CHAPTER 18

THE

INDUSTRIAL CORE

PLAN
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The story of the success of the Industrial Core is in many ways the story of the success of the City of Solon itself. Since its inception in the 1950’s, the Core has emerged as the community’s most important business sector.

This area provides the predominant source of funding for the high quality municipal services and infrastructure for which the community is known; it offers convenient employment opportunities for Solon residents; and it serves as the cornerstone supporting one of the City’s greatest assets – the Public School System. *Clearly, the importance of the Industrial Core - both as a factor in Solon’s past success and as the key to its future viability - cannot be overstated.*

**“MAP 18-1-A” – THE INDUSTRIAL CORE AREA**

The Industrial Core constitutes the principal office, manufacturing, and warehousing center of the City. This area consists of approximately 1,938 acres of contiguous industrially zoned land, and is generally bounded on the north by US Route 422 and a small section of Cannon Road; on the south by the Glenwillow city limits; on the west by Hawthorne Parkway; and on the east by
the Wheeling and Lake Erie Railroad right of way – including active, unimproved, and vacated segments. As illustrated in “Map 18-1-A”, above, the current boundaries of the Industrial Core area are well planned and provide logical separations and transitions between adjacent land uses.

The Industrial Core is served by four (4) principal arterial roadways. These include Aurora Road, Cochran/Harper Road, Solon Road, and Bainbridge Road. The majority of businesses within the industrial area front on these arterial roads, with the balance either fronting on one of two secondary roads (Davis Industrial Parkway/Carter Street and Camp Industrial Parkway), or on one of the many moderate length cul-de-sac service streets that are dispersed throughout the district.

Connection to US Route 422 – a four lane limited access highway - is provided via an interchange with Cochran/Harper Road in the northwest sector of the industrial area.

"MAP 18-1-B" - HIGHWAYS AND RAILROAD LINES SERVICING THE INDUSTRIAL CORE

Convenient access to this highway has historically been one of key strengths of the Industrial Core. US 422 not only provides quick and easy access to regional destinations, but it is also located within close proximity to several major branches of the interstate highway system, including Route 71, Route 271, Route 77, Route 80, Route 480 and Route 90 (See “Map 18-1-B”, above).
In addition, alternative commercial transportation options are available within the Industrial Core area. These include the Erie Lackawanna railroad line which traverses the entirety of the northern portion of the industrial district, and the Wheeling and Lake Erie railroad line which provides branch service to the southeastern sector of the industrial area. At present (2010), only the Wheeling and Lake Erie line is active.

The Industrial Core is home to approximately 219 buildings comprising 15.3 million total square feet of industrial/office building space. Occupancy within these buildings is generally divided between three principal land use categories, including office (49%), warehousing (26%), and manufacturing (19%). Two minor land use categories, including service (5%) and training (1%), round out the total occupancy within the Industrial Core area.

From a broader perspective, the existing land use mix within the Industrial Core by acreage breaks down as follows (see also “Chart 18-1-A”, above). Industrial uses occupy 67% (1,292 acres) of all land; Office uses occupy 10% (187 acres) of all land; Commercial uses occupy 2% (41 acres) of all land; Residential uses occupy 3% (53 acres) of all land; Institutional uses occupy .004% (8 acres) of all land; Public uses occupy 1% (19 acres) of all land; and 17% (338 acres) of all land is unoccupied (Note: While this land may be technically unoccupied, the vast majority is in fact utilized for landfill purposes).

A visual/spatial representation of the breakdown of land uses within the Industrial Core Area is provided within the “Existing and Future Land Use Plan” section of this Master Plan (Section 3, below).
Approximately 76% of all buildings within the Industrial Core were constructed in the thirty year period beginning in 1960 and ending in 1990. This has resulted in an average current building age of more than 30 years. The continued aging of the base building infrastructure will certainly be one of the greatest challenges facing the Industrial Core - and the City in general - during the effective period of this Master Plan.

This issue extends beyond simple building maintenance and structural soundness to one of optimal building functionality. A case in point is provided by the fact that the typical ceiling height of a warehouse/manufacturing structure within the industrial core today is approximately 21 to 22 feet. This was a standard configuration for the period when the majority of Solon’s buildings were constructed. While this building configuration remains acceptable to many operators today, it has become increasingly common for warehouse and manufacturing businesses to demand greater ceiling heights - often a minimum of 24 feet and more. This trend is likely to continue.

Similarly, the standard maneuvering area that was provided for truck access to loading docks during the peak period of Solon’s development was approximately 75 feet. However, this configuration has become increasingly problematic due to the larger sized tractor trailers that are in common use today. Often it is simply not physically possible for businesses to expand maneuvering space due to lot size constraints. The potential negative impacts of these deficiencies are only compounded by the increasing availability of more modern building and premises designs in surrounding communities.

“FIGURE 18-1-A” - SAGEQUEST WAREHOUSE TO OFFICE CONVERSION

To effectively counter the challenge of building/site obsolescence it is essential that the City pursue innovative economic development policies and strategies that capitalize on the strengths of the City’s current building infrastructure, while at the same time promoting gradual development.

For example, one logical and viable economic development strategy is to focus on attracting Office and R&D uses - business categories that tend to generate attractive revenues but which do not typically require extended ceiling heights or substantial truck maneuvering areas – coupled with a policy of providing grants or other incentives to directly or indirectly offset the costs of converting outdated building infrastructure. An example of the successful application of such a
policy is provided by the relatively recent warehouse-to-office conversion of the Sagequest building on Bainbridge Road (See “Figure 18-1-A”, above).

This former warehouse building, which was approaching functional obsolescence, was comprehensively retrofitted for office use, and was eventually provided Job Creation Grant money by the City in order to assist in securing a high employment tenant. It is now one of the more aesthetically appealing and modern buildings within the Industrial Core Area. For a more detailed examination of the specific Economic Development policies that are recommended for the Industrial Core area, refer to “The Economic Development Plan” section of this Master Plan.

