THANK YOU
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Through comprehensive analysis and stakeholder engagement, the Clark Avenue Corridor Plan identifies corridor configurations, streetscape standards, and redevelopment opportunities to stimulate reinvestment and improve the quality of life for all users along Clark Avenue, from Quigley Avenue to West 65th Street.

Clark Avenue has been an important arterial since the late nineteenth century, when industry and the population were growing on the Near West Side of Cleveland. The corridor provided direct access to industrial commerce, while supporting commercial, institutional and residential areas along the corridor. Today, Clark Avenue is still an important arterial, supporting commercial, institutional and residential uses.

In an effort to revitalize the corridor and to push redevelopment energy in the Tremont neighborhood west along Clark Avenue, the City of Cleveland and Tremont West Development Corporation secured Transportation for Livable Communities Initiative funding from NOACA for the preparation of this study. Traversing a number of neighborhoods within the Tremont West Development Corporation (TWDC) and the Stockyard, Clark-Fulton and Brooklyn Centre Community Development Office (SCFBCDO) service areas, the corridor study provides recommendations to create a safer, more vibrant, cohesive, and healthier community for residents, merchants, and visitors alike.

**PROJECT GOALS**

1. Unify and Connect the Community
2. Strengthen Neighborhoods
3. Identify Districts and Define Brands
4. Make Clark Avenue a Memorable Place
5. Strengthen Existing Businesses
6. Encourage Redevelopment Authentically to Local Context
7. Balance All Transportation Modes
8. Optimize Transportation Capacity
9. Improve Residents’ Experience
10. Improve Safety
11. Beautify the Corridor
12. Instill Resident & Business Ownership
13. Reduce environmental impact
related studies

The past or current studies listed to the right impact Clark Avenue, in some way. The Clark Avenue Corridor Plan takes all these studies’ observations and recommendations into account, in the development of its own recommendations. The Metro Health Master Plan and West 25th Street Corridor Initiative are both currently in progress, which can significantly impact the future Villa Hispana area.

studies

1. Tremont Strategic Investment Initiative
2. West 65th TLCI
3. Train Avenue Greenway Plan
4. Towpath Trail Master Plan
5. West 25th Street Corridor Initiative
6. West 25th Transit Development Study
7. West 25th TLCI Plan
8. Clark Fields Master Plan
9. 2007 Tremont Bicycle Linkages
10. MetroHealth Master Plan (in progress)
11. Safe Routes to School

process

The planning process began in 2012 with the development of the Tremont West Development (TWDC) Corporation Strategic Plan, which was completed in 2013. During this study, a series of surveys, analyses, and public meetings were conducted. The information gathered during this plan became an essential foundation for the corridor plan.

The Clark Avenue Corridor Plan began with the establishment of a technical advisory committee (TAC), whose members are listed on the acknowledgements page. Concurrently, a community advisory committee (CAC) was also formed as listed on the acknowledgements page. The planning team met with each committee to review and discuss the progress made at each project milestone.

Over an eight month period the planning team conducted six TAC, three CAC, and three public meetings. The project began in late August, 2014, and the final plan was submitted in late March, 2015. During the first phase, the first TAC and CAC meetings formed and confirmed a series of project goals. At this time, the planning team conducted an in-depth inventory and analysis of the existing conditions that focused on opportunities and constraints within the corridor. The planning team performed a block-by-block walking audit of the corridor’s existing conditions, including land use, architecture, streetscape, and traffic. The site analysis cataloged, mapped and photographed community assets with development potential, as well as conditions in disrepair. Traffic volume counts and operation analysis were also completed at this time. In conjunction with the site

process

Examine Clark’s existing conditions; land use, architecture, streetscape, right-of-way, lane configurations, traffic patterns, and traffic volumes to determine the corridor’s transportation needs.

Use site and traffic analysis, and public input to propose alignments that better serve Clark’s residents, merchants, commuters, bicyclists, and pedestrians.

Based on a new road alignment, create an enhanced, unified corridor that balances the needs of pedestrians, bicyclists, vehicles, and public transit and rediscovers opportunities for commercial growth and development.

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Based on a new road alignment, create an enhanced, unified corridor that balances the needs of pedestrians, bicyclists, vehicles, and public transit and rediscovers opportunities for commercial growth and development.
The proposed configurations and streetscape design elements -- including benches, trash receptacles, street trees, and lighting -- were then presented to stakeholders and the public; their feedback was incorporated in the development of the final concepts shown later in this report.

SURVEY RESULTS (122 RESPONDENTS)

1. TYPE OF USER
   - 53% Residents

2. TRANSPORTATION METHOD
   - 90% Automobile

3. PUBLIC TRANSPORTATION
   - Not enough buses
   - Bus stops, overall, are accessible
   - The current service is not adequate
   - More shelters are needed

4. PREFERRED CONFIGURATION
   - (3) lanes, with bike lanes
   - The second highest ranked - (3) lanes with (1) parking lane.

5. CORRIDOR SEGMENT RANKING
   - W. 25th to Fulton is most important

6. GENERAL IMPROVEMENTS
   - Additional green space

7. STREETSCAPE IMPROVEMENTS
   - Trash receptacles

BIKE/WALK AUDIT RESULTS

1. WALKABILITY:
   - Traffic feels too close
   - Clearly-marked crosswalks needed
   - Vehicles drive too fast
   - More green space needed

2. BIKEABILITY:
   - Poor lighting
   - Vehicles drive too fast

The second public meeting (December, 2014) provided opportunities for Clark’s stakeholders, merchants, and residents to provide feedback about the corridor plan. Group discussions encouraged active participation from meeting participants. Participants selected their preferred lane configurations and streetscape furnishings; their responses were incorporated into the corridor plan recommendations.

The volunteer bike/walk audit in November provided first-hand experience of pedestrians and bicyclists that use the corridor.

The economic development study was underway.

The planning team also initiated a third party volunteer bike/walk audit effort to provide a thorough analysis. Bike Cleveland led the bike/walk audit, and provided written surveys to their volunteers (results are summarized to the right.) Along with the TAC and CAC meetings, the design team held a work session with Neighborhood Progress and the Hispanic Alliance, and a separate focus group with the Cleveland Municipal School District (CMSD). An online survey was also provided at the first community meeting. The survey asked residents and merchants specific questions about Clark Avenue’s current public transportation and streetscape. The survey responses (results summarized to the right.) along with the additional outreach and site reconnaissance helped the planning team to develop a better understanding of the needs and uses of each user group, and the current insufficiencies found within the corridor.

Following the site analysis, traffic and economic development study, the planning team compiled its data into a detailed presentation for stakeholders. The presentation encouraged discussion and teamwork; participants formed groups to develop potential design alternatives.

These group discussions influenced the next phase of the planning process -- concept development. The planning team used participants’ feedback to create options for improving Clark Avenue’s traffic circulation and streetscape. Planners explored potential corridor configurations that would incorporate on-street parking and bike facilities, as well as increase pedestrian safety and comfort.

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chapter 2: existing conditions

HISTORY

Tremont, Clark-Fulton and the Stockyard neighborhoods are three diverse and historically significant neighborhoods within Cleveland’s Near West Side, all connected by Clark Avenue. Clark has functioned as an essential east-west arterial connection to the steel mills along Quigley Avenue, other industries, and the stockyard on and around West 65th Street. Tremont, by the late nineteenth century, had a dramatic increase in population when the steel mills began operating, due to its proximity to the steel mills and downtown. During this time, the Clark-Fulton neighborhood became the home of the City’s first hospital, now MetroHealth, and the Stockyard neighborhood included the Cleveland Union Livestock yard, during the early 20th century. Several industries thrived in each of these neighborhoods during the mid to late 19th century and early 20th century, which attracted European immigrants from Germany, Italy, Czechoslovakia, Poland, Slovakia and Ukraine to live and work here. Each neighborhood began to develop during this time with the influx of people seeking job opportunities in the region’s numerous factories. Each ethnic group that came to work and live here brought with them their rich culture, including architecture, which can still be seen today. Several historic churches and buildings on Clark Avenue that are on either the local or National Register of Historic Places.

By the late 1960’s many industries, including the stockyard, closed, and Interstates 90 and 71 were planned and built. The construction of these freeways sliced through the Near West Side neighborhoods, and dramatically changed development patterns. By the late sixties, the near west side’s population began to decline significantly especially when the steel mills ceased operation.

Although there have been several decades of industrial decline within the region, Clark Avenue today is still an important east-west connector that supports commercial, institutional and residential uses. The corridor maintains several operating industries. The Clark Avenue corridor and surrounding neighborhoods have potential for revitalization, due to their close proximity to freeway access, cultural amenities, and downtown.

NATIONAL REGISTER OF HISTORIC PLACES

1. St. Michael the Archangel Church

CLEVELAND HISTORICAL LANDMARKS

1. Carnegie South Branch Library
2. Ceska Sin Sokol – Czech Sokol Hall
3. Immanuel Evangelical Lutheran Church
4. Lion Knitting Mills
5. Italian Club
6. Northern Ohio Blanket Mills
7. Pearl Street Bank
8. St. Procops Church

The St. Michael, Carnegie Library Building (top right), Pearl Street Bank (middle), and Ceska Sokol Hall (bottom) are museum/historic landmarks. St. Michael’s steeple can be seen from almost all directions within the corridor.
crossings are a concern for these particular institutions; the City is working on securing Safe Routes to Schools funding to upgrade these crossings.

On numerous parcels, underutilized parking lots and vacant buildings reduce eyes on the streets, which contributes to perceived and real safety concerns for pedestrians, residents, and businesses.

Adding open space ranked highest on survey responses for most desired improvement. Only three open spaces currently exist along the corridor: Clark Fields, (slated for future renovations,) St. Mary’s Cemetery between W. 38th and W. 41st Streets, and the neighborhood park adjacent to the local Feed and Seed. Clark Fields is a particularly important asset serving youths and residents of the Tremont neighborhood.

LAND USE

The eastern end of the corridor at Quigley Avenue terminates at a steel mill, and is bordered by several acres of undeveloped land. Some of this land, however, is slated for future development, including the new Clark Fields plan and Stage 3 of the Towpath Trail. The Towpath Trail will connect to Clark Avenue near W. 14th Street. This will provide the Clark corridor vital access to green space, downtown, and eventually Lake Erie. The Western terminus of this study is located at West. 65th Street, which will be home to the new Max Hayes High School and the Train Avenue Trail and Greenway. St. Mary’s Cemetery at W. 41st and a park at West 53rd Street are the only green spaces within the corridor.

The majority of the corridor is commercial, with West 25th Street to Fulton Road, and West 41st Street to West 56th Street being the most established commercial destinations. Several big box stores, such as Walgreens, have built along the corridor. Industries still can be found here, mostly within the western section of the corridor.

While the most residential area is between West 11th Street and Scranton Road, several residences are scattered throughout the commercial area, in the form of first floor commercial with second floor residential. The Carnegie Library Building along with St. Michael’s on Scranton Road are institutions that have been serving the area for over a century.

Several neighborhood schools serve the highly-residential areas immediately north and south of Clark: Max Hayes High School, Clark Elementary, Thomas Jefferson Elementary, Walton Elementary, and Luis Munoz Marin School. Currently, safe
NEIGHBORHOODS

The Tremont neighborhood extends along Clark Avenue from Quigley to W. 25th Street. This neighborhood cannot only boast that it is the oldest neighborhood on the Near West side, but it can be proud of its recent renaissance that is attracting new people to live, work and play within the neighborhood. The Tremont neighborhood is a popular dining and entertainment area that attracts both locals and tourists. This district has been a catalyst for economic growth and is strategically located near downtown, easy freeway access, and to several cultural amenities.

Both the Clark-Fulton neighborhood, which extends from W 25th to W. 44th Streets, and Tremont neighborhoods are fortunate to have the MetroHealth Hospital as an anchor destination for care and employment, and the West 25th Street/Clark Avenue Retail District, with locally-owned ethnic restaurants and stores. New loft-style housing has begun emerging, and there are plans for additional housing. The MetroHealth Master Plan and West 25th Street Corridor Initiative will help provide guidance for future development.

The Stockyard neighborhood, extending from W. 44th to W. 65th, has a well-established neighborhood network, as well as good commercial building stock, with potential for redevelopment. Councilman Cimperman recently proposed branding the area between Fulton Road and W. 58th as the “Dream Neighborhood,” in hopes of encouraging incoming refugees to settle there. Several neighborhood amenities, including the Thomas Jefferson International Newcomers Academy, Sokol Hall, the Clark Recreation Center, and affordable housing options, make the area a logical destination for refugees, and provide them opportunities to revitalize the neighborhood.

A Pedestrian Retail Overlay zone was recently established between W. 41st - W. 58th Streets, setting pedestrian-oriented standards to strengthen existing commercial establishments and direct the development of future businesses.

Branding and Identity

Branding can define a neighborhood or district by highlighting its unique characteristics and amenities. Tremont’s themed wayfinding signs and banners along Clark Avenue between W. 14th up to W. 25th convey the district’s distinct identity. There is an opportunity to continue to use banners and signage throughout the corridor, to establish an identity for other neighborhoods and districts, since none other than Tremont’s exists.

The Tremont neighborhood is comprised of mostly residential from W. 11th Street to Scranton Road. The Stockyard neighborhood has good small scale commercial building stock. Existing conditions

The Tremont neighborhood has well defined and identity, as seen on the left, that can further be strengthened along Clark Avenue. The other neighborhoods currently do not have a well defined identity.
CORRIDOR FUNCTION

Clark Avenue’s history influenced its current right-of-way width. Originally a connector to major industrial commerce, it still provides access to commercial, institutional, residential, and some industrial areas.

Clark Avenue’s right-of-way varies in width throughout the corridor. The average width is 60’, with the roadway being 34’-40’ wide, which is typically divided into four travel lanes. The two curb lanes provide on-street parking, providing a needed buffer between roadway and pedestrian space. However, where there are no parked cars, the travel lanes are unclear, due to a lack of striping.

Numerous off-street parking lots and vacant lots exist, in addition to on-street parking. A detailed parking utilization analysis for the corridor was not part of this study, but should be performed, to determine the true need for parking.

Corridor Edges

Many of corridor’s land uses, such as parking lots, car dealerships, schools, and residences, are required by city code to have an ornamental fence or enclosure. Currently, there are many different types (including a lack of) edge treatments, with varying heights, along the corridor.

PEDESTRIANS

Sidewalks vary in width between 6’ and 10’ on both sides of the street along the entire corridor. Few trees exist along the corridor, except for W.11th – W.13th, and W.16th – Scranton Road, resulting in a lack of separation between the pedestrians and vehicles. Existing utility poles offer some separation along the remainder of the corridor, but are unsightly. The existing trees in the residential area are well established, create a solid canopy, and form a separate comfortable pedestrian space.

Between W. 41st and 56th Streets, the sidewalks are cluttered with a dense collection of utility poles, folding signs and other obstacles. Many of the buildings in this area are without windows facing Clark, which does not allow for “eyes on the street.”

Curb heights also pose safety issues. Many curbs are nearly the same height as the road surface due to years of overlaid pavement; consequently, there is little vertical separation between sidewalk and roadway.

Crossings

There are several busy intersections throughout the corridor, however, only the Clark/Fulton intersection has enhanced crosswalks that have both color and texture. Clearly-marked crosswalks are also very important at schools. The Luis Munoz School has signage and painted crosswalks, along with pedestrian countdown traffic signals. The W. 56th intersection, adjacent to Clark Elementary, does not have pedestrian countdown signals and the crosswalk striping within the intersection and mid-block crossing has worn away over time, but there are flashing 20 MPH signs in front of the school. Max Hayes High School does have painted crosswalks and pedestrian countdown signals at the West 65th intersection.
PUBLIC TRANSIT

The Greater Cleveland Regional Transit Authority (RTA) has three bus routes along Clark Avenue. Route 45/45A and 21 extend along the corridor from W. 25th Street beyond W. 65th Street. Route 81 continues from W. 14th Street to Scranton Road. The existing bus routes along Clark Avenue, as listed above, provide connections to Routes 79A&B, 20, 31, and 51. The transit waiting environments throughout Clark are mostly signed, and do not provide shelters, seating, or adequate lighting.

Approximately 6% of the study’s survey respondents are current transit users. During the analysis phase, RTA was contacted for additional information concerning the current conditions, which can be found on page 29.

BICYCLISTS

Of the 122 respondents who participated in the survey, about 7% categorized themselves as cyclists. There are very few bike racks along Clark Avenue currently, most of which are the City standard U-shaped rack. However, one at St. Michaels is in the form of the Tremont branches and leaves logo. Clark Avenue is not currently listed as a dedicated bike route on the Cleveland Bikeway Plan, but the future towpath trail connection at the corner of W. 11th creates the need to provide a bicycle connection with W. 14th, which is slated to receive dedicated bike lanes in the future. The current conditions for bicyclists are not conducive to safe travel; many use the sidewalks as an alternative path of travel.

UTILITIES

Utility poles and overhead lines run the length of Clark Avenue, and are especially dense west of W. 61st Street near the existing railroad tracks and W. 65th Street. The poles become sidewalk obstacles for pedestrians, and restrict locations for street furnishings and trees.

Current lighting includes cobra-head fixtures and lamps attached to utility poles.

PARKING

A combination of on-street and off-street parking exists along the corridor, in a haphazard manner. Clark Avenue merchants depend heavily on parking as a key ingredient to a successful business. On-street parking, directly in front of each business is most highly preferred; merchants informed the planning team that customers feel less safe in off-street parking lots, particularly behind businesses, in areas where they cannot be seen from the street.

Many vacant lots exist along the corridor, directly on the Right of Way, which could provide additional parking capacity. Based on public input, the area along Clark with the highest demand for parking appears to be between Scranton and West 30th.
EXISTING CONDITIONS

FURNISHINGS
Trash receptacles and bike racks are scattered throughout the corridor, and only two benches can be accounted for along the entire stretch. Locations and styles are inconsistent, which contributes to an overall discordant streetscape and lack of identity. Additional elements—such as newspaper vending boxes, broken pay phones, and folding signs—clutter the sidewalks and restrict pedestrian movement in certain locations.

PUBLIC ART
Public art adds color, life, and a sense of identity, pride, and ownership. Two vibrant building murals, just west of W. 25th Street, add interest to bare walls and building facades. The corridor offers many more opportunities for public art.
existing conditions

The existing conditions map on the following four pages summarizes many of the observations noted earlier in this chapter. Maps are not to scale.
existing conditions
existing conditions
existing conditions
EXISTING CONDITIONS

As part of the Clark Avenue Corridor Plan, traffic operations were evaluated along the corridor from West 65th Street east to Quigley Road. The purpose of evaluating and documenting existing traffic operations is to develop a clear understanding of how the corridor is currently functioning for all forms of transportation (automotive, transit, bicycle, and pedestrian,) and to provide a baseline for future alternatives to be compared against.

Corridor Configuration

Throughout the study area, Clark Avenue generally operates as two lanes in each direction, with dedicated left turn lanes at some of the major intersections. The only existing pavement markings provided to motorists along most of the corridor is a center double line, as seen in the General Existing Corridor Configuration image to the right; without lane lines delineating individual lanes, the roadway functions in a disorganized manner. This lane configuration is typical of many City of Cleveland streets that have not recently been rehabilitated. The lack of existing pavement markings can create confusion along the corridor, as some motorists may use the road as a single lane, while other motorists may use it as two lanes. When using the corridor as two lanes, passing may be difficult, as the overall width of the road is insufficient to accommodate four standard travel lanes. In addition to the unclear lane use along the corridor, on-street parking exists sporadically.

It should also be understood that in many areas, buildings are set back from the Right of Way, with concrete pavement extending from the road curbs to the face of the buildings. All pavement between the Right of Way and building faces is private property.

