FOREWORD

The selection of a pedestrian connectivity plan as the topic for this studio was a direct result of my roles as Senior Planning Officer for the City of Upper Arlington, Associated Faculty Member at The Ohio State University, and the father of two wonderful little girls. The issue of sidewalks may at first seem simplistic and potentially not worthy of graduate-level consideration. However, my experience indicates to the contrary. This topic has divided neighborhoods, frustrated elected officials, and exasperated staff members for many years. I strongly believe that this project will be beneficial to these Master’s degree candidates because it combines many of the issues that they will face in their planning careers: policy, politics, public participation, economics, engineering, law and much more.

I consider myself extremely fortunate to have been a part of this effort, and have learned a great deal from these nine bright and talented students. What has been accomplished in a short period of time is remarkable and will benefit the residents of Upper Arlington for many years to come. The goal of this course was to create a document that will have life outside of the academic realm and that will directly assist Upper Arlington City Council in future decision-making for the betterment of the community. No matter what year you are reading this document, I hope these goals have been realized.

Sincerely,

Chad D. Gibson
American Institute of Certified Planners
Senior Planning Officer, Upper Arlington, Ohio
Associated Faculty, The Ohio State University, City and Regional Planning Department
EXECUTIVE SUMMARY

The Pedestrian Connectivity Plan for the City of Upper Arlington has been created to guide stakeholders to establish a more connected, safe, and walkable community. With a goal of providing policy recommendations and a financially feasible approach to sidewalk connectivity, our class, led by Senior Planning Officer Chad Gibson, worked with Upper Arlington City Council and community leaders to create a systematic and comprehensive sidewalk plan for the City.

The results of our efforts include a street priority index that identifies streets most in need of sidewalks based on factors such as street type, proximity to community amenities, and current sidewalk infrastructure to name a few. The Plan also provides maps to describe the City’s sidewalk network and detailed information about the current sidewalk infrastructure, best practice examples, and other sidewalk programs and initiatives. After thorough analysis, our team concludes that the City should create a restricted Sidewalk Implementation Fund (SIF) that implements new sidewalk projects in accordance with a Sidewalk Prioritization Schedule (SPS), as demonstrated in the provided document. This fund will be sustained by fees generated from the estimated improvement value of new homes, interior and exterior remodels, and additions.

The following chapters will guide community leaders in the development of a fair and comprehensive approach for sidewalk installation and will help establish a safe, connected, walkable City. Our hope is that the Pedestrian Connectivity Plan will add to the already strong reputation that Upper Arlington carries as one of Central Ohio’s premier communities.
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ACKNOWLEDGEMENTS

UPPER ARLINGTON CITY COUNCIL
Donald B. Leach, Jr.  
President of Council
John C. Adams
David DeCapua
Debbie Johnson
Frank Ciotola  
Council Vice President
Mike Schadek
Erik F. Yassenoff

UPPER ARLINGTON CITY STAFF
Jeanine Amid Hummer  
City Attorney
David Parkinson  
City Engineer
Thaddeus Boggs  
Asst. City Attorney
Lt. Greg Patrick  
UAPD
Molly Hildebrand  
City Clerk
Emma Speight  
Community Affairs
Theodore Staton  
City Manager
Peggy Wilamosky  
Records Clerk

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Julie Ginnan  
Upper Arlington resident
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Safe Routes to Schools
Tina Muldoon  
Safe Routes to Schools
Patrice Allen
Josh Crump

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Class Instructor
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Jordan Fromm
Amanda Golden
Matt Martin
Patrice Allen
Josh Crump

Jimmy McCune  
Gretchen Witte
Jacqueline Yeoman
CHAPTER ONE
INTRODUCTION
Having a safe, walkable, and connected neighborhood is vital to the success of any community as well as the quality of life for its residents. Upper Arlington, a community with over 30,000 residents in the heart of Central Ohio, enjoys pristine parks, acclaimed schools, tree-lined streets, libraries, numerous shopping, dining and entertainment options. It is crucial for the future success of Upper Arlington and its residents to be connected to these attributes through alternative transportation infrastructure.

The Master Plan and Transportation Plan of Upper Arlington both encourage walkability and address the need for better sidewalk infrastructure. The Master Plan recommends that “pedestrian access will be improved because the community currently lacks strong pedestrian and bicycle connections, making it difficult for people to move about the City except by automobile. Providing these connections will enhance the City’s transportation network, but more importantly will greatly improve the City’s livability. Walking and biking are healthy activities and bring about an enhanced sense of community. Likewise, the City’s major activity centers should have stronger links to its neighborhoods. This strengthens the bonds between institutions and residents.” (City of Upper Arlington, 2013) However, the City still lacks an adequate strategy to implement sidewalk infrastructure that would safely connect the residents to all the enriching elements a walkable community provides.

The Pedestrian Connectivity Plan analyzes Upper Arlington’s current demographics, existing sidewalk infrastructure, and best practices for sidewalk implementation. The public engagement process included a public meeting held on October 9th, 2013 as well as an online survey and an open public comment period from October 18th to November 8th. The Plan outlines a Street Prioritization Schedule (SPS) that provides guidance for sidewalk priority
and also recommends a Sidewalk Implementation Fund that would be used for sidewalk construction. Overall, goals of this Pedestrian Connectivity Plan are to:

- Develop policy recommendations for a systematic, comprehensive, and financially feasible approach to implementing new sidewalks
  - Prioritize and provide rationales where sidewalks are needed
  - Identify gaps in current sidewalk infrastructure
  - Suggest different methods for financing sidewalks such as grants, set asides, or fundraising
- Provide maps and visual aids that illustrate the needs and effects of sidewalk implementation
- Suggest updated language for Section 901.05 in the Upper Arlington Streets and Services Code (Sidewalk requirements for new builds and major renovations)
- Create a Complete Streets policy
INTRODUCTION
An accurate assessment of existing conditions is essential to developing sound and sustainable priorities for how the future of the City will take shape. This most certainly involves analyzing the physical infrastructure of the City, but also the ways in which current residents, workers, and consumers experience Upper Arlington on a daily basis. To that end, this section includes an overview of current demographics, maps and analysis of existing infrastructure, as well as input from residents about their sense of current conditions in the City. The section concludes with a summary of findings and a view toward future conditions in the community.

DEMOGRAPHICS

OVERVIEW
The following is a summary of general demographic characteristics for the City of Upper Arlington through the year 2011. Major findings are presented along with a brief discussion of the data.

The primary sources of information include the U.S. Decennial Census and American Community Survey (ACS). A set of data tables that provide the detailed information summarized in the text can be found at the end of this section.

KEY FINDINGS
The following are key findings related to the City’s demographics.

• Current Population: Upper Arlington had a population of 33,771 and 13,754 households in 2010.
• Historic Trend of Population Loss Slows and Reverses: Since 1970 the City has lost about 4,800 residents or 12.5 percent of its 1970 base population of 38,630. However, that trend slowed in the 1980s and 90s. Between 2000 and 2010 the City grew by .25 percent, and the number of households increased by 4 percent.
• Age Distribution: The percentage of Upper Arlington residents 65 years or older is 16.68 percent compared to the Columbus Metropolitan Area at 10.58 percent. However, the proportion of residents 65 years or older
fell by 10 percent between 2000 and 2010 while in Columbus and nationwide the proportion increased (Table 2.3).

**POPULATION CHARACTERISTICS**

Population characteristics provide a broad understanding of the demographic attributes of the City’s population. General demographic characteristics are typical for an older suburb.

- Upper Arlington had a larger segment of its population 65 years of age and older than the metropolitan area (Table 2.1). Clearly an aging population can increase demands for services and facilities necessary to support an older population. This is a national trend (Table 2.2 and Table 2.3).
- The overall number of children (19 years and younger) declined by 23 percent between 1960 and 1990, but has started to rebound slightly. Since 1990 there has been an 8.69 percent increase in the number of children in Upper Arlington.
- Household size also grew slightly; between 2000 and 2010 household size went from an average of 2.39 persons to 2.44 or a growth of 2 percent. (Table 2.9)
- The community is highly educated. Nearly 76 percent of residents aged 25 years or older have a bachelor’s degree or higher and less the 1 percent have not obtained their high school diploma or equivalency (Table 2.4).
- The City’s population is strongly upper middle class, with a median household income significantly higher than the MSA. According to the 2011 ACS, the median income was $96,810 which was a 9.5 percent increase from 2007 (Table 2.5).
- About 52 percent of the City’s population is female (Table 2.7).

**WALKING/BIKING AND OBESITY**

- Governing analysis of census and CDC (Center for Disease Control and Prevention) data found that cities with more walkers and bike commuters have a significantly lower obesity percentage
- 6 of the top 10 “healthiest” metropolitan areas in terms of weight were among the ten regions with the highest percentages of people who walk or bike to work
- Columbus was in the top 25 of 126 metropolitan surveyed in terms of highest obesity rates (30 percent)
- 2010 American Community Survey estimated only 3 percent of Central Ohio’s work force walks to work
- “The more people have access to these kinds of places (sidewalks, trails, bike paths), the more likely they are to be healthy” Susan Polan (associate executive director for public affairs and advocacy with the American Public Health Association).

Maciag, Mike. Analysis. Cities with More Walkers, Bike Commuters are Less Obese.Governing: The States And Localities. June 14th 2012

Table 2.1
Age Distribution, 1990 & 2010

<table>
<thead>
<tr>
<th>Age</th>
<th>Persons</th>
<th>Percent</th>
<th>Age</th>
<th>Persons</th>
<th>Percent</th>
<th>Age</th>
<th>Persons</th>
<th>Percent</th>
<th>Age</th>
<th>Persons</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
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<td>0-4</td>
<td>2,000</td>
<td>5.9%</td>
<td>102,871</td>
<td>7.5%</td>
<td>1,966</td>
<td>5.82%</td>
<td>127,634</td>
<td>6.95%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5-9</td>
<td>2,289</td>
<td>6.7%</td>
<td>98,800</td>
<td>7.2%</td>
<td>2,442</td>
<td>7.23%</td>
<td>127,291</td>
<td>6.93%</td>
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<td></td>
<td></td>
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<tr>
<td>10-14</td>
<td>2,086</td>
<td>6.1%</td>
<td>90,872</td>
<td>6.6%</td>
<td>2,507</td>
<td>7.42%</td>
<td>124,702</td>
<td>6.79%</td>
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<td>15-19</td>
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<td>5.8%</td>
<td>100,817</td>
<td>7.3%</td>
<td>2,170</td>
<td>6.43%</td>
<td>128,479</td>
<td>7.00%</td>
<td></td>
<td></td>
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<td>20-24</td>
<td>1,333</td>
<td>3.9%</td>
<td>124,106</td>
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<td>4.7%</td>
<td>131,736</td>
<td>9.6%</td>
<td>1,536</td>
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<td>138,495</td>
<td>7.54%</td>
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<td>130,266</td>
<td>9.5%</td>
<td>1,641</td>
<td>4.86%</td>
<td>131,068</td>
<td>7.14%</td>
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<td>114,149</td>
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<td>6.14%</td>
<td>130,230</td>
<td>7.09%</td>
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<tr>
<td>40-44</td>
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<td>9.0%</td>
<td>100,500</td>
<td>7.3%</td>
<td>2,502</td>
<td>7.41%</td>
<td>129,204</td>
<td>7.04%</td>
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<td></td>
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<tr>
<td>45-49</td>
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<td>75,071</td>
<td>5.5%</td>
<td>2,624</td>
<td>7.77%</td>
<td>134,979</td>
<td>7.35%</td>
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</tr>
<tr>
<td>50-54</td>
<td>1,940</td>
<td>5.7%</td>
<td>61,694</td>
<td>4.5%</td>
<td>2,876</td>
<td>8.52%</td>
<td>130,505</td>
<td>7.11%</td>
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</tr>
<tr>
<td>55-59</td>
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<td>55,344</td>
<td>4.0%</td>
<td>2,511</td>
<td>7.44%</td>
<td>110,585</td>
<td>6.02%</td>
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<td></td>
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<td>53,494</td>
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<td>6.48%</td>
<td>91,526</td>
<td>4.98%</td>
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<td></td>
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<td>65-69</td>
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<td>5.9%</td>
<td>46,830</td>
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<td>4.36%</td>
<td>62,533</td>
<td>3.40%</td>
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<td></td>
</tr>
<tr>
<td>70-74</td>
<td>1,557</td>
<td>4.6%</td>
<td>34,708</td>
<td>2.5%</td>
<td>1,121</td>
<td>3.32%</td>
<td>45,954</td>
<td>2.50%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>75-79</td>
<td>1,208</td>
<td>3.5%</td>
<td>25,508</td>
<td>1.9%</td>
<td>1,003</td>
<td>2.97%</td>
<td>34,948</td>
<td>1.90%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>80-84</td>
<td>888</td>
<td>2.6%</td>
<td>16,920</td>
<td>1.2%</td>
<td>1024</td>
<td>3.03%</td>
<td>26,871</td>
<td>1.46%</td>
<td></td>
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</tr>
<tr>
<td>85+</td>
<td>687</td>
<td>2.0%</td>
<td>13,733</td>
<td>1.0%</td>
<td>1017</td>
<td>3.01%</td>
<td>24,247</td>
<td>1.32%</td>
<td></td>
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</tr>
<tr>
<td>Total</td>
<td>34,128</td>
<td>2.0%</td>
<td>1,377,419</td>
<td>4.0%</td>
<td>33,771</td>
<td>2.0%</td>
<td>1,836,536</td>
<td>2.0%</td>
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Table 2.2
Upper Arlington Age Distribution, 1960-2010

