projects.



**RESIDENT ENGINEER  
SUWEI WANG, E.I.T.**

Suwei joined KC in May 2016. In the five years that he has been with KC, Suwei has worked in many capacities, including as a Resident Engineer, Engineering Auditor, Office Engineer, and Inspector. He has ample experience in ensuring contract compliance and reviewing and approving change orders, reports, and submittals.



**SURVEY PARTY CHIEF  
CHRIS DEPOALA**

In June 2021, Chris marks 5 years with KC. Since joining KC, he has applied his skills in geographic information systems (GIS), data coordination, cartographic design, engineering, land surveying, and site planning and development to some of KC's most complex survey projects throughout New York City, Long Island, and the Hudson Valley.



**CIVIL ENGINEER  
BRIAN MASUR, E.I.T.**

Brian joined the KC team in August 2020. A recent graduate of Bucknell University, Brian has already earned his Engineer-In-Training and OSHA certification. He has experience in civil and traffic engineering, construction estimating, and a wide variety of crucial software through internships with both engineering and construction firms.



**STRUCTURAL ENGINEER  
ESHANA KOLLI**

Eshana started work at KC as a Structural Engineer in September 2020, having recently earned her Masters in Structural Mechanics and Materials from Cornell University. While studying at Cornell, she worked on a proof of concept to test aligned steel fibers using magnets to include as reinforcement in 3D printed concrete.



Braxton Dahit, son of Senior Civil Engineer Bobby Dahit and wife, was born on July 25, 2020 at 5.9 lbs and 19 inches long. Congratulations!



# KC HUDSON VALLEY

***A new space brings enhanced capabilities.***

As KC Engineering and Land Surveying, P.C. (KC) continues to expand our capabilities and the needs of our clients continue to diversify, a decision was made by KC Management to consolidate the now-former KC Poughkeepsie (POK) and KC Circleville (CIR) offices into a larger, better equipped Hudson Valley (HV) office in Newburgh.

The new HV office is at a centralized location next to Stewart Airport, just off Exit 34 on I-84, and less than 5 minutes from the New York State Thruway. This newly centralized location is convenient for employees, clients, and visitors to KC, and serves as an effective home base for any field work undertaken by KC HV staff for clients.

The process from idea to move-in took over a year, as COVID-19 induced delays in the process, several unique approvals were required, and KC's engineers took great care to oversee the design of an efficient working space. KC's engineers worked directly with an outside architect to ensure that KC's needs were appropriately coordinated and reflected in a design that is conducive to the needs of KC and our clients.

In May 2020 and before the new HV office was completed, KC consolidated the staffs

of the former POK and CIR offices to CIR. At this point, most KC staff were already working from home due to the COVID-19 Pandemic, so any disruption was minimal. KC staggered the days when employees could move their belongings to ensure adequate social distancing was maintained. While the new HV office was being finalized, employees began returning to their respective offices as the COVID-19 numbers in New York began to improve. Throughout this process, KC ensured that there was adequate space between all employees' workspaces, provided cleaning supplies and masks to employees, and communicated clear strategies to ensure workplace safety. These strategies have



been rigorously maintained since then and have helped KC to provide a safe working environment for its employees that is still conducive to creativity and quality, allowing us to continue to provide clients with the excellent work that they have come to expect from KC. For more information on KC's COVID-19 response, see our [Return to Work Action Plan](#) on [kcepc.com](#) as well as the COVID-19 feature in the [July 2020 Newsletter](#).

While KC staff are well-accustomed to working remotely in tandem with staff from other KC offices, co-locating HV staff in one location before the move to Newburgh greatly enhanced this already-strong working relationship. With HV staff already working together in-person, the move to Newburgh created no hiccups in getting acclimated to the new, larger space.