Access

A main goal of this study is to develop recommendations that balance the needs of all users of the Clark Avenue corridor, and provide the appropriate amount of access to businesses and residents along the corridor. As business and property ownership has changed during the history of the corridor, so have the required access points. Many of the businesses have an abundance of drive access that is not required to support their establishment. As seen in the photo to the right, some businesses have drive aprons that are not currently being used and will not likely be used in the foreseeable future. In addition to excess access drives for existing businesses, several vacant parcels along the corridor also have multiple access points that are not needed.
Traffic Operations
To fully understand traffic operations along the corridor, peak period turning movement volumes were collected on September 9, 2014. Morning peak data was collected from 7:00 to 10:00 a.m.; noon peak data was collected from 11:00 a.m. to 2:00 p.m.; and evening peak data was collected from 3:00 p.m. to 6:00 p.m. Data was collected at four major intersections along the corridor including:

DATA COLLECTION:
1. Clark Avenue & West 14th Street
2. Clark Avenue & Scranton Road
3. Clark Avenue & West 25th Street
4. Clark Avenue & Fulton Road

The morning and evening peak hour traffic volumes are illustrated in Figures 1 and 2, respectively. Traffic counts indicate that the AM peak hour is between 7:45 AM and 8:45 AM and the PM peak hour is between 4:30 PM and 5:30 PM. Average Daily Traffic (ADT) was calculated from the traffic count data. ADT along Clark Avenue varies from 7,000 to 9,200 vehicles per day. It is interesting to note that the travel patterns do not reflect any inbound or outbound trends. Rather, the AM and PM peak patterns are very similar to each other. The AM and PM peak hour traffic volumes were analyzed to assess intersection operations and to determine the performance of the corridor with the existing conditions. The traffic analysis is based on the existing traffic volumes, as recorded by the traffic data collection, and existing signal timings and phasing provided by the City of Cleveland. The traffic data was analyzed using Synchro, to assess the traffic performance and operational efficiency at each intersection. The analysis results include the approach delay (measured in seconds of delay), volume-capacity (v/c) ratio, and level of service (LOS) for each approach as well as the overall intersection. Average delay is an indicator of the expected delay that would typically be experienced in the lane, on the approach, or at the Highway Capacity Manual, as shown in Table 1. LOS D is considered the acceptable performance level for urban areas such as the Clark Avenue corridor intersection. A v/c ratio that is less than 1.0 indicates that the lane is operating below capacity. A v/c ratio of 1.0 indicates that the lane is operating at capacity and a v/c greater than one indicates over-capacity conditions. Level of service (LOS) is a grading scale based upon average delay, with LOS A representing free-flow conditions, LOS E representing operational capacity, and LOS F being over-capacity. The specific delay thresholds for assessing intersection performance are provided by the Transportation Research Board in the Highway Capacity Manual, as shown in Table 1. LOS D is considered the acceptable performance level for urban areas such as the Clark Avenue corridor. An overview of the capacity analysis results are shown in Table 2 on the following page. The analysis results show that AM and PM peak hour operations at all four intersections perform at acceptable levels, with all intersections functioning at LOS C or better. In addition, all approach movements also operate at LOS D or better, with the exception of the eastbound left at the West 25th Street during both AM and PM peaks.

### Table 1: Level of Service (LOS) (Highway Capacity Manual, 2010)

<table>
<thead>
<tr>
<th>LOS</th>
<th>Signalized Intersection</th>
<th>Unsignalized Intersection</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Average Delay (Sec/Veh)</td>
<td>Average Delay (Sec/Veh)</td>
</tr>
<tr>
<td></td>
<td>x&lt;10</td>
<td>x&lt;10</td>
</tr>
<tr>
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<td>D</td>
<td>55&lt;x&lt;80</td>
<td>35&lt;x&lt;50</td>
</tr>
<tr>
<td>E</td>
<td>80&lt;x</td>
<td>50&lt;x</td>
</tr>
</tbody>
</table>

### Figure 1: Existing Traffic Volumes – AM Peak Hours

### Figure 2: Existing Traffic Volumes – PM Peak Hours
TABLE 2: CAPACITY ANALYSIS RESULTS FOR 2014 EXISTING CONDITIONS

<table>
<thead>
<tr>
<th>INTERSECTION / APPROACH / DIRECTION</th>
<th>Cycle Length</th>
<th>AM Peak</th>
<th>PM Peak</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>LOS</td>
<td>DELAY</td>
<td>V/C</td>
</tr>
<tr>
<td>CLARK AVENUE @ WEST 14TH STREET</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>EASTBOUND LEFT</td>
<td>90</td>
<td>B 15.4</td>
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<td>OVERALL</td>
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</table>

Traffic analysis
Traffic Analysis

Truck Operations

The Clark Avenue residents have expressed concern regarding truck traffic along the corridor, particularly between W. 25th Street and Quigley Road. As part of the traffic count survey that was conducted, trucks were specifically counted along the corridor to determine the actual percentage of trucks using the corridor. The count data shows that during the AM peak hour the corridor is carrying on average 6% trucks and during the PM peak hour the corridor is carrying an average of 1.5% trucks. Trucks are more prevalently found during the morning hours, the 49 trucks that traveled the corridor in a 5 hour period (5:00 AM to 10:00 AM) during a 5 hour period (5:00 AM to 10:00 AM) to ensure a complete understanding of truck movements along Clark Avenue.

A GPS mapping exercise was also completed to determine the shortest routes from major freeways to Steelyard Commons. As seen on the figure to the right, all routes to Steelyard Commons use either the Quigley Road or Jennings Road for freeway access except for the I-90 eastbound movement. It is expected that some of the truck traffic along Clark Avenue can be contributed to trucks exiting I-90 eastbound at West 25th Street and using Clark Avenue and West 14th Street for Steelyard Commons access.

Although Clark Avenue is not the primary truck movement during the morning hours, the 49 trucks that traveled the corridor in a 5 hour period equates to about 10 trucks an hour and once every 6 minutes. Residents along this section report that during summer months truck traffic is more prevalent due to construction activities. Residents also reported that overall truck traffic along the corridor may be slightly decreased since the closure of the West 14th Street entrance ramp to I-90 eastbound. Residents anticipate that when that entrance ramp re-opens additional truck traffic will return.

In 2009, residents along Clark Avenue recognized that truck traffic (and overall traffic numbers) had been increasing and associated most of the increase to the opening of Steelyard Commons. The residents developed a mitigation plan that was presented to the City. The primary focus was to increase way finding signage to Steelyard Commons. The residents plan called for proposed signage along Quigley Road, West 3rd Street, West 14th Street, I-90 Eastbound, I-490 Westbound and I-71 north and southbound.

Recommended strategies to mitigate truck traffic:

- Inform Steelyard Commons and WIRE-Net on desired truck routes to access their facilities. These routes would primarily use Quigley Road and Jennings Road.
- Along the residential section of Clark Avenue, between West 25th Street and West 16th Street, create a road that feels more like a residential street and less inviting for trucks. Adding green space and constructing parking bump outs may reduce truck traffic.
- Coordinate with the City of Cleveland and ODOT to add wayfinding signs on I-90 east, directing traffic to Steelyard Commons.
### TRUCK PERCENTAGES

<table>
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<tr>
<th>Summary</th>
<th>Clark Ave.</th>
<th>Clark Ave.</th>
<th>Scranton Rdt.</th>
<th>Scranton Rdt.</th>
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<td>Eastbound</td>
<td>Westbound</td>
<td>Northbound</td>
<td>Southbound</td>
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<tr>
<td></td>
<td>Right</td>
<td>Thru</td>
<td>Left</td>
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<td>Right</td>
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<td>4%</td>
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<td><strong>PM Peak Hour: 4:30 PM To 5:30 PM</strong></td>
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### FIGURE 4: CAPACITY ANALYSIS RESULTS FOR 2014 REDUCED LANE USE

![Figure 4: Capacity Analysis Results for 2014 Reduced Lane Use](image)

### FIGURE 5: CAPACITY ANALYSIS RESULTS FOR 2014 PROPOSED LANE USE

![Figure 5: Capacity Analysis Results for 2014 Proposed Lane Use](image)
Lane Configuration Concept Development

In order to determine feasible lane configuration along the Clark Avenue corridor, additional traffic analysis was conducted to determine the minimum capacity requirements for Clark Avenue’s four major intersections. This analysis was used to determine if it would be possible to reduce the east/west capacity of the intersections (and associated adjacent roadway and intersections in between) while maintaining an acceptable level of service. The capacity of the north/south approaches was not changed, and remained the same as existing at all intersections. The analysis determined whether or not eastbound and westbound left turn lanes were needed at the four major intersections. An overview of the reduced capacity analysis results and reduced lane use are shown in Table 3 (to the right,) and Figure 4, on page 19.

The analysis results show that AM and PM peak operations for the reduced capacity roadway would operate at LOS D or better for all eastbound and westbound approach movements at the West 14th Street, Scranton Road and Fulton Road intersections, with a majority of movements operating as LOS C or better. These results indicate that acceptable LOS would be provided at these intersections with a reduction in east/west capacity.

Without an exclusive eastbound left turn lane, the level of service at the intersection of West 25th Street and Clark Avenue results in unacceptable LOS on the eastbound approach (LOS F in the AM and LOS E in the PM). Although the overall intersection operates at LOS D in the AM and PM peak periods, it is expected that a reduction in east/west capacity would result in unacceptable delays for commuters using Clark Avenue.

Recommended Lane Use

Optimal east-west approach configurations were developed for the four major intersections on Clark Avenue based on the assessment of the existing and reduced east/west intersection capacity. The analysis showed that reduced capacity on the east-west approaches with standard single lane approaches would provide acceptable operations at the West 14th Street, Scranton Road and Fulton Road intersections. The intersection of West 25th Street and Clark Avenue should be configured with two lanes on the eastbound and westbound approaches (exclusive left and through/right). The four major study area intersections, together with the adjacent roadway segments, should be configured as described above to optimize corridor operations with the appropriate capacity, providing opportunity for other amenities, and to provide a better balance between all travelers on the corridor. Figure 5 depicts the capacity analysis for the proposed intersection configuration at the four major intersections along the Clark Avenue corridor.

Signaling

Along the Clark Avenue corridor there are currently 13 existing signalized intersections. The existing signalization hardware and equipment is at various stages of its life cycle, with some signals being recently upgraded and others in need of repairs. It is likely that several of the existing signalized intersections along the corridor are no longer warranted and could potentially be removed. This plan recommends that a warrant analysis be completed for all of the signalized intersections along the corridor to determine their need. For the purposes of this study, it was assumed that B of the 13 signals will be completely replaced with the other 5 signals either being removed or retained, due to recent upgrades.

Table 3: Capacity Analysis Results for 2014 Reduced Lane Use

<table>
<thead>
<tr>
<th>Intersection / Approach / Direction</th>
<th>Existing Year 2014</th>
<th>Cycle Length</th>
<th>AM Peak</th>
<th>DELAY</th>
<th>V/C</th>
<th>Cycle Length</th>
<th>PM Peak</th>
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<td>DELAY</td>
<td>V/C</td>
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</table>

Table 3: Capacity Analysis Results for 2014 Reduced Lane Use
chapter 4: concepts & recommendations

COMPLETE STREETS

Make Clark Avenue a destination, a memorable place, and an economic success by making it an Complete Street:

- Balance the priorities of all corridor users: pedestrians, cyclists, public transit, motorists, merchants, and residents.
- Create space for people to walk at a leisurely pace and beautiful places for people to gather.
- Provide physical comfort for pedestrians, through shade in the summer, protection from the elements where possible, and traffic calming measures.
- Define the street edge, to direct and engage people’s eyes.
- Edges are transparent, to invite people beyond the street edge, and to foster a feeling of security.
- Foster complementarity between the architecture and the streetscape design and materials.
- Reduce solar heat gain and reduce the impact of rainwater on the local and regional environment.
- Are maintainable, to promote a sense of cleanliness and to reduce the burden on the owner and stakeholders.
- Utilize high quality design, details, and construction.

CORRIDOR CONFIGURATIONS

Utilizing the planning process described earlier, the planning team arrived at the following recommended corridor configurations.

W. 65th Street to W. 51st Street

Sharrows should be installed on Clark, from West 65th to West 16th. On-street parking should be located on the side of Clark that has the fewest drive aprons (after apron consolidation) and fire hydrants, to maximize parking spaces. The location of the parking lanes will be confirmed during detailed design. Bulb outs and a solid stripe between parking and travel lanes will calm traffic and discourage motorists from using the parking lane as a passing lane. Two exceptions to the proposed configuration shown above are:

1. When Clark Elementary School is rebuilt, the building will most likely face and abut Clark, and the Cleveland Metropolitan School District will add a drop off lane on the north side of Clark, between 54th and 56th.
2. Exclude on-street parking from under the railroad bridge, between 61st and 65th.
This segment is wide enough for parking on both sides; the corridor parking study recommended by this plan will determine if parking on both sides is needed. Bulb outs and a solid stripe between parking and travel lanes will calm traffic and discourage motorists from using the parking lane as a passing lane.

There are two exceptions to configuration B:
1. Between 38th and 41st, regardless of the future parking study’s recommendations, the street should be narrowed on the north side, along the length of the cemetery, since the cemetery does not require parking.
2. Left turn lanes are recommended at West 44th Street, based on stakeholder input. Traffic counts and analysis of this intersection were not part of this study, and should be included in the design and engineering stage of Clark Avenue’s rehabilitation.

The presence of many in-out businesses in this segment, such as fast food establishments, calls for a continuous center turn lane. On-street parking should be located on the side of Clark that has the fewest drive aprons (after apron consolidation) and fire hydrants, to maximize parking spaces. The location of the parking lanes will be confirmed during detailed design. Bulb outs and a solid stripe between parking and travel lanes will calm traffic and discourage motorists from using the parking lane as a passing lane.
West 25th is the busiest vehicular and pedestrian intersection along the corridor, and one of only two intersections recommended by this study for left turn lanes. On-street parking spaces should be implemented, west of and as close as possible to West 25th, to support retail businesses on Clark Avenue.

On-street parking on both sides is important here, to serve the St. Michael’s Church community and the future use of the library building. Bulb outs and a solid stripe between parking and travel lanes are essential, to calm traffic.
The focus of this highly residential section is to calm traffic as much as possible. Bulb outs and a solid stripe between parking and travel lanes are critical for achieving this goal. While connecting the Towpath Trail to the future bike lanes on Scranton is a high priority, local residents strongly requested on-street parking, in lieu of bike lanes, due to a lack of off-street or nearby parking capacity.

Bike lanes begin at West 16th Street, toward the east. The majority of this segment consists of the bridge over Interstate 71, which provides enough width for a 4' buffer for each bike lane. Buses turn off of Clark, at West 14th Street.
### Concept & Recommendations

**W. 14th Street to W. 11th Street**

This segment, with mixed residential, commercial, and industrial uses, features bike lanes, to connect the future Towpath Trail neighborhood connector to West 14th, and to calm traffic.

**W. 11th Street to Quigley**

In order to make this segment more complete, the width of one of the two existing westbound lanes will be replaced with bike lanes. There is room for 2' buffers between the travel and bike lanes, to separate cyclists from truck traffic.
Design for Pedestrians

Safe and accessible sidewalks benefit both pedestrians and merchants. Not only do active sidewalks allow for more “eyes on the street” to monitor safety, but they also improve business -- pedestrians often become patrons in local shops and restaurants.

On-street parking is also an asset to commercial districts, not only does it provide parking for patrons, but it also works congruently with sidewalks to provide protective buffers between pedestrians and on-coming traffic. The Cleveland Complete and Green Streets report identifies seven essential key elements for successful sidewalks, which should be implemented wherever possible along Clark:

**COMPLETE & GREEN STREETS KEY ELEMENTS:**

- Accessibility
- Adequate width
- Safety
- Continuity
- Landscaping
- Drainage
- Quality of place and Social space

Accessibility

All new sidewalks and corner features (such as curb ramps and landings) must adhere to the Americans with Disabilities Act (ADA). Call buttons, signs, symbols, markings, and pavement textures should also be ADA-compliant. Accessible curb ramps designed according to the Americans with Disabilities Act create accessible routes across streets. Compliant ramps also create high visual contrast that guides pedestrians to crossing locations and raise motorists’ awareness of crossing zones.

Adequate Width

The minimum width for an unobstructed sidewalk within a City of Cleveland central business district is six feet. A two- to six-foot wide amenity strip should be placed behind the curb. This amenity strip can include street trees, landscaping (in areas that will be maintained) and site furnishings, and serves as a buffer between pedestrians and moving vehicles.

Safety

Pedestrian safety can be enhanced with the following tools:

Crosswalks

All crosswalks should be designed with a high visual contrast to the roadway pavement, such as the painted ladder design shown in the image to the right. The high visibility clarifies pedestrian crossing zones for motorists, and encourages pedestrians to cross only at specific locations. Enhanced crosswalks, with colored and stamped concrete, add a texture and color contrast to adjacent pavement, and should be constructed at the locations shown on the following page.

Curb Radius

Smaller curb radii slow turning vehicles, shortens the crossing distance, and creates more space for pedestrians and/or green infrastructure.

Median Pedestrian Refuge

Center islands narrow the cartway and shorten pedestrians’ crossing distance, but also provide a place of pedestrian refuge. On a two-travel lane road (one each direction,) the refuge allows pedestrians to cross one lane of traffic at a time. To improve car visibility and increase pedestrian-motorist eye contact, the pedestrian ADA-cut through the island should be oriented at an angle toward oncoming traffic. The feasibility of implementing median pedestrian refuges within mid-block crosswalks at Clark Elementary School, and Clark Recreation Center should be further studied. These particular areas were identified by the community as potential midblock crossing opportunities, since each has a high number of children who utilize these facilities.

In-Street Pedestrian Crossing Signs

Signs which sit in the middle of the street and denote crossing zones raise motorist awareness, and increase pedestrian comfort. These are a less durable option than median pedestrian refuges, but are inexpensive and require less space.

Countdown Pedestrian Signals

Crossing signals with a countdown number show pedestrians if and how long they have to cross safely. All crossing signals should have a countdown number.

Rectangular Rapid Flashing Beacons (RRFB)

RRFB’s are user-actuated amber LEDs that supplement warning signs at unsignalized intersections or mid-block crosswalks. They can be activated by pedestrians manually by a push button or passively by a pedestrian detection system. These signals have been found to be more effective, and are recommended at all five proposed mid-block crossings shown on the following page.
Safe Crossings

Enhanced Crosswalks

Mid-Block Crossings

The mid-block crossings are located at “T” intersections or between intersections, where there is a high volume of pedestrian crossings, particularly for children going to or from schools or the Clark Recreation Center. The crossing near West 33rd Street is a lower priority, since Walton Elementary is planned to be closed in the near future.

The mid-block crossings will be shortened with a bulbout in the parking lane(s) and a median pedestrian refuge, if space allows, and will be highly visible, with high-contrast striping and RRFB’s.
Concepts & Recommendations

Continuity
Furnishings, specialty paving, public art, and lighting compose a continuous streetscape by delineating pedestrian space and creating character. The planning team recommends using ADA-compliant permeable pavers in the Clark Avenue amenity strip as a unifying element. The proposed furnishings and materials chart on page 33 shows design elements selected by the planning team to create a cohesive streetscape.

Landscaping
Street trees enhance the overall visual and spatial character of the pedestrian zone and the corridor as a whole. A continuous canopy unifies the corridor and defines pedestrian space on both sides of the road, especially where buildings are set back from the sidewalk or are non-existent. Street trees and landscaping also create a more pleasant setting for pedestrians, cyclists, and motorists. An aesthetically-pleasing street increases property value and encourages commercial growth.

The existing trees that occur within the residential area between W. 11th and Scranton Road should be maintained in place. Additional street trees should be urban- and salt-tolerant, mature to a size that does not conflict with overhead power lines, require little maintenance, and given adequate soil volume to grow in, per the chart to the right. For appropriate tree species, refer to the City of Cleveland’s Urban Forestry list of approved street trees in the appendix.

Additional salt- and urban-tolerant landscaping can be utilized to define gathering spaces, but should be used only where they will be properly maintained.

Drainage
Permeable pavement is proposed throughout Clark Avenue’s amenity strip.

Bioretention plantings should be considered for pedestrian bulbouts, if a merchant or Community Development Corporation commits to regular maintenance. Bioretention plantings consist of plants that thrive in wet conditions, are urban-tolerant, and in northern climates, are salt-tolerant. Bioretention planters are designed to collect, slow, infiltrate, and remove pollutants from rainwater runoff before it enters a drainage system, and should only be used where pervious solutions are not feasible, or visual impact or public education is desired. The proposed locations and design should be reviewed with the City and local CDC’s during the design phase to ensure a responsible entity and adequate budget is established for proper maintenance. See page 31 for cost and more maintenance considerations.

Quality of Place and Social Space
Not only is a complete street a transportation link, but its sidewalks are a destination in and of themselves. Spaces along the corridor can function as gathering and meeting places (see La Villa Piazza concept on page 39.) Appropriate streetscape materials can compliment local architecture and enhance the neighborhood, well beyond the right-of-way.

It is important to understand that in many locations along the corridor, buildings are set back from the Right of Way, resulting in existing pavement between the Right of Way and building faces lying on private property. Since private property cannot be improved with public dollars, all improvements implemented within the Right of Way should be designed with the interface with the private property taken into account. Optimally, additional funding should be secured, to cover the costs of improvements to the face of each building.

Block Consolidation
The intersection of West 47th and Clark is unsafe and uncomfortable for pedestrians, since the two buildings on the south corners create a blind condition for northbound vehicles on 47th and east-westbound pedestrians on the south side of Clark. West 47th vehicular traffic should be rerouted to West 48th, through the vacant parcel behind the commercial property, as shown to the right, and the closed portion of West 47th can be upgraded to a pocket park that functions as a pedestrian connector.
Design for Bicyclists

The most successful bicycle facilities accommodate a broad range of bikes and meet the needs of all cyclists, whether experienced or beginner.

