

Revitalizing Brownfields, Renewing Communities

Strategies for Success

April 2019

TABLE OF CONTENTS

- 1** Responsible Remediation
- 3** The Transformative Power of Land Reuse
- 4** Baltimore Harbor Point, Baltimore, Maryland
- 6** El Segundo, California
- 8** Gardena, California
- 9** La Villita Park, Chicago, Illinois
- 10** Bayfront, Jersey City, New Jersey
- 12** Buffalo Color, Buffalo, New York
- 14** Buffalo River, Buffalo, New York
- 16** Amphitheater at Lakeview, Syracuse, New York
- 18** Eatontown, New Jersey
- 19** New Jersey City University, Jersey City, New Jersey
- 20** Everett, Massachusetts

Job, expenditure, and tax revenue figures that appear in this report are direct and indirect (unless otherwise noted), i.e. data includes economic activity derived from the multiplier effect, as measured through the IMPLAN input-output model. Data for the following projects include planned, as well as completed/underway, projects: Baltimore/Harbor Point; Jersey City/Bayfront; Buffalo/Buffalo River, and Buffalo/Buffalo Color. Data is current as of January 2018. Dollars are approximate. Source of all data: Redevelopment Economics and IMPLAN (unless otherwise specified). Acres are rounded to nearest whole acre.

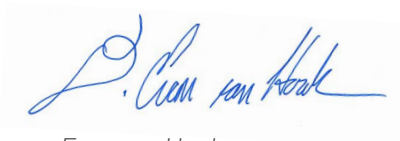
Responsible Remediation

Honeywell, a global, diverse technology company, has legacy manufacturing operations dating back to the 19th century. Like other companies with long, successful histories, many of its former operations are now considered brownfields. Honeywell is actively cleaning up these sites, viewing them as opportunities to create new assets aligned with community priorities.

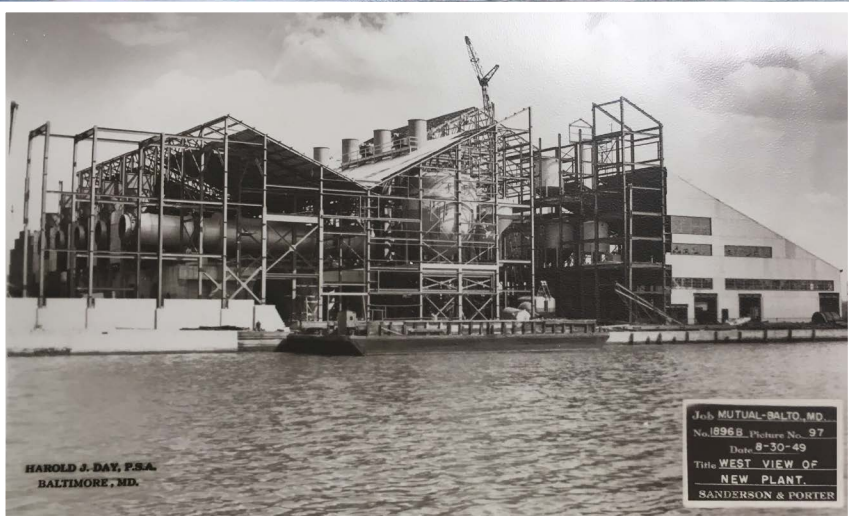
Our dedicated cross-functional team resolves our cleanup responsibilities while creating shared value. Technical excellence, scientific rigor, and community engagement drive our work. We integrate site reuse with remediation to create solutions that are both protective and valuable. Communities, agencies, environmental organizations, and elected officials want these properties put back to productive use quickly, for economic development, recreational use, or both.

Honeywell's brownfield work illustrates the breadth and benefits of our sustained efforts to proactively deal with legacy contamination. We are steadfast in our commitment to continue returning properties to uses consistent with community desires, health and safety protections, and public planning. We recognize that this approach can benefit all parties, speed up the process, and generate sustainable outcomes.

We are grateful to all our stakeholders, to the regulators who supervise this work, and to the Center for Creative Land Recycling for its inspiring and passionate engagement and leadership.



*Evan van Hook
Corporate Vice President
Health, Safety, Environment, Product Stewardship and Sustainability
Honeywell*



HAROLD J. BAY, F.S.A.
BALTIMORE, MD.

Job: MUTUAL-BALTO., MD.
No. 18968, Picture No. 97
Date: 8-30-49
Title: WEST VIEW OF
NEW PLANT.
SANDERSON & PORTER

The Transformative Power of Land Reuse

The U.S. Environmental Protection Agency (EPA) in 2017 estimated that roughly 40 percent of all Americans, including a quarter of all children, live within 3 miles of a brownfield site that has received EPA funding. This is a conservative estimate, as only 25,000 out of an estimated 450,000 brownfields nationwide have benefited from EPA resources. But these striking numbers make clear the degree to which remediating and repurposing contaminated and underutilized properties has transformative potential.

The Center for Creative Land Recycling (CCLR, or “See Clear”) worked with Honeywell on this booklet to spotlight why environmental remediation matters, what exemplary community revitalization projects look like, and what it takes to make these catalytic investments successful. These investments demonstrate the highly productive alternative to “mothballing” properties and overturning economic disinvestment and environmental threats to public health and safety.

Honeywell’s “reuse first” practice views idle properties as assets that can be revitalized to mutually benefit communities and the company. The properties that emerge from this approach galvanize civic pride and catalyze further community development initiatives. This guidebook provides case studies of Honeywell’s successful revitalization of 11 properties. They total 396 acres and span city and suburban sites, coastlines, and waterways. Many properties involved complex cleanup requirements to address their legacy of heavy manufacturing. Corporate acquisitions brought additional properties under Honeywell’s responsibility.