<table>
<thead>
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<th></th>
<th></th>
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<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>0-4</td>
<td>2,969</td>
<td>2,732</td>
<td>1,697</td>
<td>2,000</td>
<td>1,850</td>
<td>1,966</td>
<td>(1003)</td>
<td>-33.78%</td>
<td>116</td>
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</tr>
<tr>
<td>5-9</td>
<td>3,310</td>
<td>3,600</td>
<td>2,230</td>
<td>2,289</td>
<td>2,287</td>
<td>2,442</td>
<td>(868)</td>
<td>-26.22%</td>
<td>155</td>
<td>6.78%</td>
</tr>
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<td>10-14</td>
<td>2,839</td>
<td>4,361</td>
<td>3,069</td>
<td>2,086</td>
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<td>2,507</td>
<td>(332)</td>
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<td>1,732</td>
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<td>2,175</td>
<td>2,170</td>
<td>438</td>
<td>25.29%</td>
<td>(5)</td>
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<tr>
<td>20-24</td>
<td>796</td>
<td>1,793</td>
<td>1,768</td>
<td>1,333</td>
<td>889</td>
<td>1,100</td>
<td>304</td>
<td>38.19%</td>
<td>211</td>
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<tr>
<td>25-29</td>
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<td>1,879</td>
<td>1,605</td>
<td>1,400</td>
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<td>323</td>
<td>26.63%</td>
<td>136</td>
<td>9.71%</td>
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<td>2,089</td>
<td>2,200</td>
<td>2,630</td>
<td>2,248</td>
<td>1,839</td>
<td>1,641</td>
<td>(448)</td>
<td>-21.45%</td>
<td>(198)</td>
<td>-10.77%</td>
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<td>35-39</td>
<td>2,626</td>
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<td>2,564</td>
<td>2,740</td>
<td>2,344</td>
<td>2,073</td>
<td>(553)</td>
<td>-21.06%</td>
<td>(271)</td>
<td>-11.56%</td>
</tr>
<tr>
<td>40-44</td>
<td>2,288</td>
<td>2,983</td>
<td>2,161</td>
<td>3,087</td>
<td>2,873</td>
<td>2,502</td>
<td>214</td>
<td>9.35%</td>
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<td>45-49</td>
<td>2,069</td>
<td>2,946</td>
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<td>2,445</td>
<td>2,935</td>
<td>2,624</td>
<td>555</td>
<td>26.82%</td>
<td>(311)</td>
<td>-10.60%</td>
</tr>
<tr>
<td>50-54</td>
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<td>2,750</td>
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<td>61.58%</td>
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<td>27.59%</td>
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<td>1,136</td>
<td>1,881</td>
<td>2,024</td>
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<td>1,471</td>
<td>2,187</td>
<td>1051</td>
<td>92.52%</td>
<td>716</td>
<td>48.67%</td>
</tr>
<tr>
<td>65-69</td>
<td>829</td>
<td>1,344</td>
<td>1,598</td>
<td>2,029</td>
<td>1,379</td>
<td>1,471</td>
<td>642</td>
<td>77.44%</td>
<td>92</td>
<td>6.67%</td>
</tr>
<tr>
<td>70-74</td>
<td>560</td>
<td>987</td>
<td>1,393</td>
<td>1,557</td>
<td>1,639</td>
<td>1,121</td>
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<td>(518)</td>
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<td>75-79</td>
<td>303</td>
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<td>973</td>
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<td>1,476</td>
<td>1,003</td>
<td>700</td>
<td>231.02%</td>
<td>(473)</td>
<td>-32.05%</td>
</tr>
<tr>
<td>80-84</td>
<td>143</td>
<td>448</td>
<td>678</td>
<td>888</td>
<td>938</td>
<td>1,024</td>
<td>881</td>
<td>616.08%</td>
<td>86</td>
<td>9.17%</td>
</tr>
<tr>
<td>85+</td>
<td>106</td>
<td>314</td>
<td>569</td>
<td>687</td>
<td>822</td>
<td>1,017</td>
<td>911</td>
<td>859.43%</td>
<td>195</td>
<td>23.72%</td>
</tr>
<tr>
<td>Total</td>
<td>28,486</td>
<td>38,630</td>
<td>35,648</td>
<td>34,128</td>
<td>33,686</td>
<td>33,771</td>
<td>5285</td>
<td>18.55%</td>
<td>85</td>
<td>0.25%</td>
</tr>
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</table>

Source: U.S. Census of Population, 1960-2010
### Table 2.3
Population Age 65+ as a Percent of Total Population

<table>
<thead>
<tr>
<th>Area</th>
<th>1990</th>
<th>2000</th>
<th>2010</th>
</tr>
</thead>
<tbody>
<tr>
<td>Upper Arlington</td>
<td>18.66%</td>
<td>18.56%</td>
<td>16.68%</td>
</tr>
<tr>
<td>Columbus MSA</td>
<td>9.20%</td>
<td>10.00%</td>
<td>10.58%</td>
</tr>
<tr>
<td>United States</td>
<td>12.30%</td>
<td>12.40%</td>
<td>13.00%</td>
</tr>
</tbody>
</table>

Source: U.S. Census of Population

### Table 2.4
Educational Attainment for Persons 25-64 Years Old

<table>
<thead>
<tr>
<th>Level of Attainment</th>
<th>Upper Arlington Persons</th>
<th>Upper Arlington Percent</th>
<th>Columbus MSA Persons</th>
<th>Columbus MSA Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Persons 25-64</td>
<td>18,029</td>
<td>0.84%</td>
<td>990,593</td>
<td>8.48%</td>
</tr>
<tr>
<td>Less than high school</td>
<td>152</td>
<td>7.68%</td>
<td>84,018</td>
<td>27.32%</td>
</tr>
<tr>
<td>High school graduate</td>
<td>2,795</td>
<td>15.50%</td>
<td>286,478</td>
<td>28.92%</td>
</tr>
<tr>
<td>Some college, or associates degree</td>
<td>13,697</td>
<td>75.97%</td>
<td>349,488</td>
<td>35.28%</td>
</tr>
</tbody>
</table>

Source: American Community Survey, 5-year estimates (2007-'11)

### Table 2.5
Household Income, 2011 (in 2011 $)

<table>
<thead>
<tr>
<th>Income</th>
<th>Upper Arlington</th>
<th></th>
<th>Columbus MSA</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Households</td>
<td>Percent</td>
<td>Households</td>
<td>Percent</td>
</tr>
<tr>
<td>Less than $10,000</td>
<td>303</td>
<td>2.26%</td>
<td>53,188</td>
<td>7.54%</td>
</tr>
<tr>
<td>$10,000-$14,999</td>
<td>164</td>
<td>1.22%</td>
<td>32,970</td>
<td>4.67%</td>
</tr>
<tr>
<td>$15,000-$19,999</td>
<td>298</td>
<td>2.22%</td>
<td>34,842</td>
<td>4.94%</td>
</tr>
<tr>
<td>$20,000-$24,999</td>
<td>432</td>
<td>3.22%</td>
<td>35,389</td>
<td>5.01%</td>
</tr>
<tr>
<td>$25,000-$29,999</td>
<td>335</td>
<td>2.50%</td>
<td>34,804</td>
<td>4.93%</td>
</tr>
<tr>
<td>$30,000-$34,999</td>
<td>508</td>
<td>3.78%</td>
<td>36,983</td>
<td>5.24%</td>
</tr>
<tr>
<td>$35,000-$39,999</td>
<td>463</td>
<td>3.45%</td>
<td>34,778</td>
<td>4.93%</td>
</tr>
<tr>
<td>$40,000-$44,999</td>
<td>505</td>
<td>3.76%</td>
<td>34,282</td>
<td>4.86%</td>
</tr>
<tr>
<td>$45,000-$49,999</td>
<td>364</td>
<td>2.71%</td>
<td>30,304</td>
<td>4.29%</td>
</tr>
<tr>
<td>$50,000-$59,999</td>
<td>754</td>
<td>5.62%</td>
<td>57,135</td>
<td>8.10%</td>
</tr>
<tr>
<td>$60,000-$74,999</td>
<td>1,163</td>
<td>8.66%</td>
<td>75,971</td>
<td>10.76%</td>
</tr>
<tr>
<td>$75,000-$99,999</td>
<td>1,633</td>
<td>12.16%</td>
<td>90,581</td>
<td>12.83%</td>
</tr>
<tr>
<td>$100,000-$124,999</td>
<td>1,551</td>
<td>11.55%</td>
<td>58,481</td>
<td>8.29%</td>
</tr>
<tr>
<td>$125,000-$149,999</td>
<td>1,244</td>
<td>9.27%</td>
<td>34,136</td>
<td>4.84%</td>
</tr>
<tr>
<td>$150,000-$199,999</td>
<td>1,436</td>
<td>10.70%</td>
<td>33,914</td>
<td>4.81%</td>
</tr>
<tr>
<td>$200,000 or more</td>
<td>2,271</td>
<td>16.92%</td>
<td>28,013</td>
<td>3.97%</td>
</tr>
<tr>
<td>Total</td>
<td>13,424</td>
<td>705,771</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Median Income</td>
<td>$96,810</td>
<td></td>
<td>$54,112</td>
<td></td>
</tr>
</tbody>
</table>

Source: American Community Survey, 5-year estimates (2007-2011)
Table 2.6
Employment by Industry of Persons 16 Years and Over, 2011

<table>
<thead>
<tr>
<th>Industry</th>
<th>Upper Arlington</th>
<th></th>
<th>Columbus MSA</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Persons</td>
<td>Percent</td>
<td>Persons</td>
<td>Percent</td>
</tr>
<tr>
<td>Agriculture, forestry and fisheries</td>
<td>20</td>
<td>0.12%</td>
<td>5,628</td>
<td>0.63%</td>
</tr>
<tr>
<td>Construction</td>
<td>506</td>
<td>3.10%</td>
<td>46,747</td>
<td>5.24%</td>
</tr>
<tr>
<td>Manufacturing</td>
<td>866</td>
<td>5.31%</td>
<td>83,171</td>
<td>9.33%</td>
</tr>
<tr>
<td>Wholesale trade</td>
<td>403</td>
<td>2.47%</td>
<td>29,008</td>
<td>3.25%</td>
</tr>
<tr>
<td>Retail trade</td>
<td>1230</td>
<td>7.54%</td>
<td>110,423</td>
<td>12.38%</td>
</tr>
<tr>
<td>Transportation and warehousing, and utilities</td>
<td>355</td>
<td>2.18%</td>
<td>45,625</td>
<td>5.12%</td>
</tr>
<tr>
<td>Information</td>
<td>517</td>
<td>3.17%</td>
<td>22,129</td>
<td>2.48%</td>
</tr>
<tr>
<td>Finance and insurance, and real estate and rental and leasing</td>
<td>2412</td>
<td>14.79%</td>
<td>89,806</td>
<td>10.07%</td>
</tr>
<tr>
<td>Professional, scientific, and management, and administrative and waste management services</td>
<td>2,956</td>
<td>18.12%</td>
<td>97,820</td>
<td>10.97%</td>
</tr>
<tr>
<td>Educational services, and health care and social assistance</td>
<td>4,748</td>
<td>29.11%</td>
<td>201,343</td>
<td>22.57%</td>
</tr>
<tr>
<td>Arts, entertainment, and recreation, and accommodation and food services</td>
<td>890</td>
<td>5.46%</td>
<td>74,735</td>
<td>8.38%</td>
</tr>
<tr>
<td>Other services, except public administration</td>
<td>807</td>
<td>4.95%</td>
<td>38,542</td>
<td>4.32%</td>
</tr>
<tr>
<td>Public administration</td>
<td>601</td>
<td>3.68%</td>
<td>46,928</td>
<td>5.26%</td>
</tr>
<tr>
<td>Total</td>
<td>16,311</td>
<td></td>
<td>891,905</td>
<td></td>
</tr>
</tbody>
</table>

Source: American Community Survey, 5-year estimates (2007-2011)
Table 2.7
Population by Gender, 2010

<table>
<thead>
<tr>
<th></th>
<th>Upper Arlington</th>
<th></th>
<th>Columbus MSA</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Persons</td>
<td>Percent</td>
<td>Persons</td>
<td>Percent</td>
</tr>
<tr>
<td>Male</td>
<td>16,157</td>
<td>47.84%</td>
<td>901,516</td>
<td>49.09%</td>
</tr>
<tr>
<td>Female</td>
<td>17,614</td>
<td>52.16%</td>
<td>935,020</td>
<td>50.91%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>33,771</strong></td>
<td><strong>-</strong></td>
<td><strong>1,836,536</strong></td>
<td><strong>-</strong></td>
</tr>
</tbody>
</table>

Source: U.S. Census, 2010

Table 2.8
Historic Population Trends, 1970-2010

<table>
<thead>
<tr>
<th>Year</th>
<th>Upper Arlington</th>
<th>City of Columbus</th>
</tr>
</thead>
<tbody>
<tr>
<td>1970</td>
<td>38,630</td>
<td>1,125,646</td>
</tr>
<tr>
<td>1980</td>
<td>35,648</td>
<td>1,214,291</td>
</tr>
<tr>
<td>1990</td>
<td>34,128</td>
<td>1,345,450</td>
</tr>
<tr>
<td>2000</td>
<td>33,686</td>
<td>1,612,841</td>
</tr>
<tr>
<td>2010</td>
<td>33,771</td>
<td>1,836,536</td>
</tr>
<tr>
<td><strong>Change (1970-2010)</strong></td>
<td><strong>(4,859)</strong></td>
<td><strong>710,890</strong></td>
</tr>
<tr>
<td><strong>Percent Change</strong></td>
<td><strong>(12.58%)</strong></td>
<td><strong>68.91%</strong></td>
</tr>
<tr>
<td><strong>Decade Growth Rate</strong></td>
<td><strong>0.25%</strong></td>
<td><strong>13.87%</strong></td>
</tr>
</tbody>
</table>

Source: U.S. Census of Population, 1970-2010

Table 2.9
Upper Arlington Historic Household Size Trends, 1960-2010

<table>
<thead>
<tr>
<th>Year</th>
<th>Persons</th>
<th>Actual Change</th>
<th>Percent Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>1960</td>
<td>3.35</td>
<td>NA</td>
<td>NA</td>
</tr>
<tr>
<td>1970</td>
<td>3.13</td>
<td>(.22)</td>
<td>(7%)</td>
</tr>
<tr>
<td>1980</td>
<td>2.63</td>
<td>(.50)</td>
<td>(16%)</td>
</tr>
<tr>
<td>1990</td>
<td>2.52</td>
<td>(.11)</td>
<td>(4%)</td>
</tr>
<tr>
<td>2000</td>
<td>2.39</td>
<td>(0.13)</td>
<td>(5%)</td>
</tr>
<tr>
<td>2010</td>
<td>2.44</td>
<td>0.05</td>
<td>2%</td>
</tr>
<tr>
<td><strong>Change (1960-2010)</strong></td>
<td><strong>-0.91</strong></td>
<td><strong>-27%</strong></td>
<td></td>
</tr>
</tbody>
</table>

Source: U.S. Census of Population, 1960-2010

Table 2.10
Upper Arlington Population and Households

<table>
<thead>
<tr>
<th>Year</th>
<th>Persons</th>
<th>Households</th>
</tr>
</thead>
<tbody>
<tr>
<td>1980</td>
<td>35,531</td>
<td>13,502</td>
</tr>
<tr>
<td>1990</td>
<td>34,129</td>
<td>13,999</td>
</tr>
<tr>
<td>2000</td>
<td>33,686</td>
<td>13,985</td>
</tr>
<tr>
<td>2010</td>
<td>33,771</td>
<td>14,544</td>
</tr>
<tr>
<td><strong>% Change 2000-2010</strong></td>
<td><strong>.25%</strong></td>
<td><strong>4.00%</strong></td>
</tr>
</tbody>
</table>

Source: U.S. Census of Population, 1980-2010
EXISTING TRANSPORTATION NETWORK
In 2001, the Upper Arlington Transportation Plan was completed. This document, though never adopted, has been a part of shaping the transportation network throughout the City. The plan established among other things, the classification of streets. The classification is as follows:

ARterials
Arterial streets are characterized by multiple travel lanes, 35-mph speed limits, traffic signals at major intersections, and adjacent commercial development. The only street that is designated as a major arterial is Riverside Drive. Streets that are currently designated as minor arterials in Upper Arlington include:

- Henderson Road
- Reed Road
- Kenny Road
- West North Broadway
- Northwest Boulevard
- Fishinger Road
- Lane Avenue
- Fifth Avenue
- Tremont Road (from Kenny to Fishinger)

Many of the streets listed above provide regional connections for Upper Arlington. For example: Fishinger Road crosses the Scioto River, and Lane Avenue leads directly to The Ohio State University.