Bicycle Facility Types

A variety of bicycle facilities can serve and provide safety for cyclists within a roadway:

**Sharrow**

Cyclists and motorists share the same space on the road. Pavement markings increase motorists’ awareness of cyclists.

**Bike Lanes**

Bike lanes and buffered bike lanes use pavement markings to separate cyclists and motorists on the same pavement. For the Clark Avenue corridor, sharrow markings are recommended for the majority of the study area, with bike lanes recommended from Quigley to W. 16th Street, connecting to the future bike lanes on W. 14th Street. This particular corridor is not listed as a recommended dedicated route on the Cleveland Bikeway Plan. It was also decided during the public outreach phase that on-street parking is more desirable to both residents and merchants than bike lanes. The existing right of way width cannot accommodate both a dedicated parking lane and a separated bike lane.

Design for Public Transit

Formerly known as bus stops, Transit Waiting Environments (TWE) should be attractive destinations with lit, transparent shelters (where space allows, and if the boardings meet Greater Cleveland RTA’s criteria, as noted to the right,) pedestrian-scale lighting, specialty pavement, seating, trash and recycling receptacles, and low-maintenance landscaping. TWE’s that meet these criteria and receive regular maintenance will feel safe for transit riders. The current TWE boardings, along Clark Avenue, however, do not meet RTA’s eligibility criteria for new bus shelters. All existing bus shelters should be preserved and protected from damage, during any construction near them.

**RTA TWE SHELTER CRITERIA**

1. 50 boardings a day to be eligible for a shelter.
2. Standard shelters are 12' long & 6' wide.
3. RTA prefers 6' between curb and shelter, and 2' clearance between the shelter and the sidewalk.

**CURRENT CLARK TWE BOARDING DATA**

**WESTBOUND**

01015, Clark Ave at W 31ST, WB - 24 boardings
03021, Clark Ave at W 32ND, WB - 4 boardings
01109, Clark Ave at W 33RD, WB - 0 boardings
03016, Clark Ave at Fulton, WB - 8 boardings
03024, Clark Ave at W 36TH, WB - 0 boardings
03026, Clark Ave at W 41ST, WB - 1 boardings
03028, Clark Ave at W 44TH, WB - 2 boardings

**EASTBOUND**

03025, Clark Ave at W 41TH, EB - 24 boardings
03023, Clark Ave at W 38TH, EB - 2 boardings
03019, Clark Ave at W 30TH, EB - 7 boardings
03020, Clark Ave at W 31ST, EB - 7 boardings
03022, Clark Ave at W 33RD, EB - 5 boardings
03015, Clark Ave at Fulton, EB - 15 boardings
03145, Clark Ave at W 25TH, EB - 10 boardings

TWDC and SCFBCDO should continue working with GCRTA to further analyze the bus routes on Clark.

1. During the community outreach process, direct service to downtown, and bus access to Clark Fields was requested.
2. Wayfinding on TWE shelters was also recommended by the community.
3. If TWE’s were consolidated into locations at 41st, 31st, and Fulton for both East- and Westbound routes, all six TWE’s may be afforded shelters.
Traffic/Truck Calming
Traffic speeds along the corridor are a major concern that was expressed throughout the public meetings. The intersections most noted include: the W. 25th Street, Fulton and W. 41st and W. 44th intersections. Clark residents are also concerned with increased truck traffic between W. 25th Street and Quigley, as stated in the traffic analysis section, since Steelyard Commons began operation. The following treatments are feasible recommendations to assist in traffic calming.

Road Diet
Any reduction in the number of travel lanes is considered a road diet. Studies have determined the reduction from four lanes to three (one travel lane in each direction, with a center turn lane,) increases traffic flow efficiency and turning safety. A center turn lane is proposed between Twinkie Lane and W. 38th Street.

Bulbouts
Curb extensions toward the center of the road at intersections and mid-block crossings narrow the carway, and tightened the radii, thereby slowing motorists, and shorten pedestrians’ crossing distance. Bulbouts are proposed at both ends of on-street parking lanes, at midblock crossings, and bus bulbs, where feasible.

Zero Lot-Line Setback
Buildings located on or close to the Right of Way line create a sense of enclosure, define the corridor edge, and reduce the sense of scale to a pedestrian level. This minimum setback was established from W. 41st to 58th, through City Council’s passage of the Pedestrian Retail Overlay District. Parcels redeveloped in the future will be required to locate their buildings on or very near the Right of Way line.

Street Trees, Landscaping, Site Furnishings, and Decorative Elements
All of these elements create a sense of enclosure, pedestrian scale, and visual engagement. See page 33 for proposed materials.

Vehicular Pavement Treatments
Pavement materials that contrast with the typical street pavement in color, hue, and texture signal pedestrian zones (crosswalks) and increase motorists’ awareness of their speed. See page 27 for proposed locations.

Pedestrian-Scaled Lighting
Low, pedestrian-scale, decorative street lighting helps denote pedestrian zones. Higher light levels create a safer environment. See page 33 for proposed lighting.

Traffic signage
The planning team recommends implementing wayfinding signage to direct truck traffic from Steelyard Commons directly to the interstates, and vice versa, as noted on page 18. This could help to alleviate residential truck traffic.

Parking
Adequate parking is a must for a viable commercial district and where residents have limited parking options. Merchants and residents voted to keep on-street parking throughout most of the corridor, which is reflected in the proposed corridor configurations, on pages 21-25. In certain instances, on-street parking is proposed only on one side of the street, due to current ODOT lane width standards.) However, if on-street parking is implemented but is under-utilized and is without curb bumpouts to control traffic, the parking lane may be used as a vehicular passing lane, resulting in an unsafe condition. Throughout the corridor, existing lots provide existing parking capacity, and vacant lots can provide additional parking spaces. In order to determine the appropriate number of on-street and off-street parking spaces needed in different areas of the corridor and to determine the most efficient way to use those parking spaces, a follow-up parking utilization study should be performed.

Access Management
Removing or reducing the number of existing access points and curb cuts will improve safety. There are multiple extraneous access points throughout the corridor that can be eliminated without impacting residents or merchants. Some access points are wider than necessary, and a reduction in width that is to City of Cleveland design standards will also promote safety. For example, gas stations often have multiple, wide entrances, and should be evaluated.

During the community outreach process, it was noted that access management should be a priority from W. 25th to Fulton Road. Analyze, during design, utilizing north-south side streets, for the main access to businesses adjacent to those side streets, to reduce the number of drives along the Clark Avenue.
Streetscape
The consistent use of appropriate streetscape elements can unify and create a sense of place and an identity for a corridor. All of the following elements will be important to incorporate along the full length of Clark Avenue, to work toward making it a complete street.

Pavement
By repeating common materials and colors from buildings and pavement along the corridor within the amenity strips and crosswalks, the corridor becomes unified. This plan recommends brick pavers for specialty pavement treatments, for authenticity, durability, and color longevity.

Site Furnishings & Public Art
Furnishings should also complement the surrounding architecture, but they also offer an opportunity for visual punctuation with color or unique designs. Metal benches, trash receptacles and bike racks will be most durable. These furnishings should be located regularly at gathering places, TWE’s, and eating establishments. Due to the City of Cleveland’s lack of resources to maintain public trash receptacles, they should be located only where they are needed most.

Public art should be located in areas with high visibility.

Lighting and Utilities
Lighting is critical for security, the sense of safety, and to encourage pedestrian traffic and gatherings. A combination of high lights and pedestrian-scale lights will ensure adequate light levels and pedestrian-friendly spaces.

Cleveland Public Power is currently planning for a wholesale replacement of its cobra-head fixtures with LED lamps, which will reduce the number of its high-level and pedestrian light fixture models, establish consistency throughout the city, and decrease maintenance costs. The pedestrian-scale light and pole should be historic, per the future CPP standard.

All existing utility poles should be examined for consolidation.

Landscaping
A minimum of five varying tree species should be selected for the standard streetscape. Use the following U.S. National Arboretum Agricultural Research Service guidelines for tree diversity: (1) plant no more than 10% of any species, (2) no more than 20% of any genus, and (3) no more than 30% of any family to ensure biological diversity. Also refer to the City of Cleveland’s Urban Forestry list of approved street trees.

Maintenance
All parts of the roadway and pedestrian areas must be designed with longevity and maintenance as a top priority. Infrastructure is not sustainable if its maintenance requirements are beyond the capacity of the responsible entity. Implementation of the recommended improvements listed in this report should be prioritized based on cost and maintenance capacity. This is particularly pertinent when determining the most appropriate green infrastructure solution. Consider the following:

- The greenest and most aesthetically-pleasing option is to use bioretention in the bump outs. However, this requires the highest capital investment and regular maintenance.
- Tree biofiltration cells under pervious pavement require far less maintenance than bioretention cells.
- The next step down is planting beds in the curb bump outs (no bioretention.) This still is aesthetically-pleasing and still requires maintenance, but has a lower capital cost.
- The most economic option is lawn and trees in the bump outs. This only requires regular mowing, and is a lower capital investment.
- The most economic option is paving the bumpouts with pavers or colored, stamped concrete. This has the least visual impact, but also requires little maintenance.
- Consider life cycle costs when choosing materials and designing construction details.
- Quality of construction will affect longevity and maintenance.

Identity Zones
Through the community outreach process, three distinct zones within the corridor emerged, based on characteristics unique to each area. Developing an identity and brand around those qualities should be highlighted and promoted to existing and prospective residents, business owners, and visitors, to foster economic growth. For example, Tremont’s brand development and expression of it through the branches and leaves concept has served Tremont well in creating its identity and encouraging economic growth.

The Standard Clark Avenue Streetscape Palette recommended for implementation along the entire length of the corridor is shown on the following page. The pages after discuss each zone’s existing or proposed identity, and how it can be expressed, through distinct variations on concentrations of elements in the Standard Streetscape Palette.
concepts & recommendations

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concepts & recommendations

Typical Clark Avenue Streetscape Palette

- Brick or concrete pavers for permeable amenity strip and Transit-Waiting Environments.
- Enhanced amenity strip with historic, pedestrian-scaled lighting and banners.
- Enhanced colored and stamped concrete crosswalks.
- Consistent street tree planting.
- Bench, trash receptacle and City of Cleveland standard bike rack.
- City of Cleveland historic pedestrian-scaled lighting with vehicular lighting in Chagrin.
Stockyard/Clark-Fulton Zone (Dream Neighborhood)
The Stockyard neighborhood is already seeing interest in managed, pedestrian-friendly redevelopment, through the recently-instituted Pedestrian Retail Overlay zoning from W. 41st to 56th Street, and through the recent proposal by Councilman Cimperman for the creation of the Dream Neighborhood. The area’s pedestrian-scale commercial area, SCFBCDO’s aggressive home rehabilitation program, Thomas Jefferson Elementary School, and the Clark Recreation Center create a welcoming environment for many of the 635 international refugees that Cleveland receives each year.

Pavement
Implement the standard Clark amenity strip and enhanced crosswalk materials, as shown on page 33.

Site Furnishings & Public Art
Specify typical street furnishings, as shown on page 33. This intimate, pedestrian-scaled district can benefit from additional benches and bike racks. Metal banners hung on utility poles, as shown in the rendering to the right, can celebrate many of the nationalities of area residents, and serve as public art.

Lighting and Utilities
Implement lighting as is shown on page 33. Consolidate utility poles wherever possible.

Landscaping
Install street trees, where they fit. There are areas where the Right of Way and public space narrows; street trees may not be applicable in these particular areas.

This area can accommodate on-street parking on both sides of the street (W. 44th in the distance shown.) An example of a bus bulb is shown in front of the historic Sokol Hall, and public art banners celebrate many of the local residents’ nationalities.
concepts & recommendations

Stockyard / Clark-Fulton Zone (Dream Neighborhood)
La Villa Hispana
From W. 25th to Fulton Road, the foundation for La Villa Hispana, a district intended to celebrate the Latino cultures of its residents and business owners, has already been established. This district has a well-established commercial stock, and has started to express its identity through some public art.

Pavement
The pavement materials within Villa Hispana should be more colorful than the standard Clark streetscape palette, to harmonize with Latino cultural characteristics.

Due to the significance of the West 25th/Clark intersection and in order to serve as the gateway La Villa Hispana deserves, this plan recommends a dynamic, intersection pavement design, as shown to the right. If an entity (e.g., TWDC or other,) commits itself to regular monitoring and maintenance of the intersection, this plan recommends brick pavers installed on a concrete base with asphaltic leveling course and a neoprene adhesive.

A blue-gray paver blend will be placed within the amenity strip, to mimic the unique paver colors often found within Colonial Latin America.

Site Furnishings, Gateways, & Public Art
Use the standard street furnishings, in a bright color, to commemorate the Latino cultures’ admiration for color. An overhead gateway element will announce people’s arrival at the district, the exact location of which will be coordinated with existing utilities and structures, during the design phase.

Coats of brightly-colored paint on dreary buildings and Public art with a Hispanic flare will brighten the district.

Lighting and Utilities
Lighting should be as shown on page 33. If the implementation budget does not allow for historical, pedestrian-scaled lighting throughout the entire corridor, prioritize La Villa Hispana for receiving it.

Landscaping
Specify ornamental street trees, acceptable to the Division of Urban Forestry, for additional color.

Lighting and Utilities

Landscaping

Site Furnishings, Gateways, & Public Art

Coats of brightly-colored paint on dreary buildings and Public art with a Hispanic flare will brighten the district.

Lighting and Utilities

Landscaping

Site Furnishings, Gateways, & Public Art
La Villa Hispana

LA VILLA HISPANA DISTRICT  FULTON - W. 25TH

concepts & recommendations
La Villa Hispana Plaza

There is a need for and community interest in a public plaza in the La Villa Hispana district. The plaza should serve multiple functions, such as an open air market, an open space for gatherings and cultural performances, and will provide an infusion of green and a splash of color in this highly urban area.

The materials used to develop the plaza should celebrate the Hispanic culture; materials similar to the proposed La Villa streetscape will achieve this goal. The overall layout of the plaza should be open, to create a flexible space that can accommodate the variety of uses mentioned above. The edges should be defined with trees, lighting, seating and public art.

Three possible locations for the plaza are shown in the map to the right.
concepts & recommendations

**Towpath Trail Zone**

Within the Tremont neighborhood, the Towpath Trail Zone (W. 25th Street to Quigley) will function as a destination point along the future Towpath Trail. Clark residents and employees will gain access to the trail and points north and south, and Towpath users will gain access to the Clark commercial district and Tremont neighborhood establishments.

**Pavement**

This plan recommends maintaining existing and installing new tree lawns, to further enhance the residential feel along this segment. Colored, stamped concrete matching the standard palette pavers should be used where tree lawns are not feasible, and along large drive aprons. The crosswalks at key intersections, per page 27, will be comprised of colored, stamped concrete.

**Site Furnishings, Gateways, & Public Art**

The bench and trash receptacle from the standard streetscape palette are proposed for this district. The Tremont banners, leaf bike racks and street sign brackets, both in Corten or galvanized steel, should be used throughout this zone, to blend the industrial heritage of the Towpath Trail and river valley with the Tremont brand.

A gateway element that functions as a sign and kiosk should be installed at the future towpath trail connector/West 11th intersection. The kiosk can inform trail users about local points of interest in the Clark Tremont area, and, likewise, can inform Clark residents and cyclists about the Towpath Trail and its connections to regional destinations. When the Clark Fields complex is renovated, the entry sign at Clark Avenue should employ a similar design and materials approach.

The bridge over Interstate 71 is a key opportunity for public art, as shown in the image to the right.

**Lighting and Utilities**

Vehicular and pedestrian-scale lighting should be upgraded, as noted on page 33.

**Landscaping**

Tree lawns are recommended for this district, to maintain the residential character and scale. Install trees, per comments on pages 28 and 31.
concepts & recommendations

Towpath Trail Zone
SAFETY AND SECURITY

Safety is one of the most important issues throughout the corridor, based on community input. There is currently a security camera at the corner of W. 14th and Clark Avenue. The residents in this location believe that it has reduced the number of incidents in this location. The cameras have good full range and are visible to motorists and pedestrians, and they provide an additional set of eyes on the street. The process is lengthy to acquire these cameras. Two additional cameras are currently on order for the West 25th and Fulton Road intersections. During the community outreach process it was decided that the best location for the cameras is at primary entrances and exits to neighborhoods, schools and high crime intersections.

Additional lighting was another request made by residents. Most agreed that the current lighting levels are inadequate, and pedestrians and transit riders do not feel safe at night. Cleveland Public Power’s plan to conduct a wholesale replacement of its cobra-head fixtures with LED lamps will help the current levels; however, additional lighting is still needed in the form of pedestrian-scale pole lights.

Additional lighting under the existing railroad bridge at W. 65th Street, along with improved drainage, is important for instilling a sense of safety for pedestrians walking under the bridge, particularly future Max Hayes High School students.
RECOMMENDATION SUMMARY

Related Studies
- Prior to design and implementation, coordinate streetscape efforts with the Metro Health Master Plan and the West 25th Street Corridor Initiative. See page 2 for additional related studies.
- Coordinate with the current Pedestrian Retail Overlay Study area designation.
- Coordinate with the future Towpath trail on the proposed trail head design at the corner of W. 11th.

Corridor Configurations
- In general, change the roadway to (2) driving lanes. Width varies between 11’ and 12’. See pages 21-25 for configurations.
- Install a 5’ bike lane on either side of Clark Avenue from Quigley to W. 16th Street.
- Install an 8’ wide parking lane, on either side of Clark Avenue, where space allows, as determined during the design effort.
- Install a 10’ wide turn lane at West 25th and West 44th. Perform traffic counts and analysis at 44th, during design phase.

Traffic Signals
- Perform warrant analysis for all signalized intersections along the corridor, to determine their need.

Design for Pedestrians

Sidewalks
- Meet all ADA requirements.
- Maintain 6’ wide concrete sidewalk.
- Maintain clear lines-of-sight at all sidewalk corners and intersections.
- See Enhanced Intersections below for safe crossing recommendations.
- Eliminate sidewalk clutter, including extraneous signage on utility poles, pay phones, and newspaper vending boxes.
- Examine all utility poles for consolidation.
- Install pedestrian-scaled lighting.
- See “Landscaping & Drainage” for information on sidewalk tree plantings and tree lawn locations.
- See “Site Furnishings & Public Art” for streetscape furnishing recommendations.

Standard Crosswalks
- Replace crosswalks with highly-visible continental or ladder striping.
- Install pedestrian countdown signals.
- Install ADA compliant curb ramps.
- Place a sign in the middle of the street at non-signalized intersections to denote a pedestrian crossing zone (where necessary.)

Enhanced Crosswalks
- See map, pages 27, for enhanced crosswalk locations.
- Install stamped, colored concrete within crosswalks. Select colors and textures that provide high visual contrast. See pages 26 and 27 for recommendations.
- Reduce curb radii and create sidewalk bulbouts at key intersections and at the end of on-street parking areas. See pages 21-25 and 26.
- Install pedestrian refuges where feasible and as determined during the design phase. Minimum recommended locations are Clark Recreation Center and Clark Elementary School, but should be installed at all mid-block crossings, if feasible.
- Install in-street pedestrian crossing signs if pedestrian refuges are not feasible.

Landscaping & Drainage
- Install a minimum 2’-wide amenity strip with permeable pavers throughout the Villa Hispana District and Stockyard/Clark-Fulton Zone. Clear the permeable pavers with the City of Cleveland, to ensure they have the capacity to maintain them.
- Install street trees with appropriate mature sizes and tolerance of urban conditions (e.g. drought, salt, low maintenance,) at regular intervals along the permeable pavement amenity strip. Structural soil is recommended within the amenity strip to help alleviate compaction to the tree roots, and provide adequate soil volume.
- Install bioretention cells where public awareness or education is desired, where their aesthetic value is most needed, and where they will be properly maintained.

Block Consolidation
- Reroute vehicular traffic at West 47th to West 48th, and change West 47th to pedestrian connector/pocket park.

Social Space
- Secure additional funding for, and coordinate with private property owners on improvements outside of Right of Way, where hardscape continues to face of building(s).

Sustainability
- Use an effective combination of permeable pavement, bioretention, and tree biofiltration to clean, slow, and reduce rainwater runoff where feasible, and if proper maintenance can be achieved.

Bicycle Facility Types
- Create a shared roadway by installing sharrow symbols from W. 16th to W. 65th streets.
- Separated bike lanes are recommended from Quigley to W. 16th Street.
Design for Public Transit
- Provide trash and recycling receptacles, lighting, and seating at all TWE’s.
- Provide plantings, or tree lawns depending on availability of maintenance.
- Install specialty pavement.
- See page 33 for material recommendations.
- Closely coordinate all improvements with RTA.
- Continue working with RTA to analyze service and TWE numbers and locations, per page 29.

Traffic / Truck Calming
- Traffic calming design measures include: a reduction in roadway lanes, the installation of bulbouts, constructing new buildings on the existing right of way, adding streetscape amenities, varying vehicular pavements that contrast in color and texture, providing pedestrian-scaled lighting and additional traffic signage.
- Discourage and redirect truck traffic away from between W. 25th and W. 16th Street. See page 18.

