

Testimony of Stanley Shor, Assistant Commissioner of Franchise
Administration
Committee on Technology
Oversight - LinkNYC
November 15, 2016

Good afternoon Chairman Vacca and members of the Committee on Technology. My name is Stanley Shor, and I'm the Assistant Commissioner of Franchise Administration for the Department of Information Technology and Telecommunications (DoITT). Seated with me today is Chad Rosenthal, DoITT's acting General Counsel, and Anne Koenig, DoITT's Senior Director of Public Communications Structures. We are pleased to speak with you today about LinkNYC, an ambitious, first-of-its-kind franchise to build a network of free Wi-Fi kiosks across the five boroughs. When we set out to take on this innovative project, we decided to replace outmoded payphones, while providing millions of New York City residents and visitors with an extremely in-demand service: free, high-speed Wi-Fi.

It must be noted that no other city has ever attempted a public Wi-Fi project of this scope. As the nation's largest city, New York is often looked to for leadership in technology. As more municipalities strive to become "Smart Cities," New York City is ahead of the curve and is setting the trend. We are excited about LinkNYC, and we are extremely confident in the ability of our franchisee, CityBridge, to successfully implement our vision. The product they've launched is evolving, and it has been rewarding to see the progress so far.

Although there had been discussion regarding the need to transform the City's payphones since 2012, it was this administration that prioritized broadband accessibility, getting practicable projects off the ground. In April of 2014, DoITT released a request for proposals (RFP) for public communications structures that called for, at minimum, free calling to 311, 911 and free 24/7 public Wi-Fi. In November of that year, CityBridge was awarded the franchise.

Under a non-exclusive franchise agreement with DoITT, CityBridge is authorized to build up to 10,000 LinkNYC kiosks to replace the public payphone infrastructure across the 5 boroughs over the course of the franchise term. In total, 7,500 LinkNYC kiosks will be installed over the first 8 years, and the City will receive a minimum of \$500 million in ad revenue over the first 12 years. This is a win-win situation for New York City: advertising on LinkNYC kiosks sustains and funds the entire project, ensuring no cost to taxpayers. All LinkNYC services are truly free for New Yorkers and visitors alike. And funds from this franchise are already allowing us to address broadband inequity; such as the City's investment of \$10 million to provide free broadband to thousands of residents in New York City Housing Authority developments across the City.

LinkNYC kiosks offer several beneficial services. The free Wi-Fi is extremely fast, with up to gigabit speeds, and a minimum range of 150 feet in each direction. Since Links will be installed along commercial corridors, many businesses and their customers will be able to take advantage of the Wi-Fi beyond the sidewalk. As many of us who use smartphones know, data usage can be

quite expensive. A convenient, reliable, fast Wi-Fi network will allow New Yorkers to save a ton on their mobile phone bills. Links also serve as public telephones, but unlike payphones, nationwide calls from a LinkNYC kiosk are 100% free. The kiosks also have a dedicated button to quickly call 911 in an emergency. The tablet interface offers wayfinding and allows any user to access City services through a 311 online application. Finally, each kiosk contains two USB ports for quick mobile device charging.

New Yorkers across the City are eager to take advantage of these services. That's why our franchise agreement with CityBridge commits to installing Links in each of the 5 boroughs. The project is currently in year 2 of construction, with approximately 7% of our entire rollout completed. Citywide, there are currently 558 LinkNYC kiosks installed, 434 of which are active. DoITT and Citybridge expect to steadily rollout more Link locations across the five boroughs in the coming year. Although some of our borough deployment targets are behind schedule, we are addressing the challenges head-on with CityBridge. The progress made over the past several months is substantial, and we are encouraged by the good work our franchisee is doing.

The City is pouring in a lot of time and effort into the success of this initiative. This transformational project is an important step towards Mayor de Blasio's goal of providing every resident and business access to affordable, reliable, high-speed broadband service by 2025, and DoITT is honored to work in support of that effort. LinkNYC's success can easily be measured by its usage, and the usage will only increase as more kiosks are installed and activated. As of yesterday, there have already been over 45 million Wi-Fi sessions, used by 784,670 subscribers to date. All of these users have consumed a cumulative total of 363 terabytes of data cumulatively. For perspective, this amounts to approximately 181,000 New Yorkers' typical monthly 2 gigabyte-per-month data plan. That is the approximate equivalent of downloading over 90 million mp3s of music.