As illustrated in “Map 18-1-C”, above, the Industrial Core is predominated by a single industrial zoning category - the “I-2” Industrial and Manufacturing district. This classification permits a broad spectrum of uses ranging from business and professional offices, to moderate intensity warehousing, distribution, and manufacturing businesses.

However, higher intensity industrial activities, such as those that would potentially pose a nuisance or safety concern to adjacent properties, have been historically prohibited. These restrictions, coupled with requirements for generous front yard set-backs and green areas have contributed to the general aesthetic appeal of the Industrial Core area. The attractive appearance of the Industrial Core has in turn served a valuable economic development function over the
years, providing a physical environment conducive to attracting the office users and high tech companies that are such an important component of the City’s desired industrial land use mix.

It has been City policy to regularly update the “I-2” zoning district in order to meet changing circumstances and future needs. These updates, including the permitting of front yard parking areas and front yard truck loading facilities (each subject to substantial landscape screening provisions) and the accommodation of new uses including sports training facilities, paratransit, and business and trade schools have served to keep the “I-2” district a modern, relevant, and effective zoning category.

In addition to the “I-2” zoned areas, there are three (3) comparatively minor areas of non-industrial zoning within the Industrial Core. These include a specialized retail district (“C-5”, Industrial and Retail and Service) located in the vicinity of Enterprise Parkway; a higher intensity office district (“O-2”, Office Park zoning) designed to accommodate an office park development located at the southeast corner of Aurora and Cochran Roads; and a lower intensity office district (“O-1”, General Office zoning) located along Bainbridge Road to the east of Harper Road.

Each of these non-industrial zoning classifications serves an important function by providing the means to accommodate significant business segments within the Industrial Core area. However, there are notable deficiencies in the current zoning configuration. For example, the “C-5” (Industrial Retail and Service) district has experienced increased challenges relating to the maintenance of full occupancy in the face of the restrictions that have been placed on the permitted range of uses. The existing “O-1” (General Office) zoned areas, on the other hand, do not reflect the type and character of development that has actually occurred within these areas. Potential strategies to address these issues, and others, are examined within the “Future Industrial Zoning Plan” (see Section 2, below).

Finally, it should be noted that an enclave of single and two-family residential zoning - located on Bainbridge Road immediately to the west of Kruse Drive- has been included within the Industrial Core planning area for the purposes of this Master Plan. This mature residential neighborhood, which is effectively hemmed between the Central Retail District area and the Industrial Core area proper, presents one of the more difficult planning challenges facing the City. A detailed planning strategy for this area, including a proposed new site specific zoning classification, is proposed within the “Future Industrial Zoning Plan”, below.

The balance of the Industrial Core Plan focuses on the following planning categories, in sequence:

- Section 2- The Future Industrial Zoning Plan;
- Section 3- The Existing and Future Industrial Land Use Plan;
- Section 4- The Physical Infrastructure Improvements Plan;
- Section 5- The Communications Technologies Plan;
- Section 6- The Landscape, Signage, and Aesthetic Character Plan;
- Section 7- The Public Transportation Plan.
SECTION 2

THE FUTURE INDUSTRIAL ZONING PLAN
RECOMMENDATIONS FOR THE INDUSTRIAL CORE AREA

The existing zoning pattern within the Industrial Core has adequately served the needs of the area and the community for many years. Nevertheless, certain improvements to the current zoning configuration may warrant future consideration.

To this end, the “Future Industrial Zoning Plan” provides both a blueprint of general zoning policies for the Industrial Core area, as well as an examination of specific zone change options relevant to the effective span (10-15 years) of this Master Plan. These recommendations include policies relating to the content and configuration of existing zoning classifications, as well as proposals to establish new zoning categories in order to better address the unique planning challenges that face certain segments of the Core area.

The discussion within this Section corresponds to the following general outline:

1. Recommendations for “I-2” (Industrial Manufacturing) zoned areas.
2. Recommendations for “O-1” (General Office) zoned Areas.
3. Recommendations for “O-2” (Office Park) Zoned Areas.
4. Recommendations for “C-5” (Industrial Retail and Service) zoned areas.
5. Recommendations for the Bainbridge Road West Planning Area - Proposed “O/S-1” (Office/Service One) zoning district.
6. Recommendations for the establishment of an “I-3” (Auto Repair) zoning district.

Proposed zone changes are examined in detail under the relevant subsections listed above. A comprehensive future zoning map (See “Map 18-2-G”), which illustrates all recommended zone changes, is provided at the end of this Section.

Finally, it should be emphasized that as with any future zoning recommendations contained within this Master Plan, the City Council and residents of the City of Solon reserve the exclusive right to adopt all, some, or none of these recommendations. As has been noted, the City considers the current zoning configuration appropriate and adequate and these recommendations are only intended to serve as a statement of basic planning policies should the City determine to consider zoning use changes within, or adjacent to, the Industrial Core area.
I. RECOMMENDATIONS FOR “I-2” (INDUSTRIAL MANUFACTURING) ZONED AREAS

As per “Map 18-1-C”, above, the “I-2” (Industrial Manufacturing) zoning district is the predominant zoning classification within the Industrial Core. This zoning district has effectively served the City for more than 50 years - providing the basic framework that is largely responsible for the success of the industrial area throughout the span of its existence.

Over the years, the “I-2” district has been regularly updated in order to accommodate new uses and modern site design standards. The most recent comprehensive overhaul of the district occurred with the adoption of the “2005 City Zoning Ordinance”.

Due to these recent updates, it is expected that the current configuration of the “I-2” district will effectively serve the needs of the community throughout the timeframe of this Master Plan. Nevertheless, it is essential that the City continue to closely monitor economic development trends in order to ensure that new uses, technologies, and required site design features are adequately accommodated. However, it is of equal importance that any future alterations to the district respect the aesthetic design qualities that have historically been an integral, if perhaps underappreciated, strength of the Industrial Core area in general.