Parking
- Provide a dedicated parking lane on each side of the street, where feasible and as determined during the design phase. See pages 21-25 for recommended locations.
- Parking should begin as soon as possible once the left turn lane is fully developed and determined during the design phase.
- Potential to utilize existing vacant lots for parking. This study recommends conducting a separate parking study for this area.
- Establish a consistent parking lot edge treatment (such as ornamental fence).

Access Management
- Remove or reduce the number of existing access points/curb cuts.
- Reduce the width of curb cuts to meet, but not exceed code.
- Analyze the feasibility of utilizing north-south side streets to access adjacent Clark businesses, and to eliminate curb cuts on Clark.

Streetscape
Pavement
- Repeat common materials and colors within the amenity strips and crosswalks to create a unified corridor. See page 33 for recommendations

Site Furnishings & Public Art
- Install additional bike racks. See page 33 for preferred models.
- Install new benches and trash/recycling receptacles throughout corridor (see page 33 for preferred models). Review trash receptacle locations with the City of Cleveland prior to installation to ensure the City has the proper maintenance capacity.
- Public art should be located in areas with high visibility.

Landscaping
- A minimum of five varying trees should be selected for the standard streetscape to ensure tree diversity.
- Refer to the City of Cleveland’s Urban Forestry List of approved street trees.

Maintenance
- Design with longevity and maintenance as a top priority.
- See page 31 for additional maintenance considerations.

Identity Zones & Branding
- Three distinct identity zones have been identified: The Towpath Trail Zone, La Villa Hispana, and the Stockyard/Clark-Fulton Zone (Dream Neighborhood.)
- Consider gateway treatments for the Towpath Trail Zone, and La Villa Hispana, during the design process
- See pages 35-41 for detailed information on district branding/identity improvements

La Villa Hispana Plaza
- Explore opportunities for a public plaza in the Villa Hispana District. See page 39 for potential locations.

Safety and Security
- Additional security cameras for an additional set of eyes on the street.

Economic Redevelopment
- See analysis Takeaway Summaries on Appendix pages 11, 17, 20, 22, 24, and 27.
- See financial feasibility analysis conclusions on page 31.
Cost Estimate

The information and level of detail in this estimate is similar to a City of Cleveland Division of Engineering and Construction Stage 1 cost estimate, but without survey base information. Quantities are derived on the planning team’s field reconnaissance and base information generated from Cuyahoga County GIS data, as exhibited in the existing conditions map, and are derived from the proposed conditions shown in the configuration sections and streetscape recommendations.

The estimate makes the following assumptions:

1. Existing pavement is in fair condition; the wearing course will be removed, and base repair will be completed. Estimate assumes partial-depth pavement repair totaling 10% of the project area.
2. Eight of the 13 traffic signals will be completely replaced, and the other 5 signals will either be removed or retained, due to recent signal upgrades.
3. 6’ wide sidewalks the entire length of corridor
4. All curb and sidewalk will be replaced
5. Basic water line adjustments
6. Eight traffic signal upgrades
7. 3'-4' wide amenity strip with permeable pavers in La Villa Hispana & Stockyard/Clark-Fulton Zone
8. Rolled curbs around tree openings
9. Trees and lawn, only, at bulb-outs and transit waiting areas.

The estimate does not include R/W Land, utility relocation, or construction engineering and inspection costs.

### Roadway

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<td>$5,125.00</td>
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<tr>
<td>11</td>
<td>PROOF ROLLING</td>
<td>20</td>
<td>HOUR</td>
<td>$150.00</td>
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<tr>
<td>12</td>
<td>GEOTEXTILE FABRIC</td>
<td>2,584</td>
<td>SF</td>
<td>$5.00</td>
<td>$12,920.00</td>
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<tr>
<td>13</td>
<td>6&quot; CONCRETE WALK - SIDEWALK</td>
<td>133,675</td>
<td>SF</td>
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<td>14</td>
<td>CURB RAMP LAYOUT COMPLETE IN PLACE WITH TILE, AS PER PLAN</td>
<td>100</td>
<td>CORNER</td>
<td>$50.00</td>
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<td>15</td>
<td>MONUMENT BOX ADJUSTED TO GRADE</td>
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<td>16</td>
<td>PIPE CLEANOUT</td>
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<td>17</td>
<td>UNDERCUTTING SUBGRADE AND SUBBASE</td>
<td>300</td>
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**SUBTOTAL** $1,458,256.00

### Drainage

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<tr>
<td>1</td>
<td>6&quot; UNCLASSIFIED PIPE UNDERDRAINS WITH FABRIC WRAP</td>
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<td>8&quot; BASE PIPE UNDERDRAINS WITH FABRIC WRAP</td>
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<td>15&quot; CONDUIT, TYPE F FOR UNDERDRAIN OUTLETS</td>
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<td>15&quot; CONDUIT, TYPE B, 70A 08, AS PER D-32</td>
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<td>12&quot; CONDUIT, TYPE B, DUCTILE IRON PIPE ANSI CLASS 52, PUSH-ON JOINTS AND FITTINGS, AS PER D-32</td>
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<td>CATCH BASIN, CITY OF CLEVELAND CB-1, AS PER D-34</td>
<td>135</td>
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<td>CATCH BASIN, CITY OF CLEVELAND CB-2, AS PER D-34</td>
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<td>$4,400.00</td>
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<td>VAULT/MAINTENANCE ADJUSTED TO GRADE, AS PER PLAN</td>
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<td>MISCELLANEOUS METAL (WPC), AS PER D-72</td>
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<td>LB</td>
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**SUBTOTAL** $1,109,550.00
**Clark Avenue Corridor Plan**

### Pavement

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<td>1</td>
<td>PARTIAL DEPTH PAVEMENT REPAIR</td>
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<td>PAVEMENT PLANNING, ASPHALT CONCRETE</td>
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<td>SY</td>
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<td>3</td>
<td>PATCHING PLANNED SURFACE</td>
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<td>SY</td>
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<td>4</td>
<td>FULL DEPTH PAVEMENT SAWING</td>
<td>22,770</td>
<td>FT</td>
<td>$1.25</td>
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<td>5</td>
<td>AGGREGATE BASE</td>
<td>850</td>
<td>EY</td>
<td>$45.00</td>
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<td>6</td>
<td>9” CONCRETE BASE, AS PER D-23 AND D-24</td>
<td>635</td>
<td>EY</td>
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<td>7</td>
<td>TACK COAT</td>
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<td>GAL</td>
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<td>TACK COAT FOR INTERMEDIATE COURSE</td>
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<td>GAL</td>
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<td>$7,753.00</td>
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<td>3/4” ASPHALT CONCRETE INTERMEDIATE COURSE, AS PER D-29</td>
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<td>SY</td>
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<td>0” MIN. ASPHALT CONCRETE INTERMEDIATE COURSE, AS PER D-29</td>
<td>360</td>
<td>CY</td>
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<td>1/4” ASPHALT CONCRETE SURFACE COURSE, AS PER D-29</td>
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<td>SY</td>
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<td>0” NON-REINFORCED CONCRETE PAVEMENT, AS PER D-23 AND D-24</td>
<td>4,200</td>
<td>SY</td>
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<td>NON-REINFORCED CONCRETE PAVEMENT, MISC. - CONCRETE PAVEMENT BEHIND DRIVES AND MALL</td>
<td>420</td>
<td>SY</td>
<td>$75.00</td>
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<td>SURCHARGE FOR CLASS MS CONCRETE, AS PER D-25</td>
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<td>CY YD</td>
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<td>SURCHARGE FOR CLASS FS CONCRETE, AS PER D-26</td>
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<td>CURB, TYPE 6</td>
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**SUBTOTAL**  
$2,208,122.00

### Water Work

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<tr>
<th>ITEM #</th>
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<th>UNIT</th>
<th>UNIT COST</th>
<th>TOTAL COST</th>
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<tbody>
<tr>
<td>1</td>
<td>GENERAL WATERWORK ADJUSTMENTS - DOES NOT INCLUDE NEW WATER MAIN</td>
<td>LS</td>
<td>LS</td>
<td>$50,000.00</td>
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**SUBTOTAL**  
$50,000.00

### Lighting

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<tr>
<td>1</td>
<td>PEDESTRIAN CORRIDOR LIGHTING</td>
<td>150</td>
<td>EACH</td>
<td>$4,000.00</td>
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<td>2</td>
<td>VEHICULAR LIGHTING ENHANCEMENTS</td>
<td>165</td>
<td>EACH</td>
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**SUBTOTAL**  
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### Traffic Control

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<tr>
<td>1</td>
<td>SIGNING - REMOVAL AND REPLACEMENT ENTIRE CORRIDOR BOTH SIDES</td>
<td>LS</td>
<td>LS</td>
<td>$80,000.00</td>
<td>$80,000.00</td>
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<td>2</td>
<td>CENTER LINE</td>
<td>2,15</td>
<td>MILE</td>
<td>$7,000.00</td>
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<td>3</td>
<td>CHANNELIZING LINE, 8”</td>
<td>15,000</td>
<td>FT</td>
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<td>STOP LINE</td>
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<td>FT</td>
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<td>5</td>
<td>CROSSWALK LINE</td>
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<td>6</td>
<td>LANE ARROW</td>
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<td>EACH</td>
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<td>7</td>
<td>BIKE LANE SYMBOL (MARKING)</td>
<td>10</td>
<td>EACH</td>
<td>$120.00</td>
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**SUBTOTAL**  
$143,350.00
### Traffic Signals

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<tbody>
<tr>
<td>1</td>
<td>Maintaining Traffic, Misc.: Maintenance of Traffic signal Installations, As per D-49</td>
<td>15</td>
<td>LS</td>
<td>$10,000.00</td>
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<tr>
<td>2</td>
<td>Signing, Misc.: Solar Powered Rectangular Rapid Flashing Beacon Sign Assembly</td>
<td>8</td>
<td>EACH</td>
<td>$8,000.00</td>
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<tr>
<td>3</td>
<td>Signization Upgrades</td>
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### Landscaping/Street SCAPING

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<th>UNIT</th>
<th>UNIT COST</th>
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</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>4&quot; TOPSOIL</td>
<td>306</td>
<td>CY</td>
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<tr>
<td>2</td>
<td>SEEDING</td>
<td>24,050</td>
<td>SF</td>
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<td>$196,745.00</td>
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<tr>
<td>3</td>
<td>STREET TREES (Assume 1 tree every 50')</td>
<td>442</td>
<td>EACH</td>
<td>$465.00</td>
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<tr>
<td>4</td>
<td>PLANTING, Misc.: Planting soil for trees (Assume 3.7 CY Per tree)</td>
<td>1,420</td>
<td>CY</td>
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<td>5</td>
<td>STRUCTURAL SOIL FOR TREES</td>
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<td>CY</td>
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<tr>
<td>6</td>
<td>Special Misc.: Rolled curb around tree opening (Assume 5’ x 8’ = 40 LF per tree)</td>
<td>9,932</td>
<td>LF</td>
<td>$40.00</td>
<td>$397,280.00</td>
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<td>7</td>
<td>Special Misc.: Trash Receptacles (Assume 1 every 2 blocks)</td>
<td>30</td>
<td>EACH</td>
<td>$1,150.00</td>
<td>$34,500.00</td>
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<tr>
<td>8</td>
<td>Special Misc.: Bicycle Racks (Assume one every 300 linear feet)</td>
<td>90</td>
<td>EACH</td>
<td>$50.00</td>
<td>$4,500.00</td>
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<tr>
<td>9</td>
<td>Special Misc.: Metal Benches (Assume one every 300 linear feet)</td>
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<td>EACH</td>
<td>$2,000.00</td>
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<td>10</td>
<td>Special Misc.: Permeable Pavers in amenity strip</td>
<td>50,200</td>
<td>SF</td>
<td>$20.00</td>
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<td>11</td>
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<td>14,460</td>
<td>SF</td>
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<td>12</td>
<td>Special Misc.: Stamped/Colored concrete for enhanced intersection (W:25H)</td>
<td>4,460</td>
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<tr>
<td>13</td>
<td>Special Misc.: Brick Pavers at Ped. Areas for enhanced intersection (W:25H)</td>
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<td>SF</td>
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<td>$12,000.00</td>
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### Transit Waiting Areas (27)

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<tr>
<td>1</td>
<td>4&quot; TOPSOIL</td>
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<td>19,116</td>
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<td>3</td>
<td>BRICK PAVERS ADDED TO CONCRETE BASE (Assume 2525SF Per tree, Trash Receptacles included above)</td>
<td>6,800</td>
<td>SF</td>
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### Bike/Boulevard Areas (52)

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<tr>
<td>1</td>
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<td>STREET TREES (Assume 1 tree every 50')</td>
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### Streetscape Subtotal

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<tr>
<td>1</td>
<td>Special Misc.: Public Art (1.5% of Streetscape Budget)</td>
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<td>LUMP</td>
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### Implementation

**Clark Avenue Corridor Plan**

**Clark Avenue Rehabilitation Cost Estimate**

<table>
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<td>PORTABLE CHANGEABLE MESSAGE SIGN</td>
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<td>LAW ENFORCEMENT OFFICER WITHOUT PATROL CAR FOR ASSISTANCE</td>
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<td>$60.00</td>
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<td>$10,000.00</td>
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<tr>
<td>9</td>
<td>WATER</td>
<td>10</td>
<td>MGAL</td>
<td>$15.00</td>
<td>$150.00</td>
</tr>
<tr>
<td>10</td>
<td>CALCIUM CHLORIDE</td>
<td>1.00</td>
<td>TON</td>
<td>$250.00</td>
<td>$250.00</td>
</tr>
</tbody>
</table>

**Subtotal** $93,100.00

**Testing**

<table>
<thead>
<tr>
<th>ITEM #</th>
<th>ITEM</th>
<th>QUANTITY</th>
<th>UNIT</th>
<th>UNIT COST</th>
<th>TOTAL COST</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>ASPHALT EXTRACTION TEST, AS PER D-73</td>
<td>40</td>
<td>EACH</td>
<td>$50.00</td>
<td>$2,000.00</td>
</tr>
<tr>
<td>2</td>
<td>THICKNESS OF COMPACTED ASPHALT TEST, AS PER D-73</td>
<td>40</td>
<td>EACH</td>
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<td>$2,000.00</td>
</tr>
<tr>
<td>3</td>
<td>CONCRETE CYLINDER TEST (4 SPECIMENS PER SET), AS PER D-73</td>
<td>40</td>
<td>SETS</td>
<td>$50.00</td>
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<tr>
<td>4</td>
<td>SUBSEQUENT SLUMP AND TEMPERATURE TEST, AS PER D-73</td>
<td>40</td>
<td>EACH</td>
<td>$10.00</td>
<td>$400.00</td>
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<tr>
<td>5</td>
<td>SUBSEQUENT AIR CONTENT AND TEMPERATURE TEST, AS PER D-73</td>
<td>40</td>
<td>EACH</td>
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<td>$400.00</td>
</tr>
<tr>
<td>6</td>
<td>FLEXURAL STRENGTH OF CONCRETE (BEAM) TEST (ASTM C-78), AS PER D-73</td>
<td>2</td>
<td>EACH</td>
<td>$100.00</td>
<td>$200.00</td>
</tr>
<tr>
<td>7</td>
<td>TECHNICIAN WITH NUCLEAR DENSITY METER (SUBGRADE COMPACTION, SUBBASE, ASPHALT), AS PER D-73</td>
<td>200</td>
<td>HOUR</td>
<td>$50.00</td>
<td>$10,000.00</td>
</tr>
<tr>
<td>8</td>
<td>PROCTOR TEST, AS PER D-73</td>
<td>6</td>
<td>EACH</td>
<td>$100.00</td>
<td>$600.00</td>
</tr>
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</table>

**Subtotal** $17,600.00
## Miscellaneous Costs

<table>
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<tr>
<th>ITEM #</th>
<th>ITEM DESCRIPTION</th>
<th>QUANTITY</th>
<th>UNIT</th>
<th>UNIT COST</th>
<th>TOTAL COST</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Maintaining Traffic, As Per Plan</td>
<td>LUMP</td>
<td>LS</td>
<td>$125,000.00</td>
<td>$125,000.00</td>
</tr>
<tr>
<td>3</td>
<td>Field Office, Type B</td>
<td>24</td>
<td>MONTH</td>
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<tr>
<td>4</td>
<td>Computer Equipment for Type B Field Office, As Per D-46, For City Ownership</td>
<td>LUMP</td>
<td>LS</td>
<td>$2,000.00</td>
<td>$2,000.00</td>
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<tr>
<td>5</td>
<td>Additional Smartphone for City Inspector, As Per D-45</td>
<td>24</td>
<td>MONTH</td>
<td>$125.00</td>
<td>$3,000.00</td>
</tr>
<tr>
<td>6</td>
<td>Digital Camera for City Ownership</td>
<td>LUMP</td>
<td>LS</td>
<td>$500.00</td>
<td>$500.00</td>
</tr>
<tr>
<td>7</td>
<td>Construction Layout Stakes and Surveying, As Per Plan</td>
<td>LUMP</td>
<td>LS</td>
<td>$20,000.00</td>
<td>$20,000.00</td>
</tr>
<tr>
<td>8</td>
<td>Mobilization</td>
<td>LUMP</td>
<td>LS</td>
<td>$100,000.00</td>
<td>$100,000.00</td>
</tr>
<tr>
<td>9</td>
<td>Storm Water Pollution Prevention Plan</td>
<td>LUMP</td>
<td>LS</td>
<td>$5,000.00</td>
<td>$5,000.00</td>
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<tr>
<td>10</td>
<td>Erosion Control</td>
<td>LUMP</td>
<td>LS</td>
<td>$20,000.00</td>
<td>$20,000.00</td>
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<tr>
<td>11</td>
<td>As-Built Record Drawings</td>
<td>LUMP</td>
<td>LS</td>
<td>$5,000.00</td>
<td>$5,000.00</td>
</tr>
<tr>
<td>12</td>
<td>Pre-Construction Videography, As Per Plan</td>
<td>LUMP</td>
<td>LS</td>
<td>$5,000.00</td>
<td>$5,000.00</td>
</tr>
<tr>
<td>13</td>
<td>Pre-Construction Videography, As Per D-36</td>
<td>LUMP</td>
<td>LS</td>
<td>$5,000.00</td>
<td>$5,000.00</td>
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<tr>
<td>14</td>
<td>Project Signs Furnished and Placed</td>
<td>2</td>
<td>EACH</td>
<td>$750.00</td>
<td>$1,500.00</td>
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<tr>
<td>15</td>
<td>Engineering &amp; Construction Force Account (FA-1A)</td>
<td>LUMP</td>
<td>LS</td>
<td>$100,000.00</td>
<td>$100,000.00</td>
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<td>16</td>
<td>Cleveland Water Department Force Account</td>
<td>LUMP</td>
<td>LS</td>
<td>$25,000.00</td>
<td>$25,000.00</td>
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<td>17</td>
<td>Cleveland Water Pollution Control Force Account</td>
<td>LUMP</td>
<td>LS</td>
<td>$50,000.00</td>
<td>$50,000.00</td>
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</table>

**Subtotal:** $39,000,000

**Estimated Project Subtotal:** $10,887,095.00

**Contingency (30%)** $3,266,179

**Inflation 2018 (10.6%)** $1,500,242

**Total Probable Construction Cost:** $15,653,465.81

---

### Cost Management Strategies

Options for reducing or delaying costs, but which may impact the effectiveness of this study’s recommendations include:

- Keep all curbs in existing locations
- Stripe bumpouts
- Replace only sidewalk panels that are in poor condition
- Reduce level of finishes (e.g., install colored, stamped concrete, in lieu of unit pavers, in accent strips.)
- Focus streetscape improvement investments on La Villa Hispana district.
- Install corridor reconfigurations via low-cost striping and pavement markings, if street rehabilitation funding for east of West 41st is not imminent.
- Encourage owners of private properties to paint facades facing Clark bright colors, in La Villa Hispana district.
- Phase implementation of improvements, as described on the following two pages.
Next Steps

Short Term
• Coordinate with City of Cleveland, Division of Engineering and Construction, to find Streetscape Enhancement funding for Clark Avenue Rehabilitation project West of West 41st St., which is currently out for design.
• Coordinate with NOACA on corridor parking analysis.
• Coordinate with the City of Cleveland regarding the camera at Scranton Road, which has been taken down. Residents would like the camera back as soon as possible.
• Addition of security cameras to begin establishing safety within the corridor.
• Work with local merchants to begin upgrading storefronts, especially painting exteriors in La Villa Hispana. Help them navigate through the City’s storefront Renovation Program.
• Coordinate with the current Pedestrian Retail Overlay (PRO) Study area designation. SCFSCDO should reach out to the small business owners to help explain the purpose and benefits of the PRO, and direct them to the services offered to small businesses, including securing certificates of occupancy, for those who do not possess one currently.
• Begin coordination with CPP on pole consolidation and the City’s future LED City street lighting program. They may develop a street priority list.
• Further coordination is required with CPP for the historic pedestrian-scale lights. CPP’s board will have to review and approve pedestrian-scale lighting. If approved, CPP would furnish and install lights, and pole. Payment of power for these lights would also have to be coordinated with CPP.
• Lighting improvements under the railroad bridge, near 65th, are important.
• Contact the City of Cleveland to see if they are able to add additional City standard trash receptacles along the corridor and have the capacity to collect and maintain them.
• Contact LAND Studio to discuss public art and potential funding opportunities.
• Identity key individuals at Steelyard Commons and WIRE-Net to discuss desired truck routes to access their facilities.
• Coordinate with the City of Cleveland and ODOT on the potential for increasing the number of wayfinding signs to Steelyard Commons other than Clark Avenue.
• Secure funding for District branding, wayfinding and street signage.
• Attend NOACA’s workshops to develop a prioritized program of low-cost projects that are recommended for TLCI implementation grant funding. NOACA will help identify common projects, and then help in the programming of projects across the region. This component of the TLCI program focuses on smaller-scale projects that can be implemented in multiple locations across northeast Ohio. Candidates for this funding source include:
  1. Stripping separated bike lanes from Quigley to W. 16th Street.
  2. Install bumpouts and on-street parking markings between West 16th and Scranton. Coordinate with bike lanes east of 16th.
  3. If rehabilitation funding for Clark, east of 41st Street will not be secured for several years, install crosswalks at schools and Clark Recreation Center.
  4. Install wayfinding signs to and from Steelyard Commons.
• CDC’s discuss sources of funding for larger projects, with NOACA.
• Coordinate with Towpath Trail Partnership on the future towpath trail connector kiosk design.
• Determine preferred La Villa Hispana Plaza site and raise funds for purchase.