Each featured project is unique, and together they illuminate important lessons about successful approaches to brownfield redevelopment. These lessons underscore the importance of strong leadership, cross-functional teams, multi-sector partnerships, innovative and forward-thinking cleanups, effective communication, and stakeholder engagement.

Of the 11 projects featured here, six completed or partially completed projects were analyzed for economic and fiscal impacts, including investment expenditures, tax revenues, and jobs created. These figures, which are not often calculated, testify to the transformative power of brownfield redevelopment.

Over the past two decades, CCLR has convened, navigated, and influenced the redevelopment industry. Our programs educate the public sector and community stakeholders to clean up and repurpose underutilized and contaminated properties. Through this guidebook, CCLR shows that with the right training, incentives, and conditions — chiefly, an active corporate partner/investor, community support, and municipal leadership — the redevelopment of brownfields changes communities for the better.

CCLR is pleased and honored to partner with Honeywell to spotlight the featured remediation projects. They serve as a valuable and powerful learning opportunity for practitioners and ultimately demonstrate the uplifting force of community stewardship of brownfields as an investment in our shared future.



Sarah Sieloff
Executive Director
Center for Creative Land Recycling



BALTIMORE, MARYLAND

Leadership and science transform a closed chemical plant into an economic engine

BALTIMORE HARBOR POINT

Former Baltimore Works chromium manufacturing plant has become a national model of successful brownfield redevelopment

Harbor Point, a dramatic development of apartments, offices, shops, restaurants, parks, and other amenities, is rising on the shore of Baltimore's Inner Harbor, where one of the world's largest chromium ore chemical plants once stood. The project both reflects and contributes to Baltimore's continued economic renewal. It's also proof that sound science combined with visionary leadership can transform a former manufacturing site into a 21st-century urban centerpiece.

Once completed, the development is expected to generate \$1.4 billion in investment and produce 6,600 direct jobs in a city working hard to reduce poverty and unemployment. Additionally, the developer, Beatty Development Group, has set ambitious goals for local hiring. When Harbor Point is fully built out, it will generate about 80 times the annual property taxes that the site produced when it sat idle, according to an analysis by the city.

For more than 140 years, Baltimore Chrome Works and later AlliedSignal (Honeywell's predecessor) processed ore to extract chromium for use in paint pigments, aerospace materials, and many other commercial products. The refinery closed in 1985, leaving 18 acres of contaminated soil and groundwater adjacent to

the Inner Harbor. Under a Consent Decree with the U.S. Department of Justice, the U.S. Environmental Protection Agency (EPA), and the Maryland Department of the Environment (MDE), Allied agreed to a \$110 million cleanup. The agreement required permanent onsite containment of soil and groundwater.

Honeywell addressed the site's environmental issues and worked closely with EPA, MDE, city government, developers, financiers, prospective commercial tenants, and residents to create a bold vision for this site, and to translate that vision into reality.

The agencies and Honeywell worked cooperatively on integrating redevelopment into the final remedy. The redevelopment provisions of the Consent Decree laid out a process for obtaining agency approvals, providing a measure of assurance to the developer that these approvals would be timely. It clearly stated the requirements for conceptual and detailed design plans, engineering evaluations, and certifications to ensure the redevelopment would not interfere with the efficacy of the remediation.

Demolition of the old chrome works began in 1989. A challenge involved designing and

Redevelopment Project Details:

- 940,000 sq ft office
- 392,000 sq ft residential
- 64,000 sq ft retail
- 96,000 sq ft hotel

constructing a cap and containment structure on which a major development could safely be built. Strict oversight by state and federal agencies and rigorous monitoring of air and water quality ensured the remediation work was performed without compromising containment or threatening the environment, worker safety, or community health. In addition, Honeywell constructed an underground perimeter wall around the site to isolate the contamination and installed a multimedia cap over the site to prevent rainwater infiltration. Pumping maintains groundwater levels lower than the adjacent harbor surface water so no groundwater enters the harbor. An embankment protects the site from storm-generated waves.

Engagement with city leadership and the community has been critical to the success of the project. In 1993, while remediation was underway, city officials approved both an initial design for the development and a Planned Urban Design. The city also has provided financial support, including \$125 million in Tax Increment Financing (TIF) bonds for roads, open space, improvements in a nearby public school, and other infrastructure. Community outreach included information on plans and progress and advisories on noise, traffic, and the environmental impact of the development, including measures to prevent the release of chromium during construction.

In late 2002 and early 2003, EPA, MDE, and the developer negotiated a Prospective Lessee Agreement to limit liability for the developer. After a public notice period, the agreement

became effective on May 5, 2003. It was a critical component of the overall redevelopment plan.

In 2010, Harbor Point's first building, Thames Street Wharf, opened. This LEED Gold-certified building is eight stories of floor-to-ceiling glass, cantilevered over the water. Tenants include Morgan Stanley and Johns Hopkins Medicine International.

Exelon Building, a 21-story mixed-use building named for its signature tenant, energy giant Exelon Corp., opened in May 2016. It also is LEED Gold, with a 24-hour, 65,000-square-foot trading floor. Two months later, residents began moving into the building's 103 apartments, the first people to call Harbor Point their home. Two other major projects are the 289-unit 1405 Point, completed in 2018, and Wills Wharf, a complex with offices and a 156-bed Hilton Canopy hotel with anticipated completion in 2019. The redevelopment progress has opened a spectacular stretch of the waterfront to the public to enjoy views of the harbor and the city, and participate in the recreational and entertainment venues now operating on this transformed manufacturing site.

The Inner Harbor project illustrates the critical importance of establishing a working team of a developer and a responsible party to coordinate remediation with complex construction. Less creative developers may have backed away from this brownfield, given that the capping remedy had been in place for more than 20 years and needed to be opened temporarily to enable the development. Early and frequent technical interaction facilitated successful redevelopment while fully protecting the local community.