As per the Existing Land Use Plan (“Map 18-3-A”, below) approximately 85% of all of the City’s “I-2” industrial zoned land is currently occupied. The vast majority of “undeveloped” land is owned by the landfill located on the western border of the Industrial Core area. The balance of undeveloped land is primarily controlled by existing Solon companies for the purpose of accommodating future expansions. Therefore, the City has very limited opportunity to attract new businesses to the community when the availability of a new development site is a prerequisite. This is perhaps the principal shortcoming of the City’s existing industrial land use situation, leading many businesses that would have otherwise established a presence in Solon to instead locate in adjacent communities. Therefore, it is certainly in the long term economic interest of the City to explore potential alternatives to expand the area of available industrially zoned land.
1. **RECOMMENDATIONS FOR “O-1” (GENERAL OFFICE) ZONED AREAS**

The sole “O-1” (General Office) zoned area within the Industrial Core is located in the vicinity of the Harper Road/Bainbridge Road intersection (See “Map 18-1-C”, above). This approximately twenty two (22) acre site is characterized by large multi-story office buildings which currently accommodate medical, R&D, and business office uses.

The existing office land use pattern – being situated at the northwestern gateway to the Industrial Core and clearly visible from US 422 - is appropriate and well suited to the area. The existing land uses are also complementary to those present on the adjacent industrial zoned land.

However, while the existing “O-1” zoning is adequate to the existing land use pattern and general physical environment of the area, it is perhaps not optimal. A zone change from the current “O-1” (General Office) zoning to the relatively more permissive “O-2” (Office Park) classification may be more appropriate for the area for the reasons examined below.
First, it should be noted that the purpose of the current “O-1” zoning district is to “permit low to moderate intensity office projects and similar uses” and to provide “well planned transitions from lower intensity residential areas to higher intensity non-residential areas”. In essence, the “O-1” district is intended to serve as a low intensity transitional type zoning classification. As such, maximum building size and building height are strictly limited.

However, as has been noted, this is not the type of development that has actually occurred in this area. In effect, considerably larger and more intensive office projects have historically been approved in this area, primarily through the granting of variances for the various building sites. The result is a development pattern that is generally more consistent with that characteristic of the “O-2” (Office Park) zoning district than with the a typical “O-1” district.

Therefore, a rezoning to “O-2” (Office Park) as illustrated in “Map 18-2-A” above, would more effectively reflect and accommodate the City’s historically demonstrated land use preferences for this area.

2. RECOMMENDATIONS FOR “O-2” (OFFICE PARK) ZONED AREAS

The “O-2” (Office Park) zoned portion of the Industrial Core is restricted to an approximately ten (10) acre site located at the southeast corner of Cochran Road and Aurora Road (See “Map 18-1-C”, above). This area is characterized by two large multi-story office buildings that were part of a planned, but ultimately uncompleted, office campus development. Approximately 2.3 acres of the site remains vacant and is available for development.

The current office designation for this site is appropriate to the existing land use pattern in this area, and it is recommended that the existing “O-2” (Office Park) zoned area remain in its current format and configuration.

3. RECOMMENDATIONS FOR THE BAINBRIDGE ROAD WEST PLANNING AREA – PROPOSED “O/S-1” (OFFICE/SERVICE ONE) ZONING DISTRICT

Background

The land use scenario presented by the section of Bainbridge Road that is located between Kruse Drive and Harper Road has been the subject of significant discussion and study for many years.

In 2002, the “Bainbridge Road West Master Plan” (See Appendix) was prepared in association with the Master Plan Citizen’s Committee, in order to establish a viable land use strategy for the area. This plan advocated the implementation of a transitional type office/service zoning classification and included building size limitations and residential architectural design requirements for all non-residential structures. The strategy advocated by the plan was intended to protect the continued residential use of properties in the area while allowing for a gradual transition to low intensity office/service uses. The recommendations and conclusions of the 2002 plan have been largely incorporated in to this Master Plan.
The principal feature of the Bainbridge Road West area from a planning perspective is a relatively small remnant of residentially zoned/used land. Over time, this neighborhood has become surrounded by commercial and industrial zoned/used land to the east, west, and south, and now directly abuts US 422 to the north.

These changes have essentially created a residential enclave in the midst of the City’s two largest non-residential planning areas - the 340 acre Central Retail District and the 1,938 acre Industrial Core (See “Map 18-2-B”, above).

As per “Map 18-2-B”, the encircling of the lower intensity residential neighborhood by higher intensity commercial and industrial uses has created a less than ideal land use situation. This is compounded by the fact that the segment of Bainbridge Road that serves the residential area also accommodates a significant volume of commercial/industrial through traffic. For a better understanding of how this land use pattern evolved, an examination of the 1966 aerial map for the area (see “Map 18-2-C”, below) may be useful.
As can be discerned from the aerial, the neighborhood in question was constructed at a time when this section of Bainbridge Road was more or less residential and agricultural in character.
The embryonic Industrial Core area was then confined to the area to the south of the current Erie Lackawanna (Conrail) railroad line. Later, when US 422 was constructed, the highway became the logical northern boundary for the Industrial area (See “Map 18-2-D”, above).

Eventually, all of the residential and agricultural properties on Bainbridge Road that were formerly located between the US 422 right of way and the Industrial Core were absorbed into the Industrial Core. The sole exception was the residential neighborhood in question.

While this neighborhood continues to be well maintained and has experienced limited vacancies, the existing land use pattern may not be conducive to the long-term viability of the existing residential area and therefore should be monitored over time.

**Recommendations**

As the residential land use pattern in the Bainbridge Road West Area may not be tenable over time, the establishment of a contingent planning strategy for the area is warranted.

However, it should be emphasized that the implementation of any new planning strategy should only occur under one of the following two scenarios:

1. A majority of the property owners within the residential area petition the City for a zone change, or;

2. Housing and property conditions and/or values within the area begin to measurably decline.

The recommended alternative planning strategy for this area, is transitional in concept, and is based upon Master Plan Citizen’s Committee discussions and the 2002 “Bainbridge Road West Master Plan”. The two principal features of this strategy are as follows:

1. **Permit Business/Medical/Professional Offices, and Light Service Uses within the existing Residential Area**- The most appropriate future use of the residential area in question is office (including business, medical and professional) and light commercial service. Permitting such uses within this area will essentially constitute the continuation of the larger area’s historic development pattern. Furthermore, by permitting these lower intensity type land uses, the City will enable the area to transition gradually from residential to non-residential use thereby minimizing the impact of the transition on the pre-existing residential properties. The smaller scale office projects that the lots in this area could reasonably accommodate (2,000 sq. ft. to 8,000 sq. ft.) will service a market segment that is currently underserved within the City (this according to the research of City’s Economic Development Manager.)