The intersection of Fishinger Rd. and Tremont Rd. mark the convergence of two heavily traveled arterials.

Figure 2.1
Arterial Street
COLLECTOR STREETS
Upper Arlington recognizes all collector streets designated by the Mid-Ohio Regional Planning Commission (MORPC). The City has also designated additional collector streets to aid in the prioritization of street repair and snow removal. The following streets are MORPC designated collector streets in Upper Arlington:

- Arlington Avenue
- Cambridge Boulevard
- King Avenue
- Lane Road
- McCoy Road
- North Star Road
- Redding Road
- Tremont Road
- Zollinger Road

Collector streets are streets that serve as local travel connections between different parts of the City. Generally, collector streets have one travel lane in each direction with some separate left turn lanes. There is a speed limit on each road ranging from 25-35 miles per hour. Many have sidewalks and some have signalized intersections.

Figure 2.2
Collector Street
RESIDENTIAL STREETS
Residential streets serve multiple needs. Residents expect neighborhood streets to be quiet and safe, connecting, rather than dividing, a place to walk and cross easily and a place where vehicles move slowly. Other neighborhood street users, such as fire and police, solid waste collectors, and delivery trucks, expect the roads to be easily navigable, accessible and maneuverable. As Upper Arlington is a primarily a bedroom community, the majority of the streets are residential.

Figure 2.3
Residential Street
EXISTING SIDEWALK NETWORK

An important part of assessing the walkability needs and connectivity priorities of Upper Arlington is having an existing conditions assessment of the pedestrian infrastructure and an understanding of the common challenges to using safe alternative modes of transportation. The following section provides an overview of the existing sidewalk network in the City.

Half of all properties in Upper Arlington have a sidewalk. An identical share of all residential properties in the City has a sidewalk. Figure 2.4 provides a comparison between the City’s major streets and the entire network of streets. Due in large part to long stretches of roads like Riverside Drive, Fishinger Road, Henderson Road, and Lane Road, 38 percent of the City’s arterial and collector street segments have no sidewalks.

**Figure 2.4**
Presence of Sidewalks in Upper Arlington

<table>
<thead>
<tr>
<th></th>
<th>All Streets</th>
<th>Arterials</th>
<th>Collectors</th>
</tr>
</thead>
<tbody>
<tr>
<td>No Sidewalks</td>
<td>9.6%</td>
<td>17.8%</td>
<td>18.6%</td>
</tr>
<tr>
<td>Sidewalk on One Side</td>
<td>50.7%</td>
<td>53.5%</td>
<td>19.9%</td>
</tr>
<tr>
<td>Sidewalks on Both Sides</td>
<td>39.7%</td>
<td>28.7%</td>
<td>61.6%</td>
</tr>
</tbody>
</table>

Source: City of Upper Arlington, Engineering Division

Because of the existing sidewalks along roads such as Northwest, Tremont, Arlington, Redding, and Reed, the City possesses good walkable connectivity and infrastructure from north to south through the center of the community. However, north to south connections along the edges of the community are poor. East to west connectivity is also poor, with not a single road in the City possessing sidewalks on both sides from Riverside drive to the City’s eastern jurisdictional boundary, and only McCoy and Zollinger having sidewalks on at least one side. Missing or incomplete sections of sidewalks on Lane Avenue, Fishinger, Lane Road, and Henderson inhibit pedestrian travel from east to west. Map 2.2 shows the sidewalk status of the major roads throughout Upper Arlington, and illustrates how walkable connectivity is strongest through the core of the City.

In addition to the existing sidewalk network, other factors such as street crossings and bikeways are critical components of the City’s overall connectivity. By illustrating the existing conditions of sidewalks along major roads, Map 2.2 also gives an indication of where the most challenging and unsafe crossings exist. These include crossing streets such as Henderson, Lane Road, Fishinger, and Riverside Drive, Kenny, and North Star. Major intersections where one or more sides of a street have no sidewalks also pose challenges to pedestrians. These include intersections like Kenny and Tremont, Fishinger and Kenny, Kenny and McCoy, Fishinger and North Star, Lane Avenue and North Star,

PUBLIC INPUT: SIDEWALK MAINTENANCE

When asked to respond to the statement “the current sidewalks I use on a regular basis are in good condition”, survey respondents indicated the following:

- 7 percent strongly agree
- 43 percent agree
- 24 percent are neutral
- 22 percent disagree
- 4 percent strongly disagree

See the Public Engagement section of the Appendix for full results of the public survey.

The survey was part of the public engagement process and is discussed more in Chapter Two on page 39.
Tremont and North Star, Tremont and Lane Avenue, and all major intersections along Riverside, particularly the most relevant one which connects the City to Griggs Reservoir.

Although Upper Arlington only contains one bike path, that which surrounds Lane Road Park, there are two adjacent paths to the south and east which are important cycling connections to other regional bikeways. The current infrastructure connections to these three bike paths are fragmented, making it challenging for cyclists and pedestrians to access these amenities.

While having sidewalks on every street in the City makes for a solid long term vision for connectivity, the present void of sidewalks along some of the busiest roadways inhibits residents from enjoying walkable connections to a variety of great places. The lack of a more robust cycling network also inhibits residents from utilizing another alternative method of transportation and/or recreation. Upper Arlington does possess an inherently walkable scale along with a number of destinations of interest throughout the City. However, while scale and proximity are vital components of walkability, safety and infrastructure are also important aspects. Combining all of these elements will leverage the assets of Upper Arlington to make it an even more livable community.

**WALKING AND REAL ESTATE**

- A 2009 study titled *Walking the Walk* analyzed data from 94,000 real estate transactions in 15 major markets provided by ZipRealty and found that in 13 of the 15 markets, higher levels of walkability, as measured by Walk Score, were directly linked to higher home values.

- “If urban leaders are intentional about developing and redeveloping their cities to make them more walkable, it will not only enhance the local tax base but will also contribute to individual wealth by increasing the value of what is, for most people, their biggest asset.” Carol Coletta

- *Walking the Walk* found that in Charlotte, North Carolina a neighborhood with a WalkScore of 54 had an average home price of $280,000. Another neighborhood in Charlotte with similar sized homes had a much higher WalkScore of 71 and an average home price of $314,000.

CEOS for Cities August 2009
<http://www.ceosforcities.org/research/walking-the-walk/>
Map 2.2 Upper Arlington Sidewalk Status

This map displays the status of sidewalk existence of Upper Arlington streets.
Map 2.3 Upper Arlington Sidewalk Status of Major Streets

This map displays the status of sidewalk existence of Upper Arlington arterial and collector streets.

Legend:
- Green: Both Sides
- Orange: One Side
- Red: No Sidewalks
- Gray: Neighborhood Streets
SAFETY

According to the Urban Land Institute, “studies show that people have a growing interest in neighborhoods that are characterized by a strong urban fabric—mixed-use properties, higher population densities, entertainment options, and access to public transportation” (Urban Land Institute, Columbus 2050, 2012). Responsively, the Columbus Metropolitan Area will continue to grow, introducing a greater demand for housing near the urban core. Upper Arlington has been adjusting towards these attributes in the form of new mixed-use developments in the Kingsdale and Lane Avenue areas. As a result, these developments are creating a nuclei of dense population and are attracting a diverse selection of street-level retail and recreational opportunities. These conditions will, over time, generate more pedestrian traffic that is attracted to activity nodes in Upper Arlington and will attract pedestrians from a continually increasing radius of walking distance to reach these amenities.

Although these two areas stand out as the greatest potential generators for pedestrian activity, there are other areas that associate with a heightened need for pedestrian facilities—particularly in neighborhoods adjacent to heavily traveled vehicular thoroughfares, other commercial and multi-family nodes across the City, and areas that may experience future mixed-use and high-density development. Based on these circumstances, the importance of having a comprehensive sidewalk network to serve new pedestrian demands and to adapt to the existing pedestrian experience will be essential for preserving the safety element of the pedestrian along the roadways of Upper Arlington.

Smart Growth America, a nationwide coalition that promotes sustainable regional growth, identified that incomplete streets—those that lack proper and complete pedestrian (and bicycle) facilities—put people at a heightened level of risk. Smart Growth America indicates that although the amount of pedestrians killed by vehicular traffic has declined in the past decade, this is attributable in part to an overall decline in the total number engaging in pedestrian activity. Furthermore, between 2007 and 2008, over 50 percent of those who died were on arterial roadways, and more than 40 percent of pedestrian fatalities occurred on street intersections that lack crosswalks. Overall, pedestrian death rates are two to six times higher in the United States than in Germany and Netherlands, where street design mimics the Complete Streets elements that are being considered in the United States in recent years (Smart Growth America, Complete Streets Safety, n.d.).

The United States Department of Transportation (DOT) conducted a study on the safety benefits of walkways, sidewalks, and paved shoulders. The DOT noted that 8 percent of pedestrian deaths occurred when the pedestrian was walking along the roadway. This is a serious consideration for the City of Upper Arlington, where 50 percent of parcels do not contain a sidewalk on their frontage, thus placing the pedestrian on the street. Furthermore, midblock crossing collisions may be greatly reduced by providing sidewalks on both sides of the road. By providing wide, comfortable, and more numerous sidewalks throughout the City of Upper Arlington, more pedestrians would be encouraged to use the facilities. As pedestrian use increases, the local motorist becomes more aware of pedestrians in a given area and will come to expect the pedestrian presence while driving (US Department of Transportation Federal Highway Administration, Safety Benefits of Walkways, Sidewalks, and Paved Shoulders, 2008).
Unfortunately, much of the pedestrian-vehicular collisions are due to negligent behavior by either the pedestrian or the driver. The National Highway Traffic Safety Administration found that 70 percent of pedestrian deaths occur at non-intersections and 70 percent occur during the nighttime, and many of these deaths involved alcohol consumption. Furthermore, 60 percent of pedestrians said that they expected the vehicle involved in the collision to slow to a stop as the pedestrian assumed they had the right-of-way and began to use the crosswalk. Others impacted pedestrians were engaged in using a cell phone or other were engaged in other distracting activities. Evidently, there is a critical gap between the legibility and understanding of pedestrian crossing facilities and devices for both drivers and pedestrians (NHTSA, Safety in Numbers, 2013). Also, both vehicular and pedestrian parties have demonstrated that pedestrian facilities and associated safety elements are either not used properly, are ignored, or are not sufficient to mitigate the dangers such as drinking and driving or texting and driving. Clearly, there is a greater need to increase and make more visible the various pedestrian crossing facilities and devices to improve the safety of the moving pedestrian.

Overall, pedestrian incidents in Upper Arlington have been rare, but this does not mean that potential conflicts with vehicles will not occur in the future. Communication with the Upper Arlington Police Department identified a variety of conditions in Upper Arlington that may directly impact pedestrian safety (Lieutenant G. Patrick, personal communication, November 6, 2013).

Firstly, commuting traffic often utilizes cut-through streets to avoid traffic on the arterials and connectors in and adjacent to Upper Arlington. Cambridge Boulevard, Nottingham Road, and London Drive are the typical complaint areas by residents, however, crashes on each of these routes are rare. Traffic enforcement has been effective, and serves to deter and slow vehicular traffic in these areas. Speed trailers are often deployed on these roads. It is important to note that each of these streets are not sufficiently served by sidewalks. Cambridge Boulevard has gaps in the sidewalk system, and is listed on the High Priority schedule (refer to the Street Prioritization section in Chapter Three). London Drive and Nottingham Road do not have many of the priority elements considered in the Street Prioritization Schedule (SPS). However, due to cut-through traffic, these two streets may be considered for sidewalk installation.

The majority of crashes that involve a pedestrian occur on private property, which deserves additional consideration but could not be included given the capacity of this study. In the public realm, there have been a few rare incidents of pedestrian-vehicular conflict. Accidents involving joggers in the roadway are more common since 2010 (Lieutenant G. Patrick, personal communication, November 6, 2013). Accidents have occurred in the following locations:

• 3900 block of Kioka Avenue
• 2000 block of Waltham Road
• Intersection of Ridgeview Road and Tremont Road

Much of Kioka Avenue has no sidewalks, with only the stretch containing the 3900 block of Kioka Avenue being served on one side. Waltham Road contains sidewalks on various stretches of the road, including the 2000 block, but is largely incomplete. The intersection of Ridgeview Road and Tremont Road is
well served by pedestrian crossings and contains sidewalks (although not on both sides in the case of Ridgeview Road) on each street. There have also been accidents with pedestrians within crosswalks at the intersection of Tremont Road and Ridgeview Road and at the intersection of Mackenzie Road and Reed Road, where both intersections are equipped with sufficient pedestrian crossing elements and sidewalks. In each of these cases listed, it is important to recognize that pedestrian crashes have been quite rare in Upper Arlington. It will be important to continue to provide sufficient pedestrian infrastructure where potential vehicular and pedestrian conflicts are greater, in order to enhance the visibility of the pedestrian along the roadway and at key intersections.