The new HV office was designed from the ground up with efficiency and quality at the forefront. The HV office is almost twice the size of the former CIR office, providing ample room for current KC employees, scalability for expected workforce growth, and adequate space for compliance with COVID-19 social distancing guidelines. Upgrades to office amenities were substantial and well-suited to the already efficient workflows of KC



employees. The office cubicles, which feature new desks that can convert to standing desks for comfort, are laid out in a way that enables employees to work near others in their department while still being near other departments. For the most part, the offices of department managers are in the center of the HV office, facing out to the departments that they work with and oversee. There are also offices set aside for KC New York City (NYC) employees to work should they visit the HV office. Five spacious and well-equipped conference rooms are conveniently located throughout the office, including some near the new reception area, allowing for convenient, socially-distanced meetings with



visitors without them needing to walk through the office to attend. Additionally, the new office features a spacious printer room, as well as a large break area that is complete with fridges, microwaves, a dishwasher, the ever-important coffee machine and tea kettle, and socially-distanced tables and chairs. This space exits to a deck area where employees can break during warmer weather. In addition to a larger break room, a smaller kitchenette is located on the other side of the office for employee use.



As the new HV office began to take shape, considerations were made for IT upgrades, including for networking equipment and jack locations, TV accommodations for the conference rooms, a new rack server, and efficient wireless internet. An experienced KC team consisting of IT specialists and engineers meticulously planned the network and technology infrastructure based on KC's current and future needs, including cabling, jacks, switches, in-betweens, and more. Additionally, a new, secure room was dedicated to the network infrastructure, allowing for easy management and troubleshooting of any potential IT issues should they arise.

By late October 2020, work on the new HV office was complete and the office was finally ready for move-in. The move-in was successful and KC HV employees adapted to the new space without a hitch.

As KC continues to grow, a larger and better-equipped HV office enables us to accommodate growth and provide an optimal and modern workspace for our HV employees, allowing us to continue providing our clients with high-quality work in the process. φ





# A STORIED HISTORY: WASTEWATER MANAGEMENT

The history of the human relationship with wastewater management is a long and storied one.

From the advent of agriculture and humanity's transition from a primarily nomadic to a primarily sedentary lifestyle extending all the way to today, effective wastewater solutions continue to be a necessity for ensuring a clean environment, preventing disease, and enhancing livability.

Despite possible misconceptions to the contrary, humanity has implemented creative solutions to wastewater management since the dawn of civilization. The Mesopotamian civilizations implemented some of the earliest known sewer systems, utilizing clay sewer pipes. Ancient Greece utilized a clay piping system similar to the Mesopotamians and improved upon it. Notably, the Minoan civilization in Crete utilized a form of flush toilets: a bucket of water was used for flushing. Indoor privies, dated to ~3000 BCE, were unearthed in Scotland at the Neolithic settlement Skara Brae that utilized a primitive understanding of hydraulics to send wastewater through a diverted river and away from the town. Ancient Egypt utilized copper basins that led to copper drainage pipes for wastewater management, most notably at the Abusir site, dated to ~2400 BCE. Copper was used for its longevity, and these systems are still mostly intact and can be observed today. The Hittites (1600-1180 BCE) made their piping in segments, allowing for easy replacement of damaged segments and cleaning. The major cities of the Indus Valley civilization utilized particularly robust wastewater systems, including bathrooms in homes that sent wastewater into brick /

terracotta city pipes and drains, which was then either diverted away from the city into rivers or collected in cesspits to be used as fertilizer. Many civilizations have utilized human waste as fertilizer throughout human history, especially in areas where livestock was less prevalent. This technique fell out favor when it became clear that the waste could contain harmful pathogens, potentially contaminating crops and spreading illness.

Ancient Rome utilized complex indoor plumbing that mostly utilized lead piping. The Cloaca Maxima, which literally means Greatest Sewer in Latin, was constructed around 600 BCE in the Ancient City of Rome. Running water was supplied by the Roman Aqueducts to most of the public buildings of Ancient Rome which was then sent through the Cloaca Maxima and emptied into the River Tiber. The Cloaca Maxima is an engineering marvel and remains in use today, having been connected to Rome's modern sewer system for draining rainwater from the City center. The success of the Cloaca Maxima inspired similar sewer systems across Ancient Rome and beyond. In the Middle Ages, as many of these sewer systems fell into disrepair, wastewater flowed in the streets and natural waterways that acted as sewers were covered to hide the smell. Outhouses and cesspools were commonplace, the contents of which were sometimes collected to make niter. Meanwhile, the Islamic World implemented advances in wastewater management, including interconnected sewers and advanced research into hydrogeological and hydrological concepts. The Maya pioneered engineered water pressure in the Americas well before the arrival of Europeans, possibly

to raise water into residences for wastewater purposes.