Any light service uses that would be permitted should have impacts substantially similar to office uses. Examples of such uses would include real estate businesses, travel agents, financial institutions, government facilities, barbers/beauticians, places of worship, etc.
2. Develop and Implement a new transitional type “Office/Service Zoning District (“O-S-1”) - To regulate the implementation of office/service uses within the Bainbridge Road West area it is recommended that the City establish a new transitional zoning classification district - “Office/Service (O-S-1)” (See “Map 18-2-E”, below).

The purpose of the “O-S-1” district should be to provide a tool to enable the continued residential use of properties within transitional areas, while permitting a smooth and gradual transformation of the area to office/light service use (It should be expected that the “O-S-1” district would potentially have application to any transitional residential situation – not exclusively the Bainbridge Road West Area).

General features of the “O-S-1” District should include the following:

A. All non-residential buildings should be required to incorporate residential design features (such as peaked roofs, etc.) and relevant architectural, material, and color design standards should be established.
B. A maximum building size limitation should be established (8,000 sq ft + or -) and not more than 25% building lot coverage should be permitted.

C. A minimum of 25% of any non-residential lot should be devoted to green space, and specific landscape criteria should be established, including the minimum number of trees per 100 ft of lot frontage, and the use of complete visual vegetative buffers and increased structure set-backs when non-residential uses abut residential uses.

D. To minimize traffic impacts, the number of street access points should be limited, and cross access between adjacent non-residential developments should be required.

4. **RECOMMENDATIONS FOR THE ESTABLISHMENT OF AN “I-3” (AUTO SERVICE) ZONING DISTRICT.**

There currently is no zoning classification within the City that permits stand alone automotive service businesses such as auto mechanics and body shops. Rather, all existing automotive service businesses in the City are either accessory to a specific automobile dealership (such as is permitted within the “C-4” Motor Service Commercial District) or are non-conforming in nature. As non-conforming uses cannot be re-established if discontinued for a period of 6 months or more, the City could eventually lose all of its current stand alone automotive service businesses. Therefore, the designation of a specific automotive service area in which to permit these uses may be warranted. Certainly convenient access to these uses can be a substantial benefit to the community as a whole.

Perhaps the most viable location at which to consider the establishment of such a district is on Old South Miles, off of Aurora Road (See “Map 18-2-F”, below). This area presents several advantages:

1. **General Compatibility with Existing Land Uses** - Though technically a commercial service use, the typical auto repair business is more consistent with industrial type uses in impact and intensity than with any other general land use category (ie: commercial, office, residential, etc.). Therefore, these uses tend to be less disruptive and more compatible with existing land uses when located within industrially zoned areas. The Old South Miles area is perhaps particularly suited to an expansion of auto service uses in that an existing non-conforming auto body shop is already located in this area.

2. **Separation from Residential and Office Areas** - Corollary to the above, the Old South Miles Road area is adequately separated from land uses that may be less compatible with auto service uses such as residential and office uses. While the Bainbridge Road West residential area (see Section 2, Item 3, above) does technically abut the north side of Old South Miles Road, it is substantially buffered by the one hundred feet wide Erie Lackawanna railroad right of way line. However, additional property site buffering
requirements should be included within the “I-3” (Auto Service) Zoning District, if implemented.

3. **Low Visibility** – The Old South Miles Road area has the advantage of being one of the most secluded and inconspicuous sections of the Industrial Core Area. While, as has been noted, auto service uses are generally compatible with industrial type uses, these uses do tend to involve the outside storage of vehicles awaiting repair. This may lead to aesthetic concerns in areas that are more prominent and visible. As auto service businesses tend to be destination driven and do not require high visibility, the Old South Miles Road area is ideal.

Should the City determine to implement an “I-3” (Auto Service) Zoning District, the following general features are recommended:

1. Permitted Uses should include General Auto Repair, Auto Towing and Impound Yards, as well as basic industrial uses such as Warehousing, Manufacturing and Distribution. Specifically prohibited uses should include Auto Salvage Yards/Junk Yards.

2. Set-backs, buffering, site design, and dimensional requirements should generally reflect “I-2” (Industrial Manufacturing) District parameters, except that more lenient front yard set-backs should be incorporated in consideration of the lot dimensions in the Old South Miles area.

“MAP 18-2-F” – POTENTIAL LOCATION OF THE “I-3” (AUTO SERVICE) ZONING DISTRICT
A visual summary of all zone changes proposed within this Master Plan for the Industrial Core Area is provided in “Map 18-2-G”, below, and a verbal summary is provided in “Chart 18-2-A”, below.
1. Rezone current “O-1” (General Office) zoned area located at the Bainbridge Road/ Harper Road Intersection to “O-2” (Office Park) zoning.

2. Maintain “O-2” (Office Park) zoning located at the corner of Aurora and Cochran Road as per current configuration.

3. Consider the development and implementation of “O/S-1” (Office/Service) zoning in the Bainbridge Road West area, immediately to the west of Kruse Drive.

4. Consider the development and implementation of “I-3” (Auto Service) zoning on Old South Miles Road.
The features of the City’s Existing Land Use Map and the Future Land Use Plan are in many ways a reflection of the City’s Existing and Proposed Zoning Plans. However, while the Zoning Plan represents the general mix of essentially compatible land uses that the City deems to be acceptable within a given area, the Existing Land Use Map illustrates the actual use of each property, and the Future Land Use Plan illustrates the use category deemed to be most appropriate for each particular area.