The Upper Arlington Police Department also revealed that drivers accumulate the most speeding tickets along Fishinger and McCoy Roads, which are both listed as High Priority streets in the SPS. The reason these streets accumulate so many tickets is that there is a great distance of uninterrupted roadway; there are few stop lights, stop signs, and pedestrian crossings, which enables drivers to speed down the roads. It will be important for the City of Upper Arlington to monitor vehicular activity along these roadways, and should consider installing more traffic breaks and mid-block pedestrian crossings to interrupt the constant flow of high-speed traffic.

**PUBLIC ENGAGEMENT APPROACH**

In this phase of developing the Pedestrian Connectivity Plan, a meeting was held on October 9, 2013 at the Municipal Services Center on Tremont Road in Upper Arlington. Residents were invited to provide insight and ideas about the City’s current and future sidewalk network. The meeting consisted of the following: first, the participants were asked to fill out an individual survey based on their own experiences and opinions of Upper Arlington’s sidewalk network, second, participants were asked to divide into groups where they were able to discuss in greater detail their likes, dislikes, and future ideas for the City’s sidewalk network, and finally, the participants were asked to complete an exit questionnaire.

An online survey was also conducted to reach an unrepresented demographic that did not attend the meeting. The intent of the public engagement process was to gather insight from people who live, work, play and care about pedestrian safety and connectivity in Upper Arlington. All input gathered at the public meeting as well as through the online survey has been analyzed and documented throughout the plan as well as in the Public Engagement section of the Appendix.

A significant effort was undertaken to inform the residents of Upper Arlington about the Pedestrian Connectivity Plan and how vital their opinions would be to the success of the Plan.
AWARENESS/OUTREACH EFFORTS

- City website flyer
- Social network flyers (Facebook & Twitter)
- Newspaper flyers/Ads
- Email invitations to interest groups
- City staff invitations
- Sidewalk subcommittee and Lane Road Residents
- Upper Arlington Alerts

EARNED MEDIA

- WBNS 10TV News Story

PARTICIPANTS

Exit Questionnaires were provided to participants at the end of the outreach meeting in order to understand the makeup of the attendees. 33 Exit Questionnaires were completed. Of those in attendance, nearly half were male (47 percent) and half were female (53 percent). All of the participants were White/Caucasian and 96 percent of the participants owned property within the City. People from all different age groups attended the meeting with the highest percentages of participants being within the ages of 25-34 (23 percent) and 55-64 percent (23 percent). This is reflective of Upper Arlington’s diverse age distribution (See Chapter Two). A majority of the participants (78 percent) have a household income of over $100,000 a year, which is also reflective of Upper Arlington.

THE EXPERIENCE

The Exit Questionnaire responses indicate that most participants seemed to be pleased with the meeting overall. In fact, 97 percent of the participants indicated they felt comfortable working in their small groups. Furthermore, 97 percent of the participants indicated they believed their input was heard and recorded accurately. The majority of participants also believed the length of the meeting was sufficient.

Exit Questionnaires are in the Public Engagement section of the Appendix.

WHAT WE LEARNED

INDIVIDUAL SURVEYS

The individual survey was conducted in such a way as to bolster the research of each chapter of the Plan by grounding research with public opinion. Many of the results supported existing research. The results of the individual survey can be found throughout the Plan as well as in the Public Engagement section of the Appendix.

See results on the sidewalk petition process on page 69.
See results on safety on page 38.
See results on Safe Routes to School on page 70.
See results on finances on page 79.
See results on sidewalk maintenance on page 29.
See results on citizen preference on page 47.
GROUP WORK
During the workshop on October 9, participants were asked to work in groups to discuss three questions.

1. How does the existing network benefit walking in Upper Arlington?
2. How does the existing network make walking difficult in Upper Arlington?
3. What changes need to be made to improve connectivity in Upper Arlington?

Divided into 6 groups, the 42 participants engaged in dialogue about the above questions. Table leaders recorded individual comments on provided forms. Several themes surfaced from the group work, which are summarized below.

Group worksheets can be found in the Public Engagement section of the Appendix.

WHAT WE FOUND:

THEMES RELATED TO THE BENEFITS OF THE EXISTING NETWORK IN UPPER ARLINGTON AS THEY RELATE TO WALKING.

• The existing network creates a strong bond between neighbors throughout the City.
• The existing network is not consistent throughout the City. Strong, connected neighborhoods exist, as do less connected neighborhoods.
• In the neighborhoods where sidewalks exist, there is a strong sense of safety.
• The existing network in Upper Arlington encourages an active lifestyle where residents can feel comfortable walking their dogs, exercising, and walking children to school.

THEMES RELATED TO THE DIFFICULTIES OF THE EXISTING NETWORK IN UPPER ARLINGTON AS THEY RELATE TO WALKING.

• The current petition process causes tension between neighbors.
• There are many places throughout the City that the sidewalks begin and end abruptly. This makes any type of pedestrian activity challenging.
• Sidewalks should connect residents to amenities such as; libraries, swimming pools, shops and schools.
• Pedestrian activities are dangerous because of the incomplete sidewalk network.

THEMES RELATED TO NEEDED CHANGES TO IMPROVE CONNECTIVITY IN UPPER ARLINGTON.

• Traffic calming measures are needed in many neighborhoods. This includes a stronger police presence.
• Financial transparency of the City is desired.
• If the petition process was easier to understand and more information was provided to residents, more streets would have sidewalks.
• Ensure “sidewalks to nowhere” are connected before new ones are built.
Throughout the public process, residents were able to share within a structured setting; the survey and group work, but also were able to provide general recommendations. The following is a list of ideas from residents that are directed at a specific location within the City.

- Close the gap along Greensview Road north of McCoy Road
- Pave the goat path along North Star Road
- Complete the east side of Tremont Road between W. Lane Avenue and North Parkway
- Close the gap along Sunset Drive between Nottingham Road and Fancyburg Park
- Create a connection to OSU's Waterman Farm east of Zollinger Road
- Create connections from Wickliffe Woods Court path northbound to Nottingham/Griggs Park
- Close the gap along corner of Woodbridge Road at Pinebrook Road
- Pave the goat path along the west side of Riverside Drive (between 2011 and 2025 Riverside Drive, along guardrail)
- Construct a sidewalk along the north side of Barrymede Court
- Construct a sidewalk along the south side of Old Ravine Court
- Construct a sidewalk along the south side of Chantry Court
BEST PRACTICES OVERVIEW

Enhancing walkability requires taking a close look at sidewalk and crosswalk design from many different perspectives. Access to sidewalks gives people independence to move throughout the community safely and comfortably. Designing sidewalks to meet the needs of the spectrum of sidewalk users means more people can enjoy this independence. This section will address those considerations by introducing best practices in sidewalk and crosswalk construction. Best practices are designed strategies that are generally accepted to ensure the safety and comfort for people with a wide range of physical abilities.

Because best practices are developed to facilitate sidewalk use by many different users, implementation of these tools in Upper Arlington should facilitate more people using the sidewalk network. Additionally, best practices are a means toward accomplishing some of the City’s objectives stated in the Master Plan. Specifically, those objectives are:

- Chapter Four – Community Appearance
  - Objective 5: Promote pedestrian orientation
- Chapter Seven - Transportation
  - Objective 5: Expand walking opportunities

Ultimately, best practices are intended to ensure that people using sidewalks can be confident that sidewalks are reliable for moving through the community.

SIDEWALKS

Refining the City’s sidewalk system will require more than identifying gaps in the existing sidewalk network. Quality sidewalks accommodate users with different physical abilities and in varying weather conditions. Incorporating the following recommendations should ensure that the widest possible variety of users may comfortably navigate the sidewalks.
ZONES
Before discussing aspects of sidewalk design, it is important to understand that the realm in which sidewalks are constructed can be subdivided.

- Planter Zone: the space between the road edge or curb and the pedestrian zone; this space is intended to include street trees, utility poles, street signs, fire hydrants and bus stops; a minimum width of 3ft. allows for utilities and other features while keeping the pedestrian zone clear, but a width of 8ft. is preferred; this area may be paved or unpaved depending on whether the sidewalk is in a residential or commercial area. This area also serves as a buffer between pedestrians and moving traffic on the street.
- Pedestrian Zone: the paved area intended for pedestrian travel; it should remain free of obstacles; in general this space should be at least 5ft. wide.

WIDTHS
In general, sidewalks should be at least 5 ft (60 in.) wide to allow two people walking in the same direction to comfortably walk side-by-side or two people to pass each other walking in opposite directions. When approaching schools, commercial centers or other public gathering places, sidewalks may need to be wider to accommodate many users at once.

GRADES
The grade, or slope, of sidewalks is an important consideration for a couple reasons. First, people with limited mobility may tire easily moving up steep slopes but have less difficulty traveling over gradual inclines. Traveling down steep inclines may be risky for anyone when the ground is wet or icy, and wheelchair users might have difficulty maintaining control. For these reasons, sidewalk slopes should not exceed 5 percent. When 5 percent is not attainable, 8.3 percent is the maximum incline while providing landings every 30ft (Kirschbaum, Axelson, Longmuir, Mispagel, Stein & Yamada, 2001).

Inversely, slope is still a consideration in flat areas because water and debris can easily collect on completely flat surfaces. Maintaining a 1 to 2 percent slope across surfaces allows water to adequately drain.

INFORMAL PATHS
Even in the absence of sidewalks, people will unintentionally highlight where sidewalks are needed. If people notice a logical route where there is no walkway, they may form their own shortcut. As many people use the same path over time, the frequency of use wears away any existing grass creating an informal path, usually across a lawn or planted bed. These paths are great indicators of where a sidewalk is needed.

STREET TREES
Street trees provide an enormous benefit to streetscapes. They improve the aesthetic quality of a street and offer shade and shelter in varying weather conditions. For pedestrians on sidewalks, they are an important buffer from traffic, and large trees can be effective at calming traffic because they appear to enclose the street making it feel narrower. When constructing new sidewalks, efforts should be made to preserve existing trees, and new trees should be planted when none are present.

PUBLIC INPUT:
BEST PRACTICES
When survey participants were asked about their preference on the presence of a sidewalk versus a multi-use path, the following responses were given:

- 45 percent of participants of the public survey preferred a sidewalk
- 32 percent preferred a multi-use path
- 15 percent were indifferent
- 7 percent preferred neither

When asked what elements would improve neighborhoods the most

- 69 percent of participants agreed that sidewalks and improved sidewalk quality would improve the neighborhood
- 13 percent preferred a bike path
- 5 percent preferred neighborhood activities

See the Public Engagement section of the Appendix for full results of the public survey.

The survey was part of the public engagement process and is discussed more in Chapter Two on page 39.
New trees should be placed in the planter zone and need open space around their trunks to allow water to infiltrate to the roots. On residential streets, a lawn buffer between the street and sidewalk should be adequate. Near commercial centers, there should be a minimum 48in. x 48in. space free of concrete around the base of the trees (Kirschbaum et al, 2001). Without open space at the base of the tree, the roots will not collect enough water. The results are stunted tree growth, poor tree health and the formation of surface roots, which can cause sidewalk panels to heave and shift causing damage and trip hazards.

**PEDESTRIAN CROSSINGS**

Crosswalks make the difference between sidewalks existing as isolated segments and an interconnected, community-wide, pedestrian network. Additionally, ensuring quality crosswalk design is important since they intersect pedestrian and automobile realms. Good crosswalk design is critical to ensuring that both pedestrians and motorists are aware of one another, pedestrians understand when it is appropriate to cross the street and crashes are prevented. The following are strategies that should be useful to enhancing crossings in Upper Arlington:

**CROSSWALKS**

To maximize visibility, crosswalk markings should include a series of 12 to 24in. wide stripes spaced 12 to 24in. apart and running parallel to the direction of vehicle travel (Kirschbaum et al, 2001). Additional consideration may be taken to space the markings so that the primary path of vehicle tires runs between the painted stripes, thereby increasing the longevity of the crosswalk. Simply providing two lines running parallel to the direction of pedestrian travel is not as visible to approaching drivers. A crosswalk should also not be used as an isolated tool. Signs, crossing signals, traffic calming strategies and additional street modifications, such as those listed below, should be paired with crosswalks to create the safest crossings possible.
RECTANGULAR RAPID FLASH BEACON (RRFB)
These signals are used at intersections without stoplights. Using rapidly flashing, yellow LED lights mounted on yellow pedestrian signs, the lights flash to signal to drivers that a pedestrian is either about to cross or in the crosswalk. The lights are activated either by pushbutton or passive detection (City of Raleigh, 2012).

HIGH INTENSITY ACTIVATED CROSSWALK (HAWK)
This model uses signals to both pedestrians and drivers through a series of steps (City of Raleigh, 2012):

![Diagram of High Intensity Activated Crosswalk]

**Figure 3.2**
High Intensity Activated Crosswalk
Source: Montgomery County Department of Transportation

The traffic signal is dark allowing drivers to pass through the intersection. Pedestrians are stopped at the intersection by seeing a DON'T WALK signal.

Through either passive sensor detection or a pushbutton, a yellow traffic light blinks several times telling drivers that a pedestrian is about to cross. Meanwhile, a DON'T WALK signal is displayed to the waiting pedestrian.

The traffic light changes to a steady yellow telling drivers to slow and stop. The pedestrian continues to wait by seeing a DON'T WALK signal.

The traffic light changes to red telling the drivers to remain stopped, and the pedestrian signal changes to WALK allowing the pedestrian to cross.

After a moment, the pedestrian signal will begin to flash DON'T WALK telling the pedestrian to continue crossing but to clear the intersection. The cars are still stopped.