The advent of the Industrial Revolution and acceleration of urbanization and population growth pushed antiquated sewer systems to the limit. While indoor plumbing and other various advances in wastewater technologies began to be implemented, untreated human and industrial waste was being emptied directly into waterways, including sources of drinking water, at alarming rates. As a direct result of poor sanitation practices, illnesses, especially cholera and typhoid, were widespread, and life expectancies were low. The gradual modernization of sewer systems and the advent of modern wastewater treatment systems in the late 19th and early 20th centuries improved, and saved, millions of lives.

Today, rapid advancements in wastewater management technologies have resulted in systems providing a certain level of comfort that many of us take for granted. However, as many wastewater solutions approach the end of their useful life, the need for updating these systems becomes more urgent. KC understands the needs of municipalities, agencies, and their constituencies regarding wastewater solutions as our professional staff has designed, observed construction of, and assisted with the operation of over 70 facilities. KC provides modern and cost-effective wastewater solutions and approaches every project with innovative and creative expertise to deliver comprehensive engineering services that solve the most intricate wastewater challenges from concept through design, construction, and operation.  $\phi$





# PROJECT HIGHLIGHTS

KC's diverse worklog demands meticulous attention to detail, and our highly capable staff is always ready to rise to the occasion.

**NEW AWARD: Contract D214787: Term Agreement for Preliminary Engineering Support Services for Highways and Bridges - Statewide, New York State Thruway Authority (NYSTA):** This three-year term agreement is to provide preliminary engineering support services for NYSTA's highway and bridges throughout New York State. Assignments will include the preparation of scoping memos; bridge and/or highway rehabilitation reports; alternatives analysis; life-cycle costing; technical reports, including seismic reports, fatigue analysis, deck evaluations, and hydraulic analysis; and cost estimating.

**NEW AWARD: Contract RFP-DPW01-20: Architectural and Engineering Services for Various Facilities, Project D – Department of Social Services Americans with Disabilities Act (ADA) Evaluation, Orange County Department of Public Works:** KC will be performing a complete evaluation of the Orange County Department of Social Services building and the surrounding site. KC will then prepare a report with concept plans, recommendations, and cost estimates for all required elements to bring the building and site into compliance with the latest ADA standards.

**NEW AWARD: Contract D037720-02, PIN 8815.31: Highway Design, Rustic Rail Replacement, New York State Department of Transportation (NYSDOT):** As part of a Regional Design Services Agreement (RDSA), this project involves the replacement of rustic rail in Orange and Ulster counties.

**NEW AWARD: Contract X 042 20066: Rock Slope Stabilization Milepost AR-128 & AR-130, Amtrak:** This project involves the assessment of site conditions, identification of root mechanisms of slope instability, and design of a solution to provide long-term slope stabilization to rock slopes on the Hudson Line. KC will be providing surveying services.

**NEW AWARD: Contract CY-XS-0001-21: Various Professional Engineering and Related Services for Somerset County for the Year 2021:** KC was selected to provide professional engineering services for Somerset County in 2021 in the categories of engineering / design services for the replacement or rehabilitation of various types of bridges; engineering / design services for the reconstruction of roadways; and bridge and roadway inspection services, including construction engineering and integrity inspections.

**NEW AWARD: Expert Professional Services for the Design of Repairs for the Original Section of the Airtrain at Newark Liberty International Airport (EWR), Port Authority of New York and New Jersey (PANYNJ):** This project consists of performing a field inspection to obtain existing condition information, preparing final design and contract documents, and providing post-award support for repairs of the original section of the Airtrain at EWR. KC will be providing support for structural design, condition inspection, and CADD services.