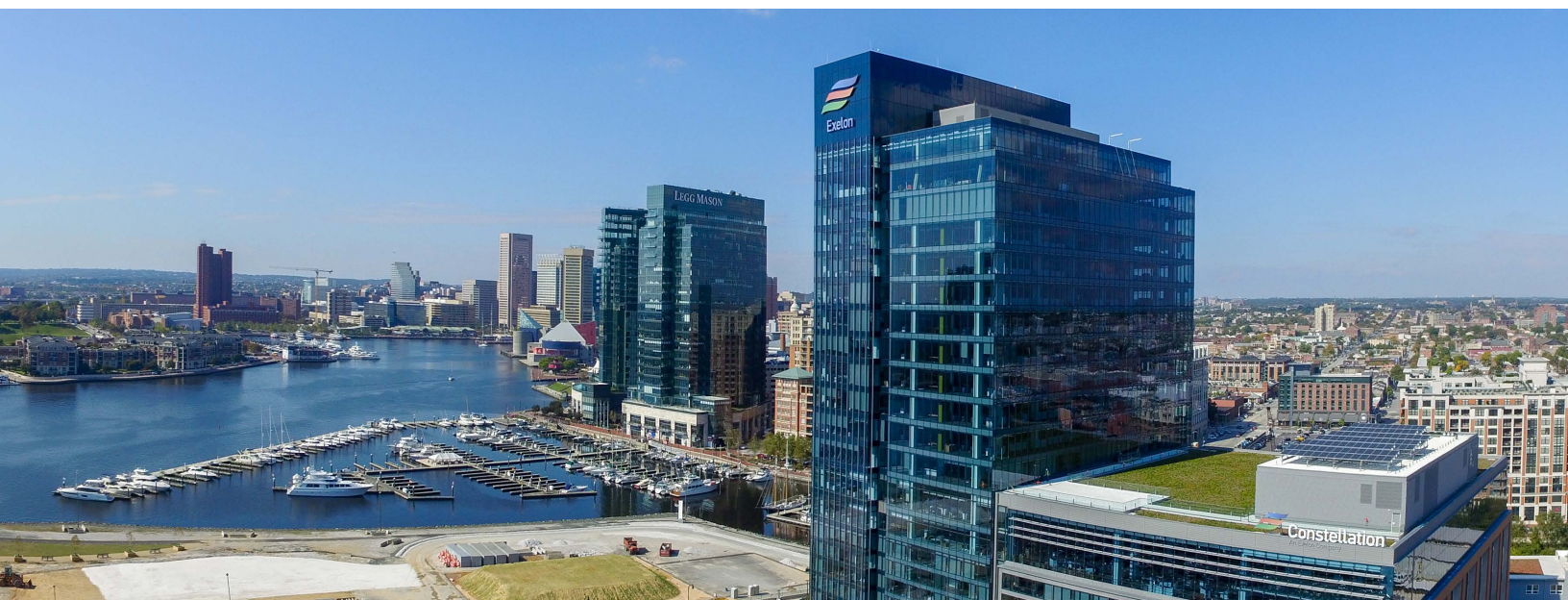
Completed and Under Construction Benefits:

- \$700M direct Investment
- \$14.7M tax revenue annually
- 4,400 jobs in construction

Permanent Benefits at build-out (annually):

- \$1.4B of total direct investment at build-out
- \$29M tax revenue during the life of the TIF (\$57M after the TIF expires)
- 9,158 jobs (direct and indirect)

Numbers are approximate and include planned projects as well as existing/underway (unless otherwise noted).



EL SEGUNDO, CALIFORNIA



Why integrating remediation and reuse matters

PLAZA EL SEGUNDO

Former chemical and refrigerant plant redeveloped as two urban shopping centers with 493,000 sq ft

Clean up a site before figuring out what to do with it — that was the traditional approach to brownfield remediation. A far more productive, efficient, and cost-effective way exists: incorporate reuse plans up front and tailor the cleanup to support the new use. Redevelopment can then begin as the remediation is being completed, so valuable land does not sit idle. This approach attracts employers and generates revenue, often in communities in need of both.

In El Segundo, California, in south Los Angeles County, the seamless transformation from brownfield to stylish shopping center illustrates the benefits and transformative impact of an integrated approach. An expedited grand opening scheduled for fall 2006, along with a reduction in state staffing for regulatory oversight, challenged the stakeholders to come up with a plan to ensure timely regulatory review and approvals. Remediation and reuse were coordinated so that everyone involved — property owner Honeywell, the state, the city, and the developer — committed to shared goals, joint work plans, and a master schedule with an aggressive timetable.

The property, a few miles from the Pacific Ocean and Los Angeles International Airport, housed a chemical and refrigerant plant from 1912 to 2003. The 56-acre site was one of the last large

undeveloped tracts in the 5-square-mile city. State regulators approved a cleanup plan for the removal of vapors from the soil, and for the excavation of contaminated soil and its disposal offsite.



The Honeywell team went beyond the state's remediation requirements to facilitate the planned commercial development. For example, as a condition of the sale of the property, Honeywell required the developer to install effective sub-slab vapor barriers. As vapor intrusion guidance and regulations were still evolving, Honeywell leadership had the foresight to implement protective measures to address vapor intrusion by requiring the developer to install vapor barriers under all future buildings.

Just two years after Honeywell shut down manufacturing on the site, remediation in support of redevelopment was completed and approved, and construction immediately began on 38 acres. A year later city officials cut the ribbon on Plaza El Segundo, a Mediterranean-style shopping center with more than 50 shops and 423,000 square feet of commercial space.

The U.S. Environmental Protection Agency showcased the project in 2008 as an exemplary brownfield transformation and a model of collaboration and integration that used real-time measuring technologies to accelerate and streamline cleanup.