While this Master Plan has deliberately placed greater emphasis on the specific Zoning Plan for the Industrial Core, presentation of the Existing Land Use Map and Future Land Use Plan for this area (“Map 18-3-A” and “Map 18-3-B”, respectively, below) will provide City decision makers with important additional land use information to assist in the decision making process.
Interviews were conducted with the Public Works Commissioner and the City Engineer to assist in the identification of future street infrastructure and utility improvements that are either scheduled or recommended within the Industrial Core Area. These improvements are as summarized below, and as illustrated in “Map 18-4-A”, below. (Note: The information contained herein is supplemental to the consultant prepared “Traffic Master Plan” and the “Sanitary Sewer Master Plan” which are incorporated with this Master Plan document.)

1. RECOMMENDED SIDEWALK IMPROVEMENTS: Sidewalks are an essential amenity within commercial and industrial areas just as they are within residential
neighborhoods. The provision of a well planned sidewalk system contributes to the safety, efficiency, and quality of life of the workers in the areas in which they are located, and adds to the overall attractiveness and marketability of the Industrial Core in general.

However, to date, only approximately 50% of the Industrial Core Area is currently serviced by sidewalks (See “Map 18-4-B”, below).

“MAP 18-4-B” - EXISTING SIDEWALKS AND PROPOSED SIDEWALK PROJECTS

This represents perhaps the single greatest infrastructure deficiency in the City today. As a first step towards mitigating this deficiency, a general strategy is proposed, below, for the prioritization of future sidewalk implementation projects.

It should be noted that this strategy recognizes that safety and convenience are the two principal motivating factors for the provision of sidewalks. However, where choice must be made, public safety is given precedence over convenience. This typically equates to a bias for providing sidewalks in areas with high traffic levels coupled with high existing building development density. With this in mind, the proposed prioritization strategy for sidewalk infrastructure projects is outlined in “Chart 18-4-A”, below:
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"CHART 18-4-A" - RECOMMENDED PRIORITIZATION STRATEGY FOR SIDEWALK IMPLEMENTATION PROJECTS

**PRIORITY #1.** - **SOLON ROAD** - Install sidewalks from Aurora Road west to Cochran Road. *(NOTE: See also the street widening recommendations relevant to Solon Road that are contained within this section.)*

**PRIORITY #2.** - **BAINBRIDGE ROAD** - Install sidewalks from Harper Road east to the Spring Lake Colony Subdivision.

**PRIORITY #3.** - **AURORA ROAD** – Install sidewalks from the Solon Road intersection west to Camp Industrial Parkway.

**PRIORITY #4.** - **CAMP INDUSTRIAL PARKWAY** - Install sidewalks from Aurora Road south to Solon Road.

**PRIORITY #5.** - **INDUSTRIAL SERVICE ROADS** - Install sidewalks on Solon Industrial Parkway, Bruce Industrial Parkway, Fountain Parkway, Parkland Boulevard/Arnold Miller Parkway, Ambina Drive, and Hall Street.

**PRIORITY #6.** - **BAINBRIDGE ROAD** - Install sidewalks from Kruse Drive west to the western border of Spring Lake Colony Subdivision. *(NOTE: This project would only occur if the office/service zoning extension proposed within this Master Plan for the Spring Lake Colony Subdivision area were enacted. Any such project should furthermore be incorporated within the related street widening project as proposed, below, within this Master Plan section.)*

**PRIORITY #7.** - **AURORA ROAD** - Install sidewalks from Harper Road west to the western boundary of the Industrial Core Area.

Obviously other issues relevant to sidewalk implementation – such as design, maintenance, and project financing - must also be considered. For instance, each of the prioritized projects addressed above will ultimately need to specify whether sidewalks will be installed on one side of the street or both. This will not be feasibly determined until the commencement of the engineering phase of the construction project in question.

In addition, the City must identify the most appropriate method for financing any proposed sidewalk implementation project. The two principal financing options will include exclusive City funded projects, and the assessment of private property owners for the portion of the lot that
is contiguous to the sidewalk (ie: the property benefiting from the improvement pays for the improvement). Exclusive City funded projects will most likely only be feasible where supplemental grant money has been secured.

Finally, it should be recognized that more sidewalk miles will necessitate additional maintenance, especially during the winter months. Therefore, City policies will need to be established identifying the responsibility for this maintenance. These policies may assign maintenance responsibilities to private property owners, to the City, or may involve a combination of policies with some streets maintained by the City, and others not. Obviously the practicality and feasibility of City provided maintenance will require an assessment of the availability of manpower and equipment resources.

2. RECOMMENDED STREET AND INTERSECTION IMPROVEMENT POLICIES:

The existing transportation infrastructure within the Industrial Core Area is largely adequate to serve current and expected needs. However, there are certain improvements and policies that should be considered in order to better accommodate traffic levels. As has been noted, these are addressed in significant detail within the consultant prepared “Traffic Master Plan”, which shall be considered to be part of this Master Plan document. However, a brief summary of recommended transportation related improvements and policies particularly relevant to the Industrial Core area is provided below.

A. Solon Road Lane Additions – The section of Solon Road that is located between Davis Industrial Parkway and Cochran Road is currently two lane in configuration. To more adequately support traffic flow within this area it is recommended that the City consider expanding the street to three lanes, with the addition of a designated turning lane.

B. Bainbridge Road Lane Addition – Nearly all of Bainbridge Road that is located within the Industrial Core is currently two lanes in configuration. Therefore, it is recommended that this road be widened to three lanes, providing one designated turning lane, in order to better promote the efficient flow of commercial traffic. It is suggested that this project occur for the entirety of the street in conjunction with the implementation of office service zoning as proposed within this Master Plan. Alternatively, the project could be implemented only for the “I-2” zoned section of the street if the City determines not to implement office service zoning.