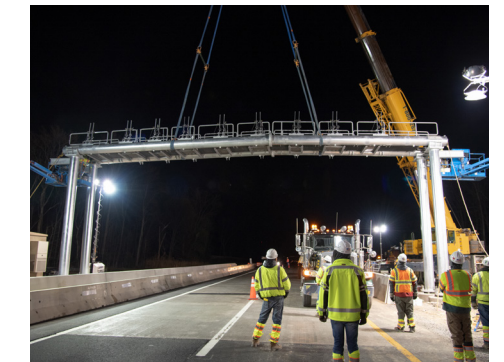
**RENEWED AWARD: Town of Walkill Engineering Services 2021:** The Town of Walkill chose to renew their agreement with KC to provide engineering services throughout 2021.

**RENEWED AWARD: Tri-Municipal Sewer Commission (TMSC) Engineering Services 2021:** The TMSC chose to renew their agreement with KC to provide engineering services throughout 2021.

**RENEWED AWARD: Town of Bethel Engineering Services 2021:** The Town of Bethel chose to renew their agreement with KC to provide engineering services throughout 2021.

**RENEWED AWARD: Town of Milan Engineering Services 2021:** The Town of Milan chose to renew their agreement with KC to provide engineering services throughout 2021. ☐

# PROJECT SPOTLIGHT: CASHLESS TOLLING



In mid-November, NYSTA's Cashless Tolling design-build project went live, more than one month ahead of schedule.

This design-build project involves the design and construction of cashless tolling on the Thruway ticketed system from approximately Thruway Exits 16 to 61 (MP 45.00 to MP 496.00), saving travel time, reducing traffic, minimizing greenhouse gas emissions, and benefiting the approximately 267 million vehicles that travel the Thruway each year. The work varies on a site-by-site basis, but generally consists of the strategic and cost effective placement of gantries, the removal of toll plazas, the reduction (in most locations) of the infrastructure footprint, positive separation of opposing traffic, signing, striping, design and construction modifications of super elevations to accommodate higher speeds through the gantry and modified toll plaza areas, landscaping, electronic work, communication buildings, tandem lot access modifications or closures or relocations, drainage work, pavement work, coordination with and/or preservation of existing utilities, asbestos and hazardous material abatement, and/or solutions to provide safe ingress and egress to and from the Thruway System.

The Cashless Tolling Constructors, LLC Team, which includes KC, was selected as the Best Value Team for this project. KC is Lead Designer along with Stantec Consulting Services Inc. KC leads the structural engineering team, with work including providing design for four different types of gantries; generators / mechanical, electrical, and plumbing; and communication buildings, including tie-in points to existing power and fiber sources, adequate parking space, and safe access for maintenance personnel. KC also performs quality management, surveying, and civil and utility engineering services. With a successful Go-Live in the rear-view, toll booth removals, asbestos and hazardous material abatement, and final construction work will occur in 2021. Congratulations on a job well done, Team! ☐



# CAREERS

For Phases III and IV of the Kauneonga Lake Sewer District sanitary sewer collection system rehabilitation, KC provided field survey and manhole inspections; prepared a report with findings and recommendations for repair or replacement; assisted the Town Board in satisfying SEQR requirements; and prepared contract plans, details, specifications, and cost estimates.

**49** **New opportunities awarded in 2020**  
KC continually wins new jobs thanks to our qualifications and our leadership.

**5** **Municipalities where KC is the Municipal Engineer**  
We take pride in serving our clients, especially when it benefits our local communities and residences.

**201** **Proposals submitted in 2020**  
KC's project managers, in tandem with the marketing group, produce a steady stream of new proposals, keeping KC at the forefront of the industry.

**691** **Milestones completed in 2020**  
Project milestones, sometimes called "tasks," define key developments. KC works to complete all projects on or ahead of schedule.

**135** **KC employees**  
KC's staff is comprised of engineers from many disciplines, land surveyors, inspectors, and administrative staff.

**2** **KC offices**  
KC is currently located in New York, NY with a regional office in Newburgh, NY.

**3** **Career positions currently listed on KC's website**  
There are plenty of opportunities to join KC, and new ones are always being added. Visit our website's career page at [www.kcepc.com/careers](http://www.kcepc.com/careers) to find out more.