



Opportunities for Cargo Oriented Development

Willow Springs, IL September 1, 2015

In Partnership with



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Introduction

The Village of Willow Springs, a suburban residential community of approximately 5,500 people located in southwest Cook County, has a unique opportunity for industrial development. Primarily a residential community, Willow Springs has very limited land available for new commercial development and is therefore limited in its capacity to add new jobs and grow its commercial and industrial tax base. A strip of land running along the Chicago Sanitary and Ship Canal and the Illinois & Michigan (I & M) Canal can be part of the answer, creating jobs for area residents as well as tax revenue to fund municipal services. However, unlocking this land's development potential is not as simple as it might seem.

The corridor in question is a long, thin strip of land owned by the Metropolitan Water Reclamation District of Greater Chicago (MWRD). To the north of the corridor lies the Sanitary and Ship Canal, the historic reason for the site's industrial and transportation opportunities. To the south lies the I & M Canal, forest preserves including a popular bike trail, a Canadian National (CN) rail line used for freight and Metra passenger trains, and IL Route 171/Archer Avenue (Figure 1).Three industrial businesses are currently operating along the corridor, but approximately 40 acres of land



Source: CMAP

Figure 1: Study Corridor

remains undeveloped. The Full Circle Group, which operates a barge cleaning and repair business at the southern end of the corridor, has long-term leases (expiring in the year 2060) for the undeveloped parcels from MWRD. Full Circle can develop the land for its own use or sublease it to a tenant subject to MWRD's approval. Once developed, the site has the potential to generate jobs and much needed revenue for the Village.

Besides Full Circle, the other businesses along the corridor include Holcim Cement, a cement manufacturer located at the southern end and, Rowell Chemical Corporation, an asphalt and chemical distribution and manufacturing center located north of the undeveloped sites.

Workshop Process

As a part of their Local Technical Assistance (LTA) Program, the Chicago Metropolitan Agency for Planning (CMAP) engaged the Chicago District Council of the Urban Land Institute (ULI Chicago) to assist the Village of Willow Springs in evaluating opportunities for cargo oriented development for the sites in the study corridor. ULI Chicago convened a five-member expert panel on September 1, 2015 to address five questions posed by the Village.

Workshop Questions

- 1. How can the multiple transportation modes in the corridor (roadway, rail and water freight, transit and trails) be integrated and optimized to realize the full benefit each provides? Could a parallel road to Archer Avenue provide relief from traffic congestion in the area? Where would optimum access points be located?
- 2. How can the study area sites and the corridor take advantage of specific industrial uses? Is there an optimum mix of light, medium and heavy industrial that would benefit the region?
- 3. How can we enable industrial sites in the corridor to successfully co-exist with the nearby forest preserves and trails? Would landscape screening and separation by a road be sufficient?
- 4. What would be an optimal financing and phasing plan for infrastructure improvements and industrial development?
- 5. Who will be the key public and private partners and what role should the Village play in the development of the corridor?



Undeveloped sites in the study corridor.

The panelists reviewed detailed background briefing material, toured the study corridor and interviewed stakeholders including representatives from the Village, Full Circle Group and other businesses along the corridor, MWRD, the Forest Preserve District of Cook County (FPDCC) and the CN Railway. The panel's assessment of the corridor's development opportunities and recommendations for the Village are presented in the following sections.

Study Corridor Opportunities

1. Multi-modal Transportation Access

The corridor's key asset is its access to water, rail, and road transportation. As the panelists said, "For intermodal use, the site is a gem. Clearly, the highest and best use of the corridor should leverage its transportation advantages, particularly access to water freight."

Existing businesses along the study corridor are already taking advantage of the multi-modal transportation access. Full Circle Shipyard cleans and repairs barges, while Rowell and Holcim unload materials from barges traveling up on the Sanitary and Ship Canal for their operations, and then load trucks and/or train cars that use the rail spur off the CN line.

At Holcim Cement for example, barges bring raw materials up the Mississippi River where they are unloaded and the aggregates used to manufacture cement, which is then loaded onto trucks to be delivered to construction sites throughout the Chicago area. All three firms are well-established and in a growth mode—their experience shows the value of a multimodal development model for the corridor.