C. Intersection Capacity Improvements - Promoting efficient flow through major street intersections is a primary contributor towards achieving increased levels of service for area streets. Implementing intersection capacity improvements (ie: turning lanes and stacking areas) is one of the most effective ways to promote efficient flow through these areas. Therefore, the following intersections are recommended for capacity improvements in accordance with the specific provisions of the Traffic Master Plan: 1. Solon Road/Aurora Road Intersection; 2. Solon Road/Cochran Road Intersection; 3. Aurora Road/Cochran Road Intersection; 4. Cochran Road/Carter Street Intersection.
D. **US 422/Harper Road Interchange Improvements** – It is in the City’s interest to support capacity improvements to the US 422 interchange ramps in order to enhance the ease of ingress and egress from the Industrial Core to the regional and interstate highway system. However, implementing these improvements is somewhat complicated by the fact that it is not generally ODOT policy to support interchange capacity projects. This is due to concerns that greater accessibility will in turn adversely impact the level of service experienced by other segments of the highway system. Therefore, in order to promote enhanced local accessibility, the City’s options will be limited to the more general policy of advocating regional capacity improvements to US 422 and the adjacent highway system, as opportunities arise.

E. **Ongoing Street Maintenance** – Of equal importance to improving the capacity of streets to accommodate efficient traffic flow, is the need to provide ongoing maintenance of the existing street infrastructure. Therefore, the City should continue current maintenance policies, monitoring street conditions and making improvements as necessary throughout the useful life of the street in question.

3. **STORM WATER AND SANITARY SEWERS** – The age and condition of the existing storm water and sanitary sewer system within the Industrial Core area will likely require close examination during the time span of this Master Plan. Currently the City is experiencing symptoms of potential problems, particularly the occurrence of Inflow and Infiltration ("I & I"). “I&I” is a serious condition that is characterized by storm water infiltrating into the sanitary sewer system, and/or vice versa. At present this is occurring primarily during rain events and has been observed at the City Water Reclamation Plant on Beaver Meadow Parkway.

“I&I” is symptomatic of one of two possible causes (or a combination of the two). These are: 1. general deterioration of infrastructure; and, 2. improper sewer system tie-ins. A comprehensive study of the issue will be necessary in order to identify the specific cause(s) of the problem and to establish the appropriate strategy to correct the situation. The first step in this process will involve dye and smoke testing of the existing infrastructure in order to determine the location and character of the contamination.

Costs to correct the condition of the storm water and sanitary sewer systems could potentially be significant. Therefore, the Engineering and Public Works Departments have recommended a two prong approach to financing any necessary corrective actions. In specific, the City would be financially responsible for any corrective action that is required within right of ways and within City easements, and private property owners would be responsible for any corrective action that is required on private property (alternatively the City could perform the work on private property and assess the costs to the property owner).

Failure to appropriately address the “I&I” problems within the Industrial Core area in a proactive and timely manner could result in the imposition of EPA fines and other actions, as well as the continued deterioration and decline of essential infrastructure. Further recommendations relating to this issue are contained within the consultant prepared “Sanitary Sewer Master Plan, which is incorporated within this Master Plan.
4. **ELECTRICAL INFRASTRUCTURE** – Access to dependable electrical service is essential to the viability and marketability of the Industrial Core area. Therefore, the City should continue to monitor service quality and advocate for ongoing system maintenance and infrastructure upgrades in order to meet the needs of Solon businesses.

**SECTION 5**

**THE COMMUNICATIONS TECHNOLOGY PLAN FOR THE INDUSTRIAL CORE**

This Section of the Master Plan provides background information and recommendations relating to technology issues affecting the Industrial Core Area. This plan section was prepared with the consultation and input of the City Information Technologies Manager, the City Engineer, the Public Works Commissioner, and the Economic Development Manager.

As has been discussed within this Master Plan, the age and physical limitations of the buildings within the Industrial Core Area are likely to place the City at a certain competitive disadvantage relative to many of the surrounding communities. To address this challenge it has been recommended that the City focus its economic development efforts, in part, on attracting offices, R&D, and other technology based segments of the industrial market.

*However, if Solon is to attract and accommodate “high-tech” uses, it is imperative that the City maintain an advanced level of supporting technological infrastructure within the Industrial Core Area. In particular, it is essential that adequate infrastructure be provided to support the specific communication technologies that are demanded by businesses. These include high speed/capacity data transmission capabilities, advanced telephone services, and state of the art television services.*

The effectiveness of the City’s technological infrastructure can best be measured by the level of bandwidth that is available to serve the aforementioned communication technologies. Bandwidth, of course, is defined as the amount of data that can be carried from one point to another in a given time period.

Obviously, bandwidth capacity is limited by the physical medium through which it is conducted. Fiber-optics lines are the most advanced and capable of the current technologies utilized for conducting communications and data, and are expected to remain so throughout the effective period of this Master Plan. Copper lines are a generation older than fiberoptics and offer both less capacity and speed. Wireless communication, while an advanced technology, does not offer a marked improvement over copper lines and is best suited for areas that have neither fiberoptics nor copper line infrastructure.
“Map 18-5-A”, below, designates the location of the various types of communication technology infrastructure that are currently provided within the Industrial Core Area.

As per “Map 18-5-A”, the most common communication technology infrastructure within the Industrial Core is the older copper based system. At present, all streets are serviced with either above ground or in-ground copper lines. These communication lines are currently owned by one of two companies – AT&T or Time Warner. The more advanced fiber-optic technology is currently limited in distribution, essentially confined to Cochran Road and to relatively minor segments of Aurora Road and Bainbridge Road within the immediate vicinity of Cochran Road.

However, a significant opportunity to expand access to fiber optic technology may be on the immediate horizon. This is the result of the pending, though likely, awarding of grant money to the City for the purpose of connecting fiber optic lines to all traffic signals within the Industrial Core Area. At present, the plan calls for the installation of lower capacity single strand/single
mode lines along all arterial roads within Industrial Core area, including Solon Road, Bainbridge Road, and Aurora Road.

However, as the principal cost associated with fiber optics installation is not the cost of high capacity line itself, but rather the cost of excavation and other work preparatory to laying the lines, it certainly makes sense for the City to investigate the potential for laying higher capacity lines at this time. While some extra cost may be incurred, this expense would be minimal compared to any subsequent attempt to upgrade the lines to higher capacity status. However, before proceeding, the legal issue of whether the City is able to make higher capacity lines available to businesses, in competition with existing providers, must first be answered.