The tablet, which is the gateway to calls, 911, 311, and maps, has also been popular. In the month of October, users made over 4,000 911 calls and over 172,000 non-911 calls. The maps application was accessed over 40,000 times, and the 311 app was accessed approximately 13,000 times.

As CityBridge continues to install LinkNYC kiosks across the City, we have been actively engaging our partners in community and government. We have been receiving feedback from Council Members, Borough Presidents, Community Boards, and community advocates, in addition to data coming in via 311 and CityBridge from the public-at-large. All of the feedback we have received weighed heavily in the decisions we have made about adjustments to the kiosks' functionality. In response to noise complaints, CityBridge lowered the volume of the kiosks' speakers by 50% after 10:00 PM. When inquiries were received about the brightness of the ad screens, CityBridge implemented a dimming function that reacts to ambient light. Most importantly, in mid-September, we made the decision to disable the Internet browser of the tablet in response to reports of individuals using the Links for extended periods of time.

Adjustments to the system like these directly address public input to ensure that these valuable assets remain a boon to NYC's neighborhoods. We want people to know that these complaints, while valid, reflected a very small percentage of the hundreds of thousands of users who benefit from LinkNYC's useful free services. Nonetheless, since disabling the browser, complaint data and anecdotal feedback indicate that there has been a significant drop in issues relating to the

congregation of individuals at kiosks. In fact, we have seen a noticeable increase in the number of tablet users and a severe drop in loitering complaints.

While we do not have any plans to bring back the browser, DoITT and CityBridge have been exploring the possibility of expanding the tablet's capabilities in the form of applications for specific uses. Additionally, DoITT and CityBridge have partnered to create time sensitive features, such as our efforts to engage New Yorkers in the election process. In October, the front page of the tablet featured a link to register to vote, and it was clicked on 4,283 times. Earlier this month, a similar page was featured that helped users find their polling site for the general election. That link was clicked 3,015 times. These are the types of features that we hope to continue to do in the future.

Thank you for giving us the opportunity to testify before the Committee today. DoITT and CityBridge will continue to work with the Council as we deploy LinkNYC across the 5 boroughs. We welcome your feedback, and we are happy to answer your questions.



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Gale A. Brewer, Borough President

Gale A. Brewer, Manhattan Borough President
Testimony for the City Council Committee on Technology
November 15, 2016

My name is Gale A. Brewer, and I am the Manhattan Borough President. I would like to thank Chairman James Vacca and members of the Committee on Technology for holding this hearing on LinkNYC as it is being rolled out in Manhattan communities. I look forward to learning what the committee, the Department of Information Technology and Telecommunications (DoITT), and LinkNYC have to report about the successes and challenges of the user interface.

Before the disabling of LinkNYC's web browser, my office was inundated with calls and emails from residents, civic organizations, and Community Boards about the well-documented abuse of the system's browser function. I commend DoITT, LinkNYC, and the de Blasio administration for listening and acting quickly to correct the problem and for engaging Community Boards and their technology committees in addressing public concerns. Our CBs have sought to balance the attraction of free Wi-Fi access with its neighborhood impacts, including increased sidewalk congestion and the bright lighting of the LinkNYC terminals. These issues remind us that the Links connection points, like all new infrastructure, require careful balancing to ensure that the system is user-friendly, widely available, and well-received.

I look forward to the browser reactivation with filters to block inappropriate content and perhaps the implementation of time limits on usage. But we must be careful to ensure that we do not create another kind of "digital divide" that restricts the appeal and the use of LinkNYC to those who already have smartphone and home digital access.

Challenges aside, I have been encouraged by the features of LinkNYC and its ease of use: access to neighborhood maps, a sign-up feature for IDNYC, and the capacity to fill out voter registration forms. At my last update on the system, I was alerted to the availability of emergency preparedness information. An important potential feature would be real-time access to that information when crises arise.