Finally, there is a DON'T WALK signal displayed telling any oncoming pedestrians to wait to cross. Both red and yellow traffic lights are turned off allowing vehicles to pass freely through the intersection.
LEADING PEDESTRIAN INTERVAL
This strategy simply involves retiming the traffic and pedestrian signals to prevent cars in a turning lane from establishing their turn before pedestrians may begin crossing. Typically, a pedestrian signal changes from DON’T WALK to WALK the same time the concurrent traffic signal changes from red to green. The challenge for pedestrians is that turning vehicles may begin driving before pedestrians have a chance to begin crossing. With this strategy, drivers would be held at a red light for 4 to 7 seconds while pedestrians may begin crossing the street (City of Raleigh, 2012).

TRAFFIC CALMING
CORNER ISLANDS
These devices are raised traffic islands placed in the dead space between the right turn lane and the adjacent left lane. The obstacle in the roadway causes drivers to slow while making their turn, and it allows pedestrians to pause safely after crossing one lane of traffic before crossing the rest of the street.

MEDIAN ISLANDS
This island follows the same principle as the corner island, except it is placed in the middle of the street instead of near a corner.
CURB EXTENSIONS/BULB OUTS
This traffic calming strategy shortens the total distance that pedestrians spend crossing the street. When the street lane closest to the curb is permanently dedicated to street parking, the sidewalk corner and curb are extruded past the lane of parked cars to the first lane of traffic. The strategy pinches the roadway at intersections causing drivers to slow, and it shortens the distance of the crosswalk giving pedestrians more time on the sidewalk.

Figure 3.5
Curb Extensions
SIDEWALKS AND PEDESTRIAN SAFETY

The University of Connecticut along with the Connecticut Department of Highway Transportation conducted a study in 2009 that looked at the relationship between street design and safety for pedestrians and drivers.

The study found that streets with the presence of sidewalks directly encouraged drivers to drive at lower speeds.

- Two similar streets were studied based on Average Annual Daily Traffic (AADT), one with sidewalks and one without sidewalks.
- The street without sidewalks had an average speed of 42 mph and the street with sidewalks had an average speed of 34.7 mph, a difference of 7.3 mph.

The US Department of Highway Transportation conducted a study in 2002 that researched the connections between sidewalks and crashes.

- This study concluded that a street with a sidewalk on a given site has an 88.2 percent lower chance of being a site where a pedestrian/car accident would occur.
- This study also analyzed 47 crash sites in North Carolina and found that nearly 90 percent of streets where the crashes occurred did not have sidewalks.


INTRODUCTION TO STREET PRIORITIZATION

The street prioritization process creates a framework for the City to improve pedestrian connectivity in Upper Arlington. Many factors in the built environment of a neighborhood increase the desire and need for residents to be able to travel by foot to their destination including neighborhood schools, parks, libraries, and retail locations. Studies have found that having amenities such as these within ½ mile of a neighborhood encourages more total physical activity among local residents (Dannenberg, Frumkin & Jackson, 2011). However, people may be less likely to choose to walk when there is deficient pedestrian infrastructure, and therefore, it is important to provide adequate sidewalks or paths to neighborhood destinations (Saelens & Handy, 2008). Other cities that have utilized street and sidewalk prioritization to improve pedestrian facilities include the City of Columbia, MO in their 2012 Sidewalk Master Plan Update, and the City of Raleigh, NC in their 2012 Pedestrian Plan.

The Street Prioritization Schedule (SPS) is designed to place sidewalks on the streets with the greatest need. Priority is assigned to each street by a weighted scale that includes points for street type, the existing sidewalk infrastructure, and pedestrian attractors, such as schools, senior housing, commercial areas, parks, libraries, and high-use bus stops located along the street. The weighted scale for each element ranges from 0 – 4 and is determined by the level of necessity or desirability of a sidewalk created by the element. Points are assigned to the entire street, not street segments, in order to encourage connectivity throughout the City. Pedestrian attractor points are assigned only to the street on which the attractor is located. An alternative option would be to assign points to streets within ½ mile of an attractor, however, this option breaks streets into small segments and does not encourage overall connectivity. The SPS also encourages complete sidewalks on both sides of a street in order to provide the greatest level of safety for pedestrians. Gaps in a sidewalk or sidewalks that abruptly end may force a pedestrian to walk in the street. Similarly, a street with only one sidewalk may encourage pedestrians to dangerously cross the road without a crosswalk. However, it may be necessary at times to complete only one sidewalk per street in order to place sidewalks on more streets throughout the City. Table 3.1 illustrates the point value assigned to each priority element.

An analysis of each street in Upper Arlington has been performed using mapping software and the results provide detailed information about priority elements as well as a total assigned value for each street. In a time of economic austerity, this model of prioritization can serve as a valuable tool for City leaders to make informed, strategic decisions that maximize the tax dollars of residents and improve the safety and quality of life throughout Upper Arlington.
Table 3.1
Street Prioritization Weighted Scale

<table>
<thead>
<tr>
<th>Street Priority Elements</th>
<th>Points</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Street Type</strong></td>
<td></td>
</tr>
<tr>
<td>Arterial</td>
<td>3</td>
</tr>
<tr>
<td>MORPC designated collector street</td>
<td>2</td>
</tr>
<tr>
<td>Upper Arlington designated collector street and/or a residential street that intersects with an arterial or collector street</td>
<td>1</td>
</tr>
<tr>
<td>Residential</td>
<td>0</td>
</tr>
<tr>
<td><strong>School</strong></td>
<td></td>
</tr>
<tr>
<td>Elementary School</td>
<td>4</td>
</tr>
<tr>
<td>Middle School</td>
<td>2</td>
</tr>
<tr>
<td>High School</td>
<td>1</td>
</tr>
<tr>
<td><strong>Senior Housing</strong></td>
<td></td>
</tr>
<tr>
<td>Senior Housing</td>
<td>3</td>
</tr>
<tr>
<td><strong>Other Pedestrian Attractors</strong></td>
<td></td>
</tr>
<tr>
<td>Commercial</td>
<td>2</td>
</tr>
<tr>
<td>Park</td>
<td>2</td>
</tr>
<tr>
<td>Library</td>
<td>2</td>
</tr>
<tr>
<td>Other Public Facilities</td>
<td>2</td>
</tr>
<tr>
<td>Major Transit Stop</td>
<td>1</td>
</tr>
<tr>
<td><strong>Existing Sidewalk Infrastructure</strong></td>
<td></td>
</tr>
<tr>
<td>Gap in Sidewalk</td>
<td>3</td>
</tr>
<tr>
<td>No Sidewalk on Street</td>
<td>2</td>
</tr>
<tr>
<td>Sidewalk on One Side Only</td>
<td>1</td>
</tr>
<tr>
<td>Sidewalk complete on both sides</td>
<td>0</td>
</tr>
</tbody>
</table>

**PRIORITY ELEMENTS FOR PEDESTRIAN CONNECTIVITY**

**STREET TYPE**
Each street in Upper Arlington has been assigned to a street type based on local traffic counts as described in the Upper Arlington Transportation Plan. Arterials receive the highest levels of traffic and are used by drivers to navigate regionally to areas outside the City, while MORPC designated collector streets serve local connections between different parts of the City (Kimley-Horn and Associates, Inc., 2001). Upper Arlington has also designated additional collector streets in the City that are not recognized by MORPC. These streets have been designated collector streets in order to prioritize repairs and snow removal in the City (D. Parkinson, personal communication, November 17, 2013).
High traffic counts on arterial and collector streets increase the level of danger for pedestrians and the need for safe pedestrian infrastructure. These streets may also provide direct access to major destinations for pedestrians and bicyclists, therefore arterial streets receive a 3 rating and MORPC designated collector streets receive a 2 rating on the weighted scale. Upper Arlington designated collector streets and other residential streets that intersect or dead-end into an arterial or collector street provide an integral connection between neighborhoods and primary access routes and receive a 1 rating on the weighted scale while all other residential streets receive a 0 rating.

<table>
<thead>
<tr>
<th>Street Type</th>
<th>Points</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arterial</td>
<td>3</td>
</tr>
<tr>
<td>MORPC designated collector street</td>
<td>2</td>
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<tr>
<td>Upper Arlington designated collector street and/or a residential street that intersects with an arterial or collector street</td>
<td>1</td>
</tr>
<tr>
<td>Residential</td>
<td>0</td>
</tr>
</tbody>
</table>

**SCHOOLS**

There are many health benefits for children who regularly participate in physical activity. Active children are more likely to maintain a healthy weight, gain aerobic capacity, and improve their psychological well-being (Frank, Engelke & Schmid, 2003). Walking to and from school is an easy way for children and their parents to incorporate regular physical activity into their daily routine. Further, increased participation in walking or biking to school also reduces traffic congestion on streets before and after school.

<table>
<thead>
<tr>
<th>School</th>
<th>Points</th>
</tr>
</thead>
<tbody>
<tr>
<td>Elementary School</td>
<td>4</td>
</tr>
<tr>
<td>Middle School</td>
<td>2</td>
</tr>
<tr>
<td>High School</td>
<td>1</td>
</tr>
</tbody>
</table>

Upper Arlington has participated in a Safe Routes to School (SRTS) Program to encourage elementary and middle school students to walk and bike since 2009. In 2011, City Council adopted the SRTS School Travel Plan which allows the City to apply for Federal grant funding to improve pedestrian infrastructure near elementary and middle schools. (See Chapter Four for more information about Upper Arlington’s SRTS program.) Due to the opportunity to receive grant funding for elementary and middle schools, as well as considering common pedestrian characteristics by age (Table 3.2), a street with an elementary school located on it will receive 4 points on the weighted scale and a street with a middle school located on it will receive 2 points. Finally, a street with a high school located on it will receive 1 point.
Table 3.2
Common Pedestrian Characteristics by Age

<table>
<thead>
<tr>
<th>Age</th>
<th>Characteristics</th>
</tr>
</thead>
</table>
| 0-4 | • Learning to Walk  
      • Requires constant adult supervision  
      • Developing peripheral vision, depth perception |
| 5-8 | • Increasing independence, but still requiring supervision  
      • Poor depth perception |
| 9-13 | • Susceptible to “dart out” intersection dash  
       • Poor judgment  
       • Sense of invulnerability |
| 14-18 | • Improved awareness of traffic environment  
       • Poor judgment |
| 19-40 | • Active, fully aware of traffic environment |
| 41-65 | • Slowing of reflexes |
| 65+ | • Difficulty of crossing street  
     • Vision Loss  
     • Difficulty of hearing vehicles approaching from behind  
     • High fatality rate if hit |

Source: AASHTO Guide for Planning, Design, and Operation of Pedestrian Facilities

SENIOR LIVING
As a person ages, it can become difficult for that person to engage in physical activity for recreation or transportation. While mobility varies for each individual based on health, the loss of eyesight, hearing or the sense of one’s balance can result in changed travel patterns and a more sedentary lifestyle for senior citizens. However, regular physical activity may delay the onset of disabilities from osteoporosis and other conditions, alleviate depression, and increase a person’s social interaction in the community (Frank, Engelke & Schmid, 2003). For these reasons, it is essential to provide adequate pedestrian facilities near senior residential communities. A street with a senior housing development located on it will receive 3 points on the weighted scale.

<table>
<thead>
<tr>
<th>Senior Housing</th>
<th>Points</th>
</tr>
</thead>
<tbody>
<tr>
<td>Senior Housing</td>
<td>3</td>
</tr>
</tbody>
</table>

OTHER PEDESTRIAN ATTRACTORS
Pedestrian attractors are neighborhood amenities that are desirable places for residents to travel to by foot or on a bicycle. Parks, libraries, and other public facilities such as a recreation center or place of worship may be destinations that local residents would easily visit by foot if adequate sidewalks are available. Local commercial areas are also a common destination that residents may prefer to travel to by walking. All streets that have a park, library, commercial area, or other public facility will receive 2 points per category on the weighted scale.
Transit stops are common destinations for pedestrians and bicyclists. Currently, the Central Ohio Transit Authority (COTA) provides bus service to the community of Upper Arlington as well as all of Franklin County. It is important that transit users have safe pedestrian facilities to access transit service, and therefore, all streets that have a major bus stop located at any point along the street will receive 1 point on the weighted scale. There are currently 135 COTA bus stops located in the City of Upper Arlington. The majority of stops in the City have less than 1 person using the stop each day. In order to improve walkability to the busiest stops in Upper Arlington, the top ten stops with the highest usage have been designated major bus stops. All major bus stops have more than 12 average daily weekday boardings (on) and alightings (off) based on January 2013 automated passenger counts.

<table>
<thead>
<tr>
<th>Other Pedestrian Attractors</th>
<th>Points</th>
</tr>
</thead>
<tbody>
<tr>
<td>Commercial</td>
<td>2</td>
</tr>
<tr>
<td>Park</td>
<td>2</td>
</tr>
<tr>
<td>Library</td>
<td>2</td>
</tr>
<tr>
<td>Other Public Facilities</td>
<td>2</td>
</tr>
<tr>
<td>Major Transit Stop</td>
<td>1</td>
</tr>
</tbody>
</table>

**EXISTING SIDEWALK INFRASTRUCTURE**

The “Gap in Sidewalk” designation will be applied to a street if there is a partial sidewalk on either side of the street. This could include a sidewalk that is complete up to a point but does not continue the entire length of the street. This designation will receive 3 points on the weighted scale so that streets with large amounts of sidewalks can quickly be integrated into a full network of connectivity.

The “Street with No Sidewalk” designation will be applied to a street if there are no sidewalks present. This designation will receive 2 points on the weighted scale as it is important to create a high level of connectivity for pedestrians to use the sidewalk network; however, streets with a gap in the sidewalk or one-sided sidewalks should receive a higher priority.

The “Sidewalk on One Side Only” designation will be applied to a street if there is a sidewalk the entire length of street on one side and not at all on other side. This designation will receive 1 point on the weighted scale as the street does provide some level of connectivity; however, it is important to provide safe pedestrian access on both sides of the street.

<table>
<thead>
<tr>
<th>Existing Sidewalk Infrastructure</th>
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</tr>
<tr>
<td>Sidewalk complete on both sides</td>
<td>0</td>
</tr>
</tbody>
</table>
STREET PRIORITIZATION SCHEDULE
A detailed analysis of the existing sidewalk network along with the weighted scale of priority elements provides the City with an overall understanding of Upper Arlington’s pedestrian network. The Street Prioritization Schedule (SPS) consists of the top 12 percent of streets in need of pedestrian infrastructure based on each street’s total weighted score of priority elements. These streets have been categorized as High Priority, Priority, and Secondary streets.