In 2015, an \$80 million retail center, The Point, opened on 12 acres. With a lush central square of palm trees, fountains, and soft couches and chairs, Plaza El Segundo and The Point have become gathering spots and entertainment venues for the community. Together, they have helped El Segundo attract more than \$1 billion in investment, representing 8 million square feet of new office, retail, and amenity space. The centers also have provided

a much-needed boost in employment and economic development in a county that had lost more than 100,000 jobs in the aerospace industry (1991–2011). Plaza El Segundo and The Point have generated 1,743 permanent jobs in addition to thousands of temporary construction jobs. Residents of neighboring Hawthorne and other nearby cities have filled



many of the retail positions, and the effects of redevelopment continue to ripple outward. Spurred by El Segundo's success, the adjacent City of Manhattan Beach is overhauling and expanding a shopping center across the street from Plaza El Segundo.

Permanent Benefits (annually):

- \$138M expenditures
- \$13.3M tax revenues
- 1,743 jobs

Temporary Construction Benefits:

- \$280M expenditures
- \$12M tax revenue
- 1,718 jobs

Numbers are approximate and include planned projects as well as existing/underway (unless otherwise noted).

“Honeywell’s contributions to the successful reuse of its properties include **working with local communities** and **businesses** to identify a new use before cleanup begins, and **treating remediation and reuse as linked objectives.**”

EPA REPORT: “REVITALIZING MOTHBALLED PROPERTIES: CHALLENGES, SUCCESS STORIES AND SOLUTIONS”



GARDENA, CALIFORNIA

How a city mines brownfields for value and potential investment

GARDENA MARKETPLACE & GARDENA VILLAGE

10-acre
shopping center

6-acre (59-unit)
residential
community

When Southern California's aerospace industry declined in the 1990s, the City of Gardena faced two major challenges: find new paths to economic growth and figure out what to do with more than 70 former and potentially contaminated manufacturing sites in the 6-square-mile city.

So city officials launched a program to systematically assess properties with the greatest potential for reuse and kick-start development that would attract private investment and create jobs. Honeywell was an important partner in the initiative, which helped the city turn a \$3 million debt into a \$3 million surplus within a few years, according to the U.S. Environmental Protection Agency. The Company ensured frequent updates and debriefs were provided to city officials. Appropriate city departments were invited to participate in meetings hosted by the city manager's office to further facilitate the permitting and regulatory approval process.

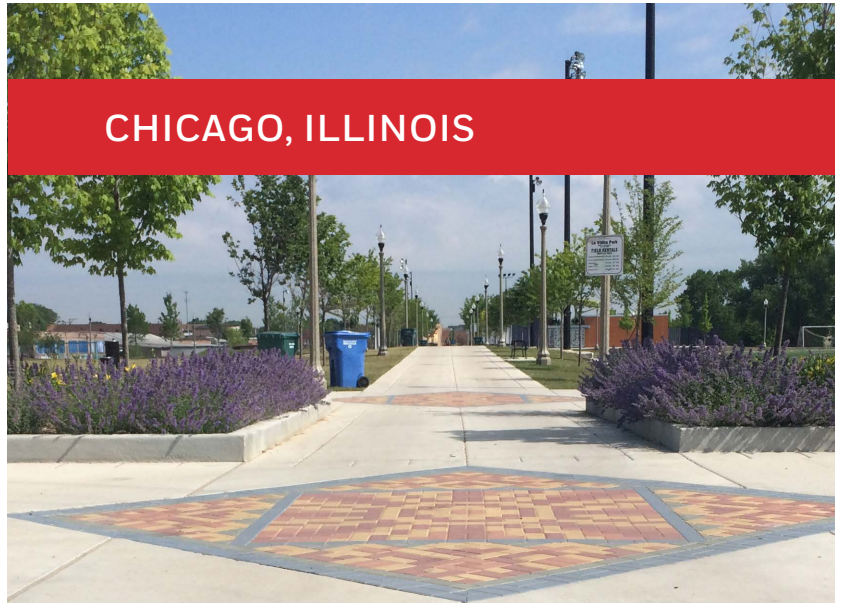
This effort resulted in two significant developments: Gardena Marketplace, a 10-acre shopping center, and Gardena Village, the adjacent 59-unit gated residential community.

Together, they occupy the site of a former Honeywell-owned factory that manufactured heating and air conditioning controls from 1953 to 1991. After operations ceased, Honeywell demolished the buildings.

The Company sold the property to a developer in 1998. The shopping center opened just three years later. Its swift completion was made possible by coordination among Honeywell cross-functional teams, the developer, state regulators, and city officials. Anchored by a much-needed supermarket, Gardena Marketplace has become a shopping and dining hub and a major source of local tax revenue.

In a city where housing is scarce, officials approved appropriate and safe soil cleanup plans that would allow residential development on the remainder of the former Honeywell property. Honeywell performed the cleanup that supported housing construction. When Gardena Village opened in 2008, at the height of the nation's foreclosure crisis, two-thirds of the initial homes sold on the first day. It was an unmistakable sign that, when managed properly, unused land can be a precious commodity.

Company works with environmental justice organization to clean up a site that became a new park



La Villita Park, in the heart of Chicago's large and vibrant Mexican-American community, has skateboard ramps, soccer fields, basketball courts, baseball fields, gardens, walking paths, and a splash zone where children cool off all summer. It's hard to imagine that not too long ago, the property was a parking lot for trucks.

The creation of this treasured park in a neighborhood that previously lacked large community green space illustrates what is possible through adaptive remediation and leadership responsive to the needs of residents.

Tucked in a densely populated neighborhood called Little Village, the 22-acre site was a roofing tar and asphalt plant from 1911 to 1982. Celotex Corp. was the last in a series of companies to operate the facility. In 1989, the Little Village Environmental Justice Organization (LVEJO) asked the Illinois Environmental Protection Agency to investigate the site and surrounding

yards. That action began a 20-year process of community organizing, environmental advocacy, and collaboration among residents, state and federal agencies, elected officials, and Honeywell.