We need more features that allow New Yorkers to put LinkNYC to work for them, such as a capacity to fill out and electronically submit city forms, including job applications. The NYC Department of Small Business Services could use LinkNYC to partner with local merchants and services through an interactive map that gives their location relative to the kiosk. DHS could map drop-in centers, food pantries, and meal programs, and there could be location maps for children's safe havens, police and fire stations, hospitals and clinics, houses of worship, and many commonly searched services such as UPS, Fedex, USPS, and libraries. Will the LinkNYC public data points be connected to the city's Open Data Portal? And finally, will ad space be reserved for nonprofits and community-based

organizations and if so how much? We know that 5% of ad space is being made available to all city agencies through New York & Co., and we encourage LinkNYC to reach out to all Community Boards to let them know about this opportunity.

I have other concerns as we move forward. For example, cameras and microphones are mounted on the kiosks for security, but we should know more about where the data is stored, how long it is kept in the system, if it is backed up, and if so where? Is it secure? If it is held by NYPD, is it shared with other law enforcement agencies? Does the city have a data-sharing agreement with other agencies or branches of government?

Quality-of-life concerns and questions about data-sharing and security and also system security are a natural part of the robust community conversation we should develop around the rollout of LinkNYC. I welcome the opportunity to work with DoITT, LinkNYC, the Community Boards, and elected officials to create that conversation and listen thoughtfully to public concerns as well as ideas to improve access and use, minimize problems, and broaden the user base to reach the largest possible number of communities.

Thank you, Chairman Vacca and the Committee, for holding this timely hearing. I look forward to working with you and all other partners to make LinkNYC the best public access network in the world.



November 15, 2016

Dear Chairman Vacca & Members of the Committee on Technology:

My name is Rhonda Binda and I am the Executive Director of the Jamaica Center Business Improvement District (BID). Thank you for the opportunity to share remarks regarding today's oversight hearing on Link NYC.

Our BID is the home of Jamaica Avenue, whose commercial corridor remains one of New York City's most vibrant shopping destinations. The district includes over three hundred businesses, several major cultural and educational institutions, and City, State, and Federal government offices. It also includes one of New York City's most critical transportation hubs with connections to JFK Airport via the AirTrain station, Long Island Railroad, and MTA subways.

Our economic development strategy for Jamaica, Queens is three-pronged focused on the 3Ts: transportation, tourism and technology. In Jamaica, we are planting the seeds for upward mobility through digital literacy. In fact, we believe that in today's knowledge economy, connectivity is a baseline utility and human right.

That is why we are thrilled to report that last month, more than a dozen LinkNYC kiosks were installed along Jamaica Avenue, providing free WiFi and phone charging for residents, businesses and visitors. In a developing and vibrant community such as ours, it is increasingly important to have state of the art services that attract business and real estate investment to this part of New York City.

The installation of these links are also a tremendous opportunity for the businesses that serve millions of customers each year in Jamaica. The ability to display advertising on each Link will only help attract customers to the diverse businesses located in our district.

The installation of Links in Jamaica is also a major safety resource with its red 911 call button for direct access to an emergency operator. We are also pleased with the decision to disable certain web-browsing features, which will allow more users to interact with the kiosks while limiting loitering around the equipment.

The Jamaica BID corridor still lacks high-speed internet, a problem our businesses suffer deeply from as internet is often even needed to run simple payment systems. Link NYC has the potential to supplement this historical digital divide in the neighborhood as we pursue connectivity for all. Thank you for the opportunity to share our thoughts. We look forward to the installation of more Links in southeast Queens, and the ability to partner with the City and CityBridge on these critical endeavors.



**Testimony Before the New York City Council
Committee on Technology
Oversight: The LinkNYC Program
November 15, 2016**

Good afternoon Chair Vacca, members of the Technology Committee and staff. My name is Jarret Hova and I am the Policy Director at Tech:NYC, an industry group that represents technology and startup companies in New York City. Tech:NYC launched in May of this year with the mission of supporting the technology industry in New York. One of our primary objectives is to increase engagement and dialogue between our industry and New York City government.