Medium Term
• Coordination should begin with Cleveland Neighborhood Progress, MetroHealth, NOACA and the City of Cleveland on the MetroHealth Masterplan and the West 25th Street Corridor Initiative. MetroHealth is interested in moving administrative offices off campus, into the neighborhood’s commercial areas. There is potential to combine redevelopment recommendations found in the appendix of this study with the above-mentioned studies’ recommendations, and combine funding strategies.
• The cost estimates provided in this study can serve as a tool to determine how much additional funding is needed for enhancements. Once the additional amount is determined, a funding strategy can be developed.
• Continue to coordinate with Cleveland Municipal School District (CMSD) on the proposed timing of all projects that was scheduled to be approved by the Board of Education in late February, early March 2015. CMSD recently adopted an updated master plan for its facilities. Plans for the schools along the corridor are as follows:
  1. Clark Elementary will be rebuilt in the near future, as a neighborhood PK-8, which will likely include pick up and drop off areas on Clark Avenue.
  2. Thomas Jefferson School currently houses the Newcomers’ Academy Program but has significant capacity for more students. In the future, this program may be relocated so the building can serve as a swing site for Clark School while a new Clark is being constructed. The permanent disposition of the building after it is used as a swing site is yet to be determined. It will however, remain a PreK-8 neighborhood school.
  3. Walton School, although currently open as a K-8 school, is recommended for closure in the future.
  4. Lincoln West High School will continue to function as a high school; however, it currently is unclear if the school will be renovated (wholly or partially) or replaced with a new building on that site.
A planning process for the school will begin in 2015.

5. Recommendations for Luis Munoz Marin PreK-8 School call for it to remain open and be maintained until other improvements are made to schools in this cluster.

6. Buhrer Dual Language School is newly built and will remain open.

7. The new Max Hayes High School is on schedule to open in August, 2015.

- Acquire property for La Villa Hispana Plaza and raise funds for design and installation.
- Identify and prioritize redevelopment sites and strategies, particularly in La Villa Hispana
- Secure funding for La Villa Hispana-specific improvements
- Develop and prioritize vacant lot conversion strategies
- Consider PRO overlay for Scranton to West 41st.

**Long Term**

- Design and build La Villa Hispana Plaza.
- Implement road rehab and streetscape improvements for 41st-Quigley.
- Implement Towpath Trailhead Building, Vacant Brewery Building and La Villa redevelopments (per financial feasibility analysis in appendix.)
A P P E N D I X  Clark Avenue Corridor Plan

chapter 6: appendix

meeting dates

1. NPI Coordination call, May 15, 2014
2. TAC #1, August 20, 2014
3. CAC #1, September 25, 2014
4. TAC #2, October 21, 2014
5. Community #1, October 29, 2014
6. NPI Work Session, November 12, 2014
7. TAC #3, December 4, 2014
8. Community #2, December 11, 2014
9. CMSD Focus Group, December 12, 2014
10. TAC #4, January 29, 2015
11. CAC #2, February 5, 2015
12. Community #3 (Draft), February 12, 2015

NPI - Neighborhood Progress Inc.
TAC - Technical Advisory Committee
CAC - Community Advisory Committee

survey results

Q1 Please check one type of Corridor user that you most identify with.

- [ ] Business owner
- [ ] Commuter who uses Clark Avenue frequently
- [ ] Consumer who visits the businesses
- [ ] Employee
- [ ] Resident
- [ ] Student

(The label) Total

- [ ] Business owner 100.00%
- [ ] Commuter who uses Clark Avenue frequently 100.00%
- [ ] Consumer who visits the businesses 100.00%
- [ ] Employee 100.00%
- [ ] Resident 100.00%
- [ ] Student 100.00%

Q2 Please identify and describe the geographic limits of specific neighborhoods along the Clark Avenue Corridor.

<table>
<thead>
<tr>
<th>#</th>
<th>Responses</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>41st to 44th</td>
<td>12/2/2014 1:30 PM</td>
</tr>
<tr>
<td>2</td>
<td>Valley - East of 15th / Tremont - 15th to Scranton / Scranton to 30th / Clark-Fulton - 30th to 65th</td>
<td>11/26/2014 1:19 PM</td>
</tr>
<tr>
<td>3</td>
<td>Clark Fields to W. 65th apparently! This question is confusing.</td>
<td>11/26/2014 9:39 AM</td>
</tr>
<tr>
<td>4</td>
<td>Clark Avenue is an unfortunate major artery for the near west/south side neighborhoods. A stronger urban design along this corridor could help the above neighborhoods.</td>
<td>11/25/2014 7:31 PM</td>
</tr>
<tr>
<td>5</td>
<td>abandoned properties can be demolished, existing tired businesses on Clark not well taken care of, need from here on up an Urban Plan to improve Clark Ave. - 36th to 65th. this new area needs to be in the plan all the way to 65th and beyond.</td>
<td>11/25/2014 5:46 PM</td>
</tr>
<tr>
<td>6</td>
<td>I do not understand the question.</td>
<td>11/24/2014 11:37 AM</td>
</tr>
<tr>
<td>7</td>
<td>Parking issues and traffic.</td>
<td>11/22/2014 4:16 PM</td>
</tr>
<tr>
<td>8</td>
<td>Safety.</td>
<td>11/20/2014 5:20 PM</td>
</tr>
<tr>
<td>9</td>
<td>Between W. 25th and W. 65th</td>
<td>11/20/2014 8:36 PM</td>
</tr>
<tr>
<td>10</td>
<td>Metro Clark Fulton</td>
<td>11/20/2014 11:21 AM</td>
</tr>
<tr>
<td>11</td>
<td>Distinct neighborhoods: moving east to west, west end to just before 15th to Tremont, Tremont to W25, W25 to W44, W44 to the rail tracks east of W65, W65 to West.</td>
<td>11/19/2014 3:50 PM</td>
</tr>
<tr>
<td>12</td>
<td>I do not understand the question.</td>
<td>11/19/2014 3:41 PM</td>
</tr>
<tr>
<td>13</td>
<td>LACK OF PARKING ON CLARK</td>
<td>11/17/2014 10:34 AM</td>
</tr>
<tr>
<td>14</td>
<td>Tremont West, Clark-Fulton, Stockyards, Southside.</td>
<td>11/13/2014 8:32 AM</td>
</tr>
<tr>
<td>15</td>
<td>Pullen, DiMoro, Suyemar, Boulevard.</td>
<td>11/13/2014 8:26 AM</td>
</tr>
</tbody>
</table>

Claremont, Clark-Pulten & Brooklyn Centre Community Development Office

Clark Avenue Corridor Plan A P P E N D I X 1
A P P E N D I X

Clark Avenue Corridor Plan: User Survey

SurveyMonkey

Q3 Please check the transportation method you use most in Clark Avenue.

Answer Choices

<table>
<thead>
<tr>
<th>Transportation Method</th>
<th>Responses</th>
<th>Yes</th>
<th>No</th>
<th>Total</th>
<th>Weighted Average</th>
</tr>
</thead>
<tbody>
<tr>
<td>Automobile</td>
<td>70.00%</td>
<td>60</td>
<td>24</td>
<td>84</td>
<td>22.94%</td>
</tr>
<tr>
<td>Bicycle</td>
<td>33.33%</td>
<td>45</td>
<td>38</td>
<td>83</td>
<td>29.22%</td>
</tr>
<tr>
<td>Pedestrian</td>
<td>6.67%</td>
<td>7</td>
<td>38</td>
<td>45</td>
<td>1.10%</td>
</tr>
</tbody>
</table>

Q4 Public Transportation

Are there enough buses?

Yes: 95.00%  No: 5.00%  Total: 100.00%

Are the buses too crowded?

Yes: 15.00%  No: 85.00%  Total: 100.00%

Are the bus stops well lit?

Yes: 95.00%  No: 5.00%  Total: 100.00%

Are the bus schedules reliable?

Yes: 90.00%  No: 10.00%  Total: 100.00%

Are there more bus riders?

Yes: 80.00%  No: 20.00%  Total: 100.00%

Are you satisfied with the current public transportation system in Clark Avenue?

Yes: 90.00%  No: 10.00%  Total: 100.00%

Please rate your preferred corridor configuration, as shown below, from most preferred (1) to least preferred (5).

SurveyMonkey

Q5 Please rank the corridor segments below, from most important (1) to least important (5) for improvement.

Survey results

Answer Choices

<table>
<thead>
<tr>
<th>Segment</th>
<th>Weighted Average</th>
<th>Total Score</th>
<th>1 2 3 4 5 Total Score</th>
<th>1 2 3 4 5 Total Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>West Side</td>
<td>2.48</td>
<td>1.60</td>
<td>14.42%</td>
<td>10.58%</td>
</tr>
<tr>
<td>South Side</td>
<td>14.42%</td>
<td>2.48</td>
<td>20.96%</td>
<td>19.58%</td>
</tr>
<tr>
<td>Inner City</td>
<td>10.58%</td>
<td>14.42%</td>
<td>21.10%</td>
<td>22.94%</td>
</tr>
<tr>
<td>Northeast</td>
<td>19.58%</td>
<td>19.58%</td>
<td>39.19%</td>
<td>39.19%</td>
</tr>
<tr>
<td>Southwest</td>
<td>1.60</td>
<td>1.60</td>
<td>22.12%</td>
<td>22.12%</td>
</tr>
<tr>
<td>Total</td>
<td>100.00%</td>
<td>100.00%</td>
<td>100.00%</td>
<td>100.00%</td>
</tr>
</tbody>
</table>
Additional green space

Pedestrian plazas for events

elements and

Bike lanes

Q8 Please rank the streetscape elements below, from most important (1) to least important (5).

<table>
<thead>
<tr>
<th>#</th>
<th>Description</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Improve traffic flow, 25th - Fulton. Improve appearance/appeal.</td>
<td>109</td>
</tr>
<tr>
<td>2</td>
<td>Are there any plans to put the overhead utilities (i.e., power/telecommunications lines) underground?</td>
<td>109</td>
</tr>
<tr>
<td>3</td>
<td>Glad you’re doing this. It’s hard to rank some of these since so much is needed. Ultimately I think the area closest to in the city. Maybe they’d pony up some landscaping $$? Just a thought.</td>
<td>109</td>
</tr>
<tr>
<td>4</td>
<td>Kids need a place to play; kids need a place to park bikes</td>
<td>109</td>
</tr>
<tr>
<td>5</td>
<td>Maingate signage near Broadway/Orange/main post office. Serves no purpose, adds no value.</td>
<td>109</td>
</tr>
</tbody>
</table>

Q9 Do you have any other comments, questions, or concerns?

Please bring community family events, resources to Trent Park. It will unify the community. The community needs to feel safer and more positive. Reverse the auto-centric design it’s especially noticeable near 74th and High. Negative effects our quality of life through noise and vibrations. I think our section of Clark also needs better speed control. The number of parking spaces available is a priority for the entire area. Parking is already limiting. The more walkable the neighborhood is, the safer it becomes.

A P P E N D I X

Clark Avenue Corridor Plan: User Survey

SurveyMonkey
BACKGROUND

Serving as a sub-consultant to Behnke Associates, 4ward Planning was engaged to provide economic development analysis services to the Tremont West Development Corporation and the City of Cleveland in support of a transportation corridor plan for the Clark Avenue Corridor in Cleveland, Ohio. The project is part of the Transportation for Livable Communities (TLCI) program.

The following market analysis includes a detailed socio-economic and labor analysis and an estimation of real estate market demand for residential, office, and retail land use to further identify market-supportable adaptive reuse and infill opportunities along the corridor. An improvement-to-land value (ILV) analysis screens existing sites for redevelopment potential, a first cut at identifying opportunities on the ground. This market analysis informs the creation of redevelopment scenarios for the overall corridor master plan being designed by other consultants. This analysis will be supplemented by a financial feasibility analysis on key sites.
# SOCIO-ECONOMIC TRENDS ANALYSIS

ECONOMIC AND REAL ESTATE ANALYSIS FOR SUSTAINABLE LAND USE OUTCOMES™

## Glossary of Terms: Socio-Economic Trends Analysis

**Household**: Household population, as compared to total population, excludes persons living in dormitories, penal facilities, hospitals, and other institutional settings.

**Family**: A family is a group of two or more people (one of whom is the householder) related by birth, marriage, or adoption and living together; all such people are considered as members of one family. The number of families is equal to the number of family households.

**Non-family Household**: A household consists of all the people who occupy a housing unit. A house, an apartment, or other group of rooms, or a single room, is regarded as a housing unit when it is occupied or intended for occupancy as separate living quarters. The count of households excludes group quarters and institutions.

**Family Type Households**: A household in which one or more parents live after the children have left home, typically represented by ages 35 to 74.

**Metropolitan Statistical Areas (MSA)**: Metropolitan Statistical Areas (metro areas) are geographic entities defined by the Office of Management and Budget. A metro area contains a core urban area of 50,000 or more population. Each metro or micro area consists of one or more counties and includes the counties containing the core urban area, as well as any adjacent counties that have a high degree of social and economic integration (as measured by commuting to work) with the urban core.

**Flat Growth**: Flat growth is defined as an annualized rate of change between -0.75% and 0.75%.

## Methodology: Socio-Economic Trends Analysis

4ward Planning examined socio-economic trends for 2010, 2014 (estimated), and 2019 (forecasted) to comparatively analyze the Clark Avenue Corridor and the surrounding region. The geographic areas studied include:

- Clark Avenue Corridor
- 10-Minute Drive Contour (from the intersection of Clark Avenue and Fulton Road)
- Cuyahoga County

The analysis and recommendations that follow are based on a combination of quantitative and qualitative techniques. Quantitative analysis is underpinned by both public and proprietary data sources, including U.S. Census-based data and Esri’s Community Analyst — a socio-economic data analysis tool.

For the study areas, estimated and forecasted socio-economic trends examined include population growth, formation of family and non-family households, age cohort characteristics, household income, residential tenure, educational attainment, and consumer expenditures.

## Key Findings: Socio-Economic Trends Analysis

### Stabilizing population with slight decline in coming years

All geographies examined are forecasted to experience population growth through 2010, albeit with a slight decline. The rate of decline is likely to be significantly lower than previous years, suggesting a stabilizing population.

### Relative rise in surrounding area non-family households

Consistent with national and regional trends, non-family households are growing faster than family households, as well as outpacing the overall rate of population growth, in the geographies surrounding the Clark Avenue Corridor. Particularly, the rate of single-person households is expected to continue for the foreseeable future.

### Aging population

The age groups forecasted to undergo the greatest growth in the study areas over the coming years include Younger Empty Nesters (55 to 64) and Older Empty Nesters (65 to 74), both of which will greatly influence housing demand, especially for smaller units.

### Low incomes and retail spending

The Clark Avenue Corridor exhibits relatively low incomes and spending patterns that are below the surrounding geographies and national average. This trend suggests future retail development and redevelopment would need to draw upon those from the surrounding region, while also ensuring consumer staples for local residents.
Socio-Economic Trends Analysis Study Areas – 2014 Summary

Clark Avenue Corridor
- Population: 8,713
- Total Households: 3,218
- Median Age: 31
- Median Household Income: $19,021
- Percent of Household Incomes > $75,000: 4%
- Percent Owner-Occupied Housing: 25%

10-Minute Drive Contour (from intersection of Clark Ave and Fulton Rd)
- Population: 225,644
- Total Households: 96,003
- Median Age: 35
- Median Household Income: $28,813
- Percent of Household Incomes > $75,000: 13%
- Percent Owner-Occupied Housing: 51%

Cuyahoga County
- Population: 1,258,105
- Total Households: 541,402
- Median Age: 41
- Median Household Income: $42,589
- Percent of Household Incomes > $75,000: 27%
- Percent Owner-Occupied Housing: 52%
Household Formation

The figures to the right and below illustrate household formation trends and projections for all three study areas, by family and non-family households. While both types of households are declining in the Corridor, the surrounding geographies have experienced growth in non-family households, despite overall population decline. This trend is expected to continue over the coming years. Further, in all three study areas, the rate of family household decline exceeds the rate of overall population decline.

Age Distribution

Despite population decline, the Clark Avenue Corridor has experienced steady growth in the number of persons 55-and-over - a trend that is very likely to continue over the coming years. In contrast, the share of population ages 15 through 44, who comprising the majority of persons in the area, is declining. This decline, combined with overall population trends, suggests a net outmigration by persons in this age group, either due to issues of housing availability, amenities, and/or employment prospects. The revitalization of the Clark Avenue Corridor can help to reverse this outmigration.

Total Population

While all three study areas have experienced population declines since 2000, the rate of decline has slowed - a trend expected to continue over the next five years. The Clark Avenue Corridor decreased to approximately 9,000 residents in 2010, from 11,500 in 2000 (a nearly 23 percent decline). Total population for the corridor is likely to stabilize around 8,500 persons over the next five years, which still represents a sizeable (and relatively high density) population for a corridor of this size.
### Age Cohort Growth

When compared to the 10-minute drive contour and Cuyahoga County, the Clark Avenue Corridor is expected to experience a greater rate of decline among younger (14 and below) persons and a greater rate of increase among older persons (45 and older) over the next five years.

#### Hispanic Population

At nearly 40 percent of the total population, the Clark Avenue Corridor is represented by a significantly higher concentration of Hispanic population relative to the other study areas, with more than double the rate of 10-minute drive contour (17.5 percent) and seven times that of Cuyahoga County (5.3 percent). The Hispanic population is generally younger and consists of larger household sizes relative to non-Hispanics. Additionally, the strong presence of Hispanics within the Clark Avenue Corridor can provide rich opportunities for neighborhood retail and cultural amenities.

### Age and Housing Demand

In the near term (the next seven years) and long term (beyond the next seven years), housing demand in the Clark Avenue Corridor and surrounding area will likely come from within the demographic groups highlighted below. The 55-to-74 age cohort (Empty Nesters) will exert considerable influence on the type of housing developed, specifically smaller housing units, as they downsize from traditional single-family units. As previously highlighted, this group is increasing as a share of the total county population. To a lesser extent, Young Professionals (ages 25 to 34) may also influence the county's housing market over the coming years. While this age group is forecasted to decline as a percent of the total population through 2018, they also typically seek small, affordable, rental units with convenient commutes to jobs or school, and thus, may be more likely to locate to a neighborhood offering such housing types.

### Median Household Income

The Clark Avenue Corridor had a notably low 2013 median household income, at under $20,000, nearly $10,000 less than the 10-minute drive contour and more than $20,000 lower than the county. Additionally, Cleveland underperforms relative to Cuyahoga County in the percentage of households with income greater than the U.S. Department of Housing and Urban Development (HUD) Area Median Family Income (AMI), which is $62,600 for 2014.
**Income Distribution**

As exhibited below, more than 70 percent of all households within the Clark Avenue Corridor earned less than $35,000 in 2013, compared to just over half of all households within the 10-minute drive contour and just over 40 percent in the county. This is consistent with the corridor’s high poverty rate of nearly 46 percent.