As successor to Celotex, Honeywell agreed to remediate the site, improve stormwater management, and clean up contamination in the yards of nearby homes. The Company hired a bilingual community member to assist in reaching out to residents to discuss plans and obtain access to conduct the work. Over time, through ongoing engagement and dialogue, Honeywell was able to gain community trust. The Company successfully implemented the government-approved remediation, replacing soil and making other improvements on 175 properties.

All along, residents envisioned converting the old Celotex site into a green space for community use. Following remediation, local officials championed the cause for park development. In

LA VILLITA PARK

22 acres of community green space, including sports fields, basketball courts, a skate park, trails, and a large playground

2012, the Chicago Park District acquired the land and worked closely with LVEJO, neighborhood leaders, and community youth to plan and build the \$19 million park. Residents named it La Villita, meaning "little village" in Spanish.





JERSEY CITY, NEW JERSEY

With an historic agreement, a city to build a vibrant community from the ground up

BAYFRONT

A plan for a thriving mixed-use environment on 95 acres created by disposal of chrome ore residue

20+ acres of public parks, including a half mile of public walkway along the Hackensack River

The Bayfront Redevelopment Plan builds on the work of hundreds of Jersey City residents, business owners, academics, and elected officials. Together with award-winning urban designer Tony Nelessen, they created a viable integrated mixed-use vision for the city's west side, called Bayside. The Bayfront plan, a subset of Bayside, received unanimous support from the City Council in 2008. The plan calls for transforming 95 acres of former industrial and municipal properties into new housing, office, and retail uses, public waterfront access, and plentiful open space. On January 15, 2019, Bayfront, except for about 20 acres of open space, was purchased by the City of Jersey City.

With plans for more than 6,000 residential units, up to 1.2 million square feet of retail and commercial space, more than 20 acres of waterfront parks, bike paths, pedestrian-friendly streets, and a light rail extension for commuters, Bayfront is the centerpiece of revitalization of the city's west side. It also will be one of the largest mixed-use developments in New Jersey. Construction alone could be a \$2 billion investment and generate as many as 16,000 temporary direct and indirect jobs. When it is

completed, the development could create more than 12,000 permanent jobs. Local businesses are projected to capture more than \$40 million annually from shopping by new residents.

In many ways, the story of Bayfront is that of a changing urban America. Spanning roughly 62 city blocks, the area pulsed with industry from the 19th century through the 1950s. Several companies, including a chromium factory operated by a Honeywell predecessor, the Mutual Chemical Co., contributed to contamination. So did a municipal incinerator and sewage treatment plant, built in the mid-20th century. Big-box retail moved in as manufacturing receded. But by the dawn of the 21st century, the area had fallen on hard times.

Meanwhile, on the east side of the city, along the Hudson River facing Manhattan, real estate took off. By 2004, Jersey City had issued over 2,100 home building permits, more than any other municipality in the state. As housing prices soared and buyers snapped up luxury condos on the Hudson waterfront — or as locals call it, the Gold Coast — attention began turning to the west side. Its long-unrecognized assets suddenly became evident. The community is conveniently

located near a major highway, regional light rail, and Newark Liberty International Airport. It also abuts the city's most underused natural resource, the Hackensack River.

supervision of a court-appointed Special Master, the New Jersey Department of Environmental Protection, and an agreement with the city for the non-chromium cleanup from city operations.

Permanent Benefits (annually):

- \$1B expenditures
- \$58M tax revenues
- 7,800 jobs

Temporary Construction Benefits:

- \$2B expenditures
- \$8.1M tax revenue
- 11,360 jobs



A novel agreement enabled Honeywell to manage all remediation, which accelerated the process and made redevelopment more viable by enabling a builder to quickly secure entitlements and approvals for mixed-use development.

The cleanup involved soil removal, containment, and treatment. Honeywell made significant

Remediation was, of course, the first step. It was guided by a focus on technical excellence, protection of human health and the environment, and sound science, and with the end use in mind. Honeywell cleaned up the site under the

investments in engineering, beyond what was required by law, to ensure the site would support future buildings, stormwater management, and open-space landscaping.

Numbers are approximate and include planned projects as well as existing/underway (unless otherwise noted).

“The cleanup is complete and the environmental approvals are in place. Mayor Steven Fulop and his team will now be able to realize their vision to **revitalize** the City’s West Side, create **affordable housing opportunities** and **jobs**, and build a **stronger economic future** for Jersey City.” DAN KIRSCHNER, HONEYWELL VICE PRESIDENT, GLOBAL REAL ESTATE



BUFFALO, NEW YORK



Collaboration overcomes cleanup challenges and catalyzes revitalization

BUFFALO COLOR

Reuse includes Heritage Discovery Center and associated museums with plans for athletic facilities, office space, restaurants, and entertainment/banquet space

Redevelopment project details:

- 14,431 sq ft office
- 3,909 sq ft residential (4 units)
- 61,661 sq ft retail
- 9,600 sq ft industrial
- 87,142 sq ft “other” space

Most industrial properties have complicated histories. They were bought, sold, repurposed, subdivided, resold, merged, renamed, closed, and abandoned over decades. One such site is Buffalo Color, a 54-acre former Allied Chemical site along the Buffalo River. Its revitalization is a striking example of what can be accomplished with corporate leadership, public-private partnerships, and strong project execution.

The sprawling plant, on five parcels, manufactured dyes and organic chemicals for more than a century. A Honeywell predecessor, Allied Chemical, sold it in 1977. The new owner, Buffalo Color Corp., operated the plant for 26 years before abruptly shutting it down, declaring bankruptcy, and abandoning chemicals in various stages of production, as well as byproducts, waste, and contaminated soil and groundwater. Following bankruptcy, the site went into foreclosure.