As part of this process, we hope to work with our more than 300 member companies to help elected officials and policymakers learn more about the technology industry and how we can harness its ingenuity to address the day-to-day issues that impact our city. At the same time, we believe our member companies can learn from the people and policymakers of New York City, especially about how new and innovative ideas can adapt to the challenges presented by a large, diverse, and complicated city.

Our ultimate goal in engaging in this dialogue is to demonstrate that New York City is the best place for technology companies to grow and develop. We believe that New York's unique business ecosystem, as a global center for so many industries such as finance, media, fashion, art, and real estate, will serve to strengthen the technology businesses that call New York home; and that in turn, technology will further strengthen those incumbent industries and the City at large.

We are here today to speak in support of LinkNYC, a first-of-its-kind program that gives New Yorkers access to ultra-fast public Wi-Fi while also connecting users to a host of other services including calling anywhere in the U.S., accessing maps and City services, or charging their cell phones. From our perspective, the LinkNYC program exemplifies the value of the dialogue between technology and government that I referenced earlier, in which both sides benefit from working with the other. As many know, there were some issues with the program upon rollout, which is to be expected -- especially when a civic project is the first of its kind and so large in its undertaking. But we think this is part of the inevitable learning process that results from these partnerships, and ultimately LinkNYC will provide a significant benefit for all New Yorkers.

This is because LinkNYC achieves two very important objectives: first, it makes Wi-Fi accessible in literally thousands of locations and therefore helps to bridge the digital divide; and second, it demonstrates New York City's forward thinking when it comes to municipal technology policy.

From the perspective of our organization, addressing the digital divide is of paramount importance. As a greater part of our lives revolve around access to broadband, the value of access to Wi-Fi grows. This is especially true for children as more tools for learning and growth are found through digital means. For this reason, our organization and several of our members have been frontline supporters of the City's CS4All initiative, a program that aims to bring computer science education to every school in New York City in the next decade. We believe technology education will only grow in importance in the future economy and it is therefore essential to provide this type of education for the children of New York City.

In this context, we can see the value of LinkNYC delivering high-quality Wi-Fi free of charge. Each LinkNYC kiosk can support hundreds of Wi-Fi users simultaneously within a range of 150-250 feet. And the actual internet service is of high quality, delivering speeds up to 100 times faster than the internet that most New Yorkers pay for in their homes. In order to deliver this high-quality internet service, hundreds of miles of new fiber optic cable is being installed throughout the city.

Perhaps most notably, LinkNYC will not cost users or City taxpayers any money. Apart from the actual access to Wi-Fi, LinkNYC promises to deliver several other local benefits. Five percent of the advertising generated by the system is dedicated to City agencies for public service initiatives, including space reserved for Community Boards. And the advertising can be specially programmed to support small, local businesses in neighborhoods throughout the City. The LinkNYC program will also be a source of employment for New Yorkers as the program is expected to create up to 800 jobs in New York City. And, we've already observed the LinkNYC system as a tool for civic engagement as it allowed people to register to vote and provided polling location information in the lead-up to Election Day.

Beyond these very worthwhile local benefits, LinkNYC increases New York's profile as a city that embraces technology and solidifies its place as one of the primary tech hubs in the United States. From the perspective of Tech:NYC, this is no small feat and, in fact, one of LinkNYC's greatest promises. The fact is that jobs in technology are vitally important for New York's continued economic health. Recent statistics indicate that the

average annual salary for New York City-based workers in the technology industry was \$118,000, compared to an average of \$79,000 for all other private sector jobs in New York City and \$65,000 for all industries excluding the securities industry. In New York City, employment in the technology industry after the Great Recession grew at four times the rate of the rest of the economy, and overall employment in tech industry jobs increased 71 percent between 2004 and 2014. We cannot emphasize the point enough: when technology companies decide where to set up shop, programs like LinkNYC matter because they demonstrate that New York City takes technology seriously and will be a partner to the industry.

In conclusion, we believe that the LinkNYC program will deliver enormous benefits to the residents of New York while elevating the city's profile as a preeminent place for technology. We look forward to the continued expansion of the program and offer our assistance to help ensure it is as successful as possible.