The following categories provide a framework for decision-makers to select streets that should receive sidewalks or other pedestrian infrastructure improvements. Although the SPS is helpful, there may be additional elements that have not been considered that would create a need for sidewalks. For example, the Safety section in Chapter Two of this document identified numerous streets with safety concerns. Therefore, the City may decide to weigh other factors and information in final decisions for infrastructure improvements. Overall, the pedestrian connectivity in Upper Arlington will be greatly improved by providing either one or two complete sidewalks on the following streets. Map 3.1 shows the location of High Priority, Priority, and Secondary streets for streets with sidewalks on less than both sides and Map 3.2 shows the portions of these streets that currently have no sidewalks.

HIGH PRIORITY STREETS
The following streets received an SPS total score between 11-16 points and have been designated High Priority streets for pedestrian connectivity. As funding becomes available, streets with a High Priority designation should be the first to be provided with pedestrian infrastructure such as complete sidewalks or multi-purpose paths and crosswalks. Capital Improvement Program (CIP) road reconstruction projects on High Priority streets should always have pedestrian infrastructure included. The following are High Priority streets shown in alphabetical order:

- Cambridge Boulevard
- Fishinger Road
- Guilford Road
- Henderson Road
- McCoy Road
- Northam Road
- Redding Road
- Riverside Drive*
- Tremont Road

*Although not all of Riverside Drive or Henderson Road are under Upper Arlington jurisdiction, they are adjacent to property in the City. While pedestrian amenities may not be feasible for all of Riverside Drive, specific consideration should be given to providing infrastructure from River Park Drive to Nottingham Road as well as providing access to parks along the Scioto River.
**CHAPTER THREE: BEST PRACTICES**

**PRIORITY STREETS**

The following streets received an SPS total score between 9-10 points and have been designated Priority streets. As funding becomes available, streets with a Priority designation should be provided with pedestrian infrastructure immediately following those streets with a High Priority designation. However, Priority streets may be substituted for High Priority streets when there is greater feasibility for infrastructure improvement to occur. CIP road reconstruction projects on Priority streets should always have pedestrian infrastructure included. The following are Priority streets shown in alphabetical order:

- Eastcleft Drive
- Kenny Road
- Lane Avenue
- Lane Road
- Mackenzie Drive
- North Star Road
- NW Professional Plaza
- Ridgeview Road
- Stanford Road
- Wickliffe Road
- Windham Drive
- Zollinger Road

**SECONDARY STREETS**

The following streets received an SPS total score of 8 points and have been designated Secondary streets. After High Priority and Priority pedestrian improvement projects have been completed, streets with a Secondary designation should be considered for pedestrian infrastructure. CIP road reconstruction projects on Secondary streets should receive high consideration to have pedestrian infrastructure included. The following are Secondary streets shown in alphabetical order:

- 5th Avenue
- Barrington Road
- Coventry Road
- Dorset Road
- Edgemont Road
- Farleigh Road
- Greensview Drive
- Kioka Avenue
- Mallway
- Ridgecliff Road
- Stonehaven Drive
- Waltham Road

The complete SPS index is located in the Street Prioritization section of the Appendix and provides detailed information about the priority elements and the total weighted scale for every street in Upper Arlington without complete sidewalks. Information about streets with completed sidewalks is located in the Street Prioritization section of the Appendix.

The Street Prioritization Schedule for infrastructure improvement is meant to be a guide for City officials to improve pedestrian connectivity in Upper Arlington. Further analysis by the City of each street will be necessary to determine the feasibility and appropriateness of an infrastructure improvement project.
CHARLOTTE SIDEWALK RETROFIT POLICY

In 2011, the City of Charlotte, North Carolina adopted a sidewalk retrofit policy as part of their overall comprehensive transportation plan called the Transportation Action Plan. The City’s Transportation Plan called for the construction of 375 miles of new sidewalks by the year 2030. The City has a number of funds that can be used for the construction of new sidewalks. The City of Charlotte Sidewalk Retrofit Policy was adopted in May of 2005 to better allocate these funds for sidewalk construction.

Property owners can petition to the City for sidewalk construction through an application process. The applications are then divided into categories based on street type (arterial, collector, local) and scored based off of the following selection criteria.

**Safety Points**
- Traffic Volume
- Connectivity to other sidewalks
- Proximity to a school
- School Type
- Proximity to a park
- Roadway related safety need
- Proximity to land uses serving elderly or people with disabilities
- Proximity to transitivity to neighborhood serving land uses
- Evidence of a worn path worn path

**Cost Points**
- Length of proposed sidewalk
- Existing curb/gutter/drainage

**Other Points**
- Pedestrian Friendly Index Rating
- Proximity to pedestrian overlay district

City leaders can weigh each criterion differently and can add/delete a criteria if necessary based off of area needs. At the beginning of each fiscal year, the City of Charlotte will score the projects and allocate the funds for sidewalk construction.
RECOMMENDATIONS

POLICY

• The City of Upper Arlington requires that sidewalks are included in the street design cross-section for street reconstructions for arterials, collectors, high priority, and priority streets. (Nine streets ranked as high priority or priority in the SPS are not currently designated by MORPC as arterial or collector streets.)

• The City of Upper Arlington adopt a Complete Streets policy in line with the regional connectivity objectives set forth by the Mid-Ohio Regional Planning Commission (MORPC).

BEST PRACTICES

• The City of Upper Arlington should place strong consideration on traffic calming and pedestrian access measures to discourage unsafe speeds.

• The City of Upper Arlington should add or enhance crosswalks and crossing signals with new sidewalks, where opportunity and need for connection exists.

• The City of Upper Arlington should adopt the Street Prioritization Schedule which weighs sidewalk demand on particular streets with adjacent and immediately local pedestrian-generating activities and uses.
Map 3.1 Upper Arlington Street Prioritization [<2 sidewalks]

This map displays the proposed prioritization of streets for sidewalk additions and improvements, based on the total score accumulated by each street in the Street Connectivity Rating Checklist in Table 3.1. Only streets that do not currently have sidewalks on both sides are displayed in this map.

Prioritization Schedule
[connectivity rating*]
- High Priority
- Priority
- Secondary
- Other Streets w/o 2 Sidewalks

* Sidewalks along City boundary streets like Henderson and Riverside may not be in Upper Arlington jurisdiction, but should still be considered in planning in order to promote continuity and contiguous pedestrian activity.
Map 3.2 Upper Arlington Street Prioritization [<1 sidewalk]

This map displays the proposed prioritization of streets for sidewalk additions and improvements, based on the total score accumulated by each street in the Street Connectivity Rating Checklist in Table 3.1. Only streets that do not currently have any sidewalks are displayed in this map.

Prioritization Schedule

[connectivity rating*]

- High Priority
- Priority
- Secondary
- Other Streets Without Sidewalks

* Sidewalks along City boundary streets like Henderson and Riverside may not be in Upper Arlington jurisdiction, but should still be considered in planning in order to promote continuity and contiguous pedestrian activity.
CHAPTER FOUR
PROGRAMS & INITIATIVES FOR A WALKABLE UPPER ARLINGTON
PROGRAMS & INITIATIVES

Upper Arlington currently maintains a number of programs and initiatives in achieving connectivity for the City. While most programs come under the Streets and Services Chapter of the Upper Arlington City Codified Ordinances, there have been programs and initiatives started by members of the local community. Below is description of existing programs and initiatives.

SIDEWALK INSPECTION PROGRAM

Under Section 901.02 of the Upper Arlington City Codified Ordinances, the City Manager has the authority to appoint a designee to conduct an inspection program for all sidewalks within Upper Arlington at a minimum of once every five (5) years. Currently this policy is not utilized on a 5-year basis and is utilized only on a complaint-driven basis (C. Gibson, personal communication).

NOTICE TO CONSTRUCT SIDEWALKS

Under Section 901.04 of the Upper Arlington City Codified Ordinances, the City Manager has the authority to report to City Council any Street that has 60 percent or more sidewalk coverage along its frontage. City Council can then declare to have sidewalks installed and “filled in” along the entire distance of the existing street. Currently this policy is not being enforced on a regular basis (C. Gibson, personal communication).

SIDEWALK CONSTRUCTION REQUIREMENT FOR NEW BUILDINGS

Under Section 901.05 of the Upper Arlington City Codified Ordinances, when a new building is to be constructed in the City along a street with improved curbs and gutters, the owner shall construct a sidewalk on the land. A building permit will not be issued for the building until either the owner may receive a waiver from the City Manager due to a threat to public health, safety, welfare, undue hardship or the owner pays the City for the cost of the sidewalk in lieu of installation. This ordinance has been a source of contention between the City and developers since its implementation. Developers have expressed their disdain for this ordinance for a variety of reasons, but one in particular being where a sidewalk may be installed along a street where there aren’t existing sidewalks creating a “sidewalk to nowhere” phenomenon. The City believes this ordinance is a policy...
that ultimately helps create a more walkable, connected community and the process for that has to begin at some point (C. Gibson, personal communication).

SIDEWALK PETITION
In the Ohio Revised Code, Section 727.06 entitled: “Petition By 60 percent Of Owners Of Front Footage For Improvement” is a process for homeowners fronting a street in a community to come together and petition for a public improvement (such as a sidewalk) to be done to that street if they are willing to be assessed for the cost of the improvement (various payment options are usually given). This process has had unsuccessful results in the past (P. Wilamosky, personal communication, October 15, 2013). The unsuccessful petition bids have usually been due to lack of cooperation in neighborhoods over agreeing on sidewalks. Many residents do not wish to have sidewalks installed along their properties for a variety of reasons which include fiscal cost, increase perception of crime, maintenance responsibility, and general complacency (Citizen Input, personal communication, October 15, 2013). In the August 12th edition of the Columbus Dispatch, the article “Upper Arlington residents lament lack of sidewalks” underscored the difficulty in achieving the petition process (Narciso, 2013). By having to attain 60 percent of support along a neighborhood street, conflict can arise among fellow neighbors. Assistant City Manager Joe Valentino was quoted as saying, “Every sidewalk that has been through the petition process has felt that tension because not everyone wants them.” (Narciso, 2013) Mr. Valentino provided a particular neighborhood street along Glenn Avenue as example of clashing between neighbors, “Friendships were put at risk, block parties don’t happen anymore. That’s when neighborhoods become dysfunctional.” (Narciso, 2013).

SAFE ROUTES TO SCHOOL
Over the past four years, the Safe Routes to School (SRTS) program in Upper Arlington has encouraged parents and students to make the change to walk and bike to school. Activities such as “International Walk to School” day, “Walking Wednesdays”, a Bike Rodeo, and pep rallies have built support for the program and increased student participation significantly. The Barrington Safe Routes Report in March 2013 reported approximately 11 percent more students walking or biking to school in 2013 compared to before the initiation of SRTS in 2009 (Panero, 2013). The Safe Routes to School program has been instrumental in helping to provide families with healthy transportation options, and it has provided a set of recommended pedestrian infrastructure improvements to the City of Upper Arlington through an Engineering Study and School Travel Plan.

In June 2010, Stantec Consulting Services, Inc. prepared for the City of Upper Arlington a SRTS Engineering Study focused on Barrington Elementary, Greensview Elementary, Tremont Elementary and Windermere Elementary. The purpose of the study was to improve students’ safety and ability to walk and bike to school and provided specific suggestions in the following categories:

- Safety and Encouragement Programs;
- New Facility Design Guidelines;
- Engineering Improvements.

The Safety and Encouragement Programs section recommended the Upper Arlington City School District to regularly update a list of “unsafe and hazardous” roadway and intersection conditions as well as track and re-evaluate the conditions
after improvements have been made. Similarly, the Engineering Improvement section requested improved pedestrian amenities on major roadways, improved pedestrian connectivity throughout Upper Arlington, enhanced visibility of crosswalks near schools, and upgraded or additional bike racks. Last, the New Facility Design Guidelines section recommended the City to revise City Ordinance 1304.03.B to require new sidewalks to meet or exceed ADA guidelines for accessible sidewalks, revise City standards to reduce the width of crosswalks, and the adoption of a Complete Streets policy (Stantec Consulting Services, Inc., 2010). These recommendations are important for the overall pedestrian connectivity of Upper Arlington.

Following the Engineering Study, the SRTS School Travel Plan (STP) was developed by Stantec Consulting Services, and was adopted by Upper Arlington City Council in June 2011. The School Travel Plan was initiated to “ensure a more comprehensive planning process” and involved a team of stakeholders from the schools, community and City government (Stantec Consulting Services, Inc., 2011, p.6). The STP includes a list of infrastructure and non-infrastructure improvements for the four elementary schools, many of which were supplied directly from the 2010 Engineering Study. The STP was also approved by the Ohio Department of Transportation and enables the City of Upper Arlington to apply for federal infrastructure grants under the Safe Routes to School Program.

The Safe Routes to School program in Upper Arlington was awarded non-infrastructure grant funding in 2012. The grant funds were used for supplies to encourage students to walk and bike to school, pedestrian and bike safety education, safety vests for volunteers and cross-guards, pedestrian state law reflective signs for roadways, and funds to pay for a Special Duty Officer to monitor K-8 schools on rotation during peak traffic two hours per day.

Since the adoption of the School Travel Plan in 2011, the following five sidewalk construction projects recommended in the plan have been completed:
- Barrington Road from North Star to Northwest Boulevard
  - Sidewalk on both sides of the street
- Glenn Avenue from Tremont Road to Stanford
  - Sidewalk installed on the east side of the street
- Waltham Road from Cambridge Boulevard to Upper Chelsea Road
  - Sidewalk installed on the south side of the street
- Lane Road from Reed Road to the Lane Road Library
  - Sidewalk installed on the south side of the street
- Mountview Road from Fishinger to McCoy roads
  - Sidewalk installed on the east side of the street

These projects were funded through the American Recovery and Reinvestment Act of 2009 as part of an economic stimulus package (Stantec Consulting Services, Inc., 2010). Currently, the City of Upper Arlington has not applied for infrastructure funding for the SRTS program, but plans to apply for two grants in 2014.