Honeywell committed to remediating the soil and groundwater at the site. The Company was not obligated to address problems in old buildings abandoned by the most recent owner. Nonetheless, Honeywell worked with a local developer, South Buffalo Development (SBD),

to clean out the buildings and process tanks, piping, and equipment. With a commitment



to safeguard human health and the environment and to prepare the site for reuse, Honeywell funded and managed all the work through the partnership with SBD, under the New York State Brownfield Cleanup Program.

The collaborative arrangements contributed to the project’s success:

- SBD has deep expertise in chemical plant demolition and remediation in Western New York. An affiliate of OSC, a large environmental and demolition contractor, SBD obtained the title to the property and collaborated with Honeywell

in designing a cleanup that would support public access and commercial development.

- The State Brownfield Cleanup Program provided tax credits for remediation and redevelopment, critical support for the improvement of blighted properties in former industrial areas. “This project sat in one of the most depressed areas of the city,” said Jon M. Williams, CEO of OSC. “There was no path to redevelopment based solely on economic conditions in this economically struggling region.”

Remediation was particularly challenging because the bankrupt owner, Buffalo Color, left no information about the contaminated material remaining in the plant. Honeywell and SBD hired former employees, retrieved Material Safety Data Sheets, and systematically went through the buildings to prepare a plan for the safe removal of chemicals and demolition. Asbestos and hazardous chemicals were removed, and most of the buildings demolished. The site was then remediated and readied for beneficial reuse. Remediation also included shoreline restoration along 19 acres known as The Peninsula, which is now a habitat for birds.

OSC plans to relocate its global headquarters to the former Buffalo Color site by 2020. On another portion of the property, the Heritage Discovery Center, an interactive educational complex, brings together the Steel Plant Museum, the Western New York Railway Historical Society, and several other historical

societies and associations that celebrate the industries and communities that drove regional growth and prosperity for 150 years.

SBD also is rehabbing the historic Buffalo Color connector building and former boiler house for offices, restaurants, apartments, and a hall for entertainment and banquets.

Work is underway with Medaille College to develop an indoor/outdoor athletic center; a turf athletic field is complete and the college’s soccer team has begun using it. Collaboration continues with Buffalo Niagara Waterkeeper on habitat restoration.



“From my perspective, this is the best example of environmental sustainability,” said Williams. “This site has gone from a community burden to an economically sustainable community asset. I am proud to have Honeywell as a corporate partner on this project and to deliver this site back to productive use for this generation and those yet to come.”

Permanent Benefits (annually):

- \$39M expenditures
- \$2.6M tax revenues
- 306 jobs

Temporary Construction Benefits:

- \$47M expenditures
- \$1.7M tax revenue
- 282 jobs



Numbers are approximate and include planned projects as well as existing/underway (unless otherwise noted).

BUFFALO, NEW YORK



Unique partnership restores a vital waterway and prospects for a city's future

BUFFALO RIVER

The river has re-emerged as an amenity and asset for landside redevelopment and renewal

The cleanup of the Buffalo River has contributed to the rising fortunes of a city hit hard by the decline of 20th-century manufacturing. Directly across the river from Buffalo Color is the Buffalo High-Tech Manufacturing Innovation Hub at RiverBend, anchored by a state-of-the-art solar panel manufacturing facility erected on the site of a former steel mill.

Downstream is Buffalo River Fest Park. The waterfront began springing back to life with the park's creation in 2011. Today, Buffalo Niagara Waterkeeper, which advocated for the environmental health of the river for decades and became the first nonprofit to sign a federal Great Lakes Legacy Act Project Agreement, conducts river tours on bikes, in kayaks, on foot, and in snowshoes.



More than 100 years of municipal sewage and industrial discharges contaminated many American waterways, including the Buffalo River. In the latter part of the 20th century, as much of the manufacturing base closed or relocated, river pollution and the stigma associated with it discouraged new investment in Buffalo.

The city was left with large stretches of vacant former manufacturing sites. Empty grain elevators stood as visible reminders of industrial decline.

Honeywell's cleanup of the Buffalo Color site led to the Company's awareness of the environmental degradation of the river and its broader economic consequences. The Company made a strategic decision in 2012–2013 to voluntarily take the private sector lead to restore the river, engage with partners, and find a creative mechanism to get the job done efficiently and cost-effectively. Honeywell partnered with the U.S. Environmental Protection Agency (EPA) and the Great Lakes National Program Office (GLNPO) to speed up the cleanup and restoration. The EPA/GLNPO process is often completed in a third of the time required for a typical Superfund site cleanup — for example, 10 years rather than 30.

Honeywell's commitment gave rise to a collaborative private-public-nonprofit partnership credited with achieving one of the most successful revitalization projects in the Great Lakes region. The Buffalo River is no longer a liability, but an amenity and asset. The landside projects that local officials classify as

related/synergistic (either strong or indirect) total about \$2.6 billion in investment.

The Buffalo River Restoration Project brought together Honeywell, EPA/GLNPO, the U.S. Army Corps of Engineers, Buffalo Niagara Waterkeeper, and the New York State Department of Environmental Conservation. In just eight years — a rapid turnaround for a major urban river cleanup — the project removed more than 400,000 cubic yards of contaminated sediment, installed acres of aquatic and plant habitat, and sparked the transformation of a desolate waterfront into a popular destination. It is a source of local pride and an engine of economic development in a city that has struggled for decades.

The \$48 million river cleanup and restoration leveraged the federal Great Lakes Legacy Act program, designed to spearhead ambitious water projects like Buffalo's through private-public collaboration. Honeywell, with contributions from other responsible parties, split the costs with EPA.

Major river restoration projects in industrialized areas have been notoriously slow, often because of bureaucratic challenges and antagonism among the major players. The Buffalo River Restoration Project streamlined planning, financing, and approvals, and allowed diverse partners to contribute complementary resources and expertise to a comprehensive initiative.