Testimony of Jen Hensley
NYC City Council
Technology Committee
November 15, 2016

Thanks so much for having me here today. I am Jen Hensley, General Manager of Link for CityBridge, the consortium of companies bringing LinkNYC to the streets of New York. I appreciate the opportunity to testify today.

When we first proposed LinkNYC as the solution for the City's obsolete payphone infrastructure, we imagined a City connected by the fastest wi-fi available, completely free for all of New York's residents, workers and visitors. We planned an agile interface housed in beautiful structures that could be adapted, updated and changed as the needs of our users evolved. We proposed a premier service built to last throughout the life of our 12+ year contract. And that's what CityBridge has delivered.

We're investing several hundred million dollars in capital to bring this service to New Yorkers, at no cost to taxpayers and with no public money invested. The entire project is 100% privately funded. In fact, over the life of our franchise, we will be generating more than \$500 million to the City by sharing 50% of the revenue earned from the advertising displayed on the Links. In just our first year of the project, as of January 2016, LinkNYC created more than 190 direct jobs, and more than 100 additional indirect and induced jobs. In that time, LinkNYC had already generated \$72 million in local economic impact and that number continues to grow throughout this year. We are compiling information for our 2016 annual economic impact report which we will submit to DoITT in January 2017.

Links have already proven popular, and because the vast majority of our users are not visible by looking at Links, I want to walk you through the statistics. Nearly 800,000 unique users have signed up for our WiFi. Nearly 40,000 free phone calls are made each week from our kiosks and more than 80,000 people each day are logging onto our network. So even just this far in our deployment, we're already having a big impact on the city.

As excited as we are to roll out this service, we have faced significant challenges related to our deployment, including litigation between Telebeam and the City of New York, the 6-week Verizon strike that occurred last summer, and the significant challenges we've had identifying locations for Links.

It's true that 21st Century infrastructure does not fit neatly into a 20th Century footprint, so I'd like to discuss the deployment process so that you can understand the complexity and coordination necessary to deliver this first-of-its-kind technology. While the starting point for this franchise was the footprint of the old payphones, deployment of the Links has entailed far more planning and complex coordination than anticipated.



First, it's important to point out that there are different conduit systems in Manhattan and Bronx as compared to Brooklyn, Queens and Staten Island. In Manhattan and the Bronx, the conduit infrastructure is operated by Empire City Subway, or ECS, which allows third party vendors to perform work without going through a time consuming application process. Verizon owns and operates conduit infrastructure in Brooklyn, Queens, and Staten Island and has strict policies and guidelines for third parties that wish to access and perform work in Verizon-managed manholes. So we've faced slightly different challenges in different parts of the City.

In terms of our own team, we have enlisted a group of GIS mappers, data analysts and planners to identify the sites necessary to build the Link network. We have another 14 people working full time on permitting, engineering and managing construction of sites in our pipeline. Standing up that team and the processes necessary to identify and deliver the Link sites has been significantly more extensive than anyone originally anticipated.

For each LinkNYC site, our team engages in a detailed planning process with our fiber providers and other partners to determine corridors where we believe a critical mass of Links can be installed based on foot traffic, street-level commercial activity, existing payphone locations, and other factors. Each potential site is assessed on the basis of the City's siting criteria, the site's constructability and financial viability. To give perspective on our siting requirements, Links must be at least 50 feet apart from each other, something that many old phone booths were not. Links must also be 15 feet away from a subway entrance, fire hydrant, sidewalk cafes, and other street furniture, among other things.

On the basis of these analyses, we develop an operational plan that contains site lists, site drawings, manhole locations and timelines for delivery. This planning process takes three to six months and reflects the partnerships and expertise we have developed over the past year as we have rolled out this groundbreaking project. It results in sites being submitted to DoITT for review.