**SIDEWALK PETITION RECOMMENDATIONS**

As mentioned earlier, the sidewalk petition process in Upper Arlington has not been successful in installing many new sidewalks. In the public meetings and comments from residents, they expressed their frustration with the process and wished to make the petition process easier, transparent, and understanding the
impact of sidewalks. One recommendation for the petition process would be to design a process that keeps in line with ORC 727 but gives City residents more information during the process such as require meetings with City staff on how sidewalks would affect their property. Also since the petition process can be a contentious issue for some residents, we recommend allowing a 30-day wait period including a public meeting for residents to voice their opinion and have the option to remove from or add their name to the petition before it is granted.

Another recommendation for the City is to readjust the assessment of a sidewalk petition. Many residents are hesitant to sign a petition whether it is due to the cost of a sidewalk regardless if payments are amortized or the maintenance cost of a sidewalk. If the City were to participate with property owners in the cost of a sidewalk construction, this could entice residents to reconsider signing onto a sidewalk petition.

### WALKING/BIKING AND CONCENTRATION

- As of 2009, only 13 percent of children walked or biked to school in the U.S, down from 50 percent in 1969
- Niels Egelund, a professor at Aarhus University in Denmark conducted a study of 20,000 children between the ages of 5-19 and found those who walked or biked to school “performed measurably better” on activities that tested concentration by simple problem solving and puzzles
- The exercise one would get from walking to school positively effects concentration up to four hours into the school day
- “As a third-grade pupil, if you exercise and bike to school, your ability to concentrate increases to the equivalent of someone half a year further in their studies (Niels Egelund)”

Goodyear, Sara. The Link between Kids who Walk or Bike to School and Concentration. The Atlantic Cities Place Matters, Commute. February 5, 2013 <http://www.theatlanticcities.com/commute/2013/02/kids-who-walk-or-bike-school-concentrate-better-study-shows/4585/>


### SAFE ROUTES TO SCHOOL RECOMMENDATIONS

The Safe Routes to School Engineering Study and School Travel Plan (STP) provide Upper Arlington with valuable information on how to improve the safety and health of students living in Upper Arlington. The recommendations provided in both documents should receive high consideration by Upper Arlington City Council.

It is also recommended the City Engineer include the list of STP infrastructure improvements in the Capital Improvement Program (CIP) document in order to track the projects as they are completed. This would also allow any CIP that includes sidewalk or pedestrian improvements, as well as sidewalk petitions received by the City, to be cross-referenced with the STP recommendations and allow the City to capitalize on potential grant funding when projects overlap.

Upper Arlington should consider applying for Safe Routes to School (SRTS) infrastructure grant funding on an annual basis.
Another recommendation is to change Section 901.02 of the Upper Arlington City Code, with regard to the authority and inspection criteria of the Sidewalk Inspection program by:

1. Having the responsibilities of the inspection program be delegated to either the City Engineer or Public Service Director. While the City Manager is currently in charge of the inspection (or their designee) it would be in the best interest of the City to have this program designated to a City department which more aligns with its expertise and skill set.

2. Having the sidewalks inspected on a more regular basis, perhaps every 1 or 2 years, instead of the current 5-year minimum. This would give City officials a better understanding of the connectivity needs of the community at a quicker pace than at the current 5-year minimum.

3. Along with setting more routine inspection standards, a set of inspection criteria should be developed to assess the current conditions of the sidewalks and to be sure the public health, safety and welfare are being met when evaluating the sidewalk.

Developing a strong set of sidewalk standards will allow the City to fix potential problem areas and show the City has a high standard in providing and maintaining its public infrastructure, which in turn would have a more positive effect on people willing to utilize pedestrian modes of transit.
CASE STUDY - CITY OF FAIRLAWN, OH

In 2009, the City of Fairlawn, Ohio created a new sidewalk petition process to help streamline the process (Wojnaroski, 2009). Several check points in their petition process were added to give residents more information and influence such as:

- Pursuant to ORC 727 requiring 60 percent agreement among owners of a street frontage, additional if 75 percent of all owners of lots bounding and abutting regardless of the amount of affected footage contained, council must consider the petition.

- Requirement of residents to meet with the city engineer and learn how the proposed sidewalk would affect their property, trees, and landscaping along their frontage.

- Residents who did not originally sign the petition have the right to circulate their own counter petition against the sidewalk.

See the Sidewalk Petition section of the Appendix for Fairlawn, OH full sidewalk petition procedure.

CASE STUDY - CITY OF WORTHINGTON, OH

The City of Worthington, Ohio has created a petition process where the city and property owners share the cost of sidewalk installation. This is in part due to their petition process, Section 905.08 of the Codified Ordinances of the City of Worthington, OH, where the City can install a sidewalk after receiving a sidewalk petition of 51 percent or greater of property owners on a block. Under Section 905.09 (Worthington), in connection with the construction of sidewalks pursuant to Section 905.08 the City shall pay for*:

- The preparation of plans and specifications;

- The costs associated with advertising for bids and awarding a contract and for construction inspection;

- The costs associated with an Assessment Equalization Board; and

- Fifty percent (50 percent) of the cost of sidewalk construction.

* Provision under Section 905.11 stipulates the city shall only pay for 50 percent of the cost when the sidewalk construction material used is concrete. If other material is desired by the property owners, they shall pay the remaining balance of the material and cost of construction associated.

See the Sidewalk Petition section of the Appendix for Worthington, OH full sidewalk code.
RECOMMENDATIONS

POLICY

• The City of Upper Arlington streamlines the petition process, as permitted by the Ohio Revised Code (ORC).

• Revamp inspection program by developing a strong set of sidewalk inspection standards, redelegating staff responsibility and increasing inspection frequency.

SIDEWALK IMPLEMENTATION

• The City of Upper Arlington include the Safe Routes to School: School Travel Plan (STP) infrastructure improvement recommendations in current and future Capital Improvement Programs (CIP).

• The City of Upper Arlington should consider applying for Safe Routes to School (SRTS) infrastructure grants on an annual basis.

• The City of Upper Arlington should strongly consider completing sidewalk gaps between intersecting streets when 60 percent or more of the frontage between said streets has been provided with sidewalks, pursuant to Section 901.04 of the Streets and Services Code of the Upper Arlington City Ordinance.

• The City of Upper Arlington may make use of low-cost or volunteer internships to complete the sidewalk inspection program, under the guidance of the City Engineer.
CHAPTER FIVE
IMPLEMENTATION OF THE PLAN
In accordance with Upper Arlington Codified Ordinance, sidewalk maintenance and installation is the responsibility of the property owner. The financial burden associated with this requirement is one reason that some residents are reluctant to install sidewalks in front of their home or sign-off on a sidewalk petition. The purpose of this section is to review the City’s current sidewalk funding methods and recommend additional funding options.

**CURRENT CONDITIONS**

The need and cost for sidewalk construction in Upper Arlington is vast. With 50.8 percent of all streets without sidewalks, the task to install the sidewalks has fallen on the City, homeowners, and developers who build homes in the community.

In an effort to fund sidewalk construction, the City implemented an ordinance that requires all new builds to install a sidewalk along their frontage. In lieu of installing a sidewalk, a property owner may pay a fee in certain cases.

Per Section 901.05, the fee-in-lieu that is charged is ‘calculated per lineal foot by the City Engineer based on the three most recent City bids received for concrete sidewalk installation on a City construction project’. As of January 2013, the average of the three most recent bids is roughly $78 per linear foot (D. Parkinson, personal communication, September 9, 2013). This amount is significantly higher than the average $48.53 per linear foot a homeowner would pay to have a sidewalk installed on their own. According to U.S. Department of Transportation Federal Highway Administration, the linear per foot cost to install a sidewalk may vary based on the following factors:

- Presence of curb and gutter: The costs of providing curb and gutter, which presumes the need to also provide a street drainage system, run much higher than the cost of sidewalk alone. A standard perpendicular curb ramp and top landing need a minimum border width of almost 12 ft at intersections if there is a 6 in. curb. A 6 in. curb reduces the minimum
border width to 10 ft. Sidewalks and curb ramps are necessary expenses to meet the needs of pedestrians – catch basins are provided to drain the roadway surface used by motor vehicle traffic. Note: per Section 901.05, the cost of ADA ramps shall be omitted from cost calculations for residential parcels, but shall be included in calculations for commercial or mixed-use parcels.

- Number of driveways: To comply with ADA, many existing driveways must be replaced with ones that provide a level passage at least 3 ft wide. It can also be advantageous to inventory all existing driveways to see if any can be closed, resulting in a cost-savings.

- Number of intersections: While intersections represent a reduction in the sidewalk, curb ramps are required where sidewalks cross intersections and the cost of providing additional traffic control at each intersection should be considered. Note: per Section 901.05, the cost of ADA ramps shall be omitted from cost calculations for residential parcels, but shall be included in calculations for commercial or mixed-use parcels.

- Obstacles to be removed: The cost for moving or removing obstacles such as utility poles, signposts, and fire hydrants vary too much to be itemized here; however, they are required to be moved if they obstruct access. These costs must be calculated individually for each project.

- Structures: While minor sidewalk projects rarely involve new structures such as a bridge, many projects with significant cuts and fills may require retaining walls and/or culvert extensions. The costs of retaining walls must be calculated individually for each project.

- Right-of-way: While most sidewalk projects can be built within existing rights-of-way (especially infill projects), some may require some right-of-way easement. An alternative to acquiring right-of-way is to narrow the roadway, which should consider the needs of bicyclists (e.g., through bike lanes or shoulders) at a minimum of 5 ft.

Table 5.1 compares the cost per linear foot the City charges and the average cost for a homeowner to install a sidewalk based on estimates obtained from licensed contractors permitted to work in Upper Arlington (Finance section of the Appendix).

Table 5.1
Linear Foot Costs - City Cost vs. Homeowner Cost (in 2013 dollars)

<table>
<thead>
<tr>
<th>Type of Cost</th>
<th>Amount</th>
<th>Average frontage of a home in Upper Arlington (ft.)</th>
<th>Total Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>New build fee-in-lieu of a constructed sidewalk fee</td>
<td>$78</td>
<td>96</td>
<td>$7,392</td>
</tr>
<tr>
<td>Homeowner</td>
<td>$48.53</td>
<td>96</td>
<td>$4,658.88</td>
</tr>
</tbody>
</table>

PUBLIC INPUT: FINANCES
When participants of the public survey were asked about the City of Upper Arlington splitting the construction cost of sidewalks with residents, respondents indicated the following:
- 60 percent would support the City of Upper Arlington splitting construction costs of sidewalks with residents
- 14 percent of participants were neutral on the subject
- 9 percent disagreed
- 16 percent of participants strongly disagreed

When asked to respond to the acceptance of a small tax increase to fund the construction of sidewalks, the survey was part of the public engagement process and is discussed more in Chapter Two on page 39.
The homeowner’s cost is significantly lower than what it costs for the City to have a sidewalk installed. Homeowners do not have to go through a bid process or meet the requirements that are involved in the process (i.e. prevailing wage). Unfortunately, unlike the City, homeowners do not have access to grant funding that may help mitigate the cost of installing a sidewalk.

The estimated cost for the City to put in sidewalks along one side of High Priority, Priority, and Secondary streets in Upper Arlington is vast (Refer to the Finance section of the Appendix). The need for sidewalks is not the same on all streets, as previously noted in the Street Prioritization Schedule (SPS) section. There are some streets with a higher need than others for sidewalks. As funding becomes available, implementation of sidewalks should be based on the level of priority noted in the SPS. The total cost to install sidewalks along the High Priority, Priority, and Secondary streets is noted in Table 5.2 (Refer to the Finance section of the Appendix).

### Table 5.2
**Total Estimated Cost to Install Sidewalks Along High Priority, Priority and Secondary Streets (in 2013 dollars)**

<table>
<thead>
<tr>
<th></th>
<th>Total Estimated Cost at Average per Lineal Foot for Homeowner to Build</th>
<th>Total Estimated Cost at Average per Lineal Foot for City of Upper Arlington to Build</th>
</tr>
</thead>
<tbody>
<tr>
<td>Install sidewalks on one side on streets without sidewalks</td>
<td>$5,123,032.75</td>
<td>$8,234,011.01</td>
</tr>
<tr>
<td>Install sidewalks on two sides on streets without sidewalks</td>
<td>$10,246,065.50</td>
<td>$16,468,022.03</td>
</tr>
<tr>
<td>Install sidewalks on one side on streets that currently have sidewalks on one side</td>
<td>$2,745,425.32</td>
<td>$4,412,593.76</td>
</tr>
</tbody>
</table>

Refer to the Finance section in the Appendix for additional details

**FUNDING OPPORTUNITIES**

Given the vast amount of sidewalk that will need to be installed in order to meet the sidewalk needs of Upper Arlington residents, the City must consider multiple funding opportunities to cover the cost of installation. Funds are available at the federal, state, and local level and may include cost sharing, public-private partnerships, grants, and public financing.

**FEDERAL/STATE**

Federal and state funding for Upper Arlington is available through its local metropolitan planning organization, which is Mid-Ohio Regional Planning Commission (MORPC). In order to receive MORPC attributable funding a project must comply with MORPC Complete Streets policies (MORPC, n.d.). Refer to Finance section of the Appendix for additional funding information. A number of the funding mechanisms are available through The State of Ohio and MORPC are for pedestrian facilities that are incorporated into other construction projects.

The City can reduce the cost of sidewalk installation by incorporating it into other related construction projects. Sidewalks can be constructed on projects that involve surface preservation, water or sewer lines, or placing utilities underground.
CHAPTER FIVE: IMPLEMENTATION

(U.S. Department of Transportation Federal Highway Administration). Currently, per the City’s Engineer, sidewalks are presented as a supplementary project when streets are undergoing reconstruction. If the City mandated the inclusion of sidewalks with these and other related projects it would not only increase the rate at which sidewalks are installed in Upper Arlington, but also reduce overall costs for the City. Table 5.3 shows the estimated cost of the concrete needed to install a 96 ft. sidewalk. The labor costs that would be associated with the project would be included in the overall labor costs of the project and not directly attributed to the construction of the sidewalk.