In addition to financing, Honeywell and EPA brought scientific and technical expertise. The Army Corps of Engineers spearheaded the dredging, in two phases, with sediment loaded onto barges and transported downriver to a Corps of Engineering disposal facility on Lake Erie. Buffalo Niagara Waterkeeper coordinated the remedial action plan and played a lead role in developing an ecological restoration plan driven by community priorities for economic revitalization, recreational opportunities, and green-space preservation. Honeywell complemented the federal, state, and NGO expertise with hydrodynamic, sediment, and habitat experts.

The waterfront has experienced an economic boom, with restaurants and crowds drawn by food, glorious sunsets, and the pride of being part of the dawn of a new era for the city. Local officials have said there is so much development planned, underway, or recently completed near the river, it is difficult to determine objectively which projects happened because of the waterway restoration. However, the list of new projects is long. It includes mixed-use complexes with apartments, shops, and offices; a rowing center; an ice rink; a new naval museum; a sports and entertainment complex; and even the old grain elevators, which have become a popular landmark on kayak tours.

- Permanent Benefits:**
- \$830M construction investment expenditures
 - \$14.4M tax revenues
 - 1,000 jobs

Impacts include projects that, by the most conservative assumptions, were determined to be related to the cleanup.

Numbers are approximate and include planned projects as well as existing/underway (unless otherwise noted).



“The successful restoration and remediation of our historic river would not have happened without Honeywell’s participation in the Buffalo River Restoration Partnership. By demonstrating how the various sectors can come together around a shared vision of clean water, restored ecology, public access, and a thriving blue economy, together we have helped re-brand Buffalo as a vibrant Great Lakes city once again.”

JILL JEDLIKA, EXECUTIVE DIRECTOR, BUFFALO NIAGARA WATERKEEPER

SYRACUSE, NEW YORK



An entertainment venue rises on reclaimed shoreline, and a lake is reborn

AMPHITHEATER AT LAKEVIEW

Former industrial property redeveloped as 17,500-seat amphitheater

“Never in my lifetime” was often heard in Syracuse, New York, as residents of the region referred to the cleanup of the community’s potentially greatest, but most degraded, asset, Onondaga Lake. Now, after two decades of environmental investigations, the dredging and capping of lake sediments, and habitat restoration, the remediation of Onondaga Lake is complete. The flagship project heralding its rebirth is the St. Joseph’s Health Amphitheater at Lakeview, built by Onondaga County on a site being remediated by Honeywell.

When the 17,500-seat amphitheater opened on the lake’s western shore on Sept. 3, 2015, with

a concert by country-pop star Miranda Lambert, a local newspaper exuberantly proclaimed the start of “a new era of entertainment” for the Central New York region.

The amphitheater sits on a corner of a 404-acre New York State Superfund site. The property encompasses settling basins built between 1916 and 1943 that rise 60 feet above the lake and contain industrial plant byproducts and municipal sludge. As Honeywell conducted the extensive lake cleanup that Audubon New York has called “one of the most ambitious environmental reclamation projects in the United States,” the

Company worked closely with Onondaga County to coordinate and expedite remediation and redevelopment of the amphitheater site. Examples of successful coordination include construction of a pedestrian trail across formerly inaccessible basins and public access to revegetated lakeshore areas and restored wetlands.

The project, a key component of a \$100 million plan to revitalize communities on the west side of



the lake, was a top priority for city, county, and state officials. The State Legislature authorized a design-build process to fast-track construction, and the county approved \$49.5 million in bonds. Under the supervision of state and federal environmental regulators and Onondaga County, the developer placed up to 10 feet of cover under the area that is now the lawn and seating areas. In areas adjacent to the amphitheater, Honeywell installed a groundwater collection system and cleared and mulched an additional 20 acres. Amphitheater construction began in February 2015 and was completed in six months.

The venue's impact has surpassed its boosters' highest expectations. In 2016, the first full season, ticket sales topped 200,000 and out-of-town and local concertgoers spent an estimated \$50 million, including ticket sales, double the initial projection, according to reports by the County Executive's office and the Visitors Bureau. Hotels reported an 11 percent increase in occupancy on concert nights. About 26 percent of concertgoers stayed in town overnight. The development spurred the creation of jobs in event production and management, security, food service, and other local business.

The amphitheater project has won accolades for design, collaboration, public management, and safety. "I want to congratulate the people at Honeywell, who have worked with the New York State Department of Environmental Conservation and with local government to make sure that the next generations will know Syracuse as 'the city on the lake' in Central New York," said New York State Lieutenant Governor Kathy Hochul, speaking at the CenterState CEO 2017 Annual Meeting.

In 2017, the county opened Lakeview Point Landing, reserved boat docking with a dedicated entrance to the amphitheater. A new on-ramp to the interstate highway leading directly from the venue and expanded parking were completed in 2018. A water taxi and direct pedestrian and bicycle access via park trails are being explored to enhance the concert-going experience. And a popular bike trail extension through the site brings the county closer to realizing its vision of a continuous trail network encircling the lake like a necklace. It will serve as a reminder that Onondaga Lake was once the jewel of the region, and as a symbol that the luster is coming back.

Permanent Spending by Out-of-Town Concertgoers (annually):

- \$8.3M expenditures
- \$1.1M tax revenues, including \$142K in direct hotel taxes and \$17K in direct ticket sales
- 53 jobs

Temporary Construction Benefits:

- \$80M expenditures
- \$4M tax revenue
- 501 jobs

Numbers are approximate and include planned projects as well as existing/underway (unless otherwise noted).



EATONTOWN, NEW JERSEY



Property sale to big-box retailer accelerates cleanup and redevelopment

The project underscored the benefit of aligning remediation and redevelopment plans and schedules

Before remediation began on a former aerospace manufacturing site in Eatontown, New Jersey, Honeywell sold the property to a well-known big-box retailer. The deal coordinated the remediation and redevelopment in a way that accelerated the cleanup of the property and its conversion to a busy home improvement center. Honeywell retained cleanup responsibility for the historic contamination through an Administrative Consent Order with the New Jersey Department of Environmental Protection.