The panel emphasizes that access to water freight in a multi-modal setting creates a unique competitive advantage for the study corridor. Compared to trucks and trains, barge traffic is quiet and has a significantly lower negative impact on the surrounding community. Barges are also often a more economical and environmentally friendly form of transportation – an analysis by the Texas Transportation Institute illustrates that barges consume significantly less fuel and generate lower emissions compared to trucks and rails (Figure 2).



Barge waiting to be unloaded at Holcim facilities.



Freight trains and trucks accessing Rowell Chemical's site.

Additionally, with the ever-increasing congestion on roadways and freight railroads, water is increasingly attractive as a transportation mode. As illustrated in Figure 3, barges have high cargo capacity – a single barge can transport the same amount of cargo tonnage as 58 large semi-trucks.

Figure 2: Fuel Efficiency and Emissions by Mode

	Fuel Efficiency (Ton-Miles/Gallon)	Emissions (Grams/Thousand Ton-Miles)				
		Volatile Organic Compounds	Carbon Monoxide	Nitrogen Oxide	Particulate Matter	Carbon Dioxide
Waterways	616	14	43	274	8	16,410
Railroad	478	18	56	354	10	21,140
Truck	150	100	370	1,450	60	171,830

Source: A Modal Comparison of Domestic Freight Transportation Effects on the General Public, Texas Transportation Institute, Amended, Feb. 2012

Figure 3: Cargo Capacity by Mode



Source: Iowa Department of Transportation

2. Compatible Zoning

The Village of Willow Springs executed a zoning amendment last year allowing heavy industrial uses along the corridor including bulk material and chemical handling and storage, which are the current predominant existing uses along the corridor. Because the site abuts existing industrial uses and is not located near residential properties, industrial expansion is unlikely to trigger any "not in my backyard" protests from neighbors.

Rowell Chemical Corporation has made significant recent investments to expand and upgrade its facilities – it is paying Nicor Gas to install a natural gas pipeline to its site, and is also bringing fresh water to its site through a new water line. These utility extensions to the Rowell site could potentially be made available to other businesses along the corridor, enhancing its overall development potential.

3. Site Ownership and Development Interest

MWRD staff supports the development of the sites for industrial users consistent with the Village's plans and zoning codes. Full Circle Group, the leaseholder for the sites, is very interested in developing the land either themselves or through a sub-lease—in fact, they have already begun clearing the property of trees and other growth. Village officials as well as the adjacent businesses are supportive of these development plans. During an interview with the panel, Full Circle representatives revealed that they have had initial conversations with potential end users interested in sub-leasing the land because of its access to water and rail freight.

Study Corridor Challenges

While the advantages described in the previous section make the study corridor ideal for cargo oriented development, there are several challenges that need to be addressed to realize the corridor's full development potential.

1. Site Configuration

Long and thin, the corridor is less than 300 feet across for most of its length, which severely limits the types of industrial uses that can be supported along the corridor (Figure 4).

2. Access Limitations

Roadway access to the study corridor is through IL Route 171/Archer Avenue, which is a 2-lane road through this stretch running parallel to the study corridor just east of the I & M Canal. Currently, there are only two access points off Archer into the study corridor:

North end: Through a renewable use license agreement with the Forest Preserves, Rowell Chemical has built a short road from Archer Avenue over the I & M Canal and through De Tonty Woods leading into their property. This short roadway, which is the only entrance/exit point for the hundreds of trucks accessing Rowell facilities daily, crosses the active railroad spur leading into the Rowell property, as well as the heavily used recreational bike trail along the I & M Canal. The roadway also provides access to a small FPDCC car parking lot that is used by bike trail users creating additional safety concerns.

South end: At the southern end of the study corridor, access to Holcim Cement and the Full Circle Shipyard is provided through a narrow roadway near the intersection of Archer Avenue, 107th Street, Grant Road and Route 83. This roadway includes a single-lane viaduct under the CN railroad tracks, requiring trucks and other vehicles to take turns entering and exiting these properties.

The challenging access conditions coupled with heavy truck traffic generated by the industrial businesses often lead to backed-up traffic on Archer Avenue, particularly at the Grant Road/Route 83/107th Street intersection. According to the Village representatives, during peak hours, it is not uncommon to see trucks queuing up for long distances as they wait to enter/exit the industrial properties. Because Archer is only one lane in each direction, the truck queuing can slow down traffic flow through the entire area.