Table 5.3
Estimated Cost of Concrete for Integrated Sidewalk Construction Project (in 2013 dollars)

<table>
<thead>
<tr>
<th>Average frontage of a home in Upper Arlington (ft.)</th>
<th>Width (ft.)</th>
<th>Depth (ft.)</th>
<th>Cubic Feet</th>
<th>Cubic Yards</th>
<th>Cost of Concrete per Cubic Yard</th>
</tr>
</thead>
<tbody>
<tr>
<td>96</td>
<td>5</td>
<td>0.33</td>
<td>159.99</td>
<td>5.9259</td>
<td>$948.14</td>
</tr>
</tbody>
</table>

Source: Personal communication with representatives from Top Cat, Anderson Concrete and Ernst Concrete, October 7, 2013. Refer to the Finance section of the Appendix for calculations.

Under the State of Ohio Department of Transportation-Transportation Alternatives Program, awards issued for Safe Routes to Schools in 2013 for the City of East Liverpool and the City of Pataskala totaled $799,185 and $545,600, respectively. In addition, an award issued to the City of Napoleon in 2012 for a sidewalk project totaled $1,297,000.

LOCAL New Build, Remodel, and Addition Construction Fee
Currently a fee is charged only for new build construction if a property owner obtains a waiver to not build a sidewalk along their frontage. Through an analysis of permits issued for remodels, additions, and new builds in 2012, it was found that there was potential revenue to fund sidewalks in Upper Arlington. The estimated improvement value for permits issued for remodels, additions, and new builds was $37,500,996. Based on these numbers, we recommend that a nominal fee be included in the cost of the building permits for all new builds, remodels, and additions to generate revenue needed to fund sidewalk construction. This fee would replace the current mandatory requirement for new builds to install sidewalks, and thus eliminates concerns related to building ‘sidewalks to nowhere.’ Additionally, a fee instituted on all building permits for remodels, additions and new builds will make the fee structure more equitable.

Implementation of this new fee structure would require that the City revamp its current fee structure for building permits. The new fee structure will impact all building permits for remodels, additions and new construction. The additional fee collected will be deposited into a restricted Sidewalk Implementation Fund (SIF). The funds will be used specifically for the construction of sidewalks and distributed per the Street Prioritization Schedule. Property owners will be assessed either a 1 percent fee on the estimated improvement value of the new build, remodel, addition construction or a $1,000 flat fee, whichever is less. The capping of the fee at $1,000 is roughly the average estimated cost of all new builds, remodels, and additions incurring a 1 percent fee. In order to reduce the burden to homeowners and encourage housing construction in
Upper Arlington, a decision was made to cap the fee at $1,000 (Finance section of the Appendix). If the flat fee method is implemented it should be subject to change in accordance with the two-year City Council assessment of other municipal fees.

As seen in Table 5.4 if this recommended fee structure were in place in 2012, it would have generated approximately $150,489. Given the City’s Engineer’s estimate of $78 a linear foot this the SIF could have funded 1,929 linear feet of sidewalk. Refer to Finance section of the Appendix for the full analysis of this fee structure and other fee structures analyzed based on 2012 new build, remodels and additions figures.

**Table 5.4**

**Analysis of Recommended Fee Method (based on 2012 permits) - 1% Fee or Flat Fee of $1,000**

<table>
<thead>
<tr>
<th></th>
<th>Permit Amount</th>
<th>Estimated Value of Work</th>
<th>Fee Generated</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>$297,177.85</td>
<td>$37,500,996.93</td>
<td>$150,489.58</td>
</tr>
<tr>
<td>Average</td>
<td>$811.96</td>
<td>$102,461.74</td>
<td>$598.98</td>
</tr>
</tbody>
</table>

Given the relatively small revenue generated from the permit fee, it may take 55 years to fund the construction of sidewalks on one-side of all High Priority, Priority, and Secondary streets using this sole method of revenue generation (Finance section in the Appendix). It is recommended that multiple funding sources be considered to fund the installation of sidewalks.

**BUILDERS PROFILE**

One of the most controversial aspects of the existing code as it relates to sidewalks is the requirement to install sidewalks in front of every new build. While current policy was put in place to begin the process of eventually having a full sidewalk network throughout the City, the piecemeal manner in which redevelopment takes place in the real world often results in stand-alone “sidewalks to nowhere”. Local builders and developers have expressed frustration with how Section 901.05 of the City code must be implemented, and have suggested that a more practical alternative be adopted. Builders have also pointed out the awkwardness that stand-alone sidewalks tend to create between neighbors, and have recommended that the installation of sidewalks be more strategic and contiguous.

“I support a fee and schedule system that dedicates funds to the installation of sidewalks throughout the City in a prioritized and strategic fashion. This would be a great alternative to the existing language in 901.05 of the code.”
[personal conversation, 11/20/13]
Municipal Bond Financing
Another way to fund sidewalk construction is through the issuance of a municipal bond. This may expedite the installation process and may offer a way to finance the cost without raising taxes. Coupled with other funding methods, it may close the gap between the cost of the sidewalks and the revenue needed to finance the construction. Given the nature of this funding method, the City and its Council would need to determine the amount and length of the bond and when to place it on the election ballot. In addition, voters will need to approve the measure once it is placed on the ballot (Elmer).

Property Tax
An increase in property tax is another way to generate revenue to fund sidewalks. In an online survey conducted October and November of 2013 by our group and the City of Upper Arlington, 61.4 percent of respondents either strongly agreed or agreed with a small tax increase to fund the construction of sidewalks in the city. Depending on the amount taxed per month, this funding method would also expedite the installation of sidewalks and has the potential to generate between $825,000 to $16,504,800. All funds collected from the tax should be deposited in the restricted SIF and only be used for sidewalk installation. Refer to Finance section in the Appendix for additional details.

Public-Private Partnerships
The City of Upper Arlington may coordinate with private entities within and surrounding Upper Arlington to improve sidewalk and walkability infrastructure in the form of public-private partnerships. A program would need to be established to receive private funding. To increase awareness of the program, it would have to be marketed (Knox-Knoxville County). All funds collected for the program should be deposited in the restricted SIF and only be used for sidewalk installation. Potential amount of funds raised from the program is unknown.

Sharing Cost with Residents
Sharing the cost of sidewalk construction with homeowners could be a win-win situation for the City and homeowners. A 50/50 reimbursement program would split the cost of sidewalk construction at the homeowner cost. The City would not have to pay the City per lineal foot rate and homeowners and the City would not have to shoulder 100 percent of the cost. In an online survey conducted October and November of 2013 by our group and the City of Upper Arlington, 60 percent of respondents either strongly supported or supported with the City splitting construction costs of sidewalks with residents. Reimbursement will depend on funding availability. Approval of the sidewalk cost of reimbursement is recommended prior to sidewalk construction to avoid any confusion in the process and ensure that funds are available before construction commences. Any funds collected and held in the SIF could be used to reimbursement residents for sidewalk construction costs.
RECOMMENDATIONS

- The City of Upper Arlington actively seeks grant funding from MORPC and other government and nongovernment sources to fund sidewalk construction.
- The City of Upper Arlington assesses property owners of all new build, remodel, addition construction a 1 percent fee on the estimated improvement value of the new build, remodel, addition construction or $1000 flat fee, whichever is less.
- The City considers putting a municipal bond or property tax increase on the ballot for an upcoming election.
- The City of Upper Arlington may coordinate with private entities within and surrounding Upper Arlington to improve sidewalk and walkability infrastructure in the form of private-public partnerships.
- The City of Upper Arlington establish a Cost Share Reimbursement Program that will split the sidewalk construction costs 50/50 with residents.
- The City of Upper Arlington allocate all funds collected for the purpose of sidewalk construction to a restricted Sidewalk Implementation Fund (SIF).
KALAMA, WA SIDEWALK FUND - CASE STUDY

The City of Kalama, Washington, a small town 30 miles north of Portland, Oregon uses a sidewalk fund to uniformly construct new sidewalks, curbs and gutters.

Property owners who “construct buildings, develop property, or perform a major remodel are required to construct sidewalks, curbs, and gutters adjacent to their property or contribute to a sidewalk fund.” (Kalama Municipal Code 11.05.010).

The city code requires that if a building project exceeds $30,000 over a three year period, the property owner must build a sidewalk along the frontage of the street unless a sidewalk already exists.

- However, if the city says a sidewalk cannot be constructed on a specific property for whatever reason, the owner must pay into a fund that is used to construct and repair sidewalks around the city.

- The cost the property owner must pay is calculated by multiplying the average cost per lineal foot by the lineal frontage of the property. (Kalama Municipal Code 11.05.080)

Kalama, Washington has a WalkScore of 51, which is well above the national average of 36. (WalkScore.com 2013)

<http://www.cityofkalama.com/buildingdepartment/permits_files/forms/sidewalks.htm>

<http://www.walkscore.com/score/kalama-washington>
RECOMMENDATIONS

Our team recommends a comprehensive sidewalk implementation strategy that involves the following policy recommendations, best practices, and suggestions:

POLICY

• The City of Upper Arlington should approve a restricted Sidewalk Implementation Fund (SIF) that:
  ° Implements new sidewalk projects in accordance with a Sidewalk Prioritization Schedule (SPS), as demonstrated in the provided document;
  ° Accrues funds from a fee generated from the estimated improvement value of new homes, interior and exterior remodels, and additions, and;
  ° Funded by either a 1 percent fee or $1,000 flat fee, whichever is less, with flat fee subject to change in accordance with the two-year City Council assessment of other municipal fees.
• The City of Upper Arlington adopt a Complete Streets policy in line with the regional connectivity objectives set forth by the Mid-Ohio Regional Planning Commission (MORPC).
• The City of Upper Arlington require that sidewalks are included in the street design cross-section for street reconstructions for arterials, collectors, high priority, and priority streets.
• The City of Upper Arlington streamlines the petition process, as permitted by the Ohio Revised Code (ORC).
• Revamp inspection program by developing a strong set of sidewalk inspection standards, redelegating staff responsibility and increasing inspection frequency.

BEST PRACTICES

• The City of Upper Arlington should place strong consideration on traffic calming and pedestrian access measures to discourage unsafe speeds.
• The City of Upper Arlington should add or enhance crosswalks and crossing signals with new sidewalks, where opportunity and need for connection exists.
• The City of Upper Arlington should adopt the Street Prioritization Schedule which weighs sidewalk demand on particular streets with adjacent and immediately local pedestrian-generating activities and uses.

SIDEWALK IMPLEMENTATION

• The City of Upper Arlington may adopt an updated version of the Upper Arlington Transportation Plan.
• The City of Upper Arlington may offer percentage credit toward sidewalk implementation in areas adjacent to Mixed Use Developments.
• If a petition comes forward for a sidewalk, the City of Upper Arlington should consider partial funding from the Sidewalk Implementation Fund if these streets are considered to be high priority or priority, based on the Street Prioritization Schedule.
• The City of Upper Arlington should strongly consider completing sidewalk gaps between intersecting streets when 60 percent or more of the frontage between said streets has been provided with sidewalks pursuant to Section 901.04 of the Streets and Services Code of the Upper Arlington City Ordinance.
• The City of Upper Arlington may make use of low-cost or volunteer internships to complete the sidewalk inspection program, under the guidance of the City Engineer.
• The City of Upper Arlington should enhance transparency regarding sidewalk implementation strategy, by the use of website materials, print media, and public notification.
• The City of Upper Arlington may coordinate with private entities within and surrounding Upper Arlington to improve sidewalk and walkability infrastructure in the form of private-public partnerships.

SAFE ROUTES TO SCHOOL

• Upper Arlington should consider applying for Safe Routes to School (SRTS) infrastructure grant funding on an annual basis.
• The City of Upper Arlington include the Safe Routes to School: School Travel Plan (STS) infrastructure improvement recommendations in current and future Capital Improvement Programs (CIP).

FINANCE

• The City of Upper Arlington actively seeks grant funding from MORPC and other government and nongovernment sources to fund sidewalk construction.
• The City of Upper Arlington assesses property owners of all new build, remodel, addition construction a 1 percent fee on the estimated improvement value of the new build, remodel, addition construction or $1000 flat fee, whichever is less.
• The City considers putting a municipal bond or property tax increase on the ballot for an upcoming election.
• The City of Upper Arlington may coordinate with private entities within and surrounding Upper Arlington to improve sidewalk and walkability infrastructure in the form of private-public partnerships.
• The City of Upper Arlington establish a Cost Share Reimbursement Program that will split the sidewalk construction costs 50/50 with residents.
• The City of Upper Arlington allocate all funds collected for the purpose of sidewalk construction to a restricted Sidewalk Implementation Fund (SIF).
CHAPTER SIX
CONCLUDING REMARKS
Upper Arlington has been regarded as a premier community for nearly one hundred years. While it remains a desirable community for many, the City faces a complex future in the face of evolving fiscal challenges. It will be important to envision a strong future for the City in many aspects, from honoring the history of the community, to encouraging and preserving the high quality of community life, to continuing to provide a high quality educational system, and all the other elements that make the residents and employees within Upper Arlington proud to be part of the community.

In the midst of the discussion and conflict over the implementation of a comprehensive sidewalk network, it has become clear that this contentious issue is characterized by challenges with financing, public safety, aesthetics and property rights. By addressing these concerns, we believe Upper Arlington can add necessary walkable access to community amenities and outdoor recreation.

Our team took a careful look at the variety of arguments for and against funding pedestrian infrastructure, and found that sidewalks are not an amenity, but a common good for the safety and welfare of the community. We believe that we have found a solution that will ease fiscal concerns, will alleviate the contentious nature of the petition process that the City promotes, and will assuage developers—who have been burdened by building sidewalks to nowhere or have paid exorbitant costs to avoid doing so.

We are excited to see this plan in action, and feel strongly that we have developed a strategy that will, in time, develop a network of sidewalks that will serve every corner of the community without arbitrarily placing sidewalks on every street. After all, it is about providing a network of sidewalks for pedestrians to use in areas of high need, while being sympathetic towards less-travelled streets with narrow and picturesque streetscapes.

Thank you, Upper Arlington, for providing us the opportunity to develop this plan. You have lent us your critical considerations on this matter, and we intend to provide only the most high-quality and sensitive pedestrian connectivity plan. The status of Upper Arlington will remain premier in eminence, and we believe that providing a network of sidewalks is a large part of the future, safety, and welfare of Upper Arlington and its citizens.
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REFERENCES

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