A Honeywell predecessor, Bendix Corp., had manufactured and assembled defense and commercial aviation components at the 26-acre site. Some prospective buyers were daunted by the significant remediation challenge, but the final purchaser and its consultant understood the state and local regulations, saw past the challenges, and recognized the property as an asset. Just off New Jersey's Garden State Parkway, it is in a mixed-use community where tourists come every summer because of proximity to the Jersey shore.

Under the deal, Honeywell first cleaned up the radioactive contaminants and demolished

the buildings. Remediation that followed was incorporated into the development site plans. The current owner agreed that Honeywell would retain the legacy (baseline) liability and be the lead for the environmental work. The retailer agreed to coordinate its redevelopment with the remediation work. Remediation included excavation and in-situ (in place) destruction of the pollutants in the ground using an agency-approved and permitted process, chemical oxidation, an innovative technique at the time (early 2000s).

The four-year project underscored the benefit of transferring the property early on and aligning remediation and redevelopment plans and schedules. A key lesson: find a buyer with knowledge of complex remediation and with project teams prepared to handle the myriad issues that inevitably arise. In this case, Honeywell's Global Real Estate division identified the buyer through an external broker.

Remediation tailored to campus master plan spurs new opportunities in public higher education

The massive transformation of Jersey City's west side created an opportunity to expand one of the city's leading public academic institutions, New Jersey City University (NJCU). School trustees and executives recognized that a former industrial site held great potential for the university's growth and economic vitality. They purchased 21 acres on the east side of Route 440 and spent two years creating a master plan for a satellite campus. Honeywell, as the party responsible for cleanup, worked closely with the university, tailoring remediation of the site to the West Campus plan.

The campus plan being implemented is an "urban village," a place to live, work, learn, visit, and raise a family. The \$400 million project will nearly triple the space for student housing at a public university that has long been a commuter school.

Formerly a steel factory and a warehouse, the property was contaminated by chromium residue that was used as fill. With a master plan combining housing and commercial use, Honeywell obtained regulatory approval for two remedies: soil removal in the zone designated for residential and a cap containment system for the 5 acres zoned for retail, office space, and other commercial uses. The remedy also included a hydraulic barrier wall and groundwater extraction system to prevent impacted groundwater from migrating off-site.

About 65,000 tons of soil were excavated and disposed off-site. In the cap area, excavation



provided clean utility corridors in future roadways, allowing new utilities to be installed above the cap. Honeywell conducted remediation under a Consent Decree and the supervision of the New Jersey Department of Environmental Protection.

The successful completion of remediation and ongoing monitoring are the result of cooperative efforts between Honeywell and NJCU. The collaboration includes cost sharing to address the risk of additional remediation, if required, during development.

In 2015, the new campus, University Place, broke ground for its first building, a four-story residence hall for students. Students moved in at the start of the fall semester in 2016.

Construction of several residential buildings began in 2016–2017 and is currently in progress, along with infrastructure and roadway work. A supermarket and additional residential buildings are expected to break ground in the next several years.

This chromium remedy, based on designated land use areas, served as a model for other sites undergoing revitalization, such as the Bayfront Redevelopment area west of the university.

21-acre site to include educational facilities, dormitories, a performing arts center, shops, parks, apartment buildings, and other amenities



EVERETT, MASSACHUSETTS



Three parties, five regulatory agencies, two municipalities, and complex tidal conditions: a case study in flexible cleanup

A unified approach to engineering, permitting, construction, and community engagement for the 10-acre site

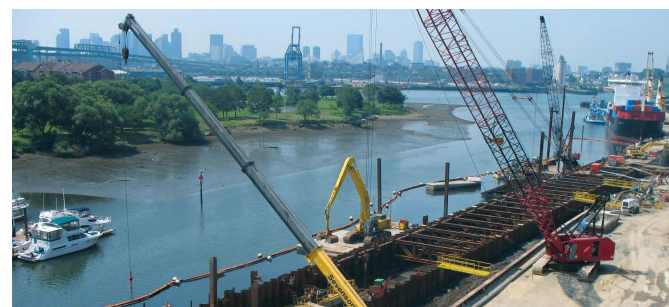
Remediating and reusing a brownfield is never a solitary or simple enterprise. But some projects involve more partners than others. Consider the story of a former coal tar processing facility in Everett, Massachusetts, on the banks of the Island End River, near Boston. Three companies were responsible for remediation, which spread across two municipalities. Five state and federal agencies had regulatory oversight. Residents and fishermen were concerned about river pollution because their boats were picking up a coat of sediment-generated sheen. The long history of industrial contamination along a tidally sensitive waterway created engineering challenges.

After extensive and productive negotiations, the responsible companies, including Honeywell, developed a unified approach to engineering, permitting, construction, and community engagement. With a flexible remediation plan designed to respond to uncertain shoreline conditions; near-constant communication among property owners, neighbors, and regulators; and public outreach to build support, the remediation team met with the community and its leaders to present the Confined Disposal Facility design

and answer questions. The detailed planning, agency interaction, and community engagement helped move this project to completion.

The coal tar plant operated from the 1890s to the late 1950s. It sat on 10 acres of a roughly 200-acre area of heavy manufacturing, where tidelands had been filled in to support industrial development. Soil, sediment, groundwater, and surface water contained coal tar residue.

Under a state-approved remediation plan, crews dredged 70,000 cubic yards of sediment. A 1,000-foot-long steel bulkhead was built on the site to perform double-duty: contain contaminated sediment removed from the river and prevent further migration of contaminants from the uplands. Concrete and asphalt decking on the facility serves as a new dock for an area warehouse. The cleanup also resulted in improvements to the shoreline and the marina.



For more information

www.honeywell.com/citizenship

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