3. Conflicting Uses

While the corridor is isolated from residential neighborhoods, it is adjacent to forest preserves and a

popular bike trail, uses that don't mesh well with industrial businesses and the associated freight movement. Additional industrial development on the currently undeveloped sites will likely increase freight movement and unless adequately mitigated, exacerbate potential conflict points with recreational users.



The popular I & M Canal Trail passess through the rail spur and road access into Rowell facilities.



Figure 4: Easements and Right-Of-Way within the study corridor

Source: Village of Willow Springs, base map prepared by K-Plus Engineering

Improvement Proposals Reviewed by Panel

1. New Collector Roadway

To address the access challenges and enhance the development potential of the corridor, the Village of Willow Springs is proposing a new 1.5-mile-long collector roadway parallel to Archer Avenue that will run along the eastern edge of the undeveloped sites (Figures 5a-c).

At the north end, the new roadway will keep the access point off of Archer that currently serves Rowell, but redesign it to improve sight lines and separate the different transportation modes. At the southern end, the Village is proposing a new access point immediately north of the Holcim property where the new roadway will connect back with Archer Avenue.

The Village believes that the proposed collector roadway will have the following potential benefits:

- Provide better access to the undeveloped sites and other uses in the area
- Ease traffic congestion in the area by taking trucks off of Archer Avenue even for a short stretch
- Improve safety by reducing conflict points between forest preserve users and industrial traffic by redesigning access points off of Archer Avenue

The Village has conducted initial meetings with the Illinois Department of Transportation (IDOT) and the Federal Highway Administration (FHWA); they have indicated that the proposed roadway will qualify for a collector designation and therefore be eligible for federal Surface Transportation Program (STP) funds. Additionally, the Southwest Council of Mayors has indicated that it views the proposed roadway as a means to spur economic development in the sub-region, and is therefore willing to allocate part of its regional share of STP funds for the project.

While support from IDOT and the Council of Mayors is a significant step, the southern end of the proposed roadway will require access through Forest Preserves property and therefore the FPDCC's approval will be needed. Additionally, the proposed roadway will carve away almost 50 feet from the already narrow corridor reducing the developable width to approximately 250 feet. MWRD will also have to be compensated for the resultant loss in leasable area of their property.

2. Improved Access through De Tonty Woods

During their conversation with the panel, Full Circle confirmed their interest in improving the existing access from Archer Avenue through De Tonty Woods, but they were not certain that the proposed collector roadway was the best or only means of achieving that end. Full Circle has already independently approached the Forest Preserves with their own plans for reconfiguring the current access to Rowell Chemical through De Tonty Woods, so that it can also serve their leased property.

Representatives from Rowell Chemical informed the panel that while an improved access through De Tonty Woods into their property and any new development would be a welcome safety improvement, they do not expect any significant impact on their facility and operations from the proposed collector roadway.

3. Rail Spurs – Adding New/ Activating Existing

During an interview with the ULI panel, Full Circle representatives indicated that they intend to activate an existing but currently unused rail spur that

Figures 5a-c: New Collector Roadway Proposed by Village



Figure 5a: Aerial View



Bio-swale

Archer Avenue

Figure 5b: Modified North Entrance



Source: Village of Willow Springs, aerial view and base maps for Figures 5b and c prepared by K-Plus Engineering

runs through the Holcim property into the southern edge of their undeveloped property, and possibly add a new spur. Because they are currently actively engaged in confidential discussions with the railroad company and others, Full Circle declined to share more detailed plans. However, they did indicate that intermodal transfer from barge to rail was critical to their development plans for the property, and hence the need for rail spurs. They were not clear whether the new collector roadway being proposed by the Village would be compatible with their plans for rail spurs.