Regardless of the aforementioned opportunity, many streets in the Industrial Core will remain underserved in communications technology infrastructure – including all secondary streets and all industrial service streets. As has been stated, it is crucial that the City provide broad access to the most advanced communication infrastructure possible in order to effectively promote the community’s larger economic development goals and objectives.

To achieve the comprehensive implementation of advanced communication infrastructure throughout the Industrial Core area will likely require the active cooperation and participation of the communications companies that own these technologies. This is due to the fact that while the City does have the option of funding the extension of the communications infrastructure itself, such a course would likely be expensive, unnecessary in many instances, and not cost effective.

Therefore, in the alternative, a multifaceted approach is recommended. While this strategy would, by necessity, take longer to implement than would a straightforward policy of municipal funding of construction projects, it does provide the most feasible and realistic approach towards accomplishing the City’s goals.

To this end, the following policies and strategies are recommended:

1. **Encourage Competition by Permitting More Providers Within the City.** – The combination of Federal, State, and Local regulations tend to increase the cost associated with communication providers entering into new market areas. This is the principal impediment to new providers establishing a presence in the community. However, having access to a greater range of providers is a potential benefit to the City in that it increases competition, reduces average infrastructure project costs, and provides more avenues to enable the provision of higher quality infrastructure within underserved areas. To this end it is recommended that local regulations be reviewed in order to reduce unnecessary restrictions, and that the City support a competition friendly approach within State and Federal regulations.

2. **Seek to Influence the Route of Privately Funded Communication Line Extensions** – Most, if not all, extensions of communications infrastructure that have occurred within the City to date are based upon perceived economic feasibility driven
by market forces. As such, the typical infrastructure improvement project has occurred in association with construction of a private development project whereby the developer has both the technological demands and the resources necessary to fund the extension or improvement of communication infrastructure. As this is the principal manner in which communication technology infrastructure has been extended within the City it is advisable, to the degree possible, for the City seek to actively influence the chosen route of any infrastructure extensions. This is desirable so as to ensure the maximum benefit to existing and planned projects within the vicinity and to promote improved service to underserved areas.

3. **Consider Option of Above Ground Communication Lines in Underserved Areas**
   
   It should be recognized that one potential barrier to extending advanced communications infrastructure into the underserved areas of the City is the longstanding community policy that all such infrastructure be located underground. As underground installation is much more expensive and problematic than above ground installation (i.e., Pole mounted), this policy may prevent communications companies from extending infrastructure into areas that are of borderline economic feasibility. While the wholesale abandoning of the City’s underground utility policies is neither warranted nor advisable, there may be instances where a specific development project of unique community benefit may warrant an exception to this policy. Any determination to waive underground utility requirements should therefore be based principally upon specific economic development merits to the community.

4. **Incorporate Fiberoptics into any new development sites**

   The development of the City’s Industrial Core Area predates the utilization of fiber-optics technology. However, more modern industrial developments typically incorporate underground fiber optics infrastructure in the early development phases as standard procedure. Therefore, should the City determine to expand the area of Industrial zoning within the City, such as that proposed within Section 2 of this Master Plan, it is recommended that the installation of fiber optics lines within those areas be required.

5. **Utilize Consultant/Liaisons to Identify and Promote Underserved Areas**

   The City should facilitate the use of third party liaisons to study the economic and physical environment within specific underserved areas in order to identify where trends may be favorable for the extension of communications infrastructure. In essence, these liaison companies serve as consultants to the businesses within the particular area, providing advice to property owners relating to the feasibility of achieving the extension of infrastructure as well as potential strategies to finance and implement the infrastructure.

6. **City Funding Policies**

   As has been noted, comprehensive municipal funding of large scale communications technology infrastructure projects is not typically a cost effective strategy. Nevertheless, some level of municipal participation in the process of funding and extending communications technology infrastructure can provide a useful catalyst for the advancement of these technologies.
To date, all existing communication technology infrastructure projects within the City have been implemented through private means. Specifically, either through speculative construction projects initiated by the infrastructure provider, or through funding provided by groups of business users directly benefiting from a particular extension. This approach has resulted in the implementation of adequate levels of communication infrastructure throughout most of the Industrial Core. However, as has been noted, certain coverage gaps have also resulted. These include the existence of large areas without fiber optic service.

Limited municipal participation, on a case by case basis, may be warranted to help fill these service gaps. It is suggested that this would occur as a component of the typical private infrastructure extension process addressed above, with City involvement limited to reducing monetary shortfalls that may otherwise make a particular infrastructure project unfeasible. This would perhaps best be accomplished through the establishment of a new City grant program that would include project prioritization and minimum qualification criteria. Of course the basic objective of any such grant program should be to maximize the economic benefits to the City, at minimum city investment.

Of course the City should also routinely track the availability of grants that may be utilized to fund the extension of communications infrastructure into underserved areas or to otherwise promote the policies advocated within this plan.
SECTION 6
THE LANDSCAPE, SIGNAGE, AND AESTHETIC CHARACTER PLAN FOR THE INDUSTRIAL CORE

The general appearance and aesthetics of the Industrial Core is an often underestimated factor in the historic success of the area. Just as the perception of the community as a whole can influence new residents to locate within the City, so can the perception of the industrial area influence the decision of new tenants to locate within the Industrial Core.

This concept is supported by economic development surveys of Solon businesses in which the aesthetic character of the Industrial Core has been noted as a factor for determining to locate in Solon. With this in mind, it certainly makes sense to take basic common sense steps to both maintain and enhance the character of the Industrial Core.

Therefore, this section of the plan proposes various policies and actions that are intended to promote character and aesthetics within the Industrial area. These recommendations are as follows:

1. **Harper Road/422 Interchange Landscaping Improvements**— The Harper Road/US 422 interchange area is the primary access point to the Industrial Core. As such this interchange provides visitors with their first impression of the industrial area, making a definite statement – either positive or negative.

   The current condition of the interchange area, while perhaps not unattractive, can best be described as understated. In order to provide a more positive statement, it is recommended that a new landscape concept be implemented within the interchange area.