Next, DoITT reviews the sites we propose for compliance with siting criteria, and against other information they have about constructability and priority locations. For existing sites, this takes approximately one to three weeks, but for new sites, which are called Greenfields, this can take more than 14 weeks due to a 60-day community review process mandated by a side agreement DoITT has with the borough presidents. When DoITT issues a Notice to Proceed, CityBridge begins the pre-construction process. This includes assigning the location to one of our civil contractors, applying for and receiving the necessary DOT permits, obtaining electrical disconnect and engineering drawings from Con Edison, and doing the exploratory connection work necessary to determine whether trenching is required to provide fiber and power connections.

Where our crews can work independently in the conduit systems, in Manhattan and the Bronx ECS system, we can usually deliver this section of work in approximately four to six weeks. In Brooklyn, Queens and Staten Island, Verizon controls the conduit systems and requires a six to



nine month exploratory or “make-ready” process in which their teams do conduit inspection work and return the results to us months after the routes have been proposed. Verizon also requires its crews to be present for any access to a manhole that our teams will need, which adds another layer of coordination, expense and time. And in Staten Island, where the infrastructure is mostly aerial and access is not through manholes, but off of poles, we had to develop whole new processes for coordinating overlash agreements, pole access and other plans to deliver Link service with that infrastructure. It’s important to note that we have a cooperative and productive with Verizon and they have worked hard across all levels of their organization to support the Link deployment. Nonetheless, all of this means before construction can even begin we have been planning and working on a site with our partners for a minimum of 5 months and as much as a year.

Once that planning and routing work is complete, we begin construction, which includes in street and sidewalk work to lay the foundation, complete necessary conduit work, and lay fiber and electricity lines. This is typically a two to four week process, and even then, sites can be determined unconstructable if they are on top of vaults, if there is another construction project or scaffolding in our way, or for other reasons. Once the Link is installed, there is a one to three week activation period when power and fiber are turned on and the unit is tested and released for public use.

In each of these stages of the process, we lose many more sites than we start with. For example, for Franchise Year 1, we had a goal of 510 installed Links in the five boroughs. To achieve that, we identified 760 total sites. We lost 92 of those sites due to siting requirements, approximately 30 due to constructability issues like street protections, conflicting construction projects or vaults, and nearly 15 that were commercially unreasonable to build. We are continuing to experience site fallout as we move forward with construction and have had to add additional Greenfield sites to the pipeline in order to achieve our goals. To expedite the Greenfield process, our staff, led by Ruth Fasoldt, has been meeting with every community board to try to expedite the review process so we can gain additional sites more quickly and move them through our process. In short, this is not a simple process of swapping one piece of street furniture for another. It is a complex coordination of many processes, and an exercise in identifying and achieving built sites.

We are working closely with DoITT on a daily basis to improve the process, achieve more sites and speed the deployment. With more than 90 units in inventory at our Long Island City warehouse now, we are ready to put more Links in the ground quicker. While we are working as hard as we can, significant challenges to our deployment remain. We will continue to work cooperatively and effectively with the Mayor’s office, DoITT and the communities where we are deploying to deliver more Links and expand our service.

We are extremely proud of the service we’re bringing to New York and of the team that is delivering this transformational project. Thank you for opportunity to be here today. My colleagues, Ruth Fasoldt and Jillian Baker and I are happy to take any questions you have.

**THE COUNCIL
THE CITY OF NEW YORK**

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Address: 1 Centre Street, 19th Floor

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I represent: Silicon Harlem Union Inc

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Name: Rhonda Bink

Address: 178-36 Wasted Terrace 4D Jamaica NY

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Address: 90-50 Parsons Blvd. #402 Jamaica NY

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Address: 168 7th St. Suite 3A Brooklyn 11215

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I represent: Department of Information Technology
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Name: Jordan Week

Address: 301 E 87 St

I represent: CB8

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Name: RUTH FRASULT

Address: 10 HUDSON YARDS

I represent: CITY BRIDGE LINK NYC

Address: 10 HUDSON YARDS

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Date: 11/15

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Name:

Anne Koenig

Address:

2 Metro Tech

I represent:

Do ITT

Address:

2 Metro Tech

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Name:

~~Robert A. Nolan~~ Robert A. Nolan

Address:

355 Bleecker Ave, 8th Fl, NY, NY 10013

I represent:

Association for a Better NY

Address:

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