Challenges for Proposed Improvements

All the infrastructure improvement proposals outlined above involve access through Forest Preserves land, which requires a land use license from the FPDCC. The Forest Preserve's mission is to maintain and restore natural environments and therefore it is generally against any development on its land. In unique circumstances, when the FPDCC does grant a use license for an infrastructure improvement, it is for a limited term after which it must be renewed, and typically requires not only mitigation of any potential negative impacts, but improvements that can enhance the experience of forest preserve users. Enhancements could include better safety markings, amenities such as comfort stations, drinking water and interpretive signage highlighting any historic features. Additionally, to ensure maintenance and upkeep, the FPDCC prefers to enter into land-use license agreements for infrastructure projects with governments, not a private entity.

The collector roadway is being proposed on MWRD property that is currently generating rental income for the agency. By dedicating a portion of the property to a public roadway, MWRD could lose rental income and would need to be compensated for that loss. The Village believes that access from the new roadway will result in increased land lease value potentially mitigating any rental income loss. As it moves forward, the Village will have to work with MWRD to quantify if there is indeed any loss of rental income and if needed, find funds to compensate the agency. Activating the existing rail spur on the south end and/or building a new spur is not likely to result in any loss of leasable area for MWRD.

CN Railway has specific requirements for building rail spurs including minimum setbacks from roadways, which might make it difficult, if not impossible, to accommodate any new rail spurs along with the proposed roadway on the narrow corridor. The Village will need to work closely with the land lessees, especially the Full Circle Group, to ensure that any proposed infrastructure projects are coordinated with their development plans.

Recommendations

The existing industrial businesses in the corridor have capitalized on its excellent access to water and established successful operations within the narrow constraints of the sites. However, the disjointed, ad-hoc nature of the development has created a situation with chokepoint access to industrial facilities and potentially dangerous intersections among recreational trails, railroad deliveries and 18-wheel trucks.

Industrial expansion to maximize the corridor's economic potential will require strong leadership from the Village and a thoughtful, thorough plan, because there are many stakeholders and their mandates/motivations are often at cross-purposes with each other. Based on the Village's vision for the corridor and insights gathered through site tours and stakeholder interviews, the panel recommends the following guiding principles for developing the corridor:

- 1. Maximize economic potential of a unique industrial site
- 2. Provide new infrastructure that is compatible with current freight activity, supports and builds on the region's freight system, and provides advantages for current and future tenants.
- 3. Improve the recreation and bike trail infrastructure by providing a separation of uses, and providing additional amenities such as drinking water and restrooms.

Using these guiding principles, the panel makes the following recommendations to address the questions posed by the Village:

1. Mix of Uses

Existing industrial businesses along the corridor are well-suited for its specific opportunities, and the panel recommends encouraging the expansion of bulk material and chemical handling and storage operations that can take advantage of the access to multi-modal freight transportation options within the corridor. The panel notes that even though the recommended industrial businesses are not likely to be high employment generators, given the site's constraints, they appear to be the most viable use for the corridor. The panel also recommends that any expansion of chemical handling businesses, while consistent with zoning, should be done responsibly and with complete transparency to maintain high safety standards. The Village should ensure that chemical handling businesses meet all regulatory requirements including acquiring necessary permits prior to starting operations, and providing current material data safety sheets (MSDS) to the Village and the local Fire Department. Maintaining current MSDS ensures that emergency responders including the Fire Department and the U.S. Coast Guard will know what to expect when responding to a call at a particular site.

Attracting businesses that can diversify the materials being handled along the corridor could help mitigate changes in market trends creating a healthier, stronger economic base for the Village and the larger sub-region.

As existing long-term leases are already in place, the panel expects business models of end-users to drive the final development of the sites including any transportation and/or utility improvements, and whether they can be privately funded or will require public investment. The Village should also continue communications with Rowell Chemical to explore the possibility of new industrial businesses in the corridor accessing natural gas and fresh water being brought to their site by Rowell. Access to these utilities could significantly enhance the development potential of the undeveloped sites.

2. Optimize Transportation Modes

The Village should conduct a transportation study to determine the best long-term solutions for the area to ensure smooth traffic flow and safe passage for all transportation modes including recreational bike-riders with increased industrial activity. This study should include a detailed analysis of the costs/benefits of building the proposed collector roadway, and explore the possibility of alternative connections to Archer Avenue, in case land-use license negotiations with the FPDCC for the southern access prove to be very difficult. The transportation study should also be an opportunity for the Village to address uncertainties and unanswered questions that are turning out to be barriers to optimal decision-making:

• Does Full Circle support the road proposal, or does it prefer its current rail spur plans?

- Does the land offer enough space for both road and rail? Will CN's minimum setback requirement of 50 feet from existing rail lines for a new spur impact the proposed roadway?
- How much support does Full Circle have for the rail spurs from the railroad and potential users?
- Would the FPDCC provide a land-use license for both an improved north and new south access road to Archer Avenue? If so, what would be the cost, and how would that be funded?
- Would the FPDCC be more amenable to providing the land-use licenses if the Village and partners are able to provide enhanced amenities for recreational users?
- How much leasable land on the corridor would be taken up by a road and what would be required to compensate MWRD for loss of that income?
- If the choice were between rail and road, which option would be more attractive to tenants, thereby bringing in more revenue to the Village? Which option is more likely to be built under current circumstances?

The opportunity to access STP funding for the proposed collector roadway is a major opportunity for the Village of Willow Springs and one that will not be available forever. However, with many factors currently in play, the Village should also be certain that its decisions are well-vetted to succeed and provide the best outcome for years to come.

3. Continue and Expand the Village's Leadership Role

The Village has a unique capacity to bring together the multiple stakeholders that have a say in the corridor's development and help find common ground where there are conflicting interests. The Village's role should include:

Facilitating Stakeholder Coordination

To date, the Village has had meetings with the many entities that are involved, but in an exploratory manner over many months. That approach was appropriate for the earlier stages of the process. However, moving closer to implementation, and with circumstances changing rapidly, communication has become disjointed and an expanded approach is needed.

All three long-term lease holders – Full Circle, Holcim, and Rowell – must be on the same page and support the proposed infrastructure improvements. Other stakeholders including the FPDCC and MWRD must also have clear, consistent, up-to-date information. Because decisions made by one entity can have wide-ranging consequences in such a complex and inter-connected scenario, the Village should organize regular meetings with all current industrial businesses and include other stakeholders as appropriate. A list of potential stakeholders is included in Figure 6.

Leading Negotiations with Government Agencies

The large number of government agencies with ownership rights and/or regulatory jurisdiction, as well as private interests along the corridor have resulted in a complex, multi-layered approval process for infrastructure improvements and development. The panel recommends that instead of individual lease holders/business owners approaching the different agencies independently, all requests to the FPDCC, MWRD, IDNR, IDOT and others should come from a united front, spearheaded by the Village, and be based on a coordinated, common development vision.

Figure 6: Potential Stakeholders

Stakeholder	Potential Role/ Interest
Village of Willow Springs	Municipal jurisdiction
Metropolitan Water Reclamation District of Great- er Chicago (MWRD)	Land owner – undeveloped sites
Forest Preserve District of Cook County (FPDCC)	Land owner – adjacent properties
Full Circle Group	Lessee – undeveloped sites and current corridor business
Holcim Cement	Current corridor business
Rowell Chemical Corporation	Current corridor business
Canadian National Railroad	Owner, corridor rail line
Illinois Department of Transportation (IDOT)	State Transportation Agency, approval required for STP funded projects
Federal Highway Administration (FHWA)	Federal Transportation Agency, STP funded projects must meet FHWA criteria
Southwest Council of Mayors	Sub-regional council, responsible for allocating local STP funds
Illinois Department of Natural Resources (IDNR)	State agency, regulates public waterways
U.S. Army Corps of Engineers	Federal agency, regulates waterways
U.S. Coast Guard	Emergency Response Organization
Local Fire Department	Emergency Response Organization
Illinois Commerce Commission (ICC)	Public utility and infrastructure services

Conclusion

Creating and implementing a cargo oriented development plan for the study corridor will need to be a collaborative effort. What all the partners—including the Village—can offer and what they require are interrelated, and the parties will need to coordinate and in some cases compromise. The Village is not the final decision maker for the study corridor, but it should be the leader of the process to develop it. The Village should stay focused on the ultimate goal, which is to develop the land for revenue-generating activity. The proposed collector road may or may not be the means to that end. Before moving forward, the Village should complete all necessary due-diligence studies as well as work closely with the existing businesses and lease-holders to determine what infrastructure improvements would be most attractive to them and their potential tenants, whether they should be public or private, and guide the development process accordingly.

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