   To promote consistency, it is recommended that any improvements to the Harper Road/US 422 Interchange be similar in concept to those proposed for the SOM/US 422 interchange area, as per the Central Retail District section of this Master Plan. To this end, “Map 18-6-A”, below, illustrates the proposed conceptual streetscape design for the Harper Road/US 422 interchange area.
As illustrated, the four quadrants of the interchange area are proposed to be landscaped with professionally designed planting beds. To promote ease of maintenance, it is recommended that all landscape areas be serviced by an integral irrigation system. It is also recommended that “Welcome to Solon” signage be incorporated into the landscaped areas at the eastbound and westbound exit ramps. This signage should be substantial in appearance, constructed of brick, and otherwise consistent with the signage that is recommended for the SOM/US 422 interchange area (See “Figure 18-6-A”, below).
2. **Maintain Aesthetic Site Design Criteria Within the Zoning Code** - The “I-2” (Industrial Manufacturing) zoning district is by far the predominant zoning classification within the Industrial Core Area. From its inception, this district has incorporated specific aesthetic design criteria, including requirements for substantial front yard building set-backs and green spaces. Additional landscape requirements have been added over time to further enhance the appearance of the area, and the consistent application of these aesthetic concepts have resulted in the attractive industrial area that the City enjoys today.

However, it must be expected that the needs of businesses will change over time. This may occasionally warrant modifications to City’s site design criteria in order to continue to promote the competitiveness and functionality of the Industrial area. *However, while the City must certainly seek to accommodate changing market demands where possible, it should only do this in a manner that continues to recognize the critical importance of promoting quality aesthetic design.*

An illustration of the successful application of this concept is provided by the recent market demand shift that resulted in the City experiencing increased requests for front yard parking and loading areas. While large open front yard areas were a traditional component of the aesthetic appeal of the Industrial Core area, an alternative approach was developed whereby modestly reduced front yard areas were permitted in order to accommodate front
yard parking/loading areas - subject to the provision of significant mounding and landscaping to screen these areas. The result enabled businesses to incorporate the site amenities that they need, while effectively preserving the traditional aesthetic quality standards of the Industrial Core area (See Figure 18-6-B, below).

“FIGURE 18-6-B” – FRONT YARD PARKING LANDSCAPE SCREENING

3. **Coordinated Street Signage Plan for the Industrial Core** – It is recommended that a signage package unique to the Industrial Core area be utilized in order to promote character and establish a distinct sense of place. Three (3) categories of signs are proposed to accomplish this goal. These are as follows:

A. **“Industrial Core” District Identification Sign** – It is recommended that distinct signage demark the principal entry points into the Industrial Core area. As such, it is recommended that this signage be located at the northern and southern entry points on Cochran/Harper Road; at the eastern and western access points of Aurora Road and Solon Road, and at the eastern access point on Bainbridge Road (See “Map 18-6-B”, below). Such signage should generally reflect the design characteristics of the proposed Central Retail District Identification Signage as proposed within “The Central Retail District”, Section 8, of this Master Plan.
B. **Street Identification Signage** – It is recommended that distinct street identification signage be utilized at the principal intersection points along the major arterial streets within the Industrial Core Area. Such signage should be similar in concept and design to that proposed for “The Central Retail District” under Section 8, Item 2, of this Master Plan.
The proposed location of street identification signage within the Industrial Core is illustrated in “Map 18-6-C”, below.

“MAP 18-6-C” - INDUSTRIAL CORE STREET IDENTIFICATION SIGNAGE LOCATIONS

C. Directional Signage – It is recommended that directional signage be located at prominent points along Cochran/Harper Road (See “Map 18-6-D”, below). The purpose of this signage would be to provide directory information to visitors to the Industrial Core area relating to the location of major employers and shopping and service centers. Such signage should be similar in design and concept to that recommended for “The Central Retail District” under Section 8, Item 3, of this Master Plan.
4. **Basic Property Maintenance** - As buildings in the City continue to age, it is essential that basic and ongoing property maintenance continue to occur. The majority of Solon businesses are likely to perform needed upkeep and maintenance as standard practice. However, if particular properties begin to experience decline it is essential that corrective action be pursued so that adjacent property values are not impacted. This may involve City financial assistance programs designed to promote renovation/ redevelopment, but in many instances will simply involve the enforcement of the existing property maintenance provisions contained within the City Zoning Code. Given the inevitable aging of the City’s building infrastructure it is natural that greater emphasis on non-residential site maintenance will be necessary over the next ten to fifteen years than has traditionally been required in the past.
SECTION 7

THE PUBLIC TRANSPORTATION PLAN
FOR THE INDUSTRIAL CORE

Broad access to public transportation options is essential to the operations of many businesses within the Industrial Core Area, especially the City’s largest employers. Currently, RTA provides extensive weekday service to key parts of the Industrial Core, with hourly routes running from approximately 5 AM to 12 Midnight (See “Map 18-7-A”, below). Weekend service, another important option for many businesses, is also currently available.

Effective coverage for all arterial streets is provided, with the actual physical route of RTA coverage determined on a more or less demand responsive basis. Perhaps the most significant shortcoming in the current public transportation program is the lack of bus shelters and the unavailability of Park-n-Ride options.

While current public transportation services are adequate to meet the needs of the Industrial Core, the following basic policies are recommended in order to maintain and advance the long term viability of the area:

1. Maintain *effective* hourly coverage for all arterial streets, and advocate *full* hourly route coverage of all arterial and secondary streets within the Industrial Core area. (See “Map 18-7-B”, below.)

2. Maintain hourly weekend and late night bus service options to meet the needs of Solon businesses.

3. Advocate non-stop route options from Solon to Downtown Cleveland in order to promote route speed and rider convenience.

4. Advocate the placement of bus shelters at strategic points (ie: the intersection of major arterials) within the Industrial Core for the convenience and comfort of RTA users. (See “Map 18-7-A”, below.)

5. Support Park-n-Ride options within the Industrial Core (and/or within other commercial areas of the City).
"MAP 18-7-B" - PRIORITY PUBLIC TRANSPORTATION
ROUTE COVERAGE AREAS AND PROPOSED
SHELTER LOCATIONS

Chapter 18: The Industrial Core Plan