**Educational Attainment**

Illustrated below, the Clark Avenue Corridor is characterized by significantly lower levels of educational attainment levels than both the 10-minute drive contour and county. Relatively high levels of educational attainment are consistent with the corridor’s low income levels, as these characteristics are highly correlated. Further, households exhibiting low educational attainment levels, typically, are more likely to demand renter-occupied housing, versus owner – and this, in turn, influences what is built.

**Cost Distribution by Tenure, City of Cleveland, 2011**

![Cost Distribution by Tenure, City of Cleveland, 2011](Image)

**Housing Tenure Trends**

The figure below comparatively illustrates trends in housing tenure for the three study geographies, indicating that rental rates are relatively higher within the Clark Avenue Corridor. The vacancy rate is also higher along Clark Avenue, hovering around 20 percent. Within the City of Cleveland, homeowners are less likely to be cost-burdened (e.g., paying over 30 percent of income toward housing) compared to area renters. Indeed, half of all renter households in Cleveland are cost-burdened, while just over one-third of owner households are cost-burdened, according to U.S. Census data.

**Household Expenditures**

The figure below illustrates the spending potential of households in each of the three analyzis geographies, on a select set of discretionary spending categories. An index value of 100 represents the national average. All geographies are generally below the national average in most spending categories, with the Clark Avenue Corridor the lowest among them; consistent with its low household incomes. These trends suggest that retail development along Clark Avenue (particularly as part of a mixed-use residential development project) may need to draw consumers from the surrounding area.

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**Appendix Clark Avenue Corridor Plan**

December 17, 2014
**Key Challenges**

**Economic Analysis Report**

- **Takeaway: Socio-Economic Trends**
  
  The preceding analysis of socio-economic trends for the Clark Avenue Corridor, 10-minute drive contour, and Cuyahoga County provides insight into the population, housing, and demographic characteristics of the area. While growth in population and household formation is likely to stay relatively flat, with modest declines in the near future, a number of indicators suggest a need for strategic redevelopment in the area:

  - There is a fast-growing segment of those 55 years of age and older in the corridor, as well the surrounding area. As persons near retirement, greater consideration is given to downsizing one’s residence while remaining close to family, friends, and employment opportunities. This suggests a need for affordable housing choice accommodating the 55-plus set – again, a demand driver for smaller housing units.
  
  - Half of all renter households are cost-burdened, spending more than 30 percent of their income on housing. Further, relatively strong growth in non-family households suggests a likely increasing demand for small, affordable rental units.
  
  - Lower incomes, lower educational attainment and higher poverty rates indicate that both businesses and residential developers looking to locate in the corridor will need to market outside of the corridor to generate sufficient demand.

**Office Buildings**

- Downward pressure on existing office building rents will result on the decline in the numbers of young and middle age office workers continue.

- Lower relative education levels and a lack of new business formation may hinder new office development along the corridor.

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**Key Opportunities**

- **Labor and Industry Trends Analysis**

  Economic and Real Estate Analysis for Sustainable Land Use Outcomes™

  **Economic and Real Estate Analysis for Sustainable Land Use Outcomes™**

  **Labor and Industry Trends Analysis**
Key Findings: Labor and Industry Trends Analysis

Employment remains below pre-crisis levels

Cuyahoga County experienced a sharp drop in total employment between 2007 and 2009, at nearly 70,000 jobs or over nine percent of total employment. While the number of jobs grew by nearly 29,000 between 2009 and 2012, total employment remains well below 2007 levels.

High unemployment and declining employment-to-population ratio

The unemployment rate of Cleveland remains considerably high, relative to pre-crisis norms. While the rate of unemployment has begun to trend downward, this is partly because more working-age people are dropping out of the workforce due to retirement, aging, and discouragement, rather than being an indicator of overall economic health.

Growing wage gap

The ratio of the top five to bottom five industries, by average monthly earnings, has grown since over the coming years is likely to be disproportionately concentrated in low-wage jobs.

Growing in health care, declines in manufacturing

Already the largest industry by employment in all study areas, Health Care and Social Assistance is expected to further expand through 2020, with nearly 41,000 jobs in Cleveland, alone. Manufacturing is expected to experience employment declines.
The Great Recession had an enormous impact on the number of total jobs within Cuyahoga County and the surrounding region, with losses of more than five percent of the county’s workforce between 2007 and 2012. However, a modest post-crisis net employment recovery occurred between 2009 and 2012, adding nearly 29,000 jobs and exceeding the employment growth rate of the Cleveland MSA and Ohio during the same time period. Despite recent employment gains, total employment within the county in 2012 remained well below 2007 levels, with a shortfall of over 40,000 jobs.

The Cuyahoga County workforce is aging, as shown below. Every age cohort below 55 years saw a net decline in workers between 2007 and 2012, while workers ages 55 to 64 and over 65 saw employment gains of over 14 percent and 15 percent, respectively. These trends are consistent with younger and middle-aged workers being disproportionately worse off, in terms of employment, as a result of the economic downturn. Further, the relatively strong rise in the share of workers 55 and older in the area suggests many companies value experience and productivity over youth and, generally, lower payroll costs.

Consistent with national and regional trends, older and bigger firms dominate the employment landscape within Cuyahoga County, while the employment generated via new firm formation appears to be in general decline. Indeed, the rate at which employment at newly formed firms (0-1 years) declined between 2007 and 2012 exceeded that of older firms (11+ years). Similarly, smaller firms experienced greater employment decreases relative to larger firms. Expanding access to entrepreneurship within the Clark Avenue Corridor could substantially increase labor demand and promote greater business dynamism.

While the majority of sectors within Cuyahoga County experienced a net decline between 2007 and 2012, Health Care and Social Assistance was a notable exception, expanding by nearly 12,000 jobs. Of the top six sectors by employment, the remaining five saw job losses, with Manufacturing leading at nearly 13,000 jobs lost, consistent with increasing automation and capital intensity of the tradable sector. However, since this recession, Manufacturing, Accommodation and Food Services, Administrative and Support, and Retail Trade have experienced modest employment gains.
Top Six Sectors by Total Employment: Cleveland MSA

Similar to Cuyahoga County, the Cleveland MSA experienced the greatest employment growth in Health Care and Social Assistance, and declines in Manufacturing. The healthcare sector is likely to remain the region’s dominant industry and source of employment growth for the foreseeable future.

Average Monthly Earnings

Between 2007 and 2012, all geographies experienced inflation-adjusted average monthly earnings increases across all industries, with Cuyahoga County having the greatest increase at over eight percent. Much of the gains were concentrated among the highest paying industries. All study areas also demonstrated a growing earnings gap between the top five industries and bottom five industries by average monthly earnings. Additionally, within the county and broader region, the bottom five industries, particularly Administration and Support, Retail Trade, and Accommodation and Food Services are expected to experience high relative occupational growth over the coming years. Many of these occupations offer lower wages.

Industry Growth Projections: Cleveland MSA

According to the Department of Job and Family Services, Health Care and Social Assistance is the industry with the greatest anticipated numeric employment change in the Cleveland MSA, by a significant margin. It is also an industry which creates, generally, a large number of lower-wage jobs.

Occupational Growth Projections: Cleveland MSA

The occupations projected to add the most jobs between 2010 and 2020 include registered nurses, food preparation workers, medical secretaries, and nursing aides. For many occupations, the majority of job openings throughout the decade are projected to result from annual worker replacement rather than new job growth, reflecting the growing workforce across industries and cautious hiring practices. Crucially, many of the highest growing occupations, including food preparation, nursing aides, office clerks, and retail salespersons, are characterized by low wages.
Employment Area Profile: Unemployment

The unemployment rate of Cleveland has consistently remained above that of Cuyahoga County and the MSA over the past ten years. While the rate of unemployment has slowly begun to trend downward, it remains well above pre-crisis norms, shooting back up to 10 percent as of June 2014. The unemployment rate remains at or above 7.5 percent for all geographies.

Within Cleveland as well as the surrounding region, there remains a large gap in unemployment, relative to pre-crisis levels. While the unemployment rate started to decline in 2010, to reach the lowest level since 2008 by 2013, this was partly a result of decreasing labor force participation and a declining employment-to-population ratio attributed to retiring, aging, and discouraged workers, rather than a sign of overall economic health. It is reasonable to assume that some of those who have left the labor force as a result of the recession will not be coming back.

Work Destinations for Residents of 1-Mile Clark Avenue Radius

Home Destinations for Workers of 1-Mile Clark Avenue Radius
Worker Inflow/Outflow

Between 2007 and 2011, the net worker inflow for the one-mile radius of Clark Avenue increased, indicating that the number of employed residents commuting outside of the area declined by a greater number than that of those commuting into the area. As of 2011, twice as many employed workers commute into the area as commute out. Those who live and work within the one-mile radius decreased by 14% to less than 350 workers, a very low number, during the same time period.

<table>
<thead>
<tr>
<th>Year</th>
<th>Worker Inflow</th>
<th>Worker Outflow</th>
<th>Net Inflow/Outflow</th>
</tr>
</thead>
<tbody>
<tr>
<td>2007</td>
<td>12,095</td>
<td>8,149</td>
<td>3,946</td>
</tr>
<tr>
<td>2009</td>
<td>10,346</td>
<td>8,762</td>
<td>1,584</td>
</tr>
<tr>
<td>2011</td>
<td>10,077</td>
<td>8,057</td>
<td>2,020</td>
</tr>
</tbody>
</table>

Commute Time and Means to Work

More than three-quarters of employed Clark Avenue Corridor residents have a commute time of less than 30 minutes, with less than 10 percent traveling over 45 minutes. The vast majority of employed Clark Avenue Corridor residents travel to work via automobile, while just over eight percent commute via public transportation.

<table>
<thead>
<tr>
<th>Commute Time</th>
<th>Percentage</th>
<th>Means to Work, Clark Avenue Corridor Residents</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less than 15 Minutes</td>
<td>79.3%</td>
<td>Automobile, Public Transportation</td>
</tr>
<tr>
<td>15 to 30 Minutes</td>
<td>8.3%</td>
<td>Walked</td>
</tr>
<tr>
<td>30 to 45 Minutes</td>
<td>7.1%</td>
<td>Other</td>
</tr>
<tr>
<td>Greater than 60 Minutes</td>
<td>0%</td>
<td></td>
</tr>
</tbody>
</table>

Industrial Composition: Clark Avenue Corridor

For both employed residents of the Clark Avenue Corridor and those who work within the Clark Avenue Corridor, Manufacturing is the leading industry by employment. Additionally, there are fewer employed Clark Avenue Corridor residents than those who work within the neighborhood, consistent with the net worker inflow of the surrounding area.

Top 10 Industries by Employment, Clark Avenue Corridor Residents

<table>
<thead>
<tr>
<th>Industry</th>
<th>Jobs</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Manufacturing</td>
<td>590</td>
<td>21.8%</td>
</tr>
<tr>
<td>Retail Trade</td>
<td>454</td>
<td>16.7%</td>
</tr>
<tr>
<td>Health Care and Social Assistance</td>
<td>420</td>
<td>15.2%</td>
</tr>
<tr>
<td>Accommodation and Food Services</td>
<td>315</td>
<td>11.6%</td>
</tr>
<tr>
<td>Admin and Support, Waste Mgmt Services</td>
<td>163</td>
<td>6.0%</td>
</tr>
<tr>
<td>Transportation and Warehousing</td>
<td>148</td>
<td>5.3%</td>
</tr>
<tr>
<td>Construction</td>
<td>139</td>
<td>4.8%</td>
</tr>
<tr>
<td>Professional, Scientific, Technical Services</td>
<td>80</td>
<td>3.0%</td>
</tr>
<tr>
<td>Other Services (except Public Admin)</td>
<td>80</td>
<td>3.0%</td>
</tr>
</tbody>
</table>

Top 10 Industries by Employment, Clark Avenue Corridor Workers

<table>
<thead>
<tr>
<th>Industry</th>
<th>Jobs</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Manufacturing</td>
<td>1,058</td>
<td>30.0%</td>
</tr>
<tr>
<td>Educational Services</td>
<td>138</td>
<td>19.3%</td>
</tr>
<tr>
<td>Retail Trade</td>
<td>430</td>
<td>12.2%</td>
</tr>
<tr>
<td>Other Services (except Public Administration)</td>
<td>336</td>
<td>9.7%</td>
</tr>
<tr>
<td>Health Care &amp; Social Assistance</td>
<td>232</td>
<td>6.6%</td>
</tr>
<tr>
<td>Accommodation &amp; Food Services</td>
<td>225</td>
<td>6.3%</td>
</tr>
<tr>
<td>Wholesale Trade</td>
<td>200</td>
<td>5.7%</td>
</tr>
<tr>
<td>Admin and Support, Waste Mgmt Services</td>
<td>144</td>
<td>4.5%</td>
</tr>
<tr>
<td>Construction</td>
<td>127</td>
<td>3.6%</td>
</tr>
<tr>
<td>Professional, Scientific &amp; Tech Services</td>
<td>60</td>
<td>2.0%</td>
</tr>
</tbody>
</table>

Industrial Composition: 10-Minute Drive Contour

The leading industries by employment for the residents of the 10-minute drive contour include Health Care, Manufacturing, Retail, and Accommodation and Food Services, all relatively low-wage industries. In contrast, Public Administration and Professional, high-wage industries, lead employment of those working within the 10-minute drive contour. This is further validation that higher-wage workers commute into the corridor but do not live there. Prospective redevelopment along Clark Avenue will likely benefit from attracting a portion of the many workers in professional services and public administration within the 10-minute drive contour.

Top 10 Industries by Employment, 10-Minute Drive Contour Residents

<table>
<thead>
<tr>
<th>Industry</th>
<th>Jobs</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Health Care &amp; Social Assistance</td>
<td>15,545</td>
<td>18.9%</td>
</tr>
<tr>
<td>Manufacturing</td>
<td>13,479</td>
<td>16.9%</td>
</tr>
<tr>
<td>Retail Trade</td>
<td>10,407</td>
<td>10.9%</td>
</tr>
<tr>
<td>Accommodation &amp; Food Services</td>
<td>9,484</td>
<td>10.6%</td>
</tr>
<tr>
<td>Educational Services</td>
<td>5,385</td>
<td>6.4%</td>
</tr>
<tr>
<td>Professional, Scientific &amp; Tech Services</td>
<td>5,043</td>
<td>6.2%</td>
</tr>
<tr>
<td>Admin and Support, Waste Mgmt Services</td>
<td>1,949</td>
<td>2.3%</td>
</tr>
<tr>
<td>Financial &amp; Insurance</td>
<td>763</td>
<td>0.3%</td>
</tr>
<tr>
<td>Construction</td>
<td>5,667</td>
<td>3.1%</td>
</tr>
</tbody>
</table>

Top 10 Industries by Employment, 10-Minute Drive Contour Workers

<table>
<thead>
<tr>
<th>Industry</th>
<th>Jobs</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Public Administration</td>
<td>22,091</td>
<td>13.3%</td>
</tr>
<tr>
<td>Professional, Scientific &amp; Tech Services</td>
<td>20,125</td>
<td>13.3%</td>
</tr>
<tr>
<td>Manufacturing</td>
<td>19,341</td>
<td>11.6%</td>
</tr>
<tr>
<td>Admin and Support, Waste Mgmt Services</td>
<td>17,153</td>
<td>10.1%</td>
</tr>
<tr>
<td>Educational Services</td>
<td>11,384</td>
<td>6.4%</td>
</tr>
<tr>
<td>Health Care &amp; Social Assistance</td>
<td>10,147</td>
<td>6.0%</td>
</tr>
<tr>
<td>Accommodation &amp; Food Services</td>
<td>9,904</td>
<td>5.7%</td>
</tr>
<tr>
<td>Financial &amp; Insurance</td>
<td>9,564</td>
<td>5.1%</td>
</tr>
<tr>
<td>Retail Trade</td>
<td>9,462</td>
<td>5.0%</td>
</tr>
<tr>
<td>Wholesale Trade</td>
<td>8,172</td>
<td>4.8%</td>
</tr>
</tbody>
</table>
Key Challenges

What key implications do the Labor and Industry findings have for the Clark Avenue Corridor, should current trends continue and holding all other factors constant?

For Sale & Rental Housing
- Lower paying jobs will be a feature for new residential development.
- Increasing the opportunities for local residents interested in living close to work, creating some demand for new, rental housing.
- Anticipated growth in health care, retail, and accommodation and food services may increase labor participation, as workers at these lower paying jobs do not provide sufficient income to support these professions.

Retail Shopping Centers
- Discretionary retail expenditures will decline as the number of workers in lower paying jobs does not bode well for retail.
- Entrepreneurship is a means to increase employment and economic opportunity.
- Employment is a means to increase employment and economic opportunity.

Office Buildings
- Economic and Real Estate Analysis for Sustainable Land Use Outcomes

Office Buildings
- Prolonged economic downturn will lead to decline in new buildings.
- Aftercentury businesses dependent upon younger workers will become increasingly difficult.
- Lifestyle factors may provide an opportunity for small scale office development, particularly in ancillary medical offices.

Employment & Industry
- Labor force participation may begin to decline in the decade.
- Attractions and retaining businesses dependent upon younger workers will become increasingly difficult.
- Discretionary retail expenditures will decline as the number of workers in lower paying jobs does not bode well for retail.
- Aftercentury businesses dependent upon younger workers will become increasingly difficult.
- Anticipated growth in the health care sector will provide core neighborhood services.

Takeaways: Labor and Industry Trends Analysis

While Cuyahoga County has recovered some employment losses resulting from the Great Recession, there is still a significant shortfall of over 40,000 jobs relative to pre-crisis levels. Further, unemployment within the region, though trending downward, remains persistently higher than pre-crisis norms. Redevelopment strategies within the Clark Avenue Corridor will benefit from consideration of the following:

A Need for Employment Generating Redevelopment Opportunities: Considering the higher unemployment rates and higher poverty rates of the workforce residing in the corridor, redevelopment opportunities should strive to increase job opportunities for corridor-area residents.

Importance of Entrepreneurship Access to Local Residents: Increasing the opportunities for local residents to engage in entrepreneurship would be a valuable way to increase employment and economic opportunities in the Clark Avenue Corridor area. Recent trends suggest that incumbent firms have remained better off, with higher rates of employment and job growth.

Employment Growth Concentrated within LowerWage Industry Sectors: As depicted, the greatest employment growth is projected to occur within industries which, traditionally, offer relatively lower wages (e.g., Healthcare and Social Assistance, Retail, and Accommodation and Food Services). This is also likely to intensify the issue of housing affordability and retail spending constraints within the region.

Key Opportunities

What key opportunities do the Labor and Industry findings have for the Clark Avenue Corridor, should current trends continue and holding all other factors constant?

For Sale & Rental Housing
- A portfolio of opportunities for landowners interested in living close to work, creating some demand for new, rental housing.
- Anticipated growth in health care, retail, and accommodation and food services may increase labor participation, as workers at these lower paying jobs do not provide sufficient income to support these professions.

Retail Shopping Centers
- Retail should also serve the existing residential population, by providing core neighborhood-based retail (e.g. pharmacy, grocery, corner store).

Office Buildings
- Anticipated growth in the health care sector may provide an opportunity for small scale office development, particularly in ancillary medical offices.

REAL ESTATE MARKET ANALYSIS

ECONOMIC AND REAL ESTATE ANALYSIS FOR SUSTAINABLE LAND USE OUTCOMES™
Methodology

The primary objective within this task is to gain an understanding of local supply, demand, occupancy, and pricing factors for a broad range of land uses within the Clark Avenue Corridor and surrounding area, including residential, office (medical and professional), and retail/service.

Using a variety of primary and secondary resources, 4ward Planning examined the competitive supply within the primary market area (existing and proposed) for each of the desired land uses and identified prospective opportunities and challenges for each of these land uses within the study area.

Based on the preceding quantitative and qualitative analyses, 4ward Planning conducted a supply/demand analysis, identifying prospective areas of unmet demand for housing, office, and retail product within the primary market area which could, potentially, be accommodated within the Clark Avenue Corridor study area. The methodology for determining the demand for specific land uses can be found at the beginning of each respective section.

Key Findings: Housing

Predominately single-family and duplex
Single-family residential structures account for 47 percent of housing units within the Clark Avenue Corridor, a share lower than the City of Cleveland (51 percent) and Cuyahoga County (65 percent). The corridor also contains the lowest percentage of multi-family housing stock with five or more units, relative to the other geographies.

Old housing stock in need of replacement
Nearly eight out of 10 housing units within the Corridor were built prior to 1940, exceeding the rate for Cleveland and Cuyahoga County. Further, less than four percent of all units were built from 1980 onward. The Clark Avenue Corridor could benefit from redevelopment opportunities that focus on replacing and upgrading the existing housing supply.

Nearly half of all households are cost-burdened, particularly renters and low-income
Based on 2012 ACS data, approximately 45 percent of households within the Clark Avenue Corridor ZIP Codes spent more than 30 percent of their monthly income on housing and are considered “cost-burdened,” according to HUD. By tenure, 51 percent of renters and 36 percent of homeowners are cost-burdened. In all study geographies, renters and low-income households were more likely to be cost-burdened.

Growing housing demand
In addition to recent residential permit activity increases as the housing market begins to recover, the demand for housing within the Clark Avenue Corridor and surrounding area will grow. 4ward Planning estimates that within the corridor over 600 units could be accommodated over the next five years, even under a flat-growth scenario.


**Age of Housing Stock**

Highlighted below, the Clark Avenue Corridor is characterized by a significantly older housing stock relative to the 10-minute drive contour and Cuyahoga County. According to the American Community Survey, more than three-quarters of all housing units within the corridor were built before 1940. Further, the corridor contains the lowest percentage of units built from 1980 onward (3.6 percent), with the 10-minute drive contour more than doubling (7.9 percent) and the County more than quadrupling (15 percent) the corridor's newer housing stock. Upgrading the housing stock of the Clark Avenue Corridor could present valuable redevelopment opportunities.

**Housing Cost Burden**

According to the US Department of Housing and Urban Development (HUD), households that expend more than 30 percent of their income for housing are considered cost-burdened and may have difficulty affording necessities such as food, clothing, transportation, and medical care. Illustrated below, all three geographies exhibit high rates of cost-burdened households, particularly among renters and low-income households. This indicates a lack of affordable housing options within the study areas. By HUD's standard, approximately 45 percent of households within the Clark Avenue Corridor’s ZIP Codes and the City of Cleveland are considered cost-burdened, a higher rate than Cuyahoga County.

**Foreclosures**

According to August 2014 data provided by RealtyTrac, foreclosed homes represented one out of every 707 homes within ZIP Code 44102, one out of every 528 homes within ZIP Code 44109, and one out of every 1,506 homes within ZIP Code 44113, compared to one out of every 566 and 600 homes within Cleveland and Cuyahoga County, respectively. The rate of foreclosures has declined in all corridor ZIP Codes on a year-to-year basis. A positive trend. Further, two of the three ZIP Codes outperform the City and County.

**Residential Permit Activity**

Residential building permit activity in Cuyahoga County began to trend downward in 2004. In the aftermath of the financial crisis and subsequent economic downturn, permit activity was generally subdued between 2009 and 2011, relative to historic levels. The past two years have demonstrated an uptick in the rate of activity. Consistent with growing demand and demographic changes, the last few years have seen a notable increase in multi-family permit activity compared to previous years, especially for buildings with five or more units (composing nearly 10 percent of units permitted in 2013). Housing permit activity can function as an indicator of confidence in the real estate market, suggesting that Cuyahoga County, including the Clark Avenue Corridor, may experience continued growth in housing demand over the coming years.
ECONOMIC AND REAL ESTATE ANALYSIS FOR SUSTAINABLE LAND USE OUTCOMES

Estimating Housing Supply and Demand

Key Assumptions Underpinning the Weak Growth Scenario for 10-Minute Drive Contour

Net Household Formation Increases by 0.5 Percent per Annum from 2014 to 2019

This assumption is based on increased in-migration from the metropolitan area and increased immigration, in response to local area job growth. A zero growth assumption is also utilized in the analysis for comparison.

Number Employed within the 10-Minute Drive Contour Increases from 168,511 in 2014 to 177,107 by 2019

This estimate is based on a modest average annual growth rate of one percent over 2014 base employment.

80 Percent of Those Working in the Study Area Live Elsewhere

Nearly eight out of every 10 people working in the 10-minute drive contour do not also live there.

Five Percent of Those Working in the Study Area but Living Elsewhere Represent Pent-Up Demand

Based on existing market trends, a conservative assumption is that five in one-hundred workers would trade their commute if there were adequate housing choice in the study area.

Seven Percent of the Study Area’s Current Housing Stock is Physically Obsolescent and Unmarketable

Nearly 60 percent of the study area’s housing stock was built before 1940, increasing the incidence of physical obsolescence.

1.25 Percent of the Study Area’s Remaining Housing Stock Becomes Obsolescent Annually

All housing stock gradually wears out over time and, on average, 1.25 out of every 100 units becomes obsolete, annually.

Study Area Will Maintain an Annual Housing Vacancy Rate of Approximately 15 Percent

The study area’s annual vacancy rate will remain relatively high, based on existing and projected conditions.

Projected Growth Scenarios

Within the 10-minute drive contour, housing demand is expected to rise considerably over the next 15 years, even under a flat household growth scenario. If the Clark Avenue Corridor was able to capture five percent of the projected 10-minute drive contour, this would result in a demand for 675 units over the next five years, and over 800 units through 2029. While it is likely that Clark Avenue will not see such a quantity of units built, it would be reasonable to conclude the corridor could accommodate an increase in its housing supply, particularly to offset obsolescent and aging units as well as fulfilling demand from workers who would trade their commute for housing closer to their place of employment.

Takeaway: Housing Trends and Residential Supply/Demand

Based on modest as well as flat household growth estimates, there will be demand for thousands of new housing units within the 10-minute drive contour over the coming years. The preceding analysis forecasts that based on a five percent capture rate, the Clark Avenue Corridor, will be able to support demand for over 800 units over the next 15 years, even under a zero growth scenario.

However, the demand scenarios presented may not result in effective demand if affordability is not adequately considered. All geographies examined demonstrate a statistically significant negative relationship between household income and the likelihood of being cost-burdened, suggesting that low-income households within and around the corridor may continue to struggle with housing affordability. Further, more than half of all renters in the corridor zip codes and City of Cleveland are cost-burdened, a relevant trend considering that much of the future demand for housing is likely to be for rental units.

With more than three-quarters of the existing housing units over 70 years old, redevelopment efforts within the corridor that expand the existing housing supply could help to replace the current stock of obsolescent housing.

Crucially, the Clark Avenue Corridor must increase the supply of affordable housing, going forward, in order to prevent displacement of lower-income households and accommodate the growing number of elderly households unable to afford market-rate rents and home prices. Multiple price points should be accommodated as well, to foster a mixed-income community that can take advantage of opportunities provided from both existing residents and professionals working in and around the Corridor.
Key Findings: Office

Weak, but potentially improving, office market
Office asking rents within Cleveland have risen substantially in recent years, potentially reflecting a tightening market. However, average asking sale price for office space remains lower than comparison geographies.

Three industry sectors represent 85 percent of new employment
Much of the estimated growth in employment (7,500 new jobs in the top 10 industries) in the 10-minute drive contour, through 2020, is estimated to come from the Professional Services, Healthcare, and Administration and Support industries.

Less than 30,000 square feet of new office space
As a result of projected employment growth in the 10-minute drive contour, the anticipated increase in office space demand through the end of the decade is approximately 550,000 square feet. Assuming the Clark Avenue Corridor will capture five percent of the office demand projected for the 10-minute drive contour, only approximately 27,500 square feet of office space could be accommodated within the corridor.

Office Market: Clark Avenue Corridor

As of September 2014, three office properties, totaling six spaces, and a 120,000-square-foot building were available for lease within the corridor. This includes office space at the busy intersection of Clark Avenue and West 25th Street. The asking rents for available office space ranged from $6.00 per square foot per year to $11.47, both lower than the City average. There were no office properties for sale within the Clark Avenue Corridor as of September 2014.

Estimating Office Demand

Projecting 2020 Primary Jobs
To determine projected office space demand, primary jobs in the 10-minute drive contour submarket were projected through 2020, based on 2014 employment data provided by Esri and industry growth rates provided by the Ohio Department of Job and Family Services. Jobs were aggregated into industry sectors.

Determining the Number of Office Workers
A National Center for Real Estate Research study has estimated the percentage of employees in various industry sectors that typically work in an office environment. Using these percentages, we were able to estimate the number of employees in the market area who would likely work in an office.

Determining Office Space Demand
Assuming a space requirement of 125 square feet per employee, the total demand for office space was estimated based on projected office workers for each year through 2020.
Projected Office Jobs: 10-Minute Drive Contour

The tables below show the projected jobs and office workers, respectively, aggregated by industry sector.

### Projected Jobs

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Source: NCRER, Esri, 4ward Planning Inc., 2014

### Takeaway: Office Market Analysis and Supply/Demand

As the regional economy will continue to experience employment growth in the Healthcare industry, the demand for office space, and particularly medical office space, is also very likely to rise, attributable to an aging population and the rapid expansion of outpatient healthcare services. However, much of Cuyahoga County’s projected employment growth is within industries not requiring traditional office space (i.e. nursing, psychiatric, and home health aides; food and beverage workers; construction workers).

Consequently, while there will be demand for new office space within the Clark Avenue Corridor in the next five to 10 years, much of this space could potentially be met by the existing inventory of currently available office space for sale or lease within the area.

Local stakeholders may need to work with property owners of physically and/or economically obsolescent office buildings (primarily Class B and C office space) to adaptively reuse buildings for land uses that are in higher demand – medical office space and multi-family residential, being the two strongest. Real estate firms Marcus and Millichap and Cushman and Wakefield both point out that growing demand for housing within Cleveland has accelerated the rate of office-to-residential conversions, with more conversions anticipated in the future. The Clark Avenue Corridor might consider such conversions to supply housing to surrounding professionals, particularly in the growing healthcare industry.

### Projected Office Space Demand: 10-Minute Drive Contour

The tables on the previous page show an estimated increase of approximately 7,500 jobs and 4,400 new office workers in the top 10 industries, through 2020, within the 10-minute drive contour. Much of the likely growth in office workers will come from the Professional Services, Healthcare, and Administration and Support industries. The table below illustrates the corresponding projected office-space demand, aggregated by industry sector, and based on projected office workers and the assumption of an estimated 125 square foot-per-worker requirement. Under the assumption that the Clark Avenue Corridor will capture five percent of the office demand projected for the 10-minute drive contour, approximately 27,500 square feet of office space could be accommodated within the corridor by the end of the decade.

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Source: NCRER, 4ward Planning Inc., 2014

### Retail Trends and Supply/Demand Analysis

ECONOMIC AND REAL ESTATE ANALYSIS FOR SUSTAINABLE LAND USE OUTCOMES™

AWARD PLANNING INC.
**Key Findings: Retail**

**Retail market experiencing growth**

The asking sale price for retail properties in Cleveland has increased by 10 percent in the last year, vastly higher than the surrounding comparison geographies, and the retail lease market has demonstrated year-over-year growth.

**Most comparison shopping demand can be met outside the corridor**

With more than 2.3 million square feet of gross leasable area within a 10-minute drive of the site, including the nearby Steelyard Commons, there is little demand for large-format, comparison retail (e.g. Walmart, Target, etc.) along the Clark Avenue Corridor.

**Certain retail categories remain undersupplied**

In 2024, the 10-minute drive contour will continue to be slightly undersupplied in most retail goods and services. Retail subcategories with sufficient demand to support the development of new, small-scale neighborhood retail include: grocery stores, restaurants, health and personal care stores, and general merchandising stores, as well as other niche opportunities related to the growing Hispanic population.

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**Retail Asking Price and Rents: Cleveland Market**

Over the past year, the Cleveland asking sale price for retail properties has increased by 10 percent, vastly higher than the surrounding comparison geographies. Additionally, the Cleveland retail lease market has demonstrated year-over-year growth, in contrast to the metro, county, and state.

---

**Retail- and Commercially-Zoned Land Market: Clark Avenue Corridor**

As of September 2014, there were two retail properties available for sale within the Clark Avenue Corridor, both as free-standing buildings.

The single retail space available for lease within the Clark Avenue Corridor, as of September 2014, was located at the intersection of Clark and West 25th, as ground-floor retail.

Within the Clark Avenue Corridor, land is the most available form of property, representing half of all properties for sale. Prices range from $352,113 and $1,555,479 per acre.

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**Major Shopping Centers**

While the Clark Avenue Corridor does not contain any major shopping destinations within its boundaries, very nearby is the Steelyard Commons with approximately 900,000 square feet of Gross Leasable Area (GLA). Anchored by a Walmart Supercenter, Target, Home Depot, and Burlington Coat Factory, Steelyard Commons has much retail to offer residents within the Clark Avenue Corridor and its surrounding area. Additionally, with another approximately 1.4 million square feet of GLA in major shopping centers within the 10-minute drive contour, retail development within the Clark Avenue Corridor would best function as highly localized destinations for nearby residents, including grocery stores and eating and drinking establishments.
Key Steps for Analyzing Retail Gap/Leakage

4WARD Planning utilized various residential and commercial data sources to conduct a retail gap/leakage analysis for the 10-minute drive contour market area. Esri retail marketplace data was the primary source of information on existing retail demand and sales for the PMA (the 10-minute drive contour).

Retail demand assumptions were formulated based on observed shopping habits and industry trends. There is, typically, a higher propensity for convenience retail (groceries, beer, wine, and liquor stores, and certain specialty stores, etc.) to be met locally. Those retail categories with higher price points or those more suited to comparison shopping (furniture, electronics, books, clothing, etc.) are more likely to have a greater capture rate outside of the market area, or even online. The assumptions for each retail type are noted on the next slide.

Information on local retailers was collected from a combination of proprietary and public data sources, including the Directory of Major Malls, Loopnet, BizStats, and Google Maps. Retail metrics for average sales per square foot and size by category was adapted from data provided by BizStats to reflect currently observed neighborhood retail supply trends. Retail metric assumptions are presented on the next page.

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The Retail Gap represents the difference between Retail Potential and Retail Sales. Positive urban demographics that retail sales are lower than local demand, indicating that local households are leaving the trade area to purchase some retail goods and services.

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<th>Retail Store Capture Estimates by 2024: 10-Minute Drive Contour</th>
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<tr>
<td>Clothing Stores</td>
</tr>
<tr>
<td>Shoe Stores</td>
</tr>
<tr>
<td>Jewelry, Luggage &amp; Leather Goods Stores</td>
</tr>
<tr>
<td>Sporting Goods &amp; Hobby/Fitness Stores</td>
</tr>
<tr>
<td>Book, Periodical &amp; Music Stores</td>
</tr>
<tr>
<td>Department Stores Excluding Limited Departments</td>
</tr>
<tr>
<td>Other General Merchandise Stores</td>
</tr>
<tr>
<td>Florists</td>
</tr>
<tr>
<td>Office Supplies, Stationery &amp; Gift Stores</td>
</tr>
<tr>
<td>Used Merchandise Stores</td>
</tr>
<tr>
<td>Other Miscellaneous Store Retailers</td>
</tr>
<tr>
<td>Full-Service Restaurants</td>
</tr>
<tr>
<td>Limited Service Eating Places</td>
</tr>
<tr>
<td>Specialty Food Services</td>
</tr>
<tr>
<td>Dining Places - Alcoholic Beverages</td>
</tr>
</tbody>
</table>

Sources: BizStats, 4WARD Planning, 2014

Takeaway: Retail Trends

Though it can generally be described as adequately retailed, the 10-minute drive contour will likely experience increased retail demand over the next 10 years to serve demographic shifts and future development. With nearly 2.3 million square feet of GLA within the 10-minute drive contour market area, including the nearby 900,000 square feet Steelyard Commons anchored by a Walmart Supercenter, retail development within the Clark Avenue Corridor likely warrants a cautious approach.

In addition to Steelyard Commons as a retail competitor, BLS consumer expenditure data suggest that senior households, growing in and around the corridor, typically spend less on certain retail categories (e.g. clothing, furniture, home and garden) than younger households, due to lifestyle needs, health care costs, and fixed-income streams. Further, beyond the impact of significant demographic shifts, the growing prominence of on-line shopping and the lingering effects of the economic downturn remain obstacles to retail development.

However, more localized retail functions are recommended, including a small-scale grocery store (e.g. Trader Joe's or an ethnic grocer), particularly one that would offer healthy, affordable food options. The large and growing Hispanic population could also provide niche opportunities for neighborhood retail development in a variety of categories. Additional retail options for the corridor could include health clubs, coffee shops, cafes and restaurants, and other neighborhood-centered services such as dry cleaners.

Additionally, retail that encourages an increase in neighborhood walkability would be a valuable redevelopment strategy.
IMPROVEMENT-TO-LAND VALUE ANALYSIS

ECONOMIC AND REAL ESTATE ANALYSIS FOR SUSTAINABLE LAND USE OUTCOMES

Methodology: Improvement-to-Land Value Analysis

The improvement-to-land value (ILV) ratio analysis is a technique used to identify prospective redevelopment opportunities within a given locality. The technique's underlying assumption is that the value of an improvement (e.g., a house or commercial building) when compared to the value of the underlying land parcel should yield a ratio greater than one-to-one and, typically, a ratio greater than two-to-one (for example, a house assessed at $200,000 and the land on which it sits assessed at $100,000). ILV ratios can and do vary, based on factors such as area real estate market values, the degree of urbanization, and property assessment techniques. However, as a general rule, properties which exhibit ILV ratios of one-to-one or less typically reflect economic and/or physical obsolescence (e.g., candidate redevelopment properties).

Utilizing geographic information system (GIS) mapping technology (ArcGIS 10.2) and parcel data provided by the Stockyard, Clark-Fulton & Brooklyn Centre Community Development office, 4ward Planning identified properties in the Clark Avenue Corridor study area exhibiting relatively low ILV ratios. The parcel data, current as of October 6, 2014, includes data from the Fiscal Office for the total value of each parcel (land value plus improvement value) as well the building value. Land value was calculated by subtracting building value from total value. As per the Stockyard, Clark-Fulton & Brooklyn Centre Community Development office, it should be noted that the Fiscal Office’s values are typically lower than actual fair market value. However, without full appraisals, it is the only way to measure value.

Methodology: Improvement-to-Land Value Analysis

Parcels were then grouped according to land-use category (more detailed information is provided on page four) and the ILV ratio statistical median was calculated for each category. Properties exhibiting particularly low ILV ratios (e.g., properties where ILV values are less than half of the median ILV value of their land-use category) were identified as potential redevelopment sites. All acreages were calculated in GIS.

It should be noted that while ILV ratio statistical medians are typically calculated for entire assessment jurisdictions, data were only provided for parcels along the Clark Avenue Corridor, thus limiting this analysis. ILV ratios of parcels in the study area are only considered relative to other parcels in the study area, meaning that it is unknown if these parcels exhibit particularly high or low ILV ratios as compared to parcels outside of the study area.

Parcel data included specific land use categories that were grouped into broad categories for analysis (in particular, mixed-use, commercial, and industrial). The land use sub-categories were grouped by the consultant as follows:

- **NOT ASSESSED** includes those parcels in the following land use sub-categories: "Null," "<2,500 sq. ft.," Animal clinic or hospital, Chemists' exemptions, hospitals, home for aged, etc., Churches, Commercial parking lot expenses, with other use, Exempt property (CMRA), Exempt property owned by board of education, Exempt property owned by college (private), Exempt property owned by municipality, Land bank, "Minging," and Public worship.
- **MIXED-USE**: General retail with walk-up apartments, General retail with walk-up offices.
- **INDUSTRIAL**: Auto repair garage, Contract and construction service facility, Franchise auto service center, Industrial vacant land, Manufacturing and assembly, light; Other industrial structures; Salvage yard, scrap-metals, etc.
- **COMMERCIAL**: Commercial parking lot; Commercial vacant land, Commercial warehouse (under 75,000 sq. ft.); Discount stores and junior department stores; Franchise food stores; Franchise food with counter service only; Full service banks; Full service gas station; Funeral homes; Lodge halls; Medical clinics and offices; Nightclubs restaurant; Office buildings 1 and 2 stories; Other commercial housing; Other commercial structures; Restaurant, cafeteria; Savings and loan; Service station with kiosk (retail); Small (under 7,500 sq. ft.) detached retail store; Small shops (machine, tool and die, etc.); Strip center retail (4 or more, > 7,500 sq. ft.); Supermarkets; Other retail structures; Used car sales (lot with trailer).
- **APARTMENT**: All apartment classes.
- **MULTI-FAMILY**: Three family dwelling, Two family dwelling.
- **OTHER RESIDENTIAL**: Other residential structures, Residential vacant land.
A land use map for the study area based on the categories described on page four is shown above. The greatest amount of land in the study area is categorized as commercial, although the share of residential land is greatest when all residential categories are combined. The second greatest amount of land in the study area is not assessed (for example, parks and exempt land), which is followed by industrial land. There are a few mixed-use parcels in the study area, comprised of ground floor retail with apartments and/or offices on higher floors.

### Composition of Land Use in Clark Avenue Corridor Study Area

<table>
<thead>
<tr>
<th>Land Use Category</th>
<th>Acres</th>
</tr>
</thead>
<tbody>
<tr>
<td>Commercial</td>
<td>57.26</td>
</tr>
<tr>
<td>Not Assessed</td>
<td>43.86</td>
</tr>
<tr>
<td>Industrial</td>
<td>34.14</td>
</tr>
<tr>
<td>Single Family Dwelling</td>
<td>31.24</td>
</tr>
<tr>
<td>Multi-family Residential</td>
<td>30.79</td>
</tr>
<tr>
<td>Small commercial land</td>
<td>9.7</td>
</tr>
<tr>
<td>Mixed use</td>
<td>7.27</td>
</tr>
<tr>
<td>Apartments</td>
<td>4.98</td>
</tr>
<tr>
<td>Utility Service Facility</td>
<td>0.39</td>
</tr>
<tr>
<td>Not Assessed</td>
<td>0.39</td>
</tr>
</tbody>
</table>

There are 67 mixed-use parcels in the Clark Avenue Corridor study area comprising 7.3 acres. One parcel has zero land value. As this results in a division by zero error, this parcel is excluded from the analysis.

The median ILV ratio of mixed-use parcels in the study area is 3.71, making the target ILV ratio for mixed-use 1.85. Based on this measure, 13 mixed-use parcels exhibit low ILV ratios (below 1.85) for a total of 1.5 acres.

### Improvement-to-Land Value: Mixed-use

There are 161 commercial parcels in the Clark Avenue Corridor study area comprising 57.3 acres. Five parcels have zero land value. As this results in a division by zero error, all parcels with zero land assessment value are excluded from the analysis.

The median ILV ratio for these industrial parcels is 0.57, making the threshold ILV ratio for industrial parcels 0.29. Based on this measure, 24 industrial parcels exhibit low ILV ratios for a total of 12.6 acres.

All of the industrial parcels considered to have low ILV ratios have zero improvement value, potentially meaning that these parcels are vacant. However, only one of these parcels is classified as “industrial land vacant.” The method of property assessment may also explain this result, and should be examined before redevelopment actions are taken.

Further details on all low-ILV parcels are provided in the appendix.
Improvement-to-Land Value: Summary

There are almost 300 acres of commercial, industrial, and mixed-use land within the Clark Avenue Corridor study area. Of this land, about one-third (30 acres) has low improvement-to-land value ratios and provides prospective redevelopment opportunities. Industrial land has the highest percentage of low ILV land, which may be a result of assessment methods or may mean that the market is not supportive of industrial land in the study area.

For both commercial and industrial land, the low-ILV parcel share is higher than the share of low-ILV acres, suggesting that the parcels with low ILV ratios tend to be smaller.

<table>
<thead>
<tr>
<th>Summary of Underutilized Land in the Clark Avenue Corridor Study Area</th>
</tr>
</thead>
<tbody>
<tr>
<td>Parcels (count)</td>
</tr>
<tr>
<td>-----------------</td>
</tr>
<tr>
<td>Underutilized parcels (count)</td>
</tr>
<tr>
<td>Underutilized parcels (share)</td>
</tr>
</tbody>
</table>

| Underutilized acres (total) | 57.3 | 7.3 | 34.1 | 98.7 |
| Underutilized acres (total) | 16.0 | 1.5 | 12.6 | 30.1 |
| Underutilized acres (share) | 27.9% | 20.5% | 37.0% | 30.5% |

Takeaway: Improvement-to-Land Value Analysis

Underutilized sites provide prospective opportunities for accommodating redevelopment and infill, bringing new and expanded commercial and industrial opportunities to the study area. Large private industry employers (e.g., manufacturers, back-office call centers, distribution warehouse operators) are likely to target areas with concentrations of large contiguous vacant and/or underutilized land. Specific locations with large low-ILV parcels or clusters of low-ILV are highlighted below.

There is a cluster of low-ILV commercial parcels near the intersection of West 25th Street and Clark Avenue. The majority of this land is characteristic of commercial vacant and commercial warehouses. Additionally, there are several contiguous parcels of light manufacturing and assembly and assembly at the intersection of Clark Avenue and Tremont Lane.

There are several of ILV parcels on Clark Avenue between Fulton Road and West 40th Street. The industrial cluster is comprised of light manufacturing and assembly, and Industrial vacant space. The commercial cluster on the north side of Clark Avenue is characterized as "commercial structures," while the commercial parcels to the south of Saint Mary’s Cemetery are commercial warehouse.

Low ILV Parcels: Mixed-use

<table>
<thead>
<tr>
<th>Address or Parcel</th>
<th>Land Use</th>
<th>ILV Value ($K)</th>
<th>Land Value ($K)</th>
<th>ILV/Parcel</th>
<th>Acres</th>
</tr>
</thead>
<tbody>
<tr>
<td>007-08-176</td>
<td>General retail with walk-up apartments</td>
<td>0</td>
<td>1,500</td>
<td>0</td>
<td>0.02</td>
</tr>
<tr>
<td>1010 CLARK AV</td>
<td>General retail with walk-up apartments</td>
<td>32,200</td>
<td>36,900</td>
<td>0.87</td>
<td>0.12</td>
</tr>
<tr>
<td>304 CLARK AV</td>
<td>General retail with walk-up apartments</td>
<td>0</td>
<td>17,300</td>
<td>0</td>
<td>0.13</td>
</tr>
<tr>
<td>4206 CLARK AV</td>
<td>General retail with walk-up apartments</td>
<td>21,300</td>
<td>15,500</td>
<td>1.37</td>
<td>0.12</td>
</tr>
<tr>
<td>4310 CLARK AV</td>
<td>General retail with walk-up apartments</td>
<td>0</td>
<td>2,900</td>
<td>0.08</td>
<td>0.05</td>
</tr>
<tr>
<td>4321 CLARK AV</td>
<td>General retail with walk-up apartments</td>
<td>0</td>
<td>3,500</td>
<td>0</td>
<td>0.07</td>
</tr>
<tr>
<td>4323 CLARK AV</td>
<td>General retail with walk-up apartments</td>
<td>21,000</td>
<td>13,700</td>
<td>1.51</td>
<td>0.10</td>
</tr>
<tr>
<td>4618 CLARK AV</td>
<td>General retail with walk-up apartments</td>
<td>9,800</td>
<td>31,900</td>
<td>0.31</td>
<td>0.25</td>
</tr>
<tr>
<td>4805 CLARK AV</td>
<td>General retail with walk-up apartments</td>
<td>0</td>
<td>10,500</td>
<td>0</td>
<td>0.11</td>
</tr>
<tr>
<td>5007 CLARK AV</td>
<td>General retail with walk-up apartments</td>
<td>20,000</td>
<td>15,000</td>
<td>1.33</td>
<td>0.11</td>
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<tr>
<td>5011 CLARK AV</td>
<td>General retail with walk-up apartments</td>
<td>20,700</td>
<td>15,000</td>
<td>1.38</td>
<td>0.11</td>
</tr>
<tr>
<td>5131 CLARK AV</td>
<td>General retail with walk-up apartments</td>
<td>30,700</td>
<td>21,800</td>
<td>1.22</td>
<td>0.17</td>
</tr>
<tr>
<td>5801 CLARK AV</td>
<td>General retail with walk-up apartments</td>
<td>22,400</td>
<td>13,300</td>
<td>1.68</td>
<td>0.10</td>
</tr>
</tbody>
</table>
## Low ILV Parcels: Commercial

<table>
<thead>
<tr>
<th>Address or Parcels</th>
<th>Use Type</th>
<th>描述</th>
<th>Area</th>
<th>Year</th>
<th>Value</th>
<th>2013 Area</th>
<th>2014 Value</th>
<th>Unit</th>
<th>Value</th>
<th>2013 Area</th>
<th>2014 Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>3115 W 38TH ST</td>
<td>Manufacturing and assembly, light</td>
<td>3115 W 38TH ST Manufacturing and assembly, light</td>
<td>15,000</td>
<td>2013</td>
<td>18,000</td>
<td>18,000</td>
<td>18,000</td>
<td>Manufacturing and assembly, light</td>
<td>18,000</td>
<td>18,000</td>
<td></td>
</tr>
<tr>
<td>3117 W 38TH ST</td>
<td>Manufacturing and assembly, light</td>
<td>3117 W 38TH ST Manufacturing and assembly, light</td>
<td>15,000</td>
<td>2013</td>
<td>18,000</td>
<td>18,000</td>
<td>18,000</td>
<td>Manufacturing and assembly, light</td>
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<tr>
<td>3127 W 38TH ST</td>
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<td>3127 W 38TH ST Manufacturing and assembly, light</td>
<td>15,000</td>
<td>2013</td>
<td>18,000</td>
<td>18,000</td>
<td>18,000</td>
<td>Manufacturing and assembly, light</td>
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</tr>
<tr>
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<td>3131 W 38TH ST Manufacturing and assembly, light</td>
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<td>18,000</td>
<td>18,000</td>
<td>18,000</td>
<td>Manufacturing and assembly, light</td>
<td>18,000</td>
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<td></td>
</tr>
<tr>
<td>3135 W 38TH ST</td>
<td>Manufacturing and assembly, light</td>
<td>3135 W 38TH ST Manufacturing and assembly, light</td>
<td>15,000</td>
<td>2013</td>
<td>18,000</td>
<td>18,000</td>
<td>18,000</td>
<td>Manufacturing and assembly, light</td>
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</tbody>
</table>

## Low ILV Parcels: Industrial

<table>
<thead>
<tr>
<th>Address or Parcels</th>
<th>Use Type</th>
<th>描述</th>
<th>Area</th>
<th>Year</th>
<th>Value</th>
<th>2013 Area</th>
<th>2014 Value</th>
<th>Unit</th>
<th>Value</th>
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<td>18,000</td>
<td>18,000</td>
<td>18,000</td>
<td>Manufacturing and assembly, light</td>
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<td>18,000</td>
<td></td>
</tr>
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<td>18,000</td>
<td>Manufacturing and assembly, light</td>
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<td>18,000</td>
<td></td>
</tr>
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<td>3127 W 38TH ST</td>
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<td>3127 W 38TH ST Manufacturing and assembly, light</td>
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<td>18,000</td>
<td>18,000</td>
<td>18,000</td>
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<td>18,000</td>
<td>18,000</td>
<td>Manufacturing and assembly, light</td>
<td>18,000</td>
<td>18,000</td>
<td></td>
</tr>
</tbody>
</table>

## General & Limiting Conditions

4ward Planning Inc. has endeavored to ensure that the reported data and information contained in this report are complete, accurate, and reliable. All estimates, assumptions, and extrapolations are based on methodological techniques employed by 4ward Planning Inc. and believed to be reliable. 4ward Planning Inc. assumes no responsibility for inaccuracies in reporting by the client, its agents, representatives, or any other third-party data source used in the preparation of this report.

Furthermore, 4ward Planning Inc. makes no warranty or representation concerning the manifestation of the estimated or projected results or values contained in this study. This study may not be used for purposes other than that for which it is prepared or for which prior written consent has been obtained from 4ward Planning Inc. This study is qualified in its entirety by, and should be considered in light of, the above limitations, conditions, and considerations.

For more information, please contact:
Todd Pool
412.429.9644
tpool@andisaleimpact.com
Overview – Financial Feasibility Analysis

Pertaining to the market analysis earlier performed by 4ward Planning (September 2014 through November 2014), a financial feasibility analysis was conducted on sites or site areas identified by members of the client stakeholder group and include the following: Vacant Brewery Building – 6605 Clark Avenue; Small Trail Head Building – 1095 Clark Avenue; La Villa Hispania District – West 29th Street to Fulton Road

The objective of performing financial feasibility analysis is to identify the likelihood that a private investor alone or partnered with a public entity, could reasonably undertake redevelopment/development activities while earning a market rate of return commensurate with project risk.

Methodology: Financial Feasibility Analysis

4ward Planning employed quantitative and qualitative analyses to inform its creation and use of development and operating pro formas.

Following are key development and operating pro forma inputs utilized and/or measured:

- Development Pro Forma
  - Acquisition Costs
  - Demolition Costs
  - Infrastructure & Site Costs
  - Hard & Soft Construction Costs
  - Construction Cost per Parking Space
  - Dwelling Units per Acre
  - Developer Fee

- Operating Pro Forma
  - Rent per SF
  - Annual Vacancy Rate
  - Operating Expenses per SF
  - Net Operating Income
  - Return on Equity
  - Internal Rate of Return
  - Capitalization Rate

Overview (continued)

Relatedly, a financial feasibility analysis is also performed so as to identify any financial gaps (financial investment contributed by a third party or parties, in addition to the private investor’s contributed equity and debt, in order that a market return may achieved for the project risk assumed).

The following pages contain the methodology employed, assumptions made, disclaimers, and key findings pertaining to the financial analysis.

The specific land-use modeled for each site or site areas include the following:

- Vacant Brewery Building: Small scale professional service office space (inclusive of business incubator shared service space), meeting venue/social gathering space and, in an assumed second phase, multi-family rental units.
- Small Trail Head Building: Small café and bicycle service shop
- La Villa Hispania District: Mixed-use residential development, with a limited amount of ground floor service retail, restaurant and medical office space.

It should be noted that all of the financial modeling is done from the perspective of the developer and owner of the real estate and not from the perspective of the business operators – an important distinction for purposes of this analysis.

Assumptions: Financial Feasibility Analysis

4ward Planning assumed constant values for the following pro forma inputs, for practicality sake:

<table>
<thead>
<tr>
<th>Development Pro Forma</th>
<th>Operating Pro Forma</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acquisition Costs</td>
<td>Rent per SF</td>
</tr>
<tr>
<td>Demolition Costs</td>
<td>Annual Vacancy Rate</td>
</tr>
<tr>
<td>Infrastructure &amp; Site Costs</td>
<td>Operating Expenses per SF</td>
</tr>
<tr>
<td>Hard &amp; Soft Construction Costs</td>
<td>Net Operating Income</td>
</tr>
<tr>
<td>Construction Cost per Parking Space</td>
<td>Return on Equity</td>
</tr>
<tr>
<td>Dwelling Units per Acre</td>
<td>Internal Rate of Return</td>
</tr>
<tr>
<td>Developer Fee</td>
<td>Capitalization Rate</td>
</tr>
</tbody>
</table>

**Note:**
- All data is assumed and reflects best estimate.
- Financial modeling is done from the perspective of the developer/owner.
Assumptions: Financial Feasibility Analysis

**Operating Metrics**

- **Monthly Residential Rent**: $1.75/s.f.
- **Annual Retail Rent**: $15.00/s.f.
- **Annual Office Rent**: $15.00/s.f.
- **Annual Vacancy Factor (residential)**: 3.0%
- **Annual Vacancy Factor (commercial)**: 5.0%
- **Operating Expenses (residential)**: $5.00/s.f.
- **Operating Expenses (commercial)**: $5.00/s.f.
- **Capitalization Rate (residential)**: 6.0%
- **Capitalization Rate (retail)**: 7.5%
- **Capitalization Rate (office)**: 9.0%
- **Real Property Taxes**: $2.50/s.f.
- **Inflation (annually)**: 2.2%

Pro forma inputs are informed by the preceding market analysis, interviews with developers and brokers, and commonly accepted industry standards.  

1. We assumed residential rents would be higher than existing area rents for newly built product, with higher end amenities.  
2. Retail rent shown is for new construction. Retail rent value used for rehabbed Trail Head building is $8.00 per square foot, based on its location.  
3. Office rent shown is for new construction. Office rent value used for rehabbed Brewery building is $10.00 per square foot, based on its location.

Disclaimer: Financial Feasibility Analysis

It should be noted that the financial analysis performed assumed current market conditions and future trends identified within the earlier performed market analysis. As market conditions and trends are subject to change – due to a number of factors, including macro level events (read: national and worldwide events), changes in consumer preferences and demographic shifts – this financial analysis should not be considered valid for an indefinite period of time. Indeed, the further out in time from the performance of this analysis, the less confidence one should place in its findings.

The reader should also consider that, dependent upon the investment return requirements of a private investor (developer), their tolerance for risk, as well as their sophistication within the real of real estate development, some or all of the herein identified assumptions may not hold.

Land-Uses: Financial Feasibility Analysis

<table>
<thead>
<tr>
<th>Site Uses</th>
<th>Brewery¹</th>
<th>La Villa Hispania</th>
<th>Trail Head Building</th>
<th>Totals</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Square footage</td>
<td>36,280</td>
<td>NA</td>
<td>2,275</td>
<td>NA</td>
</tr>
<tr>
<td>MF Rental Units</td>
<td>14</td>
<td>150</td>
<td>0</td>
<td>164</td>
</tr>
<tr>
<td>Retail S.F.</td>
<td>0</td>
<td>15,000</td>
<td>2,275</td>
<td>17,250</td>
</tr>
<tr>
<td>Professional Office S.F.</td>
<td>0</td>
<td>13,520</td>
<td>0</td>
<td>13,520</td>
</tr>
<tr>
<td>Medical Office S.F.</td>
<td>0</td>
<td>0</td>
<td>5,000</td>
<td>5,000</td>
</tr>
<tr>
<td>Meeting Venue S.F.</td>
<td>10,000</td>
<td>0</td>
<td>0</td>
<td>10,000</td>
</tr>
</tbody>
</table>

¹. The adaptive reuse of the Brewery assumes two distinct phases. Phase I assumes only commercial use, with 6,760 s.f. of low cost office space and shared services, and 5,000 s.f. of meeting venue space. Phase II assumes 9,780 s.f. of additional office and meeting venue space, respectively, along with the development of 14 one- and two-bedroom apartment units.

². The above redevelopment within the La Villa Hispania District is based on a first phase scenario. It is assumed that Phase I is successful, in Phase II scenarios will be implemented, given the area’s ability to absorb additional development.

Methodology: Financial Feasibility Analysis

<table>
<thead>
<tr>
<th>Site Name</th>
<th>Lead Entity</th>
<th>Influence on Corridor</th>
<th>Total Project Cost</th>
<th>Years to Complete</th>
</tr>
</thead>
<tbody>
<tr>
<td>Brewery¹</td>
<td>Non-Profit or Public</td>
<td>Modest</td>
<td>$5.74MM</td>
<td>4 to 8</td>
</tr>
<tr>
<td>La Villa Hispania District</td>
<td>Private Developer</td>
<td>High</td>
<td>$25.67MM</td>
<td>4 to 8</td>
</tr>
<tr>
<td>Trail Head Building</td>
<td>Non-Profit</td>
<td>Modest</td>
<td>$66K</td>
<td>1 to 2</td>
</tr>
</tbody>
</table>

¹. The Brewery total cost figure includes both Phases I and II.
Project Summary: Brewery Building

This project's chance of success relies on its close access to an Interstate highway, area commercial businesses (which might look to take advantage of low-cost meeting space) and the architectural appeal of an old brick factory. The likely sponsor from inception is a non-profit entity, capable of leveraging public and NGO funding (e.g., low cost loans, tax credits, façade grants, etc.). Because of the scale of investment required to rehab and fit out the building, and the, likely, low rents achieved during the early years of operation, it is not likely that a private sector developer would look to take on a project such as the Brewery building. However, as the building leases up and demonstrates profitability, and assuming the surrounding area also continues to improve its economic fortunes, it is, likely, that a private investor would be willing to acquire the property from the non-profit which nurtured the project.

The location of the project and its scale (under $10 million) is likely to have only a modest influence over the investment activities along the rest of the Clark Avenue corridor.

Project Summary: La Villa Hispania District

This relatively large scale redevelopment project has opportunity to change the economic direction of the entire Clark Avenue corridor given its location and scale. While the financial analysis performed on this prospective redevelopment area assumes only a Phase I scenario, it is clear from both the size of the land area and earlier identified market viable uses (particularly the growing demand for multi-family rental housing and medical office space) that subsequent phases of redevelopment are highly likely to follow.

The likely sponsor from inception is a private development entity having solid experience working at the scale of a La Villa Hispania neighborhood, as well as familiar with the complexities of mixed-use development. It is recommended that the private developer partner with one or more local non-profit developers, early on, so as to establish both good will within the community, as well as to leverage the strengths of each development entity.

The various opportunities for infill, substantial rehabilitation and new development along a corridor which is well served by public transit (bus) and is home to a number of racial and ethnic groups increases the likelihood that federal and state funding agencies will look favorably upon this project's funding applications.

The location of the project and its scale (over $25 million) is likely to have a large influence of the investment activities along the rest of the Clark Avenue corridor.

Project Summary: Trail Head Building

The location and size of the subject building is not likely to have more than modest direct influence over the corridor's economic fortunes. However, indirectly, the rehabilitated building and a successful business or two catering to both tow path trail users and local area residents can help introduce the corridor to area residents who might otherwise not come to the area.

The project’s relatively small scale (estimated to be less than $75,000 for rehabilitation) and, likely, low asking rent over the first five to ten years of operation warrants a non-profit organization serving as the initial project sponsor. Further, given the relatively high risk nature of restoring the business and establishing service uses such as a café or bike repair shop, securing conventional bank funding would be extremely challenging for all but the most credit worthy of private citizens. Whereas, a non-profit could avail themselves of grant funding not available to private entities, in addition to securing private lending.

As a means of generating buzz for the rehabbed facility and its operating business, it is highly recommended that programmed events take place, periodically, at or near to the building. In this way, word of mouth advertising will be quick